ROAD ASSET MANAGEMENT PLAN DISTRICT

JOHN TAOLO GAETSEWE DISTRICT MUNICIPALITY

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DATE

ROAD ASSET MANAGEMENT PLAN

JOHN TAOLO GAETSEWE DISTRICT MUNICIPALITY

PREPARED FOR:	JOHN TAOLO GAETSEWE DISTRICT MUNICPALITY in consultation with the Local Municipalities, i.e. Joe Morolong, Ga-Segonyana and Gamagara Local Municipalities, as well as: NATIONAL DEPARTMENT OF TRANSPORT Road Engineering Standards National Road Asset Management – Indicators and Standards Forum Building Cnr Bosman and Struben Streets PRETORIA 0001
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CONFIGURATION CONTROL

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ABBREVIATIONS

AADT	Average Annual Daily Traffic
CI	Condition Index
COTO	Committee of Transport Officials
CPD	Continual Professional Development
CRC	Current Replacement Cost
CUT	Central University of Technology
DBSA	Development Bank of South Africa
DORA	Division of Revenue Act
DRC	Depreciated Replacement Cost
ECSA	Engineering Council of South Africa
EEDSM	Energy Efficiency and Demand Side Management
EPWP	Expanded Public Works Programme
EUC	Excess User Cost
EUL	Expected Useful Life
EVU	Equivalent Vehicle Units
FAR	Fixed Asset Register
FCI	Functional Condition Index
FI	Functional Index
FWD	Falling Weight Deflectometer
GIAMA	Government Immovable Asset Management Act
GIS	Geographic
JTG	John Taolo Gaetsewe District Municipality
HDM	Highway Development and Management Model
HTM	Highway Traffic Management
IRI	International Roughness Index
IDF	Integrated Development Framework
LCCA	Life Cycle Cost Analysis
LMs	Local Municipalities
MIG	Municipal Infrastructure Grant

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MTEF	Medium Term Expenditure Framework
NDIP	National Diploma
NDOT	National Department of Transport
PMS	Pavement Management System
QGIS	Free Open-Source GIS platform
RAAMP	Road Authority Asset Management Policy
RAMP	Road Asset Management Plan
RAMS	Road Asset Management System
RCAM	Road Classification and Access Management Manual
RCI	Road Condition Index
RIAMP	Road Infrastructure Asset Management Plan
RIAMS	Road Infrastructure Asset Management System
RISFSA	Road Infrastructure Strategic Framework for South Africa
RNI	Road Network Index
RRAMG	Rural Road Asset Management Grant
RRAMS	Rural Road Asset Management System
RUL	Remaining Useful Life
SANRAL	South African National Road Agency Limited (National Road Agency)
SCI	Structural Condition Index
SDF	Strategic Development Framework
SWOT	Strength, Weaknesses, Opportunities and Threats
SMME	Small Medium and Micro Enterprise
TMH	Technical Method for Highways
TRH	Technical Recommendation for Highways
URL	Uniform Resource Locator / The address of a webpage
URMS	Unpaved Road Management System
VCI	Visual Condition Index
VOC	Vehicle Operating Cost
VUT	Vaal University of Technology
ZAR	South African Rand

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EXECUTIVE SUMMARY

The **owner** of the road infrastructure in the whole of John Taolo Gaetsewe District Municipality is the Local Municipalities i.e. Gamagara Local Municipality, Ga-Segonyana Local Municipality and Joe Morolong Local Municipality. The **custodianship** of the assets is shared by the John Taolo Gaetsewe District Municipality as well as the Local Municipalities, due to the District responsible for the asset management assessment and the Local Municipalities responsible for the managing and maintenance of the assets.

The unit that prepared the RAMP is the Directorate Basic Services and Infrastructure of John Taolo Gaetsewe District Municipality in consultation with Reneilwe Consulting and Planners. Refer to Table 1-1

RAMS Maturity level practiced – Level I

The asset management maturity level practiced by John Taolo Gaetsewe District Municipality is Level I, with some elements of asset management at Level II

The Directorate declares the following: (also refer to Appendix B)

JTGM's Asset Management Policy should be accepted and implemented – refer to draft Policy: Appendix A: Road Asset Management Policy. The level of maturity currently practised by JTG is Level I.A fixed asset register (FAR) is in place and is not yet adopted by council. The adoption process has since been postponed.The age of the data and the quality thereof is known. The Gap analysis is attached in Appendix C. The status of RCAM was reviewed during the past years and currently being reviewed as new roads are being added.

Sub-systems implemented includes: GEORAMS system consisting of GIS system accessible to the District Municipality, the system has been upgraded to a new version and Local Municipalities have been granted access.

Training to the System (GeoRAMS) has been provided to the respective Local municipality representatives and a refresher workshop is being planned for the current year, this is due to upgrades done on the system. REFER to **APPENDIX B** for a full, **signed** Declaration.

Background

The age of the data is presented in Table 1-4 below. 1556.94 km was assessed in the past year in 2024/2025. 639.35 km is not yet assessed. The total network extend was previously recorded as 3252 km, it must be noted that the network will keep fluctuating with decrease and increase across the various surface types due to updating of the network by making additions and or updating surface types due to upgrades. The network has increased with 117.01 km. John Taolo Gaetsewe District's network accounts for 27% in the district, currently the network extend within JTG is reported as 3369.01 km and consists of 399.85 km (10%) of paved network, 2969.16 km (88%) is unpaved, and 64.45 km (2%) are block roads. Joe Morolong LM has the largest unpaved network amounting to 378 km of gravel and 1111.71 km of earth roads. Gamagara LM has the largest paved network, which amounts to 171.33 km of the total network.

Traffic and bridge assessments of the attributes described in Table 3-1 complies to the standard for every 5 years for traffic and every 5 years for bridges. Traffic counts were last executed in March 2025 and data is updated.

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All roads in JTG fall under class 4 and 5 roads. The progress of assessment in Table 3-2, list that 2208.78 km of the total 3369.01 km network was assessed in past 3 years (2023, 2024, 2025) and 639.35 km of the network is not yet assessed. However, complete network assessment was achieved and reported in March 2025, the outstanding network length comprises of roads which have been added into the network and roads that are inaccessible and yet to be verified with LMs.

A total of 566 818 veh.km are travelled on JTG's assessed network. Ga-Segonyana's road is travelled the most (44%) followed by Joe Morolong (35%). In general, attention is to be given to both paved and unpaved roads across all LMs. The total veh.km is 566 818.62 of all LMs and, the paved roads serve 43% of the users while unpaved roads serve 57% of all user-km.

About 2415 km of roads has the largest portion in Very Poor Condition (72%).and only 0.3% of the network extent is very good condition.In general, 72% of the total network fall within a Very Poor condition, 4% in Poor, 4% in Fair, 1% in Good, 0.3% in Very Good and 19% of roads are not yet assessed.

Structural defects, especially crocodile cracks are the worst and if compared to Surfacing defects (Surface failure, Surface patching, Surface cracking) it can be concluded that due to the age and failures of the surfacing, second degree distresses originating into the pavement structure (potholes) are developing. These indicates that the authority should give attention to reseal and improvement actions to the surfacing in order to protect the pavement structure of the network.

The Current Replacement Cost of JTG's assessed network is valued at R1.7 billion and the DRC at R291 Million with a depreciation of R1.4 billion.

The extent of 206.83 km paved (62%) of the flexible network has depreciated beyond the minimum threshold. 42% of the block paved roads and 99% of the unpaved network has deteriorated beyond the minimum threshold. Out of the total network of 3369.01 km, 3202.06 km or 95% of the network has deteriorated beyond the minimum threshold level.

184.4 km of the assessed flexible network has less than 5 years in terms of RUL. 19.23 km of the Block Roads assessed has a life left of between 5 and 10 years.

The total cost for cyclical maintenance of paved roads is R 1 075 685 511.00 over a length of 323.02 km across the whole district. Gamagara requires the largest amount of R265 209 580.00 over the length of 57.54 km which is the largest extent. The total cost for engineering condition responsive need is R 1 075 685 511.70 over the total length of 323.02 km. Cyclical Maintenance i.e., blading amounts to 82.09 km for R 985 080.00. Very little extent requires blading, this means that most of the unpaved roads may need more condition responsive need treatments which indicates that the roads have deteriorated. Engineering responsive maintenance i.e., Reconstruct gravel accounts for the largest proportion of maintenance at R4 Billion and 345.97 km.

JTG's decision support system entails the appointment of a service provider and the use of an integrated web-based road asset management system. The mobile application is fully complaint to the TMH18 standards and condition assessments are automatically sent and imported into the system. GRMS and PMS calculations are automatically performed on data submission and treatments reports generated.

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TMH18 reports are generated automatically for exporting. The system complies to the data management system requirements of TMH22 section D.5.5.

According to the draft IDP 2025/26 for Ga-Segonyana, MIG has approved about R 82.4 million for the upgrade of gravel roads to paved roads and paved roads between the 2024/25, 2025/26 and 2026/27 financial years, furthermore the Draft budget 2023/24 to 2025/26 indicates that capital budget has increased by R34 million giving a total of R 192 million of which will be funded by MIG, of the R192 million, R63 399 000.00 has been approved and allocated across various infrastructure upgrades. Upgrading of gravel internal roads (Tsago road) is part of the identified projects for the allocation. In addition to this, Kumba Iron Ore has committed R38 million on the upgrading of access roads between Batlharos and Klein Neira.

In Gamagara LM, Khumba SLP committed about R20 million and R 15 million respectively over five-year plan starting from 2022/23 to 2026/27. The planned projects entail upgrading of internal roads in various areas within Gamagara LM. The table below give details of the road's infrastructure projects planned by the mine in Gamagara LM.

In Joe Morolong Local municipality, Construction projects of roads are mostly funded by SLPs with minimal of MIG roads funded projects. The municipalities plans are sorely dependent on SPL funder as MIG is currently focused on water and sanitation.

The DM and the LM have been allocated a total of R 5 635 000.00 from EPWP Integrated Grant . Currently, it cannot be determined how much has been used in the employment of labour within the road's infrastructure projects by each municipality, as detailed information is not provided.

The current staff or personnel for the management and implementation of the RRAMS at JTG have both the management and technical skills, however, shortages in capacity (no. of resources) may be a challenge especially with the non-absorption of the assessors.

Engagement with LMs has improved, meetings are held quarterly. Communication with the LMs has also improved, roads are added on instruction by LMs and any other verifications are done successfully with the consultation of the respective LMs.

The DM is engaging relevant stakeholders on the RRAMS through the established forum. The province is aware and has been providing support in the engagements.

In conclusion many chapters in this RAMP needs refinement and needs to incorporate a unified approach between the DM and the LM's. Taking into consideration of the progress made with involving and engaging LMs, it is anticipated that the objectives of the RRAMS will be achieved. The DM and the service provider need to be consistent and continue to build proper communication channels with the LMs.

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~END OF EXECUTIVE SUMMARY ~

1 INTRODUCTION

1.1 Statement

1.1.1 Example

The Government Immovable Asset Management Act, 2007 (Act No. 19 of 2007), applies to organs of state with the following objects:

- Provide a uniform immovable asset management framework to promote accountability and transparency within government.
- Ensure effective immovable asset management with government.
- Ensure coordination of the use of immovable assets with service delivery objects of a national or provincial department or District Municipality or Local Municipality and the efficient utilisation of immovable assets
- Optimise the cost of service delivery by –
    - Ensuring accountability for capital and recurrent works
    - The acquisition, re-use and disposal of an immovable asset
    - The maintenance of existing immovable assets
    - Protecting the environment and the cultural and historic heritage an
    - Improving health and safety in the working environment.

1.1.2 Definitions

This RAMP document is an outflow of the GIAMA Act No 19 of 2007. According to the TMH22 and the GIAMA Act, the following definitions apply:

"*Asset Custodian*" - is a person or organisation entrusted with the safeguarding and use, as well as the condition monitoring of a specific asset.

"*Custodian*" - is the organisation responsible for managing and maintaining the asset. Typically, the Road Authority

"*Road Authority*" - is the organisation officially established and tasked for managing and maintaining the road infrastructure assets of an owner organisation. Typically, the custodian, responsible for management of the assets over their full life cycle, planning for maintenance of existing assets, development, and provision of new assets, aligned to the strategic service delivery objectives of the owner.

"*Owner*" - is the organisation that owns the asset. Normally the national, provincial, or local government

"*A road* remains in the fixed assets register for as long as its physical existence can be verified, its ownership is verified through appropriate proclamations, and it is able to provide a reasonable level of service. Care should be taken to ensure that ownership and custodianship issues are resolved before roads are included in the fixed assets register. For example, national or provincial routes that passes through towns on municipal streets where subsidies may be made available for maintenance."

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"The *custodians* of road infrastructure can assess conditions and seek areas that may increase the risk of accidents and to mitigate these risks through appropriate actions and improvements."

1.1.3 Custodian and road owner

According to the above definitions and statements, the **owner of the road infrastructure** in the whole of John Taolo Gaetsewe District Municipality (JTG) is the **Local Municipalities** i.e., Gamagara Local Municipality, Ga-Segonyana Local Municipality and Joe Morolong Local Municipality.

The **custodianship** of the assets is **shared by the John Taolo Gaetsewe District Municipality as well as the Local Municipalities**, due to the district responsible for the asset management assessment and the local Municipalities responsible for the managing and maintenance of the assets.

Due to the custodianship being shared by John Taolo Gaetsewe District Municipality and the Local Municipalities, it is required to establish thorough communication channels and collaboration between the respective Road Authorities to fully comply to the GIAMA Act's objects as stated above in points a) to d).

The John Taolo Gaetsewe District Municipality has successfully managed to establish proper communication channels with its local municipalities, they have been able to hold PSC meetings with the local municipalities on a quarterly basis.

1.1.4 Name of Unit that prepared the RAMP

The unit that prepared the RAMP is the Directorate Basic Services and Infrastructure of John Taolo Gaetsewe District Municipality in consultation with Reneilwe Consulting and Planners.

1.1.5 Names and Qualifications of compilers of the RAMP

The Road Asset Management Plan (RAMP) was prepared jointly by the District Municipality and the Service Provider. The service provider prepared the document and further submitted to the client for review, inputs, and approval however one must understand that the district municipality owns the business plan.

The Roads Asset Management Plan (RAMP) is used to guide the management of municipal roads-related Infrastructure assets in the John Taolo Gaetsewe District. The need for the development of the RAMP is informed by the requirements attached to the Rural Road Asset Management Grant (RRAMG), as reflected in the Division of Revenue Act (DORA) of 2026.

1.1.5.1 *Directorate staff – Supervision of RAMP*

The names and designation of the official(s) of the John Taolo Gaetsewe District Municipality that supervised the preparation of the RAMP is as follows:

Mr. M Molusi – Technical Director Basic Services and Infrastructure.

Table 1-1 below lists the names of condition assessors and compilers of the RAMP document.

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Table 1-1: Assessors and compilers of RAMP

COMPILERS	NAME	QUALIFICATION
Service Provider- Compilation of RAMP	Ms. Mandy Rakabe	Post Grad Dipl Project Management (Regent Business School), NDip Civil Engineering (VUT)
	Me V. Pretorius	PR Tech Eng., BSc (Hons) Transportation Planning (UP), BTech Civil (CUT), N.Dip Civil (CUT)
ASSESSORS AND QUALITY CONTROL	**NAME**	**QUALIFICATION**
Previous Team of assessors	Thato Madingoane	S4
	Mohau Motlhoki	S3
	Ohemetse Melokwe	N. Diploma
	Boikago Mokgara	N. Diploma
	Thabo Matshediso	N. Diploma
Current Team of assessors	Thato Madingoane	S4
	Mohau Motlhoki	S3
	Thabo Matshediso	N. Diploma
Quality controller	Peloentle Leburu	BTech Civil Eng
Administrator / Co-ordinator	Malebogo Tshipo	BTech Human Resource Development

The RAMP is compiled by the district, while the local municipalities are the owners of the assets. In essence, the district monitors and implements the RRAMS programme to support local municipalities in maintaining their road infrastructure assets. The completed RAMP must be shared with the local municipalities for review and comment to allow their input into the finalisation of the report. The table below provides details of the local municipality representatives participating in the PSC and RRAMS programme.

Table 1-2: LM Representative Contact Information

LOCAL MUNICIPALITY	REPRESENTATIVE	FUNCTION	CONTACT DETAILS
Gamagara Local Municipality	Mr Gregory Kannemeyer		079 793 3200 kannemeyerg@gamagara.gov.za
Ga-Segonyana Local Municipality	Mr Oarabile Molwagae	Acting Roads & Stormwater Manager	072 784 5340 deenabster@gmail.com
Joe Morolong Local Municipality	Mrs Joey Tsatsimpe	Roads & Stormwater Manager	067 089 2663 stormwater@joemorolong.co.za

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1.1.6 RAMS Maturity level practiced – Level I

The asset management maturity level practiced by John Taolo Gaetsewe District Municipality (JTGDM) is Level I with some elements of asset management at level II. The level of maturity reached is highlighted in Table 1-1.

Level I category includes road condition assessment every 3 years (Class 4 and Class 5 roads) and every 5 years for structures.

Table 1-3: Asset management levels being practiced by John Taolo Gaetsewe District Municipality

SECTION	LEVEL I	LEVEL II	LEVEL III	LEVEL IV
Policy	Expectations set in vision and mission statements	Defined Policy Statements for service levels and minimum conditions	Regular review of achievements and adjustment of policy statements to reflect intent together with short term objectives and related action plans	Policy statements and strategies integrated into all business processes and regular review.
Inventory	Detailed listing of all roads	Integrated GIS and road and bridge inventory together with engineering details of each link	All road assets divided into components with different expected useful lives together with construction details	Inventory seamlessly integrated with planned roads, asset register, all acquisition data and related information material to performance
Valuation	Valuations per km or sq. m of each road type	Valuations per sq. m of road type adjusted for expected useful life	Valuation per component adjusted with estimates of remaining useful life and estimates of unit costs.	Valuation per component reliably adjusted for remaining useful life and unit costs based on detailed statistics of current construction costs.
Condition and Usage	Visual evaluations of condition of each road. Traffic counts at selected positions	Detailed, objective visual evaluations of each road and bridge with some instrument measurements. Traffic counts cover entire road network on a regular basis	Integrated visual and instrument evaluations taken at the minimum frequencies defined in Section 5.3 Traffic count histories to reliably project future volumes	Reliable and credible condition and usage data that is used to accurately determine excess user costs and predict future excess user costs and related risks

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SECTION	LEVEL I	LEVEL II	LEVEL III	LEVEL IV
Decision Support	Judgment of future condition and departmental priorities	Decisions based on reliable strategies and rankings based on condition and importance	Optimisation used to adapt strategies and improve returns on rehabilitation expenditure	Optimisation based on reliable performance predictions and linked to confirmation of performance based on past history
Management Plans	Minimal information on planned service levels and future expenditure forecasts	Impacts of plans shown in terms of future service levels with basic information on expenditure forecasting	Plans demonstrate achievement of objectives and likely service levels subject to budget constraints	Fully integrated with customer expectations of service levels and comprehensive risk analysis and trade-offs related to budget constraints
Feedback Loop	Anecdotal feedback of performance of actions.	Performance of actions measured as part of on-going condition evaluation and linked to strategy	Specific planned activities implemented to assess performance and risk and to feed into prediction models and tactics	Regular measured performance of all actions integrated into prediction models and planned actions

1.1.7 Declarations

1.1.7.1 *The Directorate Infrastructure declares:*

- John Taolo Gaetsewe District Municipality's Asset Management Policy should be accepted and implemented – refer to draft Policy: Appendix A: Road Asset Management Policy
- The level of maturity currently practised by JTG is Level I
- A fixed asset register (FAR) is in place and not yet adopted by council. The adoption process has since been postponed.
- The finalisation of Asset Management Committee by Council Resolution has since been postponed.
- The age of the data and the quality thereof is known.
- The Gap analysis is attached in Appendix C.
- The status of RCAM was reviewed and verified in the past 5 years and currently being reviewed as new roads are being added.
- Sub-systems implemented includes: GEORAMS system consisting of GIS system accessible to both the District Municipality and Local Municipalities.
- REFER to **APPENDIX B** for a full, **signed** Declaration.

1.1.7.2 *Summary of the Age of the data*

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The age of the data is presented in Table 1-4 below. A new cycle of assessment started in May 2025; 604.95 km was assessed in the past year of 2025/2026. 639.35 km is not yet assessed, this contributes to new roads added specifically in the Gamagara local municipality (Gravel) and roads currently being verified with local municipalities on ownership. The total network extend was previously recorded as 2594.61 which then increased to 3252 km in the previous financial year. The new network is 3369.01 km. It must be noted that the network will keep fluctuating with decrease and increase across the various surface types due to updating of the network by making additions and or updating surface types due to upgrades. The network has increased with 117.01 km.

Table 1-4: Age of data

SURFACE	2019	2020	2021	2022	2023	2024	2025	2026	NOT ASSESSED	GRAND TOTAL
BLOCK	3.01		11.36	7.38	12.72	11.58	9.79	3.48	5.13	64.45
FLEX	4.12	5.54	18.02	10.4	25.93	61.19	167.02	28.6	11.65	335.40
UNPAVED	9.78	37.98	67.81	102.76	613.19	1111.86	195.5	200.56	622.57	2969.16
GRAND TOTAL	**16.91**	**43.52**	**97.19**	**120.54**	**651.84**	**1184.63**	**372.31**	**232.64**	**639.35**	**3369.01**

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1.2 Background

The John Taolo Gaetsewe District Municipality (previously Kgalagadi) is a Category C municipality located in the north of the Northern Cape Province, bordering Botswana in the west.

The boundaries of this district were demarcated in 2006 to include the once north-western part of Joe Morolong and Olifantshoek, along with its surround, into the Gamagara Local Municipality.

It has an established rail network from Sishen South and between Black Rock and Dibeng. It is characterised by a mixture of land uses, of which agriculture and mining are dominant. The district holds potential as a viable tourist destination and has numerous growth opportunities in the industrial sector.

JTGDM is the second smallest district in the Northern Cape, occupying only 7% of the province (27 498.9 km2) (StatsSA 2022). Administratively, the JTGDM comprises three Local Municipalities: (1) The Gamagara Local Municipality; (2) The Ga-Segonyana Local Municipality; and (3) The Joe Morolong Local Municipality, which encapsulates the geographical area covered by the former District Management Area and the former Moshaweng Local Municipality. Joe Morolong Local Municipality is the district's largest local municipality in terms of area size; covering an extent of 20 180 km^2, with Ga-Segonyana LM and Gamagara LM covering for 16% and 10% respectively. The John Taolo Gaetsewe District comprises of 186 towns and settlements of which the majority (80%) are villages in the Joe Morolong Municipality.

Table 1-5 below presents the area and number of wards per local municipality. Joe Morolong has the largest area and 15 wards.

Table 1-5: Network area and Number of Wards

LOCAL MUNICIPALITY	AREA (SQ KM)	NUMBER OF WARDS
Gamagara	2 648km^2	8
Ga-Segonyana	4 495km^2	16
Joe Morolong	20 180km^2	15
TOTAL	**27 323KM^2**	**39**

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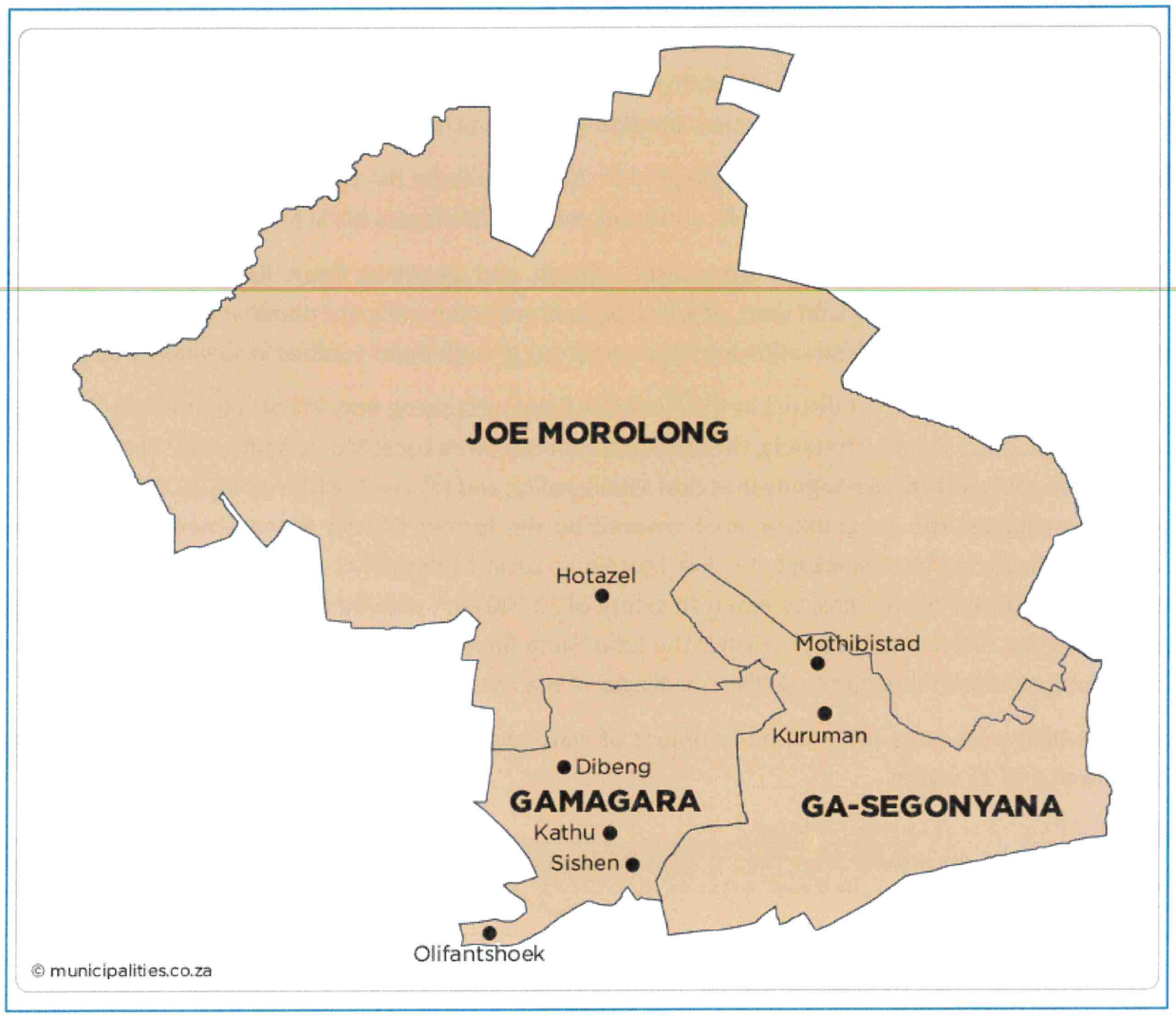


Figure 1-1: John Taolo Gaetsewe DM divided into Local Municipalities.

Figure 1-1 above represents John Taolo Gaetsewe District (JTG) and its local municipalities. JTG, still has a huge backlog in terms of addressing the basic needs of its population. Roads and Transport play a crucial role in facilitating movement amongst these communities and business centres in respect of underpinning socio-economic development and sustainability.

Through this project, the district municipality will be fulfilling its constitutional mandate which requires that the district establish, manage, regulate, and control municipal roads which form an integral part of a road transport system for its area of jurisdiction. Furthermore, this project will afford the district capacity to fortifying its plenary foresight by having established Roads Asset Management Systems that can effectively support its infrastructure investment programme.

Lastly a properly quantified roll out programme which seeks to leverage the social and economic affairs of the region whilst at the same time proving to deliver on appreciable and tangible strategic projects to its inhabitants shall be implemented.

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1.2.1 Overview of what is addressed in the RAMP

The RAMP covers the following:

- Implementation status of RAMS at the District Municipality
- The road network extent
- The maturity level of service practiced by the District Municipality - Declaration
- The situation / current condition of the Road Assets
- The Demand or Need of the road network in terms of treatments.
- Asset Management Plan - Draft
- The financial capability of the District Municipality to address the demand/need and the source of funding – LM information.
- The institutional capacity of the District Municipality to execute RAMS.
- Job Creation figures resulting from Road Asset Management – information from LMs.
- Improvement initiatives suggested for this RAMP.
- Strengths, Weaknesses, Opportunities and Threats of RAMS

1.2.2 Purpose of the RAMP

The primary purpose of the RAMP is to report on the status of Road Asset Management practiced by John Taolo Gaetsewe District Municipality (JTG). The aim of Road Asset Management is to:

- To be used by DM and LMs as a working document in terms of Road Asset Management
- Improve data on all municipal roads to guide infrastructure investment.
- Efficient use of available budgets to reduce vehicle operating costs and extend the lifespan of all municipal roads.
- Creation of employment and enhancing human capacity at municipalities for the operation of RAMS.

1.3 Goals and Objectives of the RAMP

The goals and objectives of the RAMP are to support the Vision and Mission of the municipality, as well as adhering to the various acts of the Republic of South Africa.

The vision statement of the John Taolo Gaetsewe District Municipality reflects its commitment to the ideal of an integrated, development-focused district, and is built on the following municipal core values:

- Development – Strive for the development of the district and its people, while also striving for own personal development.
- Commitment – stay committed to the vision of the John Taolo Gaetsewe District Municipality and to serving the people of the district in whatever you do.
- Care – to show empathy and care towards others, while striving to promote a positive working atmosphere; and
- Integrity – stay true to whatever you commit to, performing your duties to the best of your ability, while always conducting yourself professionally.

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JTG VISION

Working together for a better life for all in the district

JTG MISSION

Accelerating the implementation of integrated development initiatives and providing support to local municipalities

Various Acts, inter alia, the Division of Revenue Act (DORA), requires rural district municipalities to set up a road asset management system and collect road and traffic data in line with the Road Infrastructure Strategic Framework for South Africa (RISFSA).

Besides the Road Infrastructure Strategic Framework for South Africa (RISFSA) requirements, additional requirements are prescribed by the following authorities:

- Department of Transport (national): methodology and RRAMS systems specifications
- National Treasury: requirements as defined in the division of revenue act: ALL Municipal roads, urban and rural as well as surfaced and un-surfaced in its "Scope of Work" as it is a requirement from the Division of Revenue Bill (DORA) as published in the Government Gazette No. 36180 of 22 February 2013.

Extract from the Division of Revenue Act that clearly defines the conditions of the specific conditional grant:

> "The rural roads asset management grant is administered by the Department of Transport to improve rural transport infrastructure. The grant funds the collection of accurate data on the condition of rural roads in line with the Road Infrastructure Strategic Framework for South Africa. This data will guide investments to improve these roads. Rural district municipalities are funded to collect data on the condition and usage of all the municipal roads in their area so that the spending of infrastructure funds (from the MIG and elsewhere) can be properly planned to maximize their impact."

1.3.1 Program Goals

In addition to the above, the strategic goal of the RRAMS Grant is to ensure efficient and effective investment in rural roads through the development of RRAMS and the collection of associated road and bridge inventory data in line with the Road Infrastructure Strategic Framework for South Africa (RISFSA); providing the following measurable outputs:

- Collection of road inventory data including condition assessment and traffic data, and
- Setting up pavement and bridge management system compatible with National Standards.

RRAMS seek to develop a common framework for Road Asset Management systems and processes within the country, with outcomes as listed below:

- Deliver the national government aspirations for a better road network by ensuring that available financial resources are spent in the most effective and efficient manner,
- Provide a single assets management protocol/framework for all road authorities in the republic, and

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- Collate credible roads infrastructure data for planning and management.
- Provide skills development and creation of job opportunities.

1.3.2 Program Objectives

Within the broader goals of the RRAMS Grant outlined above, the project specific objectives are as follows:

- Data must be collected and presented in the format prescribed by RISFSA.
- To determine the extent and condition of the region's roads
- To determine and address information gaps in the existing Road Master Plans of the local municipalities.
- To determine the extent of the backlog on roads and associated funding requirements
- To determine the use and state of the information systems for road network management
- To implement best value systems to deliver long term value for money.
- To optimize road space availability and improve accessibility to public transport.
- To ensure safe roads (public and personal safety)
- To conduct traffic counts on the existing road network
- To conduct visual condition assessments of bridges
- Standardize and consolidate available information from the Road Master Plans of the local municipalities for purpose of RAMS.
- To provide human resource capacity development to the district and its local municipalities for each MTEF period.
- Data collection should use labour intensive methods that comply with the Expanded Public Works Programme (EPWP) guidelines.
- All data collected must be made available to the Provincial and National Department of Transport (DoT), South African National Roads Agency Limited (SANRAL) and the relevant provincial authorities.
- Systems developed to record data must be compatible with the Department of Transport specifications.

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1.4 RAMP Framework

The RAMP document content is as follows:

CHAPTER 1: INTRODUCTION ..... Pg. 1

Statement; Background, Goals, Framework; Planning

CHAPTER 2: ROAD NETWORK ..... Pg. 19

Road Network Jurisdiction; Extent; GIS Map

CHAPTER 3: LEVEL OF SERVICE ..... Pg. 27

Minimum Conditions; Changes to Standards; Data Collection

CHAPTER 4: SITUATION ANALYSIS ..... Pg. 32

Inventory Data; Usage of Assets; Engineering, Functional and Comparative Conditions; Asset Value; Trend Analysis; Performance Gap

CHAPTER 5: DEMAND OR NEED DETERMINATION ..... Pg. 56

Need determination, Demand for new assets.

CHAPTER 6: ASSET MANAGEMENT ..... Pg. 6

Budget streams; Unconstrained Budget Project list; multi-year plans; Information Management

CHAPTER 7: FINANCIAL SUMMARY ..... Pg. 7

Financial Statement; Cashflow; Funding Strategy

CHAPTER 8: ORGANIZATIONAL AND SUPPORT PLAN ..... Pg. 12

Human Resources Required; Organisational; Financial Cost; Systems.

CHAPTER 9: PLAN IMPROVEMENT AND MONITORING ..... Pg. 15

Performance Measures; Improvement program, Monitoring

CHAPTER 10: JOB CREATION AND SKILLS DEVELOPMENT ..... Pg. 24

Number of Jobs created; Skills Development Young graduates; Contractor Development

CHAPTER 11: SWOT ANALYSIS ..... Pg. 30

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Strengths; Weaknesses; Opportunities; Threats of RAMS

CHAPTER 12: REFERENCES AND APPENDICES..... Pg. 37

References; RAMS Policy; Declaration; Gap analysis

1.4.1 RAMP Period

JTG practices a level I RRAMS in line with the TMH22/COTO standards. Therefore, the reporting period for road condition and asset data is annual. The period for which this report is compiled is year 2026/27. District municipalities must submit the Road Asset Management Plan every year to the National Department of Transport.

1.5 Planning Approach and Methodology

The GIAMA act 19 of 2007 has reference. As the custodian of the immovable assets, John Taolo Gaetsewe District Municipality must prepare a custodian immovable asset management plan as well as a user immovable asset management plan, which relates to all the immovable assets used/intend to use by the custodian. Immovable assets currently in use must be kept operational to function in a manner that supports efficient service delivery.

As a minimum, an immovable asset management plan should contain the following:

- Strategic needs assessment
- Acquisition plan
- Operations plan
- Immovable asset surrender plan

As part of the strategy and to conform to the statements above in terms of the road immovable assets, John Taolo Gaetsewe District Municipality appointed service providers in June 2024 to assist with Road Asset Management and reporting thereof as stipulated by the GIAMA Act 19 of 2007: Government Immovable Asset Management Act.

1.5.1 Strategy adopted by the district (JTG) for asset management

The asset management plan strategy implemented by JTG consist of the following:

A service provider is appointed to provide support to teams assigned by the district to collect data, analyse the collected data and compilation of the RAMP, while JTG is supervising the RAMS process. The Process involves the following:

- Condition assessments of the road assets including roads, bridges, and ancillary assets
- Demand or need determination and costs of treatments.
- Financial planning and budgeting for assets in need of treatment
- Compilation of asset management plans

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- Organisational and human capacity/skills development
- Reporting on all the above via Road Asset Management Plan (RAMP)

1.5.2 Strategy implemented by local municipalities for management of assets

- **Ga-Segonyana Local Municipality**

  The Ga-Segonyana local municipality's department of roads and stormwater (Infrastructure services) has developed a Roads & Stormwater Master Condition Plan. The objective is to provide the municipality with a defensible technical strategy to plan in investment of roads infrastructure through short- and long-term plans that address the rehabilitation, maintenance and management of roads and stormwater infrastructure.

  Priority of assessments is given to towns, mainly Kuruman. A condition assessment report or master plan is then developed from these assessments. This allows the municipality to have insight knowledge about the current condition of both their roads and stormwater infrastructure.

  The report used to develop 5-year implantation plans which then enables them to develop intervention programmes under short-, medium- and long-terms. The programmes are used for:

  - Annual and medium capital budgeting
  - Municipal Infrastructure Grant (MIG) and related infrastructure grant applications
  - Partnership proposals to mining companies and other strategic funders
  - Operational and maintenance planning within the roads and stormwater unit
  - Develop a priority list of projects to be implemented.

  The strategy implemented by Ga-Segonyana is commendable, however it has been observed that some of the activities conducted include work already implemented in the RRAMs programme which then leads to duplication of work. To address and avoid duplication of work, JTG is ensuring that regular engagements are conducted with the LMs to give update and awareness of the RRAMs and capabilities. These engagements are conducted quarterly through PSC meetings and the Northern Cape provincial roads forum.

- **Joe Morolong Local Municpality**

  Joe Morolong Local Municipality uses the roads and stormwater management plan to inform their management of roads and stormwater infrastructure assets and determine maintenance needs. The strategy comprises consultations during the development of the IDP, develop maintenance plans and upgrades under the guidance of the roads master plans. The prioritization of upgrading of roads is done through council. The municipality also has strategic partnerships were projects are supported by community development trusts and department of roads and public works.

  Local Municipalities are made to present the status of management of roads infrastructure in PSC meetings providing information such as:

  - Methods used to determine maintenance needs
  - Current roads and stormwater projects
  - List maintenance projects
  - Strategy applied to prioritize roads for maintenance and upgrades

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- Multi-year plans and budgets for roads and stormwater projects
- Information on any new assets and or any assets transferred to SANRAL/province

- **Gamagara Local Municipality**

The municipality partnered with DBSA to develop a roads and stormwater master plan to support infrastructure development and upgrading of stormwater systems within its jurisdiction. It has also developed a 5-year IDP that is reviewed each financial year. The municipality uses the RRAMS during planning for the raods and stormwater projects. It regularly communicates with the district for updating or sharing of information. Prioritization of maintenance projects is guided by the developed roads and stormwater masterplan recommendations.

Gamagara local municipality does not work in isolation during planning of roads and stormwater projects but collaborates with the district through the RRAMS programme. The latest draft IDP (2025/26) gives details of how the RRAMS is effectively used and incorporated.

1.5.3 RAMS Computer Systems for Management of Asset Data

The JTG implements the RRAMS programme through consultations with a service provider for both strategic and technical support. The district RRAMs data is collected and processed using digital platform that integrate inventory data, condition assessments and financial planning.

Currently the district uses the GeoRAMS, it is a cloud-based platform that is easily accessed by both the field technicians (assessors) and managers via mobile phones/tablets and computer. The system incorporates the collected data related information such as:

- Invetory (asset register)
- Pavement Management system (PMS)
- Bridge Management System (BMS)
- Geographic Information System (GIS) and
- Financial Information for Maintenance needs

The system gives access to local municipalities for their relative data and information. The municipalities were invited for training on how to operate the system and login details were allocated. The training workshop was conducted in the past 3-years. The district is planning for a refresher training for LMs on operating the system since it has been upgraded to have more features that make it user-friendly.

JTG has been implementing the RAMs for more than 13 years, initially local municipalities did not actively participate in the RRAMS project. The district has been persistent on enforcing participation through PSC meetings and reporting RRAMS information during provincial forums. The table below gives a brief assessment of the state of readiness of both the DM and LMs.

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Table 1-6: RRAM Computer system Readiness

RAMS KEY ELEMENTS	DISTRICT	LOCAL MUNICIPALITY
People	JTG implements RRAMs with support of a service provider. A project manager is assigned to the programme for monitoring and controlling. Civil Engineering graduates are recruited by the district and trained to conduct assessment. They occasionally attend short courses related to RRAMs and software or roads infrastructure.	LMs have assigned personnel from the roads & stormwater departments to participate in the RRAMS and ensure collaboration with the district. Participation is mostly through PSC meetings. These officials are given access to the RRAMs software, provided training as well as remote support from the district on operating the system.
Information	The district acquired a cloud-based digital platform for backing up and storing collected data and processing reports required for planning of roads projects or maintenance. Everyone authorised to access the syem is allocated login credentials. The system is implemented through an annually subscription where a license is issued on subscription.	The LMs have access to their respectibe data on the district digital platform. Each municipal official has login credentials for accessing the system.
Policy	The system used does not have policies, however JTG is implementing a RRAMs policy that is awaiting approval by council.	LMs do not have the system policy
Planning	The system provides detailed data on inventory, this allows the district to plan effectively during assessments. data is collected offline through a data collection tool operated on tablets. Data is immediately backed up on active connectivity. Allowing for to continue without during disruptions.	N/A LMs only have access for generating data that can be used during business plan developments and maintenance planning.
Operations	The system is accessible around the clock. The service provider and the software team conduct regular monitoring on collected data as well as IT support for any challenges encountered by the assessors.	LMs get support from the district service provider, the district and assessors for operation of the systems.

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Risk	To ensure that risks are managed effectivel to protect the system, the district ensure annually subscriptions to the software are updated. The software service provider continuously monitors threats and put control measures in place.	To protect data, LMs are given access limited to their respective data. Login credentials are assigned per authorised individual.
Performance Improvement	The software service provider ensures that issues encountered and reported by th district are immediately addressed. The software team is continuously looking to upgrade the platform with features that suit the needs of the district.	LMs are allowed to give inputs on features and possible capabilities of the software during engagements or PSC meetings.

1.5.4 Reporting

The draft RAMP is submitted to National Department of Transport by the end of May each year with a final RAMP report submitted in June each year. The RAMP indicates the proposed activities and expenditure for the municipal financial year commencing on July of the same year. Release of grant funding to the district would be subject to the approval of the RAMP by NDoT.

The following reports needs to be submitted:

- Monthly progress reports, detailing progress, and expenditure are to be submitted in the format to be prescribed by the DoT as will be communicated from time to time.
- Quarterly reports are to be submitted in the format prescribed by DoT as will be communicated from time to time.
- A Financial Year Close-out report, sometimes referred to as a Grant Evaluation Report, is to be submitted as prescribed by the DoT as will be communicated from time to time.
- An Annual Roads Condition Report is to be submitted to DoT in a prescribed format as will be communicated from time to time.

1.5.5 Human Capacity Development and Sustainability

One of the key intentions of the grant is to assist the district municipality and its local municipalities to offer in service training and employment opportunities to unemployed tertiary graduates. At the end of the three year-period the district municipality and its local municipalities should have developed sufficient capacity to be able to fulfil a meaningful role as transport planning authorities or even structuring a shared services function in that respect would suffice.

The DORA stipulates the following of the district municipality:

- Make provision to maintain the RRAMS after the lifespan of the grant.
- Employ suitable unemployed graduates who should be trained and skilled in the operation of the RRAMS, road infrastructure planning and maintenance.

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- Ensure human resource capacity at municipalities for the operation of RRAMS; and
- Ensure that the RRAMS is used for planning road infrastructure projects.

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2 ROAD NETWORK

2.1 Higher and Lower Road Network

The John Taolo Gaetsewe District Municipality (previously Kgalagadi) is a Category C municipality located in the north of the Northern Cape Province, bordering Botswana in the west. It comprises the three local municipalities of Gamagara, Ga-Segonyana and Joe Morolong, and 186 towns and settlements, of which the majority (80%) are villages.

The boundaries of this district were demarcated in 2006 to include the once north-western part of Joe Morolong and Olifantshoek, along with its surrounds, into the Gamagara Local Municipality. The JTG District Municipality occupies an area of 27 283km2 with a population of 272 454 (2022 census).

The district main economic sectors are agriculture, mining and retail and holds potential as a viable tourist destination and has numerous growth opportunities in the industrial sector.

The road network within the John Taolo Gaetsewe District falls under the jurisdiction of three (3) levels of authority who are each responsible for a specific road network, namely:

- The National department of Roads and Transport
- The Northern Cape Department of Roads & Public Works, which is responsible for the Provincial roads, i.e., Trunk, Main, District and Minor roads within the district; and
- Three (3) Local Municipalities, who are responsible for all Municipal Access Roads.

The extent of the road network in the John Taolo Gaetsewe District by authority is indicated in Table 2-1 and Figure 2-1 below. John Taolo Gaetsewe District's network accounts for 27% in the district, the network has been increasing over the years. Initially the network extend was 2594 km, it increased in the last financial year and was reported as 3252 km. currently, the new extent is 3369.01 km. The network extend has increased with 117.01 km. there is a possibility of network growth as verification of unproclaimed roads is underway.

Table 2-1: Higher and Lower Road Network in the John Taolo Gaetsewe District

AUTHORITY	EXTENT (KM)	%
National Network	125	2,0%
Provincial Network	2 732.81	43,9%
John Taolo Gaetsewe District Municipality Network	3252	54,1%
GRAND TOTAL	**6 226.82**	**100%**

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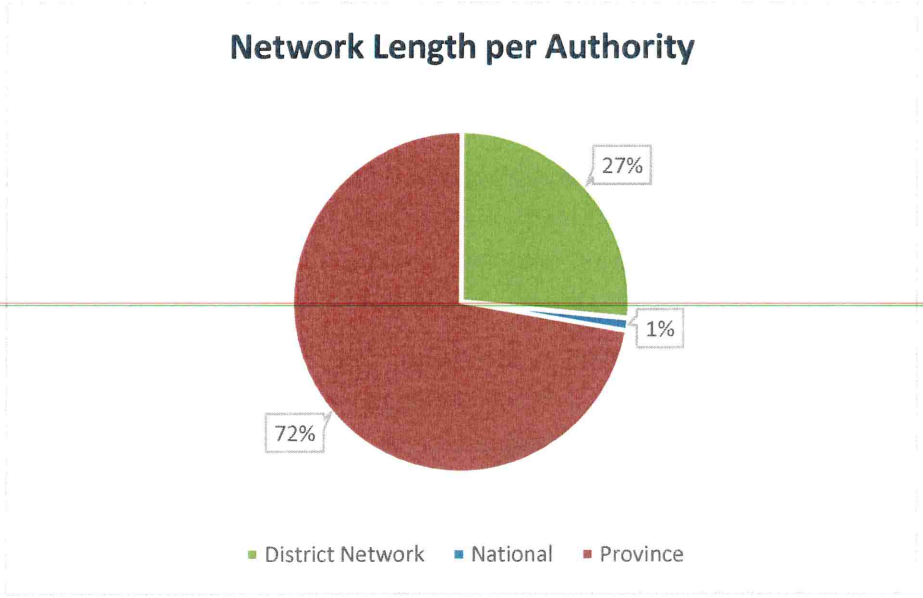


Figure 2-1: Higher Road network

2.2 Road Network Extent and Surface Type

The extent of the updated road network by authority is indicated in Table 2-2, Figure 2-2 and Figure 2-3 below. The network consists of a total of 3369.01 km of which 335.40 km (10%) of paved network, 2969.16 km (88%) is unpaved and 64.45 km (2%) of block roads. The network has increased with 117.01 km across the different surface types, as indicated inter earlier, the network fluctuates due to updates of surface types and addition of new roads. The increased surfaces are paved (Flex = 6.78km & Block = 4km) and Unpaved (Earth = 114.07 km), only the gravel decreased with 19.72 km. New gravel roads in Gamagara are currently being added the extent of gravel will increase and will be reported once endorsed and agreed with Gamagara Local Municipality.

Table 2-2: JTG Network extent per road type

MUNICIPALITY	FLEX	BLOCK	GRAV	EARTH	TRACK	GRAND TOTAL
Gamagara	171.33	7.56	6.48	93.11	0.00	278.48
Ga-Segonyana	136.89	37.57	228.76	1151.10	0.00	1554.32
Joe Morolong	27.18	19.32	378.00	1111.71	0.00	1536.21
GRAND TOTAL	**335.40**	**64.45**	**613.24**	**2355.92**	**0.00**	**3369.01**

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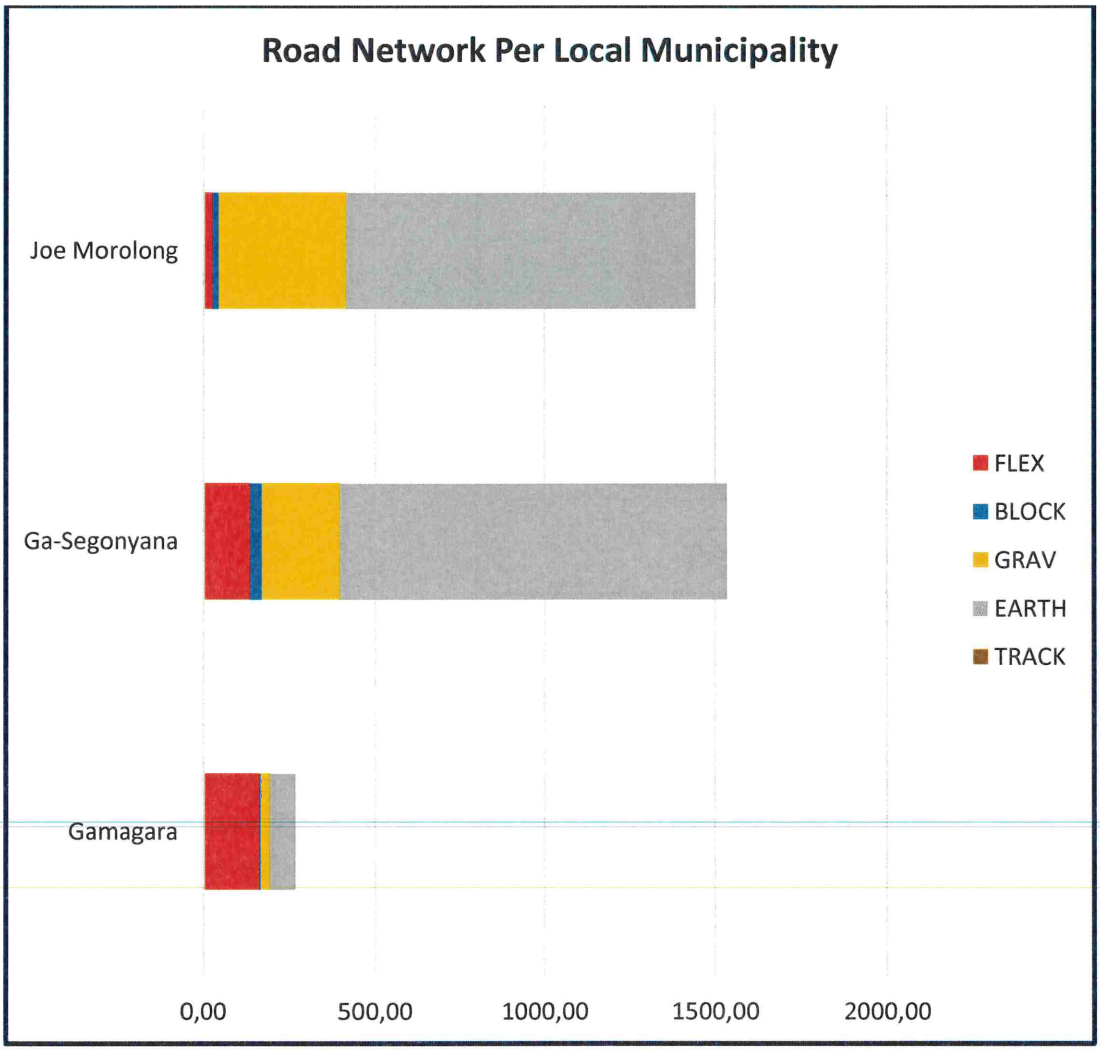


Figure 2-2: Network Extent (km)

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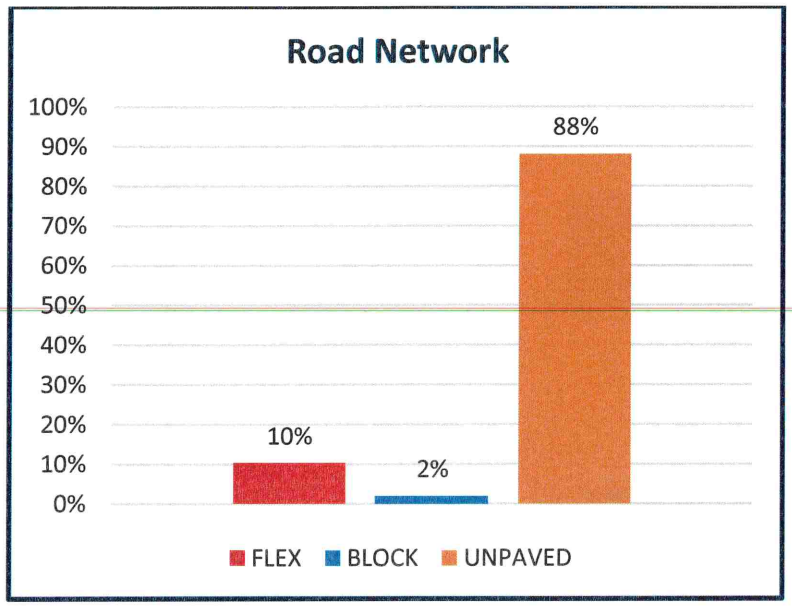


Figure 2-3: Network extent (%)

2.3 RCAM Class

Review of the RCAM classification is being done with the addition of new roads on to the data. With the addition of new roads, a significant increase shows in the Joe Morolong's network. Previously the extent of Joe Morolong was 1443.41 km and the new extent is 1536.21 km. Joe Morolong has more unpaved roads which accounts for 44% of the network as in Table 2-3 and Figure 2-4 below.

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Table 2-3: RCAM per Local Municipality and Road Type

ROAD NETWORK EXTENT PER LOCAL MUNICIPALITY AND RCAM								
LOCAL MUNICIPALITY	**RCAM CLASS**							
Surface	**R4**	**R5**	**U5A**	**U5B**	**U4A**	**U4B**	**U5**	**Grand Total**
Gamagara			**20.93**	**231.89**	**24.12**	**1.54**		**278.48**
BLOCK				5.46	2.10			7.56
FLEX			14.72	140.5	16.11			171.33
UNPAVED			6.21	85.93	5.91	1.54		99.59
Ga-Segonyana	**0.26**	**64.02**	**205.27**	**1202.65**	**53.0**	**29.12**		**1554.32**
BLOCK			0.79	36.23	0.3	0.25		37.57
FLEX	0.26		5.97	113.2	17.46			136.89
UNPAVED		64.02	198.51	1053.22	35.24	28.87		1379.86
Joe Morolong		**274.44**	**25.07**	**1164.41**	**68.57**	**3.72**		**1536.21**
BLOCK				16.25	3.07			19.32
FLEX		0.33		18.63	8.22			27.18
UNPAVED		274.11	25.07	1129.53	57.28	3.72		1489.71
GRAND TOTAL	**0.26**	**338.46**	**251.27**	**2598.954**	**145.69**	**34.38**		**3369.01**

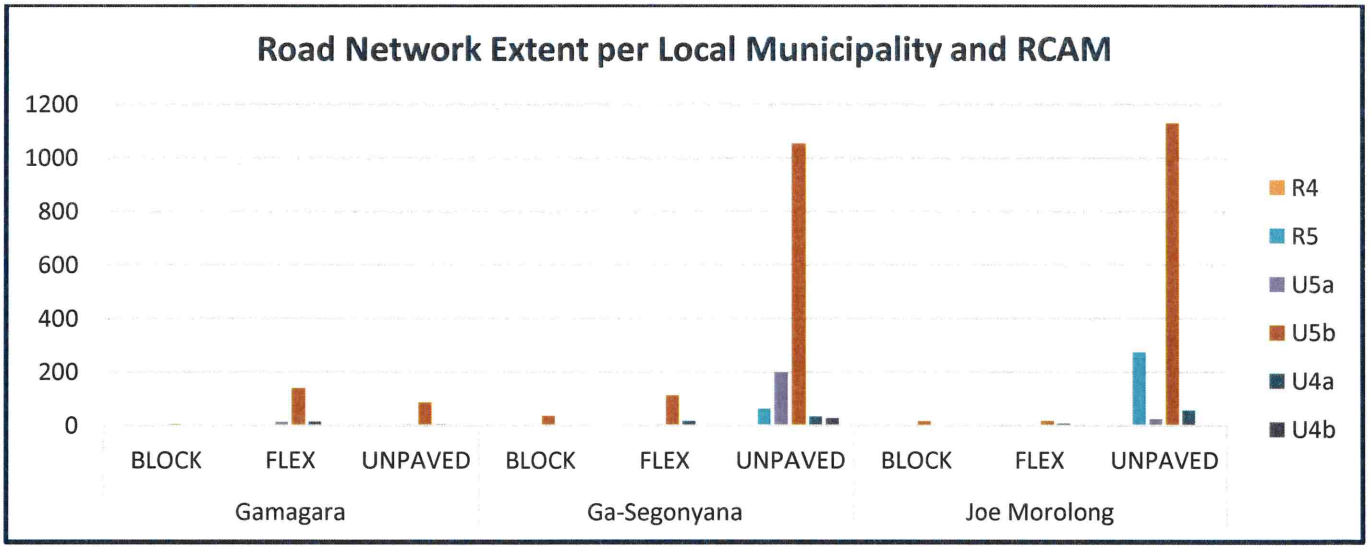


Figure 2-4: RCAM Extent (km) per Local Municipality and Road Type

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2.4 Road Network Layout

2.4.1 Joe Morolong Local Municipality

The Joe Morolong municipality is characterised by numerous small villages, mostly concentrated in the east, with very few paved roads and mostly gravel/earth roads. This is the most rural area within the district with 46% of the total road network, mostly gravel and earth. Appendix D has a detailed Map for Joe Morolong Local Municipality.

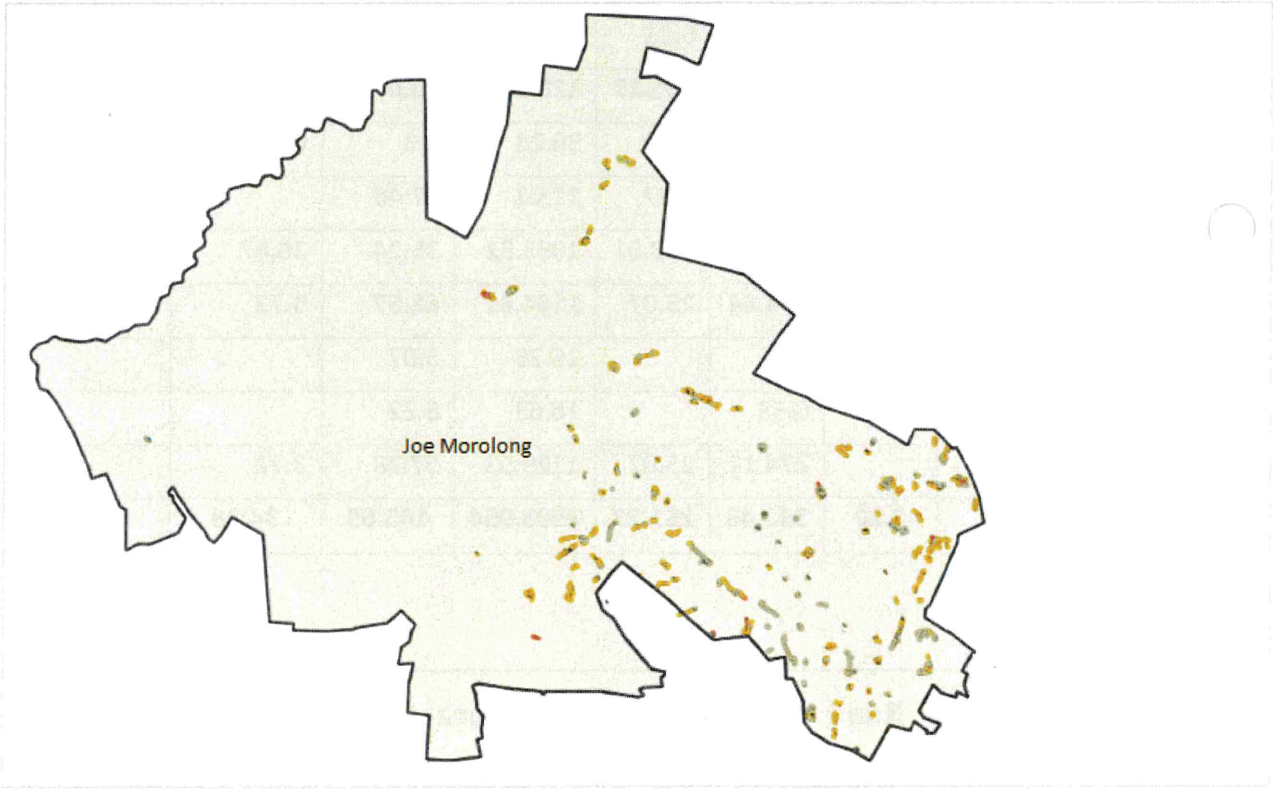


Figure 2-5: Joe Morolong Local Municipality Road network (small scale)

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2.4.2 Ga-Segonyana Local Municipality

The road network within the Ga-Segonyana municipality is concentrated in the north around the bigger towns, like Kuruman. With almost half of the paved roads and 47% of the total road network is situated within this municipality. Appendix E has a detailed map for Ga-Segonyana Local Municipality.

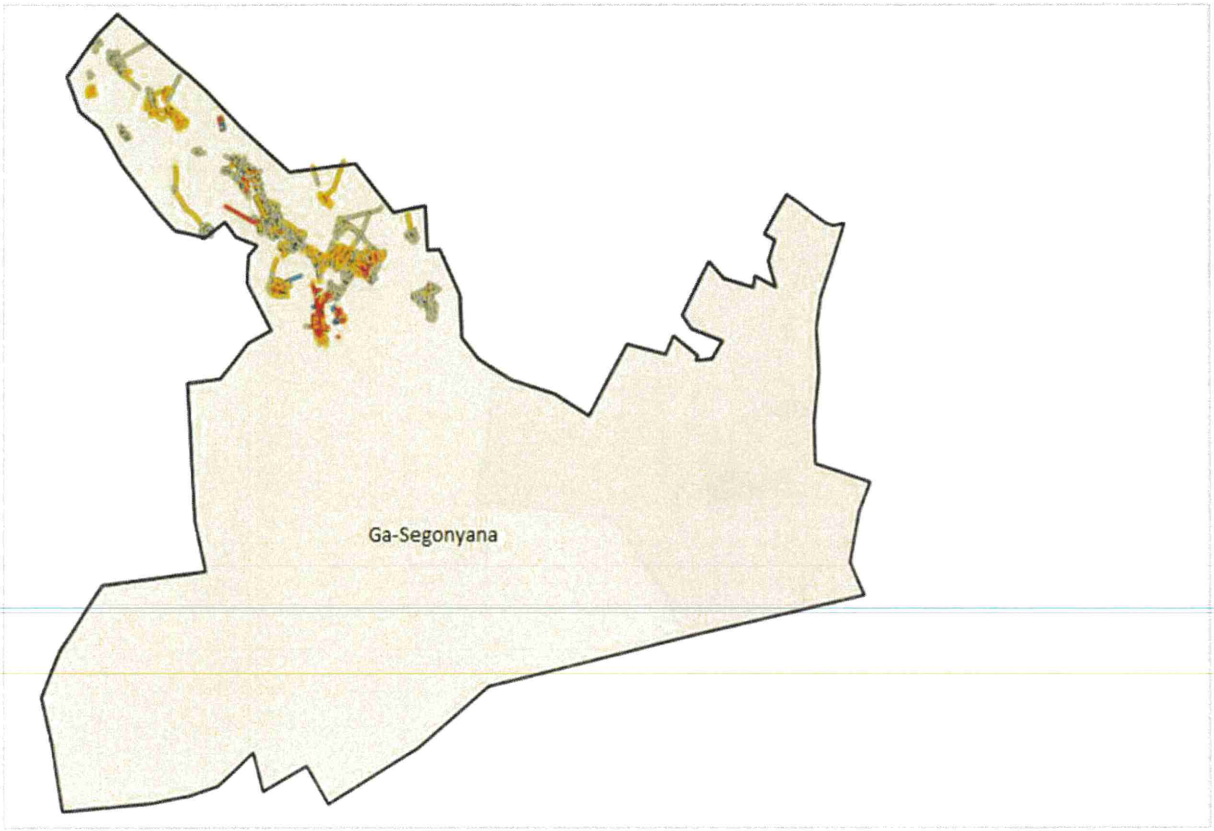


Figure 2-6: Ga-Segonyana Local Municipality Road network (small scale)

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2.4.3 Gamagara Local Municipality

The Gamagara local municipality has the smallest road network within the district, with roads concentrated in the 3 major towns within the municipality. It has slightly more paved roads than gravel roads, with most paved roads situated in the mining town of Kathu. Gamagara network accounts for 8% of the total network. Appendix F has a detailed Map for Gamagara Local Municipality.

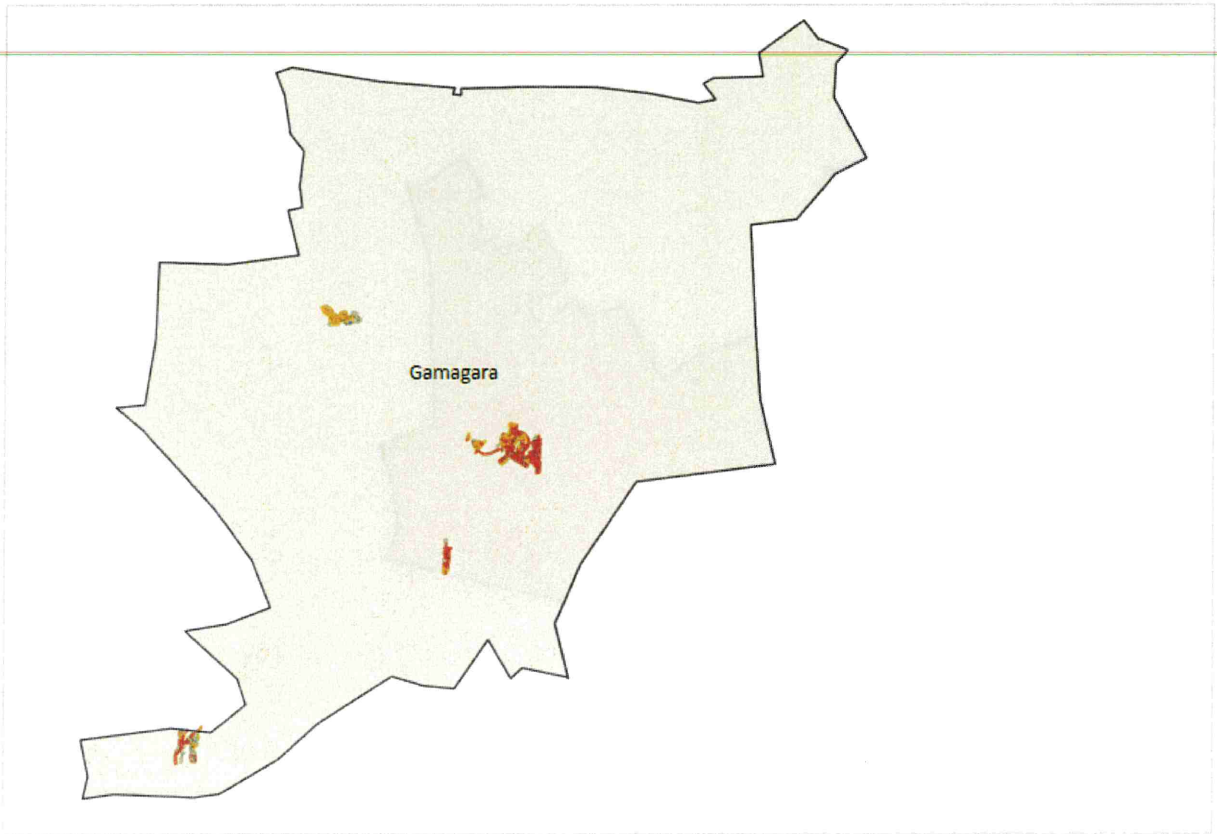


Figure 2-7: Gamagara Local Municipality Road network (small scale))

2.5 GIS MAP

To get more printable size GIS maps for these LMs, see link to GeoRAMS system. A NDoT user login is available for officials with viewing permissions of the GIS map and data set. The login credentials are as follows:

URL: https://jtg.georams.co.za/

Username: GeoRAMSNDOT

Password: N66S4liW

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3 LEVEL of SERVICE

3.1 Minimum Conditions and Service Levels

The following sections describes the minimum conditions and service levels at which John Taolo Gaetsewe District Municipality is executing RAMS.

Data Collection Cycles

Collected data and associated datasets are to be submitted to the NDoT (National Department of Transport) and the Northern Cape Department of Roads & Public works as and when updates are applied, in the TMH 18 data format compatible with the NDoT specifications.

The data frequency collection requirements are as follows:

- Roads Visual Condition (RCAM Class U2, U3, R2 and R3) – Every 2 years
- Roads Visual Condition (RCAM Class U4, U5, R4 and R5) – Every 3 years
- Bridges to be assessed every 5 years.
- Traffic (RCAM Class U4-5 years, Class U5-N/a, Class R4 and R5 – Every 5 years)

Data not applicable to JTG is as follow:

- Instrumental pavement data for roughness is not applicable at LEVEL I and II RAMP, hence rut depth and macro texture are not measured. From Level III and upwards it would be necessary to be measured every 2 years.
- Instrumental pavement data for structural strength is not applicable for LEVEL I and II RAMP. For level III and upwards, it would be measured every five years.

Desirable data:

- Road Furniture
- Guardrails – Every month
- Road signs – Every 3 years
- Road Markings – Annually
- Bus Shelters – Annually
- Bus Structures – Annually
- Street Lighting - Monthly

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3.1.1 Data Age Analysis

The age analysis of the data is reflected in Table 3-1 below. JTG has been involved in the RRAMS programme since 2014/15 financial years, however, the table below gives age of data for ancillaries within a period of six years. According to the TMH22, Class 4 and Class 5 roads should be assessed every 3 years and Traffic should be assessed every 5 years.

An age analysis of the traffic, bridge and road furniture data contained in the JTG RRAMS is provided in Table 3-1 below.

Table 3-1: Ancillary Age Data

Type	2019	2021	2022	2023	2024	2025	N/A	Grand Total
Road Markings & Furniture		1395	69	79		1046	37	4679
Structures				13	10	42		94
Traffic	32					36		68

The traffic counts were recently conducted in the year 2025 which makes the age of data well within the required 5 - year age. The age of traffic data is in compliance with the TMH22 age of data standard.

Table 3-2 below presents the age of the visual assessment data.

Table 3-2: Age of Road condition Data

Surface	2019	2020	2021	2022	2023	2024	2025	2026	Unassessed	Grand Total
BLOCK	3.01		11.36	7.38	12.72	11.58	9.79	3.48	5.13	64.45
FLEX	4.12	5.54	18.02	10.4	25.93	61.19	167.02	28.6	11.65	335.40
UNPAVED	9.78	37.98	67.81	102.76	613.19	1111.86	195.5	200.56	622.57	2969.16
Grand Total	**16.91**	**43.52**	**97.19**	**120.54**	**651.84**	**1184.63**	**372.31**	**232.64**	**639.35**	**3369.16**
3-yr TOTALS	**157.62**			**1957.01**			**604.95**		**639.35**	**3369.01**

Class 4 and 5 roads should be assessed every 3 years. All roads in JTG falls under class 4 and 5 roads. The progress of assessment in the table above, list that 1957.01 km of the total 3369.01 km network was assessed in past 3 years (2022, 2023, 2024) , with 604.95km assessed in less than two years and 639.35 km of the network is not yet assessed. A new cycle of assessments started in May 2025. The DM used to experience Various challenges that caused under performance in terms of achieving total network

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assessments within or under the 3-year period e.g., vacant position, lack of fleet for travelling to sites to conduct assessments, however, changes have been made over the years to ensure improvement and achievement of set targets to meet minimum requirements. Refer to Chapter 9 Plan Improvement and Monitoring as well as Chapter 11 SWOT Analysis for improvement plans.

3.1.2 Traffic Usage Data

The main goal of capturing road usage data on a rural road network is to have objective, comprehensive and up-to-date traffic data on the entire road network that can be used for road planning and management; and to obtain this information in a cost-effective manner. The following table show compliance against the minimum parameters for road usage information for a level II RAMS as per TMH22 Section D.1.

As the collection of traffic data can be very expensive, in most cases the traffic counting strategy adopted is focused on sampling traffic on the road network (on a link or at a node) and then using knowledge of the area, environment, daily, weekly, and seasonal variation to make estimates of AADT. JTG used this estimation approached.

Table 3-3: Parameters used by JTG

PARAMETER	COMPLIANCE IN TERMS OF LEVEL II RAMS	DESCRIPTION
Traffic volume	Yes	Extrapolated from AADT figures in historical RNI data. AADT grown at 1% per annum. Traffic counts every 5 years (RCAM Class U4-Every5 years, Class U5-N/a, Class R4 and R5 – Every 5 years
Accident data	N/A	No Accident data is available. Accident statistics are not kept by is relied upon the police stations to distribute these data.
Axle load	N/A	Not applicable for a Level I RAMS
Traffic growth	Yes	1% annual growth assumed – estimated.
Passenger movements	N/A	Not applicable for a Level I RAMS
Average vehicle speed	N/A	Not applicable for a Level I RAMS
Traffic volumes (pedestrian & cycle)	N/A	Not applicable for a Level I RAMS
Traffic spectrum	N/A	Not applicable for a Level I RAMS
Abnormal loads	N/A	Not applicable for a Level I RAMS

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3.1.3 Condition Evaluation

Condition evaluations are done to determine the current asset condition and is a first step in providing management with decision support information. Asset condition information is used at network level for the following evaluations:

- evaluation of present asset condition.
- evaluation of the change in asset condition over time.
- determination of maintenance and rehabilitation (M&R) needs.
- ranking of candidate projects.
- establishment of M&R strategies.
- prediction of asset performance; and
- optimising of M&R funds.

Table 3-4 presents the compliance against the condition assessment standards as per TMH22 Section D.3:

Table 3-4: Compliance to Condition Assessment Standards

PARAMETER	COMPLIANCE	DESCRIPTION
Condition categories	Yes	No Variance
Condition ratings	Yes	No Variance
Rating distresses	Yes	Application software captures distress summaries for the surface type and structure. The system compares the different methods used to calculate distresses i.e Deduct

3.1.4 Surveillance Measurements

Mechanical and electronic measurements are not required for a Level I and II RAMS and therefore not included in the RAMP, hence none of the following are executed at JTG:

- Deflection/FWD Measurements- not applicable to level I RAMS.
- Riding quality/ Profile Measurements- not applicable to level I RAMS.

3.1.5 Data Management Systems

A Service provide (GeoSMART), i.e., GEORAMS is hosting the data management system of JTG. The system consists of an integrated web-based road asset management system with the following capability:

- Web/mobile based system with interactive mapping function
- User configurable dashboards and reports
- Rational spatial database

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- GRMS and PMS calculations
- Treatment calculations and reports
- TMH18 downloads
- Mobile data collection according to TMH18 standards*
- Sharing and collaboration capability with access control

The mobile application is fully complaint to the TMH18 standards and condition assessments are automatically sent and imported into the system. GRMS and PMS calculation are automatically performed on data submission and treatment reports generated. TMH18 reports are generated automatically for exporting.

The system fully complies to the data management system requirements of TMH22 section D.5.5.

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3.2 Difference to Conditions and Functional Indices and Desired Levels of Service

Minimum conditions and service levels are set by the National Government. In setting these conditions the needs of users as well as socio-economic factors, risks and the consequences of failure are considered.

Table 3-5 presents the minimum condition indices as per the TMH 22 standard and the standards applied and desired by the District Municipality, which is used in the RAMP.

JTG has achieved full network assessment in 3 cycles of three year since the start of the programme (2017). The standards to which the network should be compared to, is accepted as given in the TMH22. Table 3-5 below specifies the targets set by the TMH22 and accepted differences by JTG per RCAM Class.

Table 3-5: Minimum Functional Condition Indices and standards implemented by DM

RCAM	MINIMUM TMH 22 CI/FI	MINIMUM CI/FI FOR RAMP	COMMENTS/DIFFERENCES TO TMH22 STANDARD
Class 1	45	45	TMH22 Standard accepted
Class 2	40	40	TMH22 Standard accepted
Class 3	40	40	TMH22 Standard accepted
Class 4	35	35	TMH22 Standard accepted
Class 5	30	30	TMH22 Standard accepted

The comparison of the current assessed network in terms of Condition Index versus the standard set in TMH22 is reported in the chapters the follow within the report.

3.3 Differences to TMH22 conditions

The difference between the TMH22 guideline conditions and the data of JTG can be summarised as follows:

- Visual Assessment of total network' road condition has been executed and was completed in April 2025. Additions of new roads to the network is currently being done and therefore:
  - 639.35 or 19 % of the network is not yet assessed.
  - Full network road condition assessments were reported in April 2025. The 19% accounts for recently added roads.
  - In the past years, the DM encountered various challenges regarding availability of resources and have been working on ways to address the challenges in order to improve performance, the DM has successfully managed to overcome the challenges. Refer to Chapter 9 plan improvement and monitoring as well as Chapter 11 swot analysis for improvement plans.

Traffic data assessment of the attributes described complies to the standard for every 5 years and Bridge assessment data is currently being verified, this involves engaging with the province on bridge inventory, therefore, age of data for bridges/structures is currently being updated.

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3.3.1 Minimum Conditions and Functional Indices and Desired Levels of Service

Differences in terms of TMH22 standard where 10 % of the network should not be worse than the indicated VCI as described in Table 3-5 above is presented in section 4.3.2 page 42.

About 2108.07 km of class 5 and 145.21 km of class 4 roads have deteriorated below the minimum VCI specified, the total extent of the deteriorated network is 2253.28 km which amounts to 67% of the entire district network.

The minimum percentage standard is 10%. Hence the network needs urgent attention in terms of maintenance.

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4 SITUATIONAL ANALYSIS (Current asset condition and performance)

This project seeks to develop roads asset management systems and collect municipal roads and traffic data in line with Road Infrastructure Strategic Framework for South Africa (RISFSA). The project outcome will assist with the improvement of the quality of data on roads in order to be able to guide for infrastructure investment.

All through the development of the RRAMS, data is collected and aligned to the TMH18 data electronic exchange format as a guideline document for data exchange.

In this section the extent of the assessed road network, road infrastructure and the condition of assets will be covered in detail.

4.1 Inventory Data

4.1.1 Road Surface Type & RCAM Classification

A summary of the road lengths in JTG (for RISFSA Classes 4 to 5) is provided in Table 4-3 below. Joe Morolong has the largest unpaved network amounting to 378 km of gravel and 1111.71 km of earth. Gamagara has the largest paved network, which amounts to 171.33 km of the total network.

Table 4-1: Road Network in the John Taolo Gaetsewe District

MUNICIPALITY	FLEX	BLOCK	GRAV	EARTH	TRACK	GRAND TOTAL
Gamagara	171.33	7.56	6.48	93.11	0.00	278.48
Ga-Segonyana	136.89	37.57	228.76	1151.10	0.00	1554.32
Joe Morolong	27.18	19.32	378.00	1111.71	0.00	1536.21
GRAND TOTAL	**335.40**	**64.45**	**613.24**	**2355.92**	**0.00**	**3369.01**

The network extent presented in Table 4-1 above is further broken down to give details of the RCAM per local municipality and surface type in Table 4-2 below.

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Table 4-2: RCAM per Surface Type per LM

EXTENT PER LOCAL MUNICIPALITY AND RCAM							
LOCAL MUNICIPALITY	**RCAM**						
SURFACE	**R4**	**R5**	**U5A**	**U5B**	**U4A**	**U4B**	**GRAND TOTAL**
Gamagara LM			**20.93**	**231.89**	**24.21**	**1.54**	**278.48**
Block				5.46	2.1		7.56
Flex			14.72	140.50	16.11		171.33
Unpaved			6.21	85.93	5.91	1.54	99.59
Ga-Segonyana LM	**0.26**	**64.02**	**205.27**	**1202.65**	**53**	**29.12**	**1554.32**
Block			0.79	36.23	0.3	0.25	37.57
Flex	0.26		5.97	113.20	17.46		136.89
Unpaved		64.02	198.51	1053.22	35.24	28.87	1379.86
Joe Morolong LM		**274.44**		**1164.41**	**68.57**		**1536.21**
Block				16.25	3.07		19.32
Flex		0.33		18.63	8.22		27.18
Unpaved		274.11	25.07	1129.53	57.28	3.72	1489.71
GRAND TOTAL	**0.26**	**338.46**	**251.27**	**2598.95**	**145.69**	**34.38**	**3369.01**

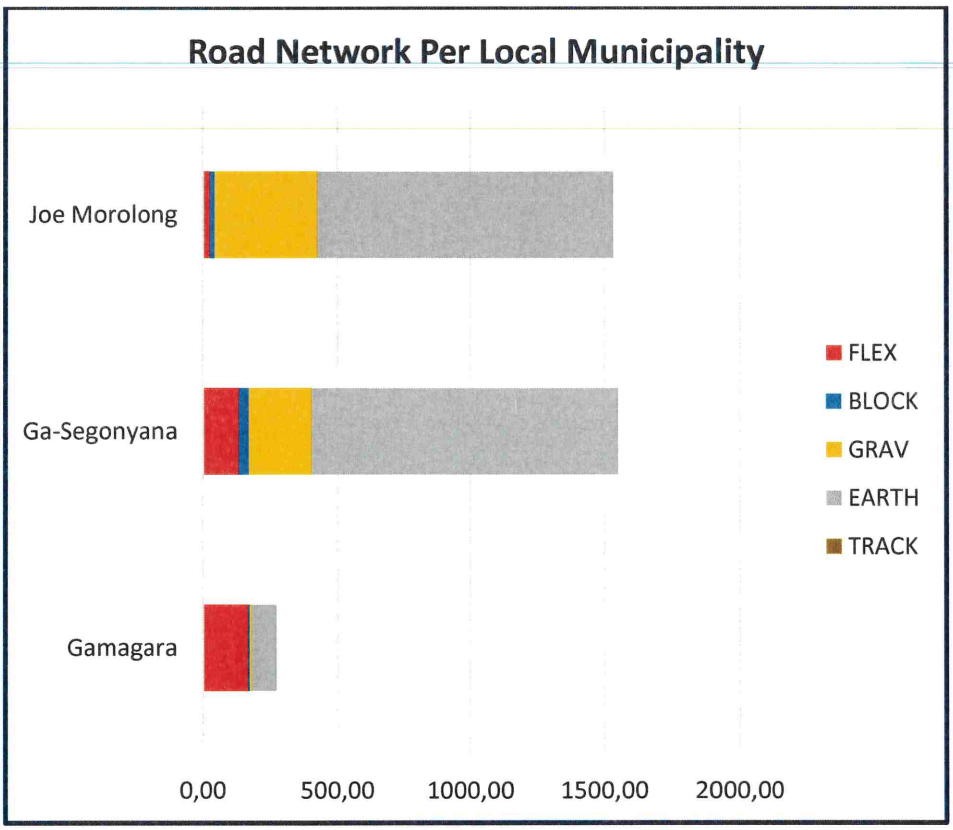


Figure 4-1: Road Surface Type

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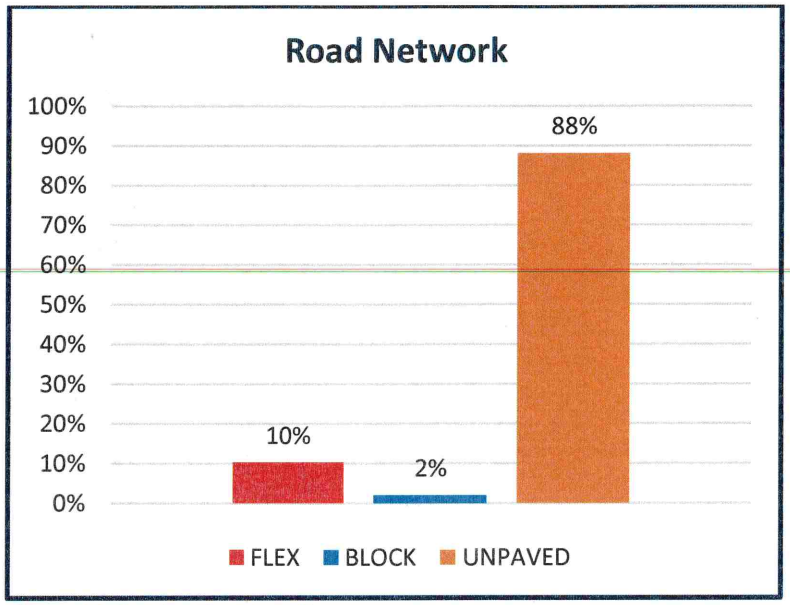


Figure 4-2: Road surface type %

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4.1.2 Extent of Assets

The district network is well identified and the current extent is defined. The network is verified regularly during assessments to ensure the correct extent is captured. Mushrooming settlements especially in villages where formal procedures are not taken for developments create major concerns as the network is inconsistent due to informal roads formed and closed causing irregularities.

The district is in process of removing roads that were formed and are no longer used. This is done with the assistance of the LMs. As a result, a list /extent of unproclaim roads per LM and will be developed and reported to indicate proclaimed, un-proclaimed roads and roads under the district jurisdiction but not maintained by the LMs.

4.1.3 Network Overview

Maintenance and review of network data is ongoing and every year the data is cleaned up and refined.

Table 4-3 below lists an overview of the extent of the whole road network under the jurisdiction of JTG.

Table 4-3: Extent of Municipal Roads, Traffic Counting Stations 2024/2025 Dataset

PAVED ROADS (KM)	UNPAVED (KM)	BLOCK (KM)	TOTAL (KM)	TRAFFIC STATIONS (NO.)
335.40	2969.16	64.45	3369.01	36
10%	88%	2%	100%	-

4.1.4 Road furniture data

The number of Road furniture/inventory was captured for JTG between 2014 and 2022, initially it was just inventory, with changes to condition rating of the road furniture, the data is being updated and reviewed. The data is presented in Table 4-4 below.

Table 4-4: Road furniture/inventory data

TYPE	UNIT	PERIOD	COUNT
Road Markings & Furniture	no	2014	258
Structures	no	2014	3
Structures	no	2015	26
Road Markings & Furniture	no	2015	1870
Traffic	no	2019	37
Road Markings & Furniture	no	2021	1395
Road Markings & Furniture	no	2022	69
Road Markings & Furniture	no	2023	96
Structures	no	2023	13

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Structures	no	2024	10
Road Markings & Furniture	no	2025	1046
Traffic Stations	No.	2025	36
Structures	No.	2025	42

Table 4-5 below gives a breakdown of ancillary assets per administrative area.

Table 4-5: Ancillary Assets per Administrative Area

LOCAL MUNICIPALITY	Gamagara LM	Ga-Segonyana LM	Joe Morolong LM
ROAD MARKINS & FURNITURE	1674	2038	994
TRAFFIC STATIONS	11	24	0
STRUCTURES	13	61	20

4.1.5 Age of Physical Assets

The age of physical assets (roads & ancillaries) refers to the roads asset management system that contains information such as inventory, construction date and condition assessments. It is typically linked to local municipalities asset register that must include Cost replacement Cost and Remaining Useful Life of road infrastructure.

The district data only has records of inventory and condition assessment of the road's infrastructure. The CRC & RUL is calculated using an estimated useful life of assets based on the condition of the asset guided by the COTO standards.

4.2 Usage of Assets

Table 4-6 and Figure 4-3 below presents the usage per road class for different surface types. A total of 566 818 veh.km are travelled on JTG's assessed network. Ga-Segonyana's road is travelled the most (44%) followed by Joe Morolong (34%). In general, attention is to be given to both paved and unpaved roads across all LMs. The total veh.km is 566 818.04 of all LMs and, the paved roads serve 43% of the users while unpaved roads serve 57% of all user-km.

Table 4-6: Usage per Functional Class and Surface Type (veh.km)

MUNICIPALITY	USAGE PER SURFACE TYPE, PER LM AND RCAM					
	RCAM CLASS	FLEX	GRAV	EARTH	BLOCK	GRAND TOTAL
Gamagara	U5A	8390.4	0	558.9	0	8949.3
Gamagara	U4A	23359.5	352.8	456.3	273	24441.6
Gamagara	U5B	80085	1015.2	7226.1	873.6	89199.9
Gamagara	U4B	0	0	138.6	0	138.6

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Ga-Segonyana	R4	377	0	0	0	377
Ga-Segonyana	U4B	0	1646.4	2069.1	30	3745.5
Ga-Segonyana	U5B	64524	36703.8	76437.9	5796.8	183462.5
Ga-Segonyana	U4A	25317	5926.2	1901.7	39	33183.9
Ga-Segonyana	R5	0	0	5761.8	0	5761.8
Ga-Segonyana	U5A	3402.9	874.8	17428.5	126.4	218132.6
Joe Morolong	U4B	0	1041.6	0	0	1041.6
Joe Morolong	U5B	10619.1	60267.6	71523.9	2600	145010.6
Joe Morolong	U4A	11919	5216.4	4037.4	399.1	21571.9
Joe Morolong	R5	188.1	3375.54	22258.8	0	25822.44
Joe Morolong	U5A	0	45	2233.8	0	2278.8

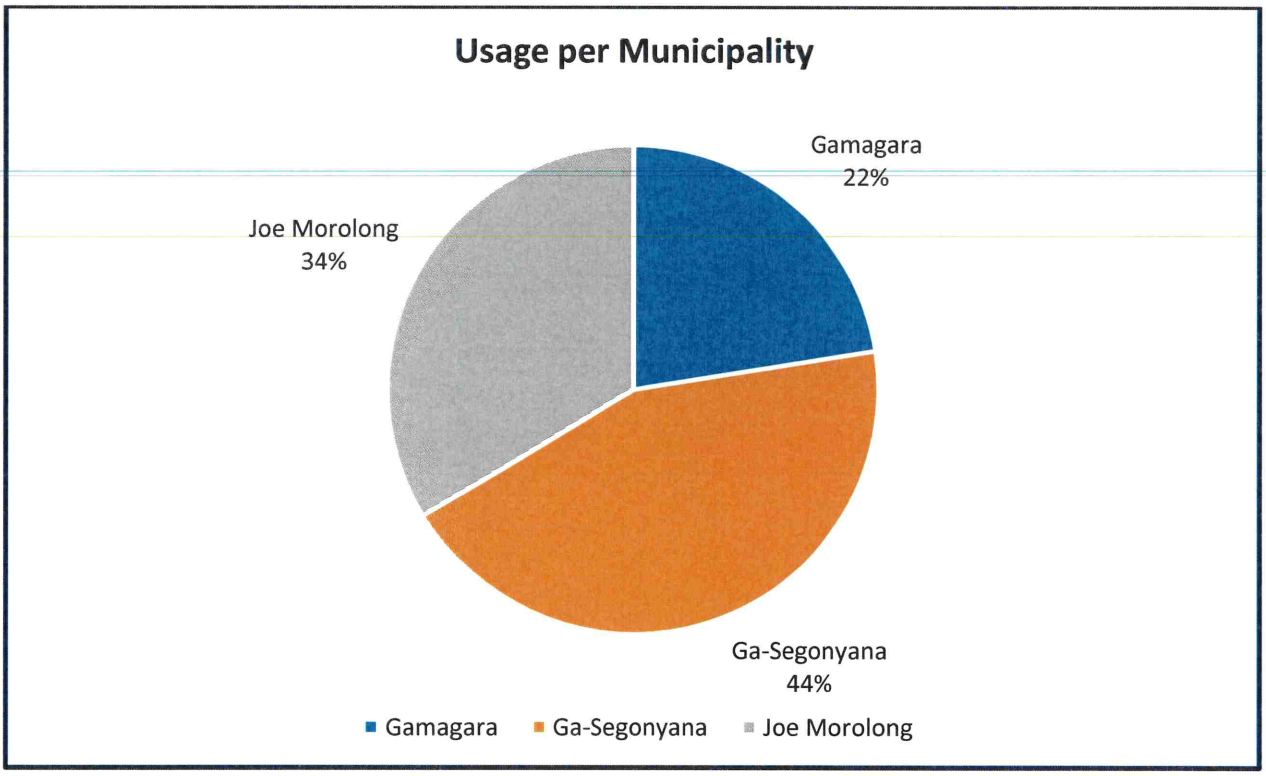


Figure 4-3: Usage per Municipality

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4.3 Engineering Condition of Assets

4.3.1 Current Visual Condition

Table 4-7 and **Error! Reference source not found.** below presents the condition of the JTG' network per surface type and Figure 4-7 gives a breakdown of the conditions per surface type. About 2415 km of roads has the largest portion in Very Poor Condition (72%).and only 0.3% of the network extent is very good condition.

In general, 72% of the total network fall within a Very Poor condition, 4% in Poor, 4% in Fair, 1% in Good, 0.3% in Very Good and 19% of roads are not yet assessed.

Table 4-7: Visual Condition of Road Network per Road Surface (km)

VISUAL CONDITION OF ROAD NETWORK PER SURFACE (KM)							
SURFACE	VERY POOR	POOR	FAIR	GOOD	VERY GOOD	NOT ASSESSED	GRAND TOTAL
BLOCK	6.12	16.52	16.02	17.06	3.6	5.13	64.45
EARTH	1728.3	38.37	4.12	0.31	0.31	580.46	2355.92
FLEX	112.94	69.52	116.38	17.89	7.02	11.65	335.4
GRAV	568.5	1.92	0.38	0.33	0	42.11	613.24
GRAND TOTAL	**2415.86**	**126.33**	**136.9**	**39.64**	**10.93**	**639.35**	**3369.01**

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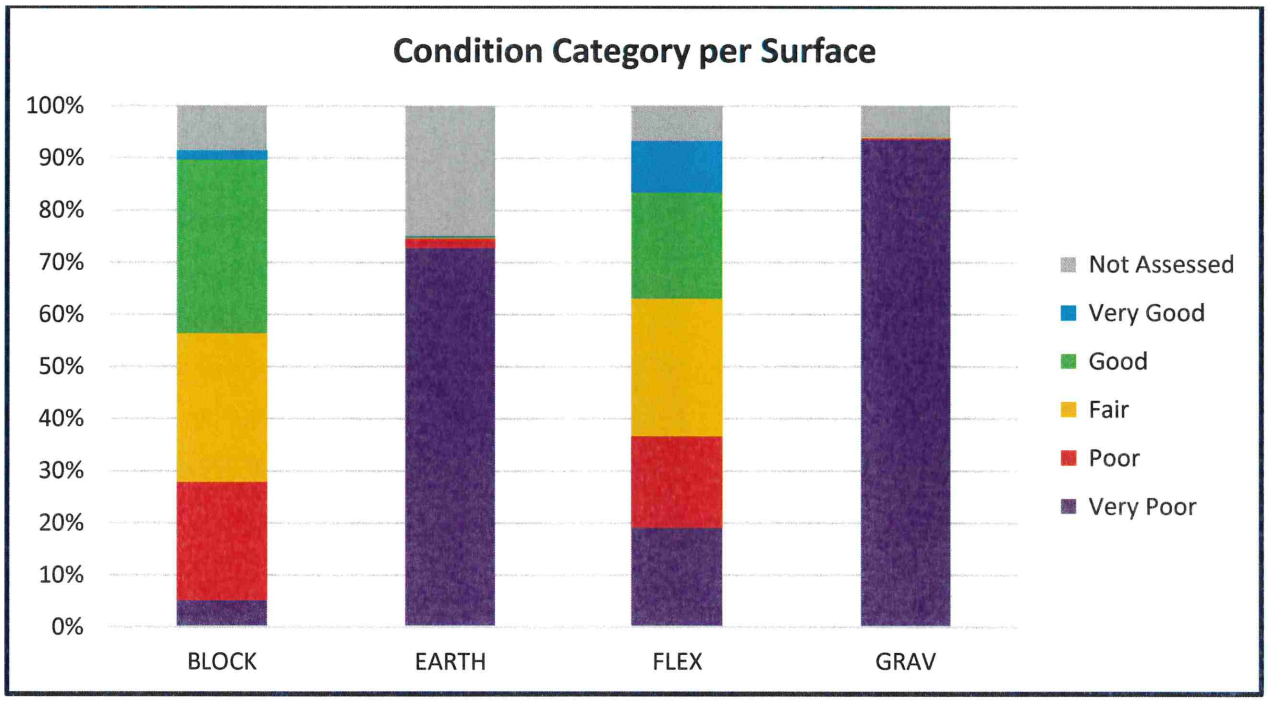


Figure 4-4: Condition Category per Municipality

Table 4-8 below represents the Condition of the network in terms of RCAM class. All assessed roads in Class U5B are Very Poor, 2598.95 km (77%) of the network falls within a Very Poor condition. Only 10.93 km (0.3%) of the assessed network is Very Good.

Table 4-8: Visual Condition of Road Network per RCAM (km)

VISUAL CONDITION OF ROAD NETWORK PER RCAM CLASS (KM)								
RCAM CLASS	**VERY POOR**	**POOR**	**FAIR**	**GOOD**	**VERY GOOD**	**NOT ASSESSED**	**GRAND TOTAL**	**%**
R4	0.00	0.00	0.26	0.00	0.00	0.00	0.26	0%
R5	35.68	0.8	0.15	0.00	0.00	301.83	338.46	10%
U5A	17.51	0.00	0.13	0.00	0.00	233.63	251.27	7.5%
U5B	2217.96	118.3	121.71	36.3	7.59	97.09	2598.95	77.1%
U4B	29.64	0.00	0.11	0.07	0.00	4.56	34.38	1%
U4A	115.07	7.23	14.54	3.27	3.34	2.24	145.69	4.3%
Grand Total	2415.86	126.33	136.9	39.64	10.93	1278.7	639.35	100%
%	**71.7%**	**3.7%**	**4.1%**	**1.2%**	**0.3%**	**19%**	**100%**	

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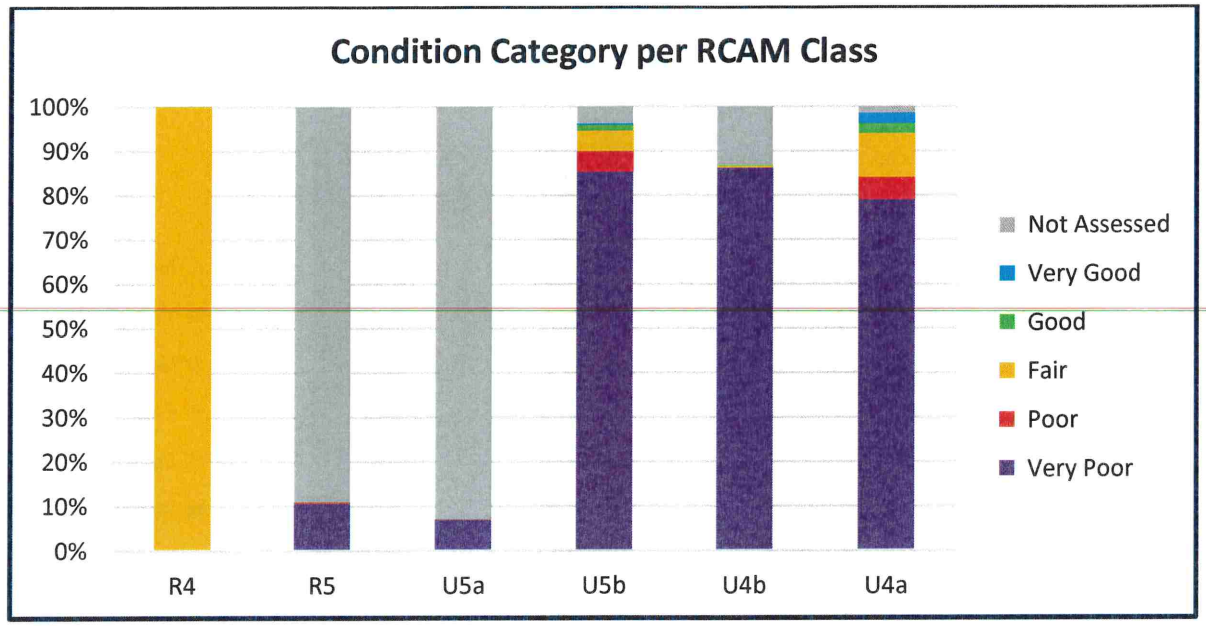


Figure 4-5: Condition Categories of Assessed network per RCAM

4.3.2 Performance Gap: Comparing Actual Visual Condition v/s Level of Service

Figure 4-6 below presents the standard target as in the TMH22. It means that not more than 10 % of the network for each class should have a Condition Index of lower than 35 for Class 4 roads and 30 for Class 5 roads.

Road Functional Class	Minimum CI/FI with max 10% length of each class of network worse than minimum CI or max 10% of vkm travelled on roads in each class with FI worse than minimum
Class 1	45
Class 2	40
Class 3	40
Class 4	35
Class 5	30

Figure 4-6: Minimum condition target (Extract from TMH22)

As indicated in section 3 above, the minimum conditions and service levels are set by the National Government. The minimum condition indices are as per the TMH 22 standards of which the network should be compared to, Table 4-9 below indicates the extent of network below minimum target.

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Class 5 Earth roads have the highest extent of network below minimum indices, Joe Morolong has the largest extent of 1115.55 km below the minimum target. In total, 2253.28 of the 3369.01 km district network is below the minimum target of condition indices, which is 67% of the entire network.

Table 4-9: Extent below minimum target

MINIMUM INDICES	SURFACE TYPE				
	EARTH	FLEX	GRAV	BLOCK	TOTAL
Vci < 30	**1480.41**	**91.47**	**535.91**	**0.28**	**2108.07**
Gamagara	81.27	37.3	5.58		124.15
Ga-Segonyana	625.94	48.24	193.91	0.28	868.37
Joe Morolong	773.2	5.93	336.42		1115.55
Vci < 35	**91.97**	**20.65**	**32.59**		**1445.21**
Gamagara	5.08	7.75	0.84		13.67
Ga-Segonyana	43.57	10.39	19.33		73.29
Joe Morolong	43.32	2.51	12.42		58.25
GRAND TOTAL	**1572.38**	**112.12**	**568.5**	**0.28**	**2253.28**

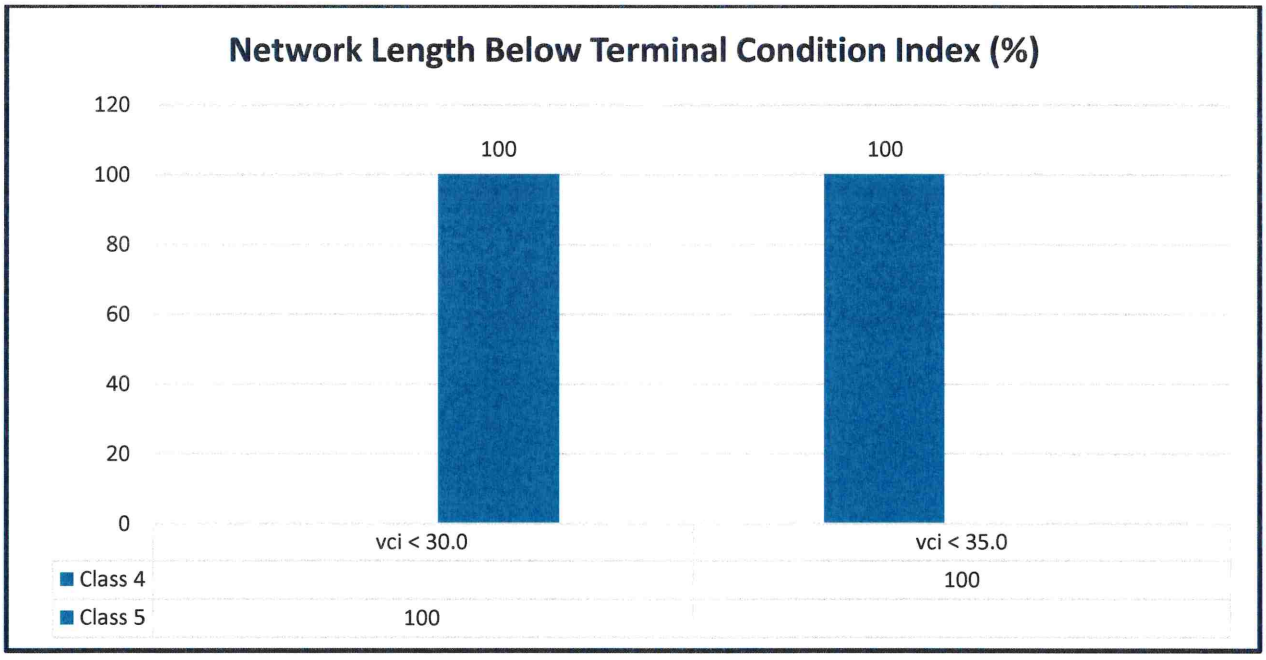


Figure 4-7:Network Length below terminal condition index

4.3.3 Current Deflection, Texture Measurements and Condition Structure Assessments

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JTG practices level I RAMS and Level II RAMP, therefore it does not conduct or report on the following for the RRAMS:

- Deflection measurement for evaluating the structural capacity of the pavement
- Pavement texture measurement for surface roughness and ensure skid resistance

This is applicable from Level III upwards, as a result, no data is captured and no performance gap is conducted.

4.3.4 Current Ancillary Condition Assessments

Currently JTG collects inventory on ancillaries. The data contains information such as size, orientation, location in terms of coordinates. Condition assessments are done based on a rating between 1-5, with 1 as very good (CI of 92) and 5 as very poor condition (with CI of 15). Pictures of the ancillaries are also taken and loaded on to the system.

The TMH 22 does not have specific standard functional indices for ancillaries. The approach used to assess the conditions is to give a condition rating which then translate to maintaining the ancillaries ensuring that they are at functional level with components between good or fair avoiding service failure.

4.4 Functional Condition of Assets

Functional Condition is only executed at maturity Level III and above. JTG is reporting on Level I RAMS and including some elements of LEVEL II RAMS, hence Functional Condition of Assets is not applicable and not reported on.

The following sections are NOT REPORTED ON – due to Level I RAMS (Refer to E.3.1 of the TMH22):

- Capacity (Included on some Level II RAMS)
- Capacity is a function of traffic counts. Traffic counts executed at JTG is based on a sampling of the network and estimates, hence Capacity Calculations are not executed on this level of RAMS.- refer to Chapter 3.1.3 on Page 29.
- Riding Quality (Included on some Level II RAMS – JTG does not have the funds for machine/Surveillance measures i.e., profile measurements, hence Riding quality is not reported on.
- User Risk
- Road Safety
- Availability

The Functional Indices are based on an appraisal of the asset in terms of functional characteristics that affect the quality of use, notably comfort (convenience) safety, congestion, and operating cost.

RAMS and Functional Condition relates to the kind of service that the road is providing the road user. Figure 4-2: Functional Categories extracted from TMH22, presents the categories of Functional Service Levels.

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To determine the functional level, Surveillance Measurements are used which include the following: (Refer to Section D.4 in the TMH22)

- Road Roughness
- Skid Resistance and Texture
- Pavement Deflections
- Cracking and other Surface Defects
- Rut Measurements
- VOC and EUC are subsequent factors determined from the surveillance measurements above .

JTG executes Level I to II RAMS and therefore does not do machine measurements, hence Functional Indices are not reported on. Usually, profile measurements are determined according to TMH22 requirements of every 2 years for class 1, 2& 3 and every 4 years for class 4 & 5.

4.5 Comparative Conditions

4.5.1 Comparative conditions Flexible Roads

Figure 4-8 below represents the flexible distresses comparison. Surface failures, crocodile cracks, pumping& potholes, surface patching and surface cracking are the surfacing distresses with the largest sections falling in the Severe and Warning frequency.

Structural defects, especially crocodile cracks are the worst and if compared to Surfacing defects (Surface failure, Surface patching, Surface cracking) it can be concluded that due to the age and failures of the surfacing, second degree distresses originating into the pavement structure (potholes) are developing.This indicates that the authority should give attention to reseal and improvement actions to the surfacing in order to protect the pavement structure of the network.

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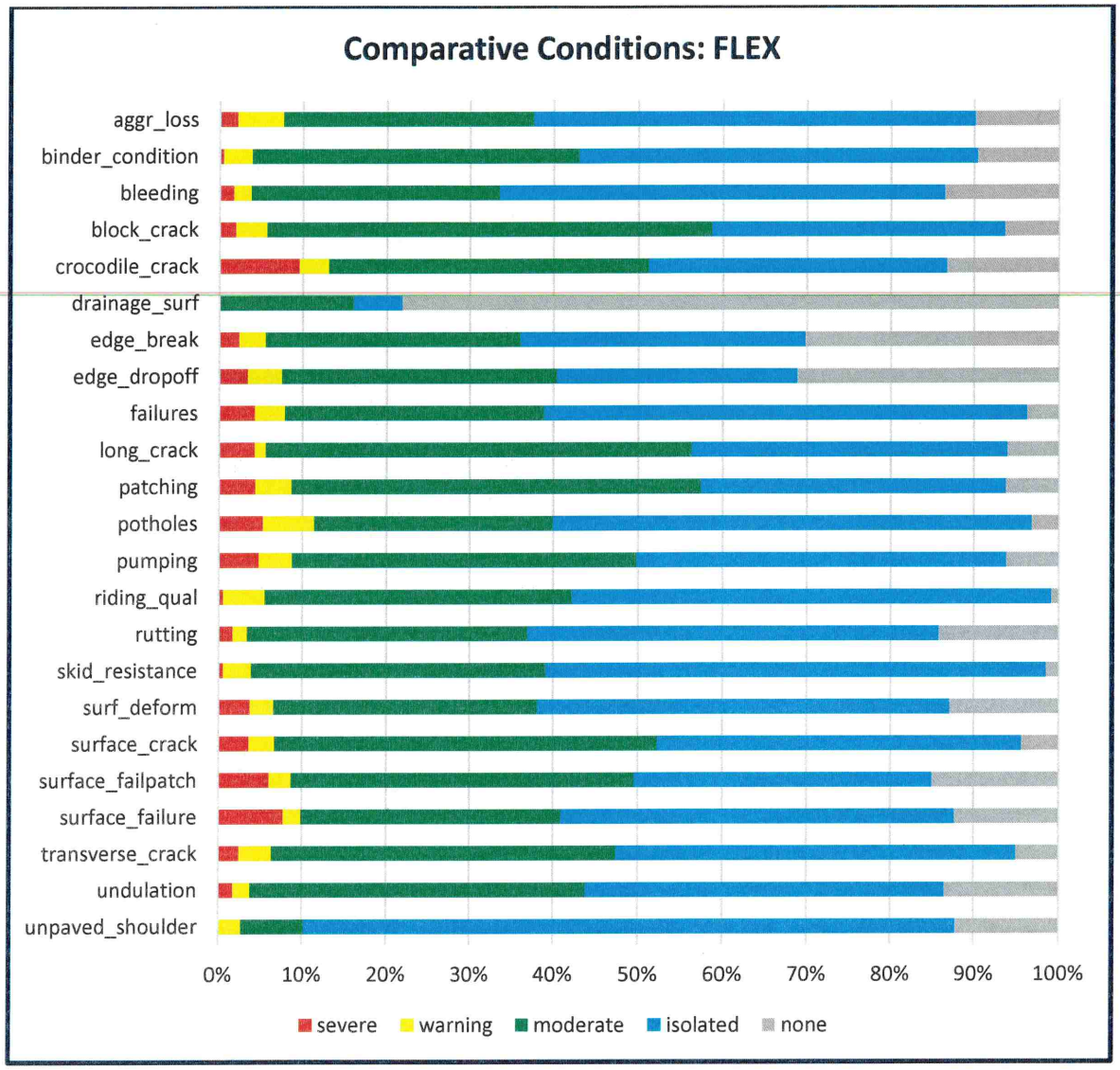


Figure 4-8: Comparative Conditions Flexible roads

4.5.2 Comparative Conditions Block Paved Roads

The comparison of the distresses for Block paved roads indicates the distresses are between warning and moderate frequencies. The worst condition occurrence of severe are less than 10% and this exist on the undulation, surface integrity and very little of joint loss. The conclusion therefore is that the block paved road is still fairly intact, but the authority needs to do routine maintenance in the form of edge repair to restrain it, apply kiln dried sand and localised maintenance.

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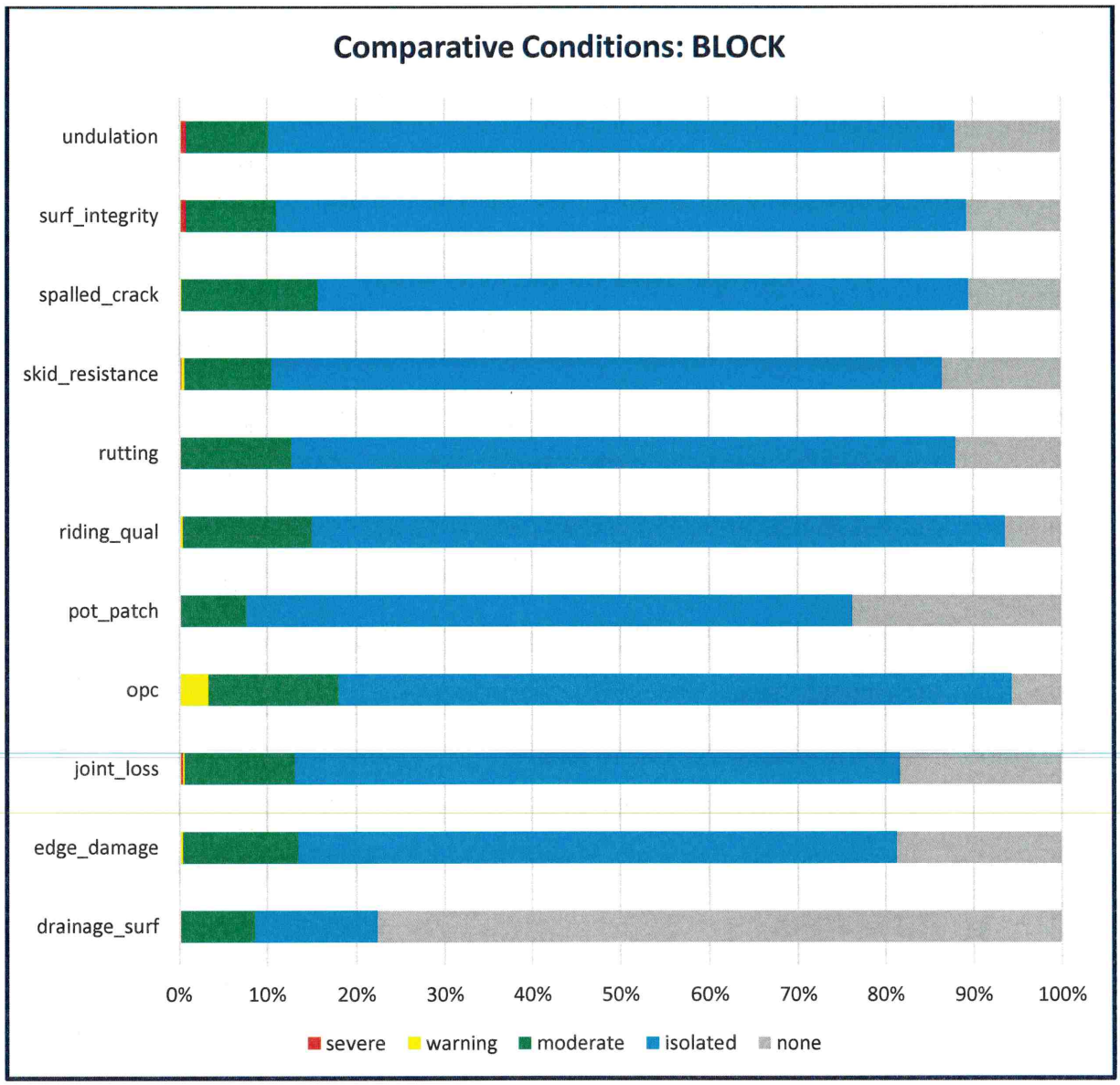


Figure 4-9: Comparative Conditions Block Roads

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4.5.3 Comparative Conditions Unpaved Network

The comparative conditions of the unpaved network shows that the network has a highest frequency of sever occurrence in corrugation and potholes occurring at approximately 78%, with loose material and stoniness loose occurring at severe rate of more than 65%. Other distresses occurring under severe frequency are erosion, gravel quality and quantity, These indicates that blading should receive attention.

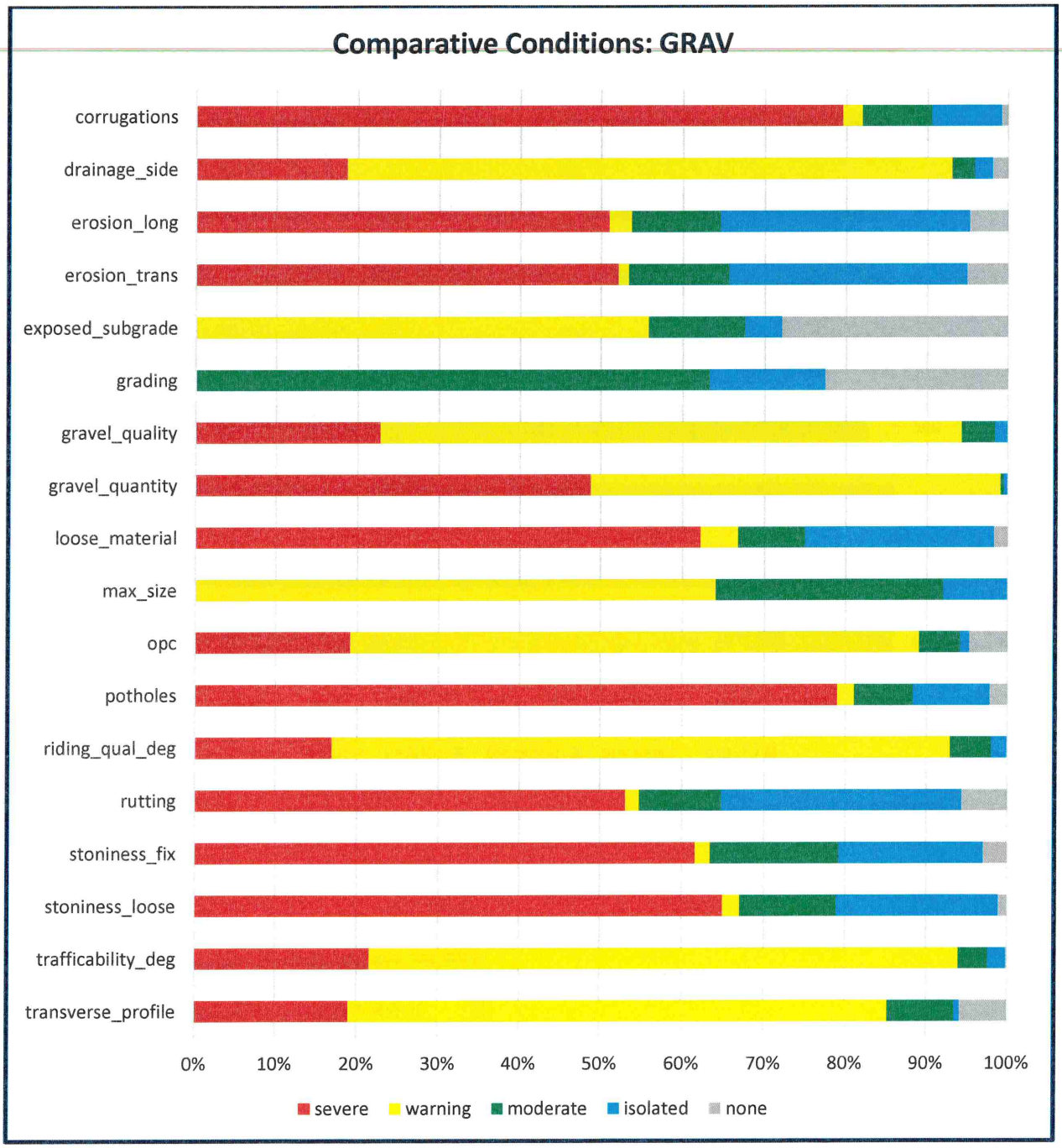


Figure 4-10: Comparative Conditions Unpaved Roads

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4.6 Vehicle Operating Costs (VOC) and Excess User Costs (EUC)and Accident data

VOC is a function depends on Functional Condition Measurements i.e. Road Roughness and Riding Quality, which forms part of the Functional Condition of Assets.

VOC and EUC are derived from Functional Condition Measurement Analysis.

Functional Indices are not reported on.

Vehicle Operating Cost for a network is calculated for light and heavy vehicles in Rand per km. It should also be calculated per RCAM class and road type, and if considered appropriate, per administrative area. Vehicle operating costs uses the Riding Quality Index (IRI) as a function. As IRI is not measured on COTO asset management maturity level II, the vehicle operating cost is not determined in this RAMP. Excess VOC (EUC) is defined as the difference between the VOC at the actual measured riding quality and the VOC at a smooth riding quality.

4.7 Asset Valuation

4.7.1 Current Replacement Cost (CRC)

Assets must be valued regularly to determine their current replacement value and depreciated replacement value and to use these values in financial reporting and to assist in determining when assets or their components should be replaced or rehabilitated.

In the case of road assets, the Current Replacement Cost (CRC) should provide a fair and reasonable value of what it would cost to replace the asset based on recent construction cost of similar assets. The rates allocated to the pavement items to determine the CRC is listed in Table 4-10 below.

Table 4-10: Surface, terrain and Base unit costs and EUL

ID	CATEGORY	TYPE	ITEM	COST_M^2	EUL
1	Surface	Asphalt	AG	75	14
2	Surface	Asphalt	AO	75	14
3	Surface	Asphalt	AC	75	14
4	Surface	Asphalt	AS	75	14
5	Surface	Double Seal	S2	60	10
6	Surface	Single Seal	6	40	9
7	Surface	Single Seal	CS	40	9
8	Surface	Single Seal	13/6	40	9
9	Surface	Single Seal	S1	40	9
10	Surface	Single Seal	S5	25	3
11	Surface	Block	block	250	20
12	Terrain	Flat	F	100	40

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13	Terrain	Rolling	R	200	40
14	Terrain	Mountainous	M	400	40
15	Terrain	Other	other	386	
16	Base	Base	base	250	20

Table 4-11 and Figure 4-11 below presents the CRC, DRC and Depreciation of the paved network. The Current Replacement Cost of JTG's assessed network is valued at R1.7 Billion and the DRC at R291 Million with a depreciation of R1.4 Billion.

Table 4-11: CRC, DRC and Depreciation

MUNICIPALITY/SURFACE	CRC	DRC	DEPRECIATION
GAMAGARA	**R536 056 860.00**	**R152 161 616.01**	**R393 895 243.99**
BLOCK	R30 528 000.00	R11 862 901.00	R18 665 098.72
FLEX	R494 051 150.00	R130 298 714.73	R363 752 435.27
UNPAVED	R11 477 710.00	R0.00	R11 477 710.00
GA-SEGONYANA	**R751 208 832.01**	**R104 936 215.05**	**R646 272 616.96**
BLOCK	R119 739 000.00	R64 152 021.26	R55 586 978.74
FLEX	R364 343 550.00	R40 243 422.99	R324 100 127.01
UNPAVED	R267 126 282.01	R540 770.80	R266 585 511.21
JOE MOROLONG	**R504 308 720.00**	**R44 660 273.98**	**R459 648 446.02**
BLOCK	R53 646 000.00	R15 991 051.54	R37 654 948.46
FLEX	R76 447 300.00	R28 602 142.53	R47 845 157.47
UNPAVED	R374 215 420.00	R67 079.91	R374 148 340.09
Grand Total	**R1 791 574 412.01**	**R291 758 105.04**	**R1 499 816 306.97**

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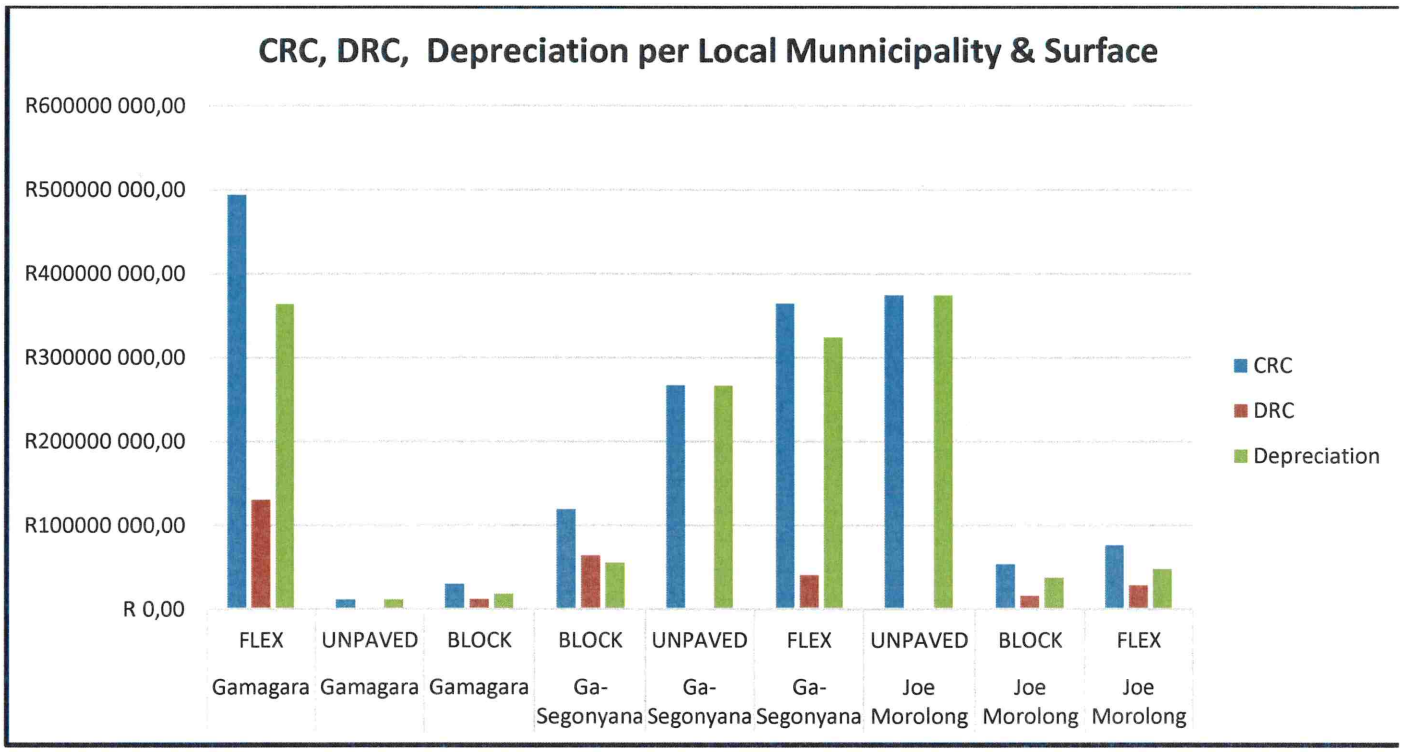


Figure 4-11: CRC, DRC, Depreciation

4.7.2 Depreciated Replacement Cost (DRC)

Depreciated Replacement Cost is the calculated current monetary value of an asset, normally calculated as the Current Replacement Cost minus accumulated depreciation and impairment. The DRC is presented in Table 4-11 above.

For Level I RAMS it is sufficient to assume that the asset life is directly proportional to condition and to use a linear depreciation proportional to the asset Condition. In this case the above formula for DRC reduces to: DRC = CRC x [(CI – Terminal CI)/ (100% - Terminal CI).

4.7.3 Depreciation

The depreciation is the difference between the CRC and DRC and is indicated in Table 4-11 above.

Depreciation = CRC - DRC

4.8 Minimum Ratio of Depreciated Asset Value

TMH22 sets the minimum DRC/CRC ratio as in Figure 4-12 below.

The resulting ratio of DRC/CRC should not be less than the target values for each road class and road type as specified in TMH22 F10.5.

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Road Class	Road Type	Minimum ratio of depreciated asset value to current replacement value
Class 1R	Freeway	50
	Dual	40
	Paved	30
Class 2R	Freeway	50
	Dual	40
	Paved	30
Class 3R	Dual	40
	Paved	30
	Unpaved	20
Class 4R	Paved	40
	Unpaved	30
Class 5R	Paved	40
	Unpaved	20
Class 1U	Freeway	50
	Dual	40
	Paved	30
Class 2U	Freeway	50
	Dual	40
	Paved	30
Class 3U	Dual	40
	Paved	30
	Unpaved	20
Class 4U	Paved	30
	Unpaved	20
Class 5U	Paved	30
	Unpaved	20

Figure 4-12: Extract from TMH22: Minimum ratio of DRC vs CRC

Table 4-12 and Figure 4-13 below presents the extent and percentage of the network not meeting the standards above. The extent of 206.83 km paved (62%) of the flexible network has depreciated beyond the minimum threshold. 42% of the block paved roads and 99% of the unpaved network has deteriorated beyond the minimum threshold. Out of the total network of 3369.01 km, 3202.06 km or 95% of the network has deteriorated beyond the minimum threshold level.

Table 4-12: Extent (km) of Road Network Depreciated beyond the threshold

EXTENT BELOW MINIMUM DRC/CRC				
RCAM_CLASS	**FLEX**	**BLOCK**	**UNPAVED**	**GRAND TOTAL**
U4A	29.55	2.53	98.43	130.51
U5B	156.27	24.31	2267.91	2448.48
U4B	0	0	34.13	34.13
R5	0.33	0	338.13	338.46
U5A	20.69	0	229.79	250.48
R4	0	0	0	0
GRAND TOTAL	**206.83**	**26.84**	**2968.39**	**3202.06**
PERCENTAGE TOTALS	**62%**	**42%**	**99%**	**95%**

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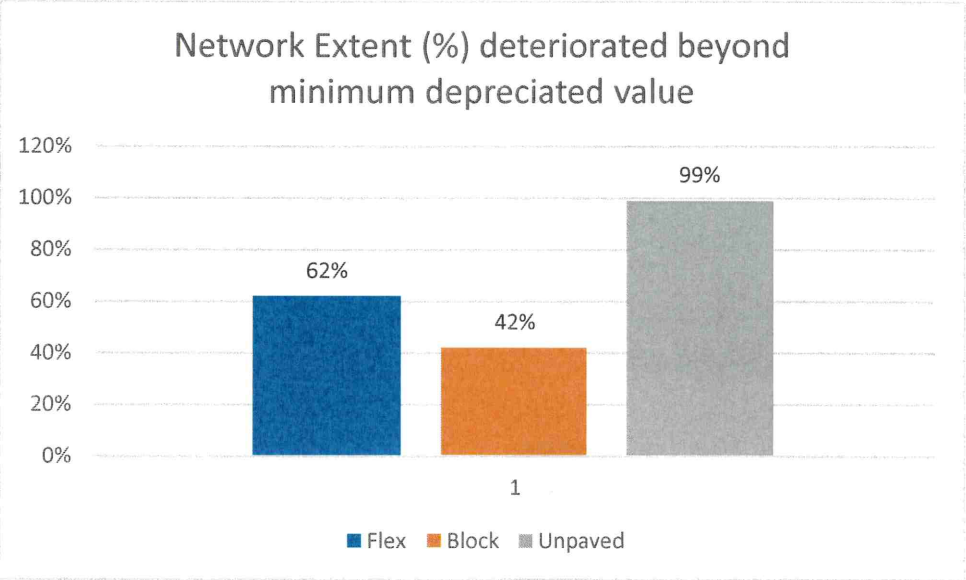


Figure 4-13: Percentage of network depreciated beyond threshold

4.9 Remaining Useful Life (RUL) of Assets

In the context of RAMS, the Remaining Useful Life (RUL) of an asset component is the remaining life over which it can meet its serviceability requirements. In the absence of Functional Condition Criteria and inter alia Life Cycle Cost Analysis, a simplified approach is followed to calculate the Remaining Useful Life (RUL).

The simplified approach is based on the context of financial analysis. Using a linear curve model, the RUL is the life left from the current VCI to a VCI of zero (or other defined value) at which point the component has no remaining useful life.

The RUL of each component is normally determined from its condition (VCI) and the age of the asset. The age of the assets assessed is not known and therefore only the VCI is used. TMH22 sets out Expected Useful Life (EUL) for various road pavement components in a new (Very Good) condition state. The EUL is based on the type of surface and range from 20 years for block pavements, 14 Years for Asphalt seal, 9 years for Single seal and 10 years for Double Seal. Unpaved roads are not calculated.

Table 4-13 and Figure 4-14 below indicates that 184.4 km of the assessed flexible network has less than 5 years in terms of RUL. 19.23 km of the Block Roads assessed has a life left of between 5 and 10 years.

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Table 4-13: Remaining Useful Life of assets (Km)

REMAINING USEFUL LIFE OF ASSETS (KM)		
RUL (YEARS)	**FLEX**	**BLOCK**
5-10	138.23	19.23
10-15	1.12	16.86
>15		19.82
<5	184.4	3.41
GRAND TOTAL	**323.75**	**59.32**

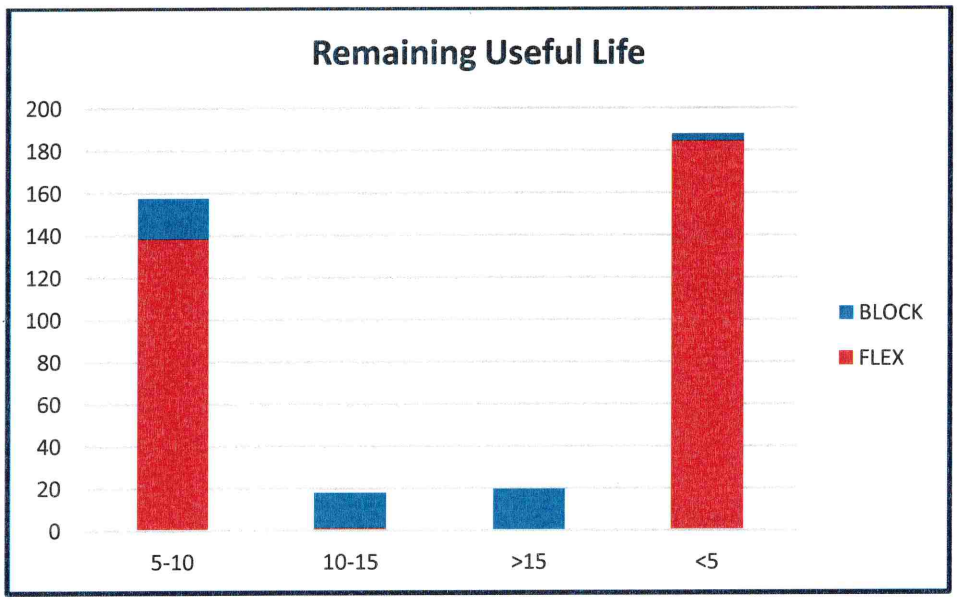


Figure 4-14: RUL

4.10 Risks

When planning for the road asset management system, the District Municipality will consider the issues as in the Policy document and the needs and expectations of all stakeholders and determine the risks and opportunities that need to be addressed to:

- assure the road asset management system can achieve its intended outcomes;
- prevent, or reduce undesired effects; and
- achieve continual improvement.

The District Municipality will plan actions to address these risks and opportunities, and how these can change with time. Planning will also include how to integrate and implement the actions into the road asset management system processes and evaluate the effectiveness of these actions.

Major risks associated with JTG's network include the failure of the road network in terms of condition because of maintenance budget shortages.

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4.11 Trend Analysis

below shows the network condition trend from 2016 to current year 2026. The condition performance of the network is in the downtrend with lower highs in condition index. The network had the best condition index of rci-deduct and cci in the years from 2017 until 2019.The network's condition index has been declining since 2019, the authorities need to optimize maintenance and rehabilitation of their roads.

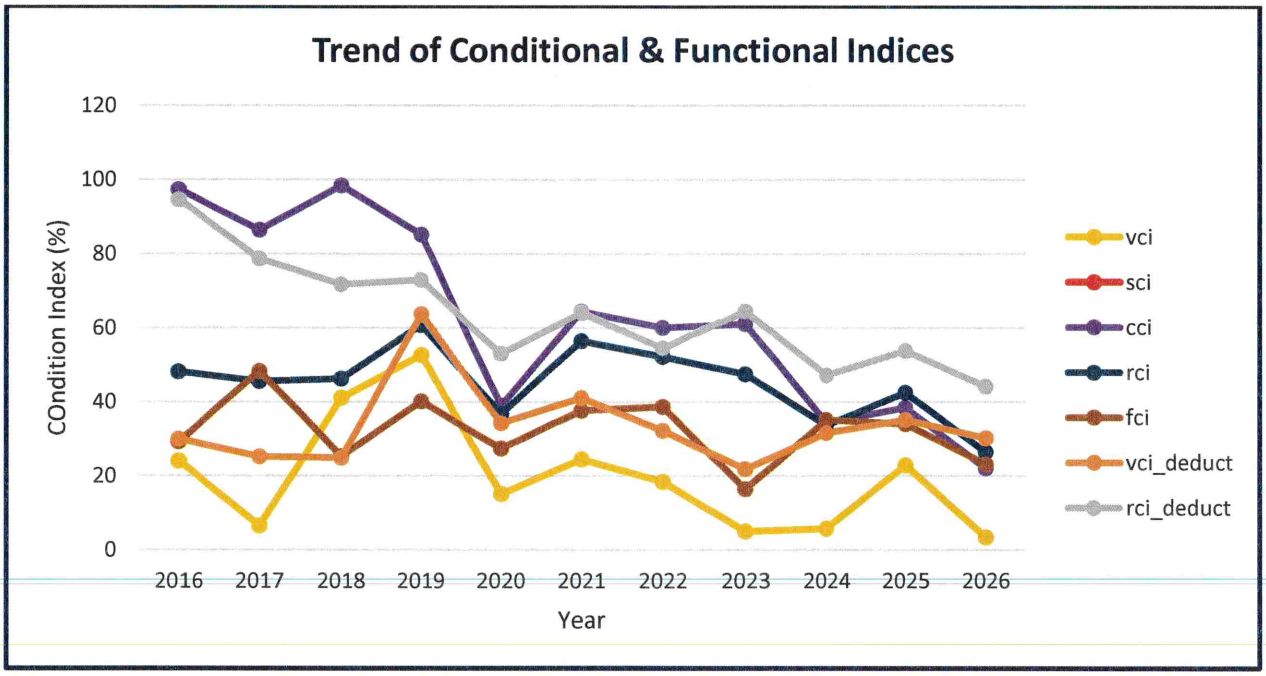


Figure 4-15:Trend analysis over the years

4.12 Summarising Indices

Figure 4-16 represents the index comparisons of flexible roads. A higher composite index score generally indicates a poorer pavement condition and a lower score indicates a better or good pavement condition. All composites are generally in the higher range, which means that the overall condition of the pavement is perceived to be poorer. It should be noted that the function of the road is measured subjectively via visuals and not via road surveillance measurements.

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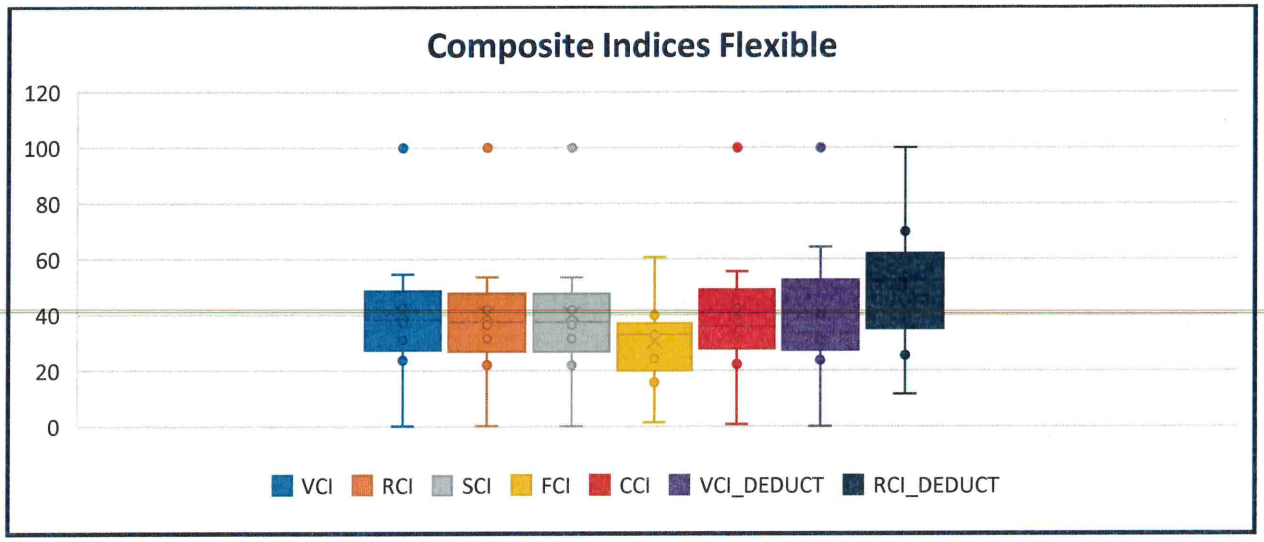


Figure 4-16: Summarised Indices

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5 DEMAND OR NEED DETERMINATION

Demand or need determination are determined by analysing the roads in the network with a gap in the level of service. The demand or need in Rand value is then determined based on the current condition of the asset to bring it to the required level of service.

The Technical Need Determination is based on the typical immediate to short term duration and does not address future needs based on performance prediction or Life Cycle Cost Analysis (LCCA), where first treatments of strategies over a short term (1 to 5 years), under no budget constraints, are considered as the technical needs.

Performance Prediction and LCCA do not form part of JTG's Level I analysis as it requires the input of Road profile and deflection measurements and LCCA analysis.

The purpose of the Network Level Road Asset Management Study is to provide an overview of the condition and needs of the assessed strategic network

After the Demand and Need is established, the roads should be prioritised in order of importance, upon which a panel inspection should be completed.

5.1 Units and rates

The maintenance cost is derived using the rates in Table 5-1 below. The rates proposed were populate in consultation with various roads construction contractors with majority of them based in the Gauteng. LMs need to share their maintenance rates with the district so that they can be included and used for estimating maintenance needs of the roads.

Table 5-1: Treatment types and unit rates

MAINTENANCE PROGRAMME	TREATMENT	UNIT	RATE (RAND)
CRACK SEAL	CRACK SEAL	m2	55
PATCHING	PATCHING	m2	0
RESHAPE	RESHAPE	m2	35
REGRAVEL	REGRAVEL	m2	40
RESURFACE	RESURFACE	m2	120
RECONSTRUCT (GRAV)	RECONSTRUCT (GRAV)	km	1 950 000
RECONSTRUCT (FLEX)	RECONSTRUCT (FLEX)	km	9 500 000
DUST TREATMENT	DUST TREATMENT	km	200 000
BLADE	BLADE	km	11 000
DILUTED EMULSION	DILUTED EMULSION	m2	35
REHABILITATION	REHABILITATION	m2	480
PATCH 20 AND SEAL 100	PATCH 20 AND SEAL 100	m2	220
UPGRADE TO PAVED	UPGRADE TO PAVED	m2	330
SPECIAL MAINTENANCE	SPECIAL MAINTENANCE	m2	240

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5.2 Need Determination of Current Assets

Effective maintenance is achieved through efficient scheduling of resources, proper planning, and application of road maintenance types. These road maintenance types are classified as follows:

Maintenance and Rehabilitation (M & R) actions is grouped by the following categories:

- Cyclical Maintenance:
    - Periodic Maintenance a- periodic maintenance treatments are ideally applied on roads prior to the manifestation of distresses. Its purpose is to extend the life of the road and to keep it in good condition. Works performed under the preventive maintenance program are resurfacing and re-gravelling.
    - Routine Maintenance – refers to the day-to-day operational activities to keep the asset or road in a smooth and trafficable operational manner (repair of potholes, surface cracks, cleaning of drains, blading of gravel roads, etc.) and forms part of the annual operational budget.
- **Event Driven** – focus on events leading up to maintenance actions e.g., disaster management and accidents.
- Condition Responsive Maintenance:
    - Rehabilitation/reconstruction -involves removing the entire portion of the roadway and replacing it with new layers or strengthening the road with additional layers. This maintenance activity usually occurs when the condition of the road reaches a point where preventive maintenance is no longer cost-effective. Reconstruction can also be seen as the replacement of the asset to its full functional condition.
- Special Maintenance -- is mostly applicable when a portion of the road structure or surface requires total reconstruction even though it may still be within or not even close to 50% of its remaining useful life. This usually occurs due to failure of underlying layers and underground water rising up, which results in surface layer pumping.
- **Functional Responsive Maintenance:** Need Determination based on betterment, expansion and upgrading based on intervention criteria such as traffic, accident data, volume/capacity analysis which do not form part of JTG's Level I RAMS.

5.3 Paved Cyclical Maintenance needs of LMs

5.3.1 Routine & Periodic

Routine or Periodic cyclical maintenance refers to various treatments applied to maintain the condition of the roads infrastructure and preserve their functionality; it consists of planned activities that are performed at regular intervals. It is done to prevent deterioration, avoid more costs in unplanned repairs. Cyclical maintenance should be done at least once a year or based on s developed schedule. Activities should be done at a frequency of monthly / weekly for routine, annually for preventive and as emergency based on the functional need of the structure. The tables below give the extent and cost of cyclical maintenance need per local municipality.

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Table 5-2: Paved Cyclical Maintenance Need - Gamagara LM

TREATMENT	LENGTH_KM	COST
PATCHING, SEAL, PATCH 20 AND SEAL 100	0.1	R 545 400.00
PATCHING, SEAL	0.44	R 811 580.00
SEAL	3.59	R 5 060 000.00
SEAL, PATCH 20 AND SEAL 100	53.35	R 258 604 800.00
DRAINAGE IMPROVEMENT SHOULDERS	0.06	R 190 800.00
GRAND TOTAL	**57.54**	**R 265 209 580.00**

Table 5-3: Paved Cyclical Maintenance Need - Ga-Segonyana LM

TREATMENT	LENGTH_KM	COST
PATCH 20 AND SEAL 100	0.39	R 1 201 200.00
PATCHING, PATCH 20 AND SEAL 100	0.29	R 1 008 910.00
SEAL	0.36	R 504 000.00
SEAL, PATCH 20 AND SEAL 100	18.61	R 76 275 200.00
DRAINAGE IMPROVEMENT SHOULDERS	0.35	R 40 441.50
DRAINAGE IMPROVEMENT SIDE DRAINS	0.03	R 20 080.20
GRAND TOTAL	**20.03**	**R 64 563 600.00**

Table 5-4: Paved Cyclical Maintenance Need - Joe Morolong LM

TREATMENT	LENGTH_KM	COST
SEAL	2.19	R 3 066 000.00
SEAL, PATCH 20 AND SEAL 100	14.01	R 61 497 600.00
GRAND TOTAL	**20.03**	**R 79 049 831.70**

The total cost for cyclical maintenance of paved roads is R 1 075 685 511.00 over a length of 323.02 km across the whole district. Gamagara requires the largest amount of R265 209 580.00 over the length of 57.54 km which is the largest extent.

5.3.2 Paved Cyclical Maintenance Need v/s Budgets

The applicable road maintenance type should be performed prior to the road beginning to break up, even when the road surface is still in good condition. Road users and respective communities have a vital role to play in the preserving of the road network infrastructure from being damaged through, i.e. unattended oil & diesel spillages, fire burning and illegal diversion of surface runoff. Therefore, providing general

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awareness to the public on the value and importance of preserving the roads network infrastructure is essential towards ensuring that the design lifespan (expected useful life) is not disturbed or reduced. Local Municipalities should have programmes for implementation to extend the lifespan and improve functionality of their roads. The tables below give a comparison between planned maintenance costs and the assessed and determine maintenance costs per local municipalities.

Table 5-5: Maintenance Budget v/s Gamagara Budget

TREATMENT	BUDGET NEED (AS PER RRAMS) & KM	LOCAL MUNICIPALITY BUDGET/ESTIMATE & KM	SHORTFALL / SURPLUS	COMMENT
RESEAL, SEAL & PATCHING TREATMENTS	R 265 209 580.00 (57.54 km)	R 10 500 000.00 (5.9 km)	- R 254 709 580.00 (- 51.64 km)	Values from IDP 2025/26, currently LM does not have a budget, Cost indicated is an estimate. KPI target by June 2027

Table 5-6: Maintenance Budget Needs v/s Ga-Segonyana Budget

TREATMENT	BUDGET NEED (AS PER RRAMS) & KM	LOCAL MUNICIPALITY BUDGET/ESTIMATE & KM	SHORTFALL / SURPLUS	COMMENT
RESEAL, SEAL & PATCHING TREATMENTS	R 64 563 600.00 (20.03 km)	R 150 000 000.00 (-)	R 85 436 400.00 (-)	Values from IDP 2025/26, currently LM does not have a budget, Cost indicated is an estimate.

Joe Morolong local municipality does not have planned programme for maintenance of paved roads, priority is given to unpaved roads for bladding. Ga-Segonyana has estimated a large sum of R150 000 000.00 for cyclical maintenance across all paved roads. The estimated value is developed from IDP consultations. Gamagara has a large budget shortfall, it must be noted that the estimate amount was obtained from the IDP 2025/26 and that Gamagara is actively doing responsive maintenance on their roads, this could include some of the roads assessed and analysed as cyclical maintenance.

5.4 Engineering Condition Responsive Maintenance per LM

Responsive maintenance is often referred to as corrective maintenance; it aims to address surface distresses identified during assessments or visual inspections. The tables below give details of maintenance needs per LM.

Table 5-7: Engineering Condition Responsive Need - Gamagara LM

TREATMENT	LENGTH_KM	COST
REHABILITATION	84.42	R 264 040 000.00
RESURFACING	27.63	R 48 352 500.00
GRAND TOTAL	**112.05**	**R 312 392 500.00**

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Table 5-8: Engineering Condition Responsive Need- Ga-Segonyana

TREATMENT	LENGTH_KM	COST
REHABILITATION	96.95	R 306 540 000.00
RESURFACING	10.22	R 17 195 000.00
GRAND TOTAL	**107.17**	**R 323 735 000.00**

Table 5-9: Engineering Condition Responsive Need - Joe Morolong LM

TREATMENT	LENGTH_KM	COST
REHABILITATION	9.11	R 29 125 000.00
RESURFACING	0.92	R 1 610 000.00
GRAND TOTAL	**10.03**	**R 30 735 000.00**

The total cost for engineering condition responsive need is R 1 075 685 511.70 over the total length of 323.02 km. The estimate is calculated based on the same length of roads as cyclical maintenance, this is due to the fact that only 45.57 km of the total paved road is between good and very good condition which makes only 11%. This suggests that all the roads require engineering condition responsive treatment to restore and extend the lifespan and functionality of the roads.

5.4.1 Condition Responsive Maintenance Need v/s Budgets

Local municipalities are constantly developing business plans to acquire funds for the upgrading, new construction, resurfacing and rehabilitation of roads. The tables below compare the gap between what has been estimated using data obtained from condition assessment and each municipality's planned programmes.

Table 5-10: Gamagara responsive need v/s budget

TREATMENT	BUDGET NEED (AS PER RRAMS) & KM	LOCAL MUNICIPALITY BUDGET/ESTIMATE & KM	SHORTFALL / SURPLUS	COMMENT
RESURFACING, REHABILITATION, CONSTRUCTION, UPGRADES	R 312 392 500.00 (112.05 km)	R 39 200 000.00 (-)	- R 273 192 500.00 (-km)	Values from IDP 2025/26, project include refurbishment, upgrades and new construction. Some projects are unfunded while most are funded by Kumba SLP

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Table 5-11: Ga-Segonyana Responsive Need v/s Budget

TREATMENT	BUDGET NEED (AS PER RRAMS) & KM	LOCAL MUNICIPALITY BUDGET/ESTIMATE & KM	SHORTFALL / SURPLUS	COMMENT
RESURFACING, REHABILITATION, CONSTRUCTION, UPGRADES	R 323 735 000.00 (107.7 km)	R 73 802 907.60 (- km)	- R 249 932 092.40 (-km)	Projects funded by MIG and Kumba mine -Anglo American

According to Joe Morolong IDP 2025/26, Joe Morolong has a backlog of 6km paved access road and 2km paved internal road per settlement. A list of about 30 projects intended to address this backlog is provided, the projects are not yet registered and as a result, they are unfunded or there is no sourced funding for implementation.

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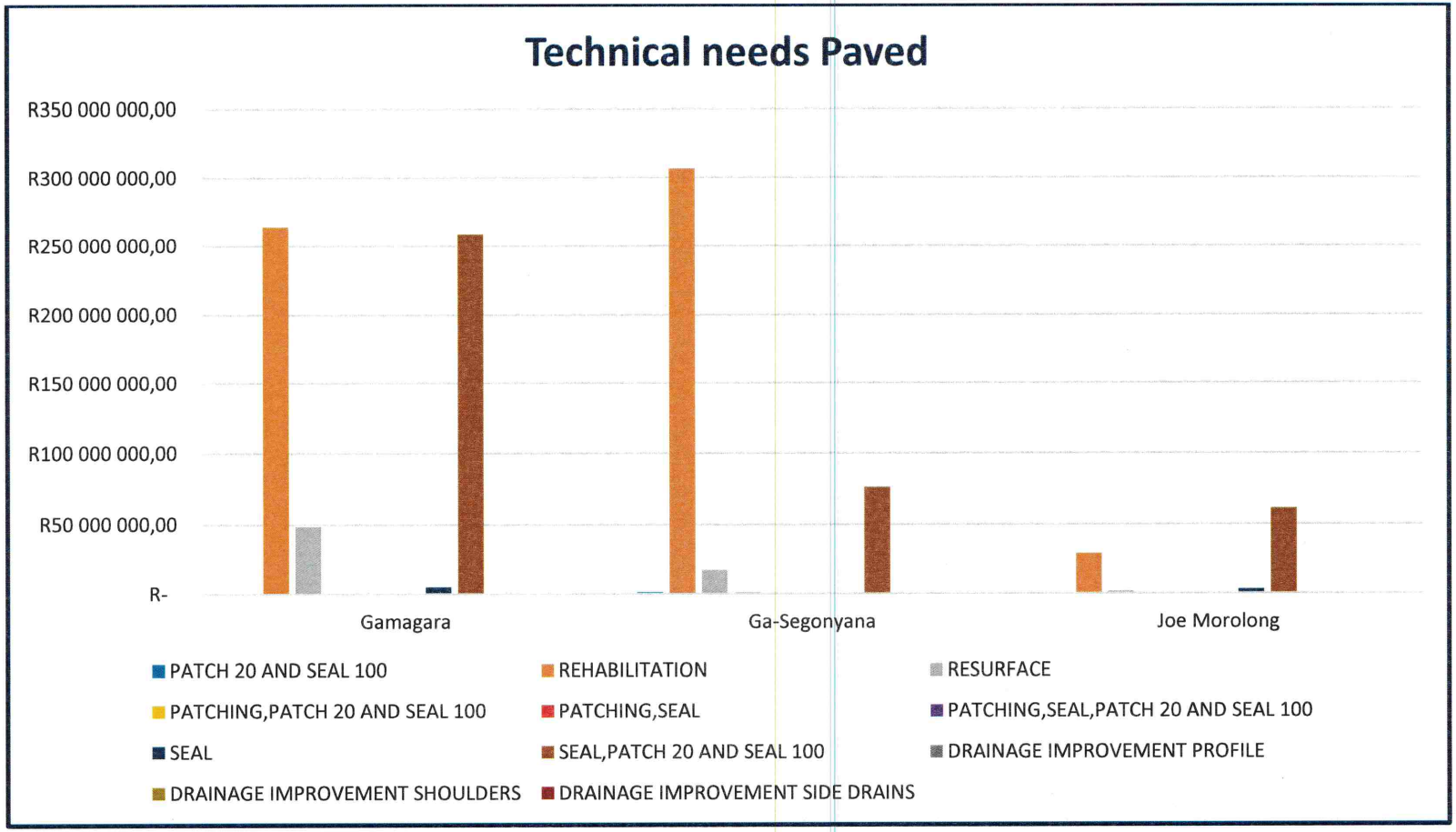


Figure 5-1: Maintenance Needs

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5.5 Unpaved Road Initial Need Determination

Maintenance actions on the unpaved network is grouped by the following maintenance actions:

- Cyclical Maintenance:
  - **Blading:** Blading entails the operation where a gravel road is graded to remove loose and oversize material from the surface, in order to ensure good riding quality.
- **Event Driven** – focus on events leading up to maintenance actions e.g. disaster management and accidents.
- Condition Responsive Maintenance:
  - **Dust treatment:** One of the drawbacks of gravel roads is that they are prone to giving off dust, particularly as daily traffic increases. Clouds of road dust can be a nuisance for those living nearby as dust settles on their homes and parked vehicles. Road dust in the air can potentially affect the quality of life of the road neighbourhood. This dust can also pose serious safety issues for drivers by causing impaired vision.
  - **Regravelling:** Re-gravelling as implied by the description, requires the addition of material (suitable gravel wearing course as defined in *TRH20: Structural Design Construction and Maintenance of Unpaved Roads (1990)*) to increase the thickness of the wearing course. Material is placed, shaped and compacted. For Re-gravelling, cognizance of the existing road levels should be considered. In some instances, it may be noted that existing levels necessitates the removal of material (cut to spoil) prior to importing new suitable gravel wearing course material. The need for re-gravelling is a direct function of gravel quantity and hence the frequency of re-gravelling would be ascertained from regular blading operations and or visual assessments.
  - **Reconstruction**/ rehabilitation maintenance - reconstruction involves removing the entire portion of the roadway and replacing it with new layers or strengthening the road with additional layers. This maintenance activity usually occurs when the condition of the road reaches a point where preventive maintenance is no longer cost-effective. Reconstruction can also be seen as the replacement of the asset to its full functional condition.
- **Functional Responsive Maintenance:** Need Determination based on betterment, expansion and upgrading based on intervention criteria such as traffic, accident data, volume/capacity analysis which do not form part of JTG's Level I RAMS.

5.5.1 Unpaved Cyclical Maintenance Need per LM

Cyclical Maintenance i.e., blading amounts to 82.09 km for R 985 080.00. Very little extent requires blading, this means that most of the unpaved roads may need more condition responsive need treatments which indicates that the roads have deteriorated.

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Table 5-12: Blading Treatment Needs

LOCAL MUNICIPALITY	TREATMENT	LENGTH_KM	COST
Gamagara Local Municipality	BLADING	0.53	R 6 360.00
Ga-Segonyana Local Municipality	BLADING	20.17	R 242 040.00
Joe Morolong Local Municipality	BLADING	61.39	R 736 680.00
GRAND TOTAL		**82.09**	**R 985 080.00**

5.5.2 Unpaved Condition Responsive Maintenance Need per LM

The network level maintenance and rehabilitation technical needs for JTG unpaved roads is summarized as follows in the table below. Engineering responsive maintenance i.e., Reconstruct gravel accounts for the largest proportion of maintenance at R4 Billion and 345.97 km.

Table 5-13: Unpaved Maintenance Need

LOCAL MUNICIPALITY	TREATMENTS	LENGTH_KM	COST
Gamagara Local Municipality	REGRAVEL	0.12	R22 500.00
Ga-Segonyana Local Municipality		33.96	R6 516 375.00
Joe Morolong Local Municipality		14.92	R2 797 500.00
TOTAL FOR REGRAVEL		**49**	**R9 336 375.00**
Gamagara Local Municipality	**RECONSTRUCT (GRAV)**	8.71	R182 442 000.00
Ga-Segonyana Local Municipality		8.71	R1 973 029 500.00
Joe Morolong Local Municipality		2151.78	R2 163 544 500.00
TOTAL FOR RECONSTRUCT		**2214.88**	**R4 319 016 000.00**
	GRAND TOTAL	**2345.97**	**R4 329 337 455.00**

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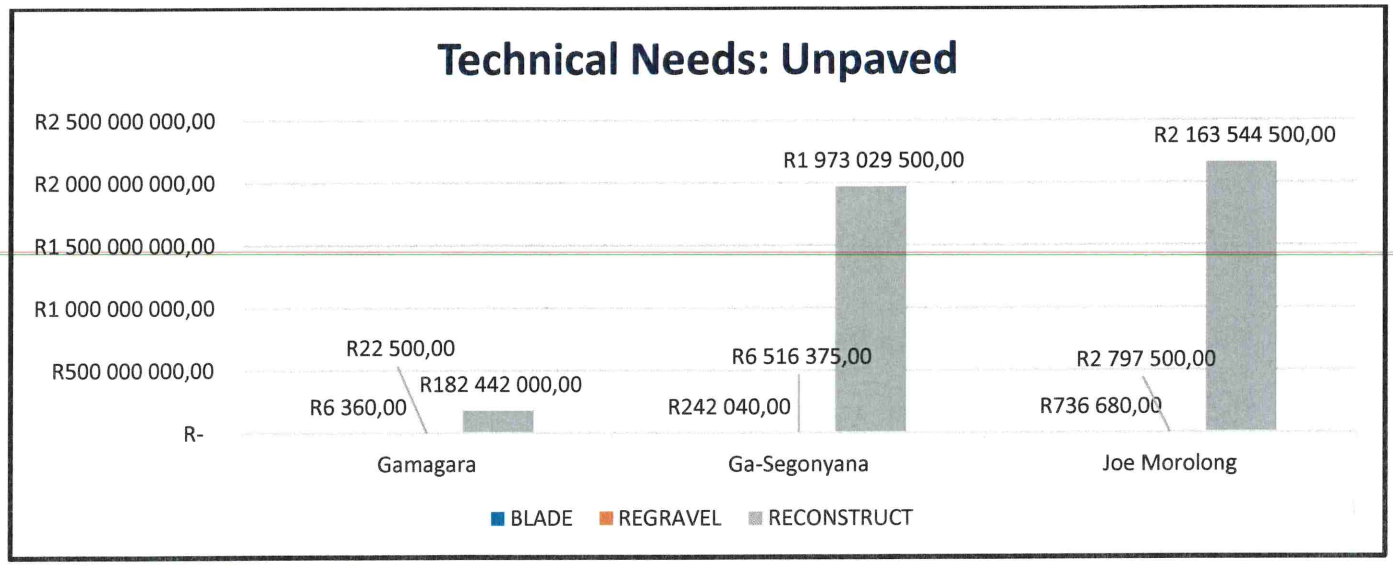


Figure 5-2: Unpaved Maintenance Need

5.6 Event driven Maintenance Needs

Event driven maintenance needs can result in construction of new assets, renewal of existing assets or the upgrading of existing assets. It is reactive or emergency maintenance as it requires urgent repairs for hazardous conditions that may pose as a threat. Event driven maintenance is triggered by a number of occurrences such as environmental and weather events, traffic incidents and emergencies. Information regarding current event driven maintenance could not be obtained from all three local municipalities, it is not clear whether there are any event driven maintenance projects planned.

Ga-Segonyana Local Municipality.

The Ga-Segonyana local municipality 's roads and storm water department gave a report in the PSC meeting that they have embarked on initiative to develop a programme for maintenance of their roads with priority given to town and nearby residential roads. The programme is as follows:

Immediate interventions scheduled for 0-12 months

- Pothole repairs in CBD and industrial routes
- Edge repairs and reinstatement of failed shoulders on school route and economic access roads
- Signages

Medium term interventions scheduled for 1-3 years

- Structured reseal programme (slurry seals, chip seal etc.) for residential and selected CBD roads where the structure is recoverable
- Rehabilitation on key CBD and collector roads with significant structural distresses.

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Long-term interventions scheduled for 3-5+ years.

- Full pavement reconstruction of chronically failing industrial roads and high-volume roads.

Gamagara Local Municipality

According to the 2025/26 IDP, two projects were implemented in the financial year 2024/25. The projects entail the upgrading of internal roads in Dibeng and Mapoteng, the projects are funded by Kumba SLP. The table below gives details of projects funded by the mine.

Table 5-14: Gamagara LM Mine Funded Projects

FUNDER	PROJECT	BUDGET	EXPENDITURE	STATUS
Kumba SLP	Construction of internal roads in Dibeng, 1.3 km and associated stormwater	R 20 669 286.79	R 19 728 669.42	Completed
Kumba SLP	Construction of internal roads in Mapoteng, 1.2 km and associated stormwater	R 13 975 678.20	R 13 975 678.20	Completed

The municipality has planned upgrading of roads in Olifantshoek for the 2025/26 financial year. The project is also funded by the mine.

Joe Morolong Local Municipality

The Joe Morolong LM does not have a plan on maintenance of roads as they have few paved roads with flexible surface. Heavy rains during January and February 2021, caused serious damages to some of the road infrastructure. Flooding occurred all over the Northern Cape and affected all the wards in the Joe Morolong Municipal area. Because most roads in the area are gravel roads, severe infrastructure reparations will be required to fix damages. In some areas, culvert bridges were washed away. The listed below are culverts bridges that were affected and no information on the status quo for planning of these projects has been shared by the municipality.

- Madibeng / Seven
- Vanzyslrus
- Ditlharapeng
- Ditshipeng
- Dithakong
- Matlhabanelong
- Bothitong
- Cardington

The table below gives a list of projects that Joe Morolong is currently implementing on roads and stormwater.

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FUNDER	PROJECT	PRJECT VALUE	STATUS
MIG	Nchwelengwe internal road phase 3	R 6 862 453.25	Completed
MIG	Gahuwe to Ditahkong access road phase 3	R 7 000 000.00	Completed
SLP	Kokfontein access road	R 32 545 000.00	Completed
	Masankong access road	R 9 200 000.00	Completed
	Motolwaneng – Gadiboe acess road	R 9 567 183.00	Completed
SLP	Mentu access road	R 11 500 00.00	Completed
	Kiankop access road	R 16 311 124.44	Current, 92% complete
	Gasese to Mokalawanoga access road Phase 2	R 11 849 994.25	Current , 66% complete

Joe Morolong has planned two projects for upgrades in the 2026/27 – (R6 000 000.00) and 2027/28 (R 10 986 298.92). The projects are for March and Shalanang villages.

5.7 Functional Responsive Needs

Functional Responsive needs include the determination of needs for betterment, expansion and upgrading based on functional condition data in a technical need's analysis based on intervention criteria such as traffic, accident data, volume, and capacity analysis.

John Taolo Gaetsewe District Municipality reports on condition and usage at a Level I RAMS. The following. Condition and Usage (functional indices) in the bulleted list below is therefore **excluded** in this RAMP.

- Volume Capacity of HTM
- Riding Quality
- Skid Resistance
- Macro Texture
- Personal Injury Accident
- Smooth Travel Exposure
- Low Rut Exposure
- High Texture exposure
- Functional Indices for Structures
- Overall Bridge Conditions Exposure

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5.7.1 Betterment / Expansion and Upgrading

As indicated in the previous chapter (5.6) projects have been listed for each municipality. These projects include activities that are meant to make roads better including upgrades. Ga-Segonyana has developed a maintenance programme for both upgrades and betterment (reseal, pothole patching etc.), Gamagara has collaborated with Kumba SLP on upgrades of internal roads within Mapoteng, Dibeng and Olifantshoek villages while Joe Morolong has completed a number of access roads in various projects, some funded by MIG and some by SLP. Details are provided in section 5.6.

5.8 Project Ranking

Roads are prioritized according to traffic, VCI and RCAM class. Attached as Appendix G is a list of roads in no specific order or priority. The roads on the list are to be panel inspected and the final road projects to be chosen. Currently, JTG has not established inspection panel, the list of roads is developed using a matrix system developed as per the TMH22 matrix for project index numbers. The list can also be found on the system used to manage data. LMs use their own developed consolidated roads and stormwater master plan to identify projects, the data from the system is used to confirm the conditions of the identified roads in the stormwater master plan. Panel inspections are in a process of being formed and this shall be reported in future. Refer to Chapter 9: Plan Improvement and Monitoring and Appendix C: Gap Analysis.

5.8.1 Ga-Segonyana LM

The municipality has developed a programme for roads and stormwater maintenance, the programme identifies projects and their priority. The municipality uses a system of categorizing the identified roads under P1-P4. The categories are as follows:

- P1 – Priority 1 = Critical roads
  Recommendations: full reconstruction (including base layers and surfacing)
  Dominant Area: CBD & Industrial

- P2 – Priority 2 = High priority roads
  Recommendations: Deep patching and 30 mm asphalt overlay
  Dominant areas: major residential distributors and some CBD links

- P3 – Medium priority roads
  Recommendations: reseal, crack sealing and minor patching
  Dominant areas: residential roads still in fair structural condition

- P4 – Low Priority roads
  Recommendations: routine and preventive maintenance
  Dominant areas: roads still in generally good condition.

5.8.2 Gamagara LM

There is no reported method of prioritization of roads by Gamagara LM. Information could not be obtained.

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5.8.3 Joe Morolong LM

Joe Morolong does not have a maintenance plan or programme, however, projects are prioritized through IDP consultations for development of an action plan, roads master plan is also used for guidance. Upgrading of roads projects are prioritized through council.

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5.9 Decision support (DS) system

5.9.1 Contextual

"Decision support (DS)" is defined by the judgement of future condition and priorities in terms of strategies, rankings, return on investment, predictions, and empirical predictions of asset conditions. In the broader sense. DS may include the software used, tools, strategies, calculations, information, and systems. "Decision support systems" usually refer to software e.g., HDM4 and DTims, but in the case of JTG, DS is based on systems developed by GEORAMS.

Decision Support influence the following attributes of a Road Infrastructure Asset Management System:

- Condition Indices
- Functional Indices
- Identification of Treatments
- Prioritizing of rehabilitation and maintenance actions
- User Cost
- Depreciation/Remaining Useful Life (RUL)
- Project Confirmation

The levels of Decision Support analysis that are used must be balanced with the Level of asset management being practiced. Higher levels of DS require greater accuracy of data and substantial historic data to have confidence in the forecasting or logic models that are used.

5.9.2 Geographic Information System

GeoRAMS is an GIS centric platform that displays all road infrastructure assets spatially through interactive maps. Refer to Appendix D: Maps.

5.9.3 Data Analysis

Analysis systems are used to process and analyse data to provide decision support to asset managers. In line with a level I and II decision support system, GeoRAMS support:

- Basic asset data, rule-based work allocation
- Project and network level assessment, geographic reference
- Calculation of level I and II TMH/TRH indices (VCI, RCI, FCI, SCI, AADT, etc.)
- Calculation of treatment programs and costs

5.9.4 Decision Support (DS) implemented by JTG.

A service provider is appointed to implement an integrated web-based road asset management system with the following capability:

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- Web/mobile based system with interactive mapping function
- User configurable dashboards and reports
- Relational spatial database
- GRMS and PMS calculations
- Treatment calculations and reports
- TMH18 downloads
- Mobile data collection according to TMH18 standards
- Sharing and collaboration capability with access control

The mobile application is fully complaint to the TMH18 standards and condition assessments are automatically sent and imported into the system.

GRMS and PMS calculation are automatically performed on data submission and treatment reports generated. TMH18 reports are generated automatically for exporting.

The system complies to the data management system requirements of TMH22 section D.5.5, as outlined below in **Chapter 6 on page 13.** JTG has created system access for the LMs, training was provided to each LM representatives. Each LM has access to only their information. Engagements with LMs have been done to get feedback on usage of the system and check if there are any challenges, two LMs (Ga-segonyana & Gamagara) have confirmed utilization of the system and that no challenges have been encountered, the district is available to provide support.

5.10 Demand for New Assets

The district has established an infrastructure forum that includes local municipalities and other sector departments. This platform allows for the discussion of ongoing infrastructure projects, their progress, challenges, and mitigation strategies, also it allows identification of demands of new assets and additionally, the forum provides an opportunity to identify and address the needs for new assets and construction projects. The district is committed on supporting the local municipalities through this collaborative approach. Projects that are running and identified for possible funding are discussed below per department and municipality. Due to the mines within the district, there is a high demand of constructing new assets.

5.10.1 Sector Department projects

Projects broken down into the following sections and provide a list of concept projects both provincial and municipal.

Infrastructure Projects

- Rehabilitation Of Bitumen Surface Road (Bendel – Loopeng 39 Km
- Rehabilitation Of Bitumen Surface Road (Hotazel to Heuningvlei 163 Km)
- Rehabilitation Of Bitumen Surface Road (Laxey to Madibeng 43 Km)
- Rehabilitation Of Bitumen Surface Road (Loopeng to Laxey 29 Km)

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- Rehabilitation Of Bitumen Surface Road (Seoding Weg – Kuruman Town 7 Km)
- Rehabilitation Of Bitumen Surface Road (Tshukudung – Vergenoeg 6 Km)
- Rehabilitation Of Bitumen Surface Road Samsokolo to Loopeng 40 Km
- Upgrade Of Internal Municipal Roads Bitumen Surface and Interlocking Paving Block Surface (District Area 1165 Km)
- Upgrade To Bitumen Surface Road - Interlinking National Road to Mining Areas (Aunty Naomi (N14) To Hotazel 75Km)

- Upgrade To Interlocking Paving Block Surface Road – Interlinking Cemeteries (Seoding 5Km)
- Upgrade To Interlocking Paving Block Surface Road – Interlinking Villages (Bankhara – Seoding 7Km)
- Upgrade To Interlocking Paving Block Surface Road – Interlinking Villages (Deben 12,5 Km)

5.10.2 Local Municipalities with SLPS

As mentioned in 5.10, municipalities share information using our quarterly infrastructure forum platform and IDPs.

5.7.2.1 Ga-Segonyana Local Municipality

According to the draft IDP 2025/26, MIG has approved about R 82.4 million for the upgrade of gravel roads to paved roads and paved roads between the 2024/25, 2025/26 and 2026/27 financial years, furthermore the Draft budget 2023/24 to 2025/26 indicates that capital budget has increased by R34 million giving a total of R 192 million of which will be funded by MIG, of the R192 million, R63 399 000.00 has been approved and allocated across various infrastructure upgrades. Upgrading of gravel internal roads (Tsago road) is part of the identified projects for the allocation. In addition to this, Kumba Iron Ore has committed R38 million on the upgrading of access roads between Batlharos and Klein Neira. The tables below give a detailed summary:

Table 5-15: MIG Projects for Ga-Segonyana LM (Table 66: Pg 138: IDP 2024/25)

PROJECT NAME	2024/25 (AMOUNT)	2025/26 (AMOUNT	2026/27 (AMOUNT
Batlharos RDP Mothusi Dichabe drive (KP Toto road) upgrading of gravel internal road to paved road		R15 597 869,36	R20 789 864,91
Mothibistad paved road unit 2 (Learamele area, methodist church and Uni 2)	R9 280 945,27	R15 416 173,33	
Maruping upgrading of gravel internal road to paved road (Tsago Road)	R21 354 653,86		

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TOTAL APPROVED MIG ALLOCATION	**R 30 635 599,13**	**R 31 014 042,69**	**R20 789 864,91**

Table 5-16: SLP Infrastructure Projects for Ga-Segonyana LM (Pg 140: IDP 2025/26)

PROJECT NAME	PROJECT VALUE	YEAR
Access road at Diamond View	R 22 000 000.00	2024-2025
Intermodal transport facility (Bus and Taxi Rank)	R 63 000 000.00	2024-2025

Table 5-17: Sector Department Funded project - SANRAL

PROJECT NAME	PROJECT VALUE	YEAR
Kagung pedestrian facilities (hawker facilities) and services roads to consolidate access to N14	R 2 000 000.00	2024-2025

Kuruman town has been experiencing a lot of pressure in traffic due to transportation of goods and minerals by heavy tracks to the mines. Due to congestion of traffic within the Kuruman town, there is a need to construct a buy pass road for heavy tracks offering services to the mines to minimise the traffic flow and congestion in Kuruman town. A Geotech study has been done for this project and Gasegonyana LM is on a progress to source out funding.

Project Details: Construction of by-pass road N14 /R31 (Phase 1 (A&B) to 3)

Location: Kuruman

Cost Estimate = R 300 000 000.00

5.7.2.2 Gamagara Local Municipality

Table 5-18:Gamagara LM – SLP Funded projects

FUNDER	PROJECT NAME	PROGRESS	BUDGET	EXPENDITURE
Kumba SLP	Construction of internal roads in Dibeng	Project is complete	R20 669 286,79	R19 728 669.42
Kumba SLP	Construction of internal roads in Mapoteng	Project is complete	R13 975 678.20	R13 975 678.18
Kumba SLP	Olifantshoek Internal roads upgrade	Tender pack complete, still need inputs from Olifantshoek forum	R 17 250 000	R 686 550.00

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In support of the progress stated above, Khumba SLP committed about R20 million and R 15 million respectively over five-year plan starting from 2022/23 to 2026/27. The planned projects entail upgrading of internal roads in various areas within Gamagara LM. The table below give details of the road's infrastructure projects planned by the mine in Gamagara LM. The table above gives progress on the roads stated in the tables below.

Table 5-19: Sishen Priority List for Gamagara LM

PROJECT NAME	2022 (VALUE)	2023 (VALUE)	2024 (VALUE)	2025 (VALUE)	2026 (VALUE)	TOTAL
Upgrading of internal main gravel roads in Mapoteng		1000 000		5000 000	2000 000	**R 8 000 000**
Upgrading of internal main gravel roads in Dibeng		1000 000		4000 000	7000 000	**R 12 000 000**
GRAND TOTAL		2000 000		9000 000	9000 000	**R 20 000 000**

Table 5-20: Khumani Five Year Project Plan for Gamagara LM

PROJECT NAME	2022/23 (VALUE)	2023/24 (VALUE)	2024/25 (VALUE)	2025/26 (VALUE)	2026/27 (VALUE)	TOTAL
Olifantshoek internal roads upgrade	5000 000	5000 000	5000 000			**R 15 000 000**

Table 5 8: Kumba iron ore Five Year Project Plan for Gamagara LM

PROJECT NAME	2022/23 (VALUE)	2023/24 (VALUE)	2024/25 (VALUE)	2025/26 (VALUE)	2026/27 (VALUE)	TOTAL
Resealing of 26 km Hendric van ECK		5 000 000				R 5 000 000
Resealing of 3,6 km of Frikkey Meyer road		8 000 000				R 8 000 000
Resealing of 1,9 km of Flemming Road		3 500 000				R 3 500 000

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5.7.2.3 Joe Morolong Local Municipality

Construction projects of the are mostly funded by SLPs with minimal of MIG roads funded projects. The municipalities plans are sorely dependent on SPL funder as MIG is currently focused on water and sanitation.

Table 5-10: Joe Morolong 2025/26 progress on projects currently implemented

FUNDER	PROJECT NAME	PROGRESS	PROJECT VALUE
MIG	Upgrading of Ncwelenwe Internal Road Phase 3	100%	R 6 862 453.25
MIG	Upgrading of Gahuwe to Dithakong Access Road Phase 3	100%	R 7 000 000.00
SLP-Assmag Mine	Upgrading of Portion of Gadiboe to Motolwaneng Access Road	100%	R 9 567 183.00
SLP UMK Mine	Kokfontein Access Road	100%	R 32 545 000.00
KMR	Kiangkop Access Road	92%	R 16 311 124.44

Table 5-11 Joe Morolong Five-year multi plan

PROJECT NAME	FUNDER	2024/25 (VALUE)	2025/26 (VALUE)	2026/27 (VALUE)	2027/28 (VALUE)	2028/29 (VALUE)	TOTAL
Nchwelengwe internal road	MIG	R11 155 745.37	R 6 862 453.25				**R 18 018 198.2**
Gahuwe to Ditahkong access road	MIG	R18 045 669.70	R 7 000 000.00	R 10 339 823.35			**R 35 385 493.5**
Mentu access road	SLP		R 11 000 000.00				**R 11 000 000.0**
Kokfontein access road	SLP	R 32 545 000.00					**R 32 545 000.0**
Shalanang Internal	MIG			R 6 000 000.00			**R 6 000 000.0**
March internal road	SLP-South 32				R 10 986 298.92		**R 10 986 298.92**

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Masankong access road	SLP	R 9 200 000.00					**R 9 200 000.0**
Motolwaneng – Gadiboe access road	SLP	R 9 567 183.00					**R 9 567 183.0**
Kiangkop access road	SLP	R 16 311 124.44					**R 16 311 124 44**
Gasese to Mokalawanoga	SLP		R 11 849 994.25				**R 11 849 994 25**

The allocated budgets indicated above can be used for the building of new assets, renewal of existing assets or the upgrading of existing assets. This is usually a difficult task as municipalities must ensure that existing assets are maintained, whilst also ensuring the eradication of any service delivery backlogs.

The determination of demand for new assets must ideally take the following factors into consideration:

- national road policies
- provincial and local strategic development plans that are likely to influence demand (the increase or reduction of demand).
- economic and social strategies influence demand
- spatial development initiatives and land use developments.
- backlogs in road infrastructure provision that exist.
- accessibility to economic and social amenities.

Changes in technology must be considered and the future demand for road infrastructure must be addressed. Due to the strategic nature of this section, it requires cooperation between various stakeholders and LMs within the district and must be coordinated at a senior management level.

5.11 Changes in Technology and Labour-Intensive technologies

Apart from a quantitative growth in the need for roads, there is also a qualitative growth in needs. Where communities were "content" to utilize gravel roads, they now demand surfaced roads. Where they were "content" to travel at 40 km/h, they now want to travel at 80 km/h or more.

This phenomenon is not unique to South Africa, but due to the ever-increasing levels of technology and other things, people raise their expectations over a very wide spectrum.

Technological advances have been in the theory of pavement design. There is a better understanding of the behaviour of road pavements in relation to traffic loading. This has enabled the Department to use

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appropriate technology to design and construct roads. Previously on paved roads the margin gravels could not be used, but now with improved stabilisers it can be used, thereby reducing the haulage costs.

Data collection for traffic counts use labour intensive methods that comply with the Expanded Public Works Programme (EPWP) guidelines. Personnel from EPWP has been trained to capture traffic information and they have been distributed across the important intersections to be counted. Traffic counts were conducted on 2024/2025, financial year to update the age of data and comply with TMH22.

Gamagara and Joe Morolong local municipality has also provided information regarding jobs created in each project implemented over the past year and current. Labour intensive methods were applied, detailed information on job creation is provided in section 10 of this report.

5.12 Demand Forecast Anticipation

The district Spatial Development Framework supports the outlining of sequence of data information into leading the municipality into realising the vision. The current District SDF was updated in 2023-24 FY.

Alignment of the District with NSDPF

The John Taolo Gaetsewe District Municipality's location in an arid and semi-arid region with a mix of urban and rural settlements and a diverse range of economic activities aligns with the NSDF's objectives of promoting inclusive and sustainable development. These developments have now forced rural settlers of the JTG to migrate to Kuruman resulting in more movement of people and transportation of goods putting a lot of pressure the road infrastructure. The NSDF recognizes the importance of promoting sustainable agricultural practices, improving access to markets through improving road infrastructure, and supporting rural communities

Alignment of the District with PGDP

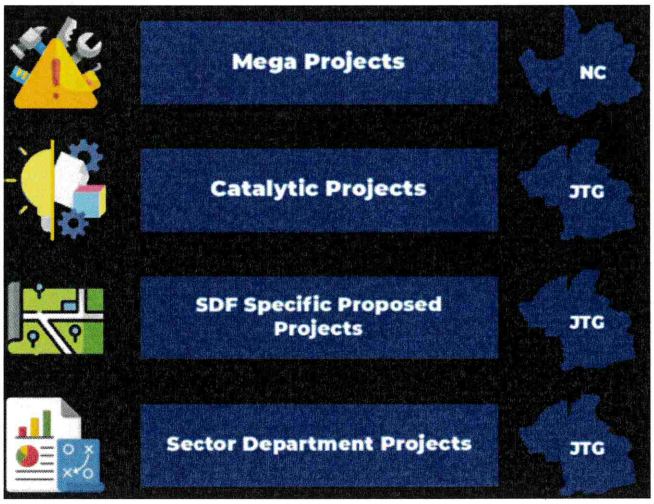
The John Taolo Gaetsewe District Municipality's economic activities and location align with several of the key sectors and industries identified in the Northern Cape PGDP, including mining. The mining industry has come to be a major activity of economic growth within the district. Mining activities has put a lot of pressure on the road infrastructure due to transportation of minerals to the mines.

Based on the key development proposals identified in Spatial Proposals and the overall Spatial direction of all sectors of the district municipality.it has embarked on identifying projects to address key issues facing the road infrastructure and the current needs.

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HOW ARE THE PROJECTS CATEGORISED
The projects are categorised in terms of Mega Projects, Catalytic projects, SDF-specific projects, and Sector Department Plans. this is reflected in the diagram below:

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Mega projects

Have specifically been identified as being major projects which have a provincial impact. These are projects which are expected to alter the nature of the Northern Cape.
Some of the projects also have a national focus as mentioned by the President in his SONA speech in 2023.

The provincial Mega projects identified for the SDF or directly have an impact on the district are as follows:

- Development Of the Railway Between Boegoebaai and Kuruman
- Development Of Boegoe Baai Port
    - The John Taolo Gaetsewe District Municipality is strategically positioned to benefit from the development of the Boegoebaai Port and rail system. The JTG mining sector can take advantage of the export potential through the port development, as well as the railway system for the movement of goods within the province and country. The Boegoebaai Railway provides direct links to all economic zones, including Namakwa, ZF Mgcawu, and the John Taolo Gaetsewe district municipality.

Catalytic projects

Catalytic projects can be defined as those projects that when pursued, would have a significant positive impact on more than one area, community, or sector and directly or indirectly improve and manage traffic. As part of the DDM process, several catalytic projects have been identified. These projects are seen as having the potential to catalyse broader economic and social development in the region and are intended to be implemented in a collaborative and coordinated manner.

The identified catalytic projects are linked to specific drivers of change to illustrate how this plan could potentially support the provincial strategic and spatial vision.

Proposed Catalytic Projects, (John Taolo Gaetsewe District Development Model, 2020) meant to benefit the transport sector within the municipality is as follows.

- Gamagara Mining Corridors
- Refurbishment of the Taxi Rank

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- JTG Regional Airport
- Construction of the bypass in Kuruman Town for transportation of minerals by heavy tracks to the mines

SDF proposed projects

The projects reflected in the SDF aim to identify projects to the spatial proposals mentioned in the previous phase. These projects speak to the key issues experienced in the DM and aim to address the quality of life of communities, and access to basic services (both basic infrastructure services and social) to create an enabling environment for investors to invest in the municipality.

Projects include security of tenure, in-situ upgrades, economic revitalization, and promoting sustainable environment and vibrant livelihoods etc.
Interventions could be undertaken by both government and/or private partnerships, as part of developer contributions.
The following are the tourism-identified projects which also will contribute to the transport sector.

- Revitalization of the forgotten route.
- Potential Corridor Development Plan.

Refer to Refer to Chapter 9: Plan Improvement and Monitoring and Appendix C: Gap Analysis.).

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6 ASSET MANAGEMENT

6.1 Panel Inspections

The John Taolo Gaetsewe District currently does not have an inspection panel in place. However, a Project Steering Committee (PSC) has been established, with officials attending meetings on a quarterly basis. The district previously experienced challenges in establishing the PSC and securing the participation of Local Municipalities (LMs) in RRAMs meetings. Following recent progress and improved participation, the district is now considering the establishment of an inspection panel to ensure full compliance with RRAMs requirements and promote optimal functionality.

6.2 Multi-year Plan – Project List

Due to the absence of an inspection panel, there is currently no formal project list in place. However, the existing system generates projects based on the priority index in accordance with TMH22 guidelines. The project list has been attached to this report as an annexure.

6.3 Multi-year Plan per Programme Level

Detailed information on multi-year plans per programme (maintenance, engineering conditions or event driven) could not be obtained. The district's Integrated Infrastructure Plan (2025/26) provides a list of projects planned by each local municipality; however, the projects are unfunded but do have cost estimates. Joe Morolong has no list of planned projects; the tables below give details of plans per programme level in each municipality.

Table 6-1: Ga-Segonyana Planned and Unfunded projects

PROJECT DESCRIPTION	YEAR	FUNDS REQUIRED
Tarring of access roads (focus on bus routes / public transportation) (27 km)	-	R 27 000 000.00
Upgrade of gravel roads (Focus on roads to cemeteries & bus routes) (5 km)	-	R 5 000 000.00
Gantatelang bus route (3.5 km)	-	R 3 700 000.00
Maruping internal roads (8km)	-	R 8 000 000.00
Paving of Batlharos internal roads and stormwater (8km)	-	R 10 000 000.00
Paving of ward 7 internal roads (12km)	-	R 15 000 000.00
Tarring of internal roads (11 km)	-	R 11 000 000.00
Mothibistad 5 roads (6.5 km)	-	R 6 400 000.00
Upgrading intersection: Bree & Kerk Street	-	R 250 000.00

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Upgrade of connector road between Hotazel and Kuruman (broaden & upgrade)	-	R 100 000 000.00
Connector road between Mapoteng & Ditshoswaneng to new landfill site (3 km)	-	R 3 700 000.00
Upgrade Thomoyanche access road	-	R 8 000 000.00
Upgrading of bridge in Gamopedi	-	R 500 000.00
Road maintenance / Upgrading GSLM	-	R 10 000 000.00
Internal access roads at Maruping	-	R 3 000 000.00
Resealing and Patching Potholes in Ga-segonyana	-	R 1 100 000.00

Table 6-2: Gamagara Planned and Unfunded Projects

PROJECT DESCRIPTION	YEAR	BUDGET
Construction of Hans Coetzee Road (1 km)- Planning	2024/25	-
Construction new 3.6 km stormwater channel along Frikkie Meyer Road	2024/25	R 3 500 000.00
Resealing of 26 km Hendric van ECK	2024/25	R 5 000 000.00
Construction of new 1.6 km stormwater channel	2024/25	R 2 000 000.00
Resealing of 3.6 km of Frikkie Meyer Road	2024/25	R 8 000 000.00
Resealing of 1.9 km of Flemming Road	2024/25	R 3 500 000.00
Construction of new 1.9 km stormwater along Flemming Road	2024/25	R 3 500 000.00
Resealing of 1.4 km Mopani Avenue	2024/25	R 2 000 000.00
Construction of new 1.4 km stormwater Master Plan	2024/25	R 2 000 000.00
Review of roads and stormwater Master Plan	2024/25	R 2 000 000.00
Construction of sidewalks ward 6 & 8	2024/25	R 5 000 000.00
Upgrading of R38D/ Airport intersection	2024/25	R 12 000 000.00

According to the district 's Integrated Infrastructure Plan 2025/26, Joe Morolong Local Municipality has a list of planned and funded stormwater infrastructure projects, the table below gives details of the projects and the funder.

6.4 Asset Management plans

As the local municipalities are custodians of the assets, the district is committed in providing valid and reliable information which is available and accessible to the municipalities. District is also committed in assisting the LMs to access possible funding for maintaining assets. During quarterly engagements with the municipalities, they have alluded that they are utilising the system for prioritising the projects.

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The district is in a process of finalising a Road asset infrastructure management policy for managing these assets.

The system used for assessments and management of collected data is continuously updated as assessments are conducted. It is reactivated after the completion of each assessment cycle, while historical data is retained for reporting purposes related to data age. PSC meetings also serve as a platform for Local Municipalities (LMs) to report on road projects. New roads are added to the system upon instruction from the respective LM, while upgraded roads are updated and reassessed accordingly. This ongoing collaboration between the district and LMs ensures that the RAMS database remains current and up to date.

Each Local Municipality (LM) has access to its respective data. Training on the operation of the system was provided to all LM representatives, while the district and its consultant remain available to provide remote support and guidance on system navigation. Access to the system enables LMs to obtain RRAMS information promptly and helps prevent duplication of work during planning processes and the development of business plans for funding applications.

6.2 Transferring of Assets

The Joe Morolong Local Municipality plans to transfer two roads to the provincial Department of Roads and Public Works. The roads identified for transfer are the route connecting Bothithong and Dithakong, and the connector road between Kleinneira and Batlharos. However, details regarding the extent, surface type, and any planned upgrades of these roads have not been provided.

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7 FINANCIAL SUMMARY

7.1 Financial Statement and projections

COHGSTA provides the forum with a summary of annual feedback in terms of financial expenditure. The following key points were provided by COHGSTA for MIG grant funding expenditure for 2025-26 per local municipality. The district is thus committed to the forum to give local municipalities support to manage their grants.

Gamagara LM:

The municipality spent 100% of the current financial year's allocation.

Ga-Segonyana LM:

The municipality is performing fairly good on MIG with current expenditure at 81% of their allocation. No funds were stopped and LM's plan to complete the funds by the end of June 2026.

Joe Morolong LM:

The LM is performing has spent 56% of current allocation. The municipality has committed to spend 100% by end of June 2026.

7.2 Multi-year: Cashflow Breakdown per programme level

Cash flow breakdown and expenditure details could not be obtained from the local municipalities (LMs). The expenditure information available is reflected in Section 5. LMs normally present this information at the provincial forum.

7.2.1 Local Municipalities' Funding Strategy.

The only available information regarding funding in each LM is as per the information provided above under **Section 5.** Currently it cannot be established how much funding has been allocated and by which available grants. Table 7-1 below gives a summary of the allocated budgets from the various available grants (MIG, EPWP Integrated Grant, EEDSM Grant). The financial information is as obtained from the DORA 2026 under annexure W4. The DM and the LM have been allocated a total of **R 5 635 000.00** from EPWP Integrated Grant (see breakdown below). Currently, it cannot be determined how much has been used in the employment of labour within the road's infrastructure projects by each municipality, as detailed information is not provided. It is noted that according to the Grant Framework and Grant Agreement, the conditions of the grant do not allow for funding of any permanent municipal personnel and that only a maximum of 5% of the grant can be used to fund contract-based capacity such as data capturing, on-site management costs and/or technical support etc.

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Table 7-1 EPWP Integrated Grant Allocations

FINANCIAL YEAR	2026/27	2027/28	2028/29	TOTAL
JTG	R 1 306 000.00	-	-	R 1 306 000.00
Joe Morolong LM	R 1 446 000.00	-	-	R 1 446 000.00
Ga-Segonyana LM	R 1 420 000.00	-	-	R 1 420 000.00
Gamagara LM	R 1 463 000.00	-	-	R 1 463 000.00
			TOTAL	**R 5 635 000.00**

The DoRA 2026 has no records of EPWP Integrated Grant allocations for all of the Northern Cape district and local municipalities for the next 3 financial years.

7.3 Expenditure Trends to Implement RRAMS

Since inception, the John Taolo Gaetsewe District Municipality has consistently implemented the programme in accordance with the RRAMS guidelines and grant conditions to maintain ongoing grant funding. The expenditure pattern for the allocated RRAMS budgets over the past three years is outlined below:

Table 7-2: RRAMS Grant Expenditure - Past 3-years

YEAR	ALLOCATION	ADDITIONAL FUNDS	ACTUAL EXPENDITURE	% UTILIZED	VARIANCE
2024/25	R 2 226 000.00	R 619 000	R 2 845 000.00	100%	-
2023/24	R 2 130 000.00	R 429 000.00	R 2 559 000.00	100%	-
2022/23	R 2 122 000.00	-	R 2 122 000.00	100%	-

The grant allocation showed a consistent increase over the three-year period, with the district effectively utilising the funds to support the objectives of the RRAMS project. This positive performance has encouraged National Treasury to allocate additional funding to the programme.

Budget utilisation also improved significantly, with the district consistently achieving 100% expenditure over the three years duration. This can be attributed to improved financial planning and stronger project implementation strategies. The district remains committed to continuously enhancing the programme and ensuring compliance with grant policy requirements.

The growth in both the budget allocation and expenditure was mainly influenced by:

- Skills development and training courses attended by assessors
- Procurement of additional programme resources, including dedicated vehicles
- Increased annual subscription costs for the RRAMS software due to enhanced features and functionality.

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There has been no variance between budget and expenditure this suggest that the district has stronger financial management with more accurate forecasting.

7.4 Funding Strategy RAMS

The district relies entirely on the RRAMS grant; the grant allocations are provided over a period of three years and published in the DoRA (Division of Revision Act). The funds are used for implementation and operation of the RRAMS, Table 7-3 below gives allocations for the next 3 years.

Table 7-3: RRAMS Grant 3-year Allocation

FINANCIAL YEAR	ALLOCATION INDICATIVES (R)
2026/27	R 2 419 000.00
2027/28	R 2 516 000.00
2028/29	R 2 594 000.00

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8 ORGANISATIONAL AND SUPPORT PLAN STRUCTURE

8.1 Human Resources Required

The JTG currently has three assessors employed specifically for the RRAMS programme, the assessors (often referred to as graduates) are managed by one project co-ordinator, project administrator and a Roads Planning Officer. The assessors are not permanently employed. Although there are many challenges, the district is planning on the following:

- The district intends to use forum meetings held with the various LM stakeholders to create awareness on the RRAMS programme, presenting the benefits and requirements for effectiveness.
- Engage with the LMs and share information in relation to status quo of the RRAMS progress as well as condition and extend of the road assets.
- The JTG and its associated LM's have unfortunately not yet finalized the graduate absorption plan.
- Several options have been discussed:
    - The RRAMS Technicians can be employed by the JTG, but be deployed to each of the LM's; or
    - The RRAMS Technicians can be employed by the LM.

Refer to Figure 8-1 below for the organizational diagram at JTG.

8.2 Required skills

The skills required by technical staff are critical to the successful implementation and execution of a RAM' system. Various levels of management and technical personal is also a determinant in the required skill levels and skills can be grouped by two major requirements i.e., technical and management.

Chapter 9: Plan Improvement and Monitoring.

RAMS operations require both technical and managerial skills as follow:

- Technical (Analysis of collected data
- The Visual Assessments of both paved & unpaved road Network
- Collection of Traffic Data/Counts
- Data Update of the RRAMS Software
- Preparation of RRAMS Technical Reports
- GeoRAMS Software Development
- Engagement of interns
- Managerial
- Management of personnel
- Management of operations and execution of RAMS

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- Mentoring/transfer of skills

The current staff or personnel for the management and implementation of the RRAMS at JTG have both the management and technical skills, however, shortages in capacity (no. of resources) may be a challenge especially with the non-absorption of the assessors.

8.3 Organisational and Organogram

As part of building capacity in the field of RAMS, the JTG has appointed Reneilwe Consulting and Planners to implement the project, one Project Administrator to manage and administer the RRAMS technicians. In total the JTG RRAMS implementation team consist of four personnel, 3 technicians (assessors) and Project Administrator. The roads Planning Officers positions are vacant.

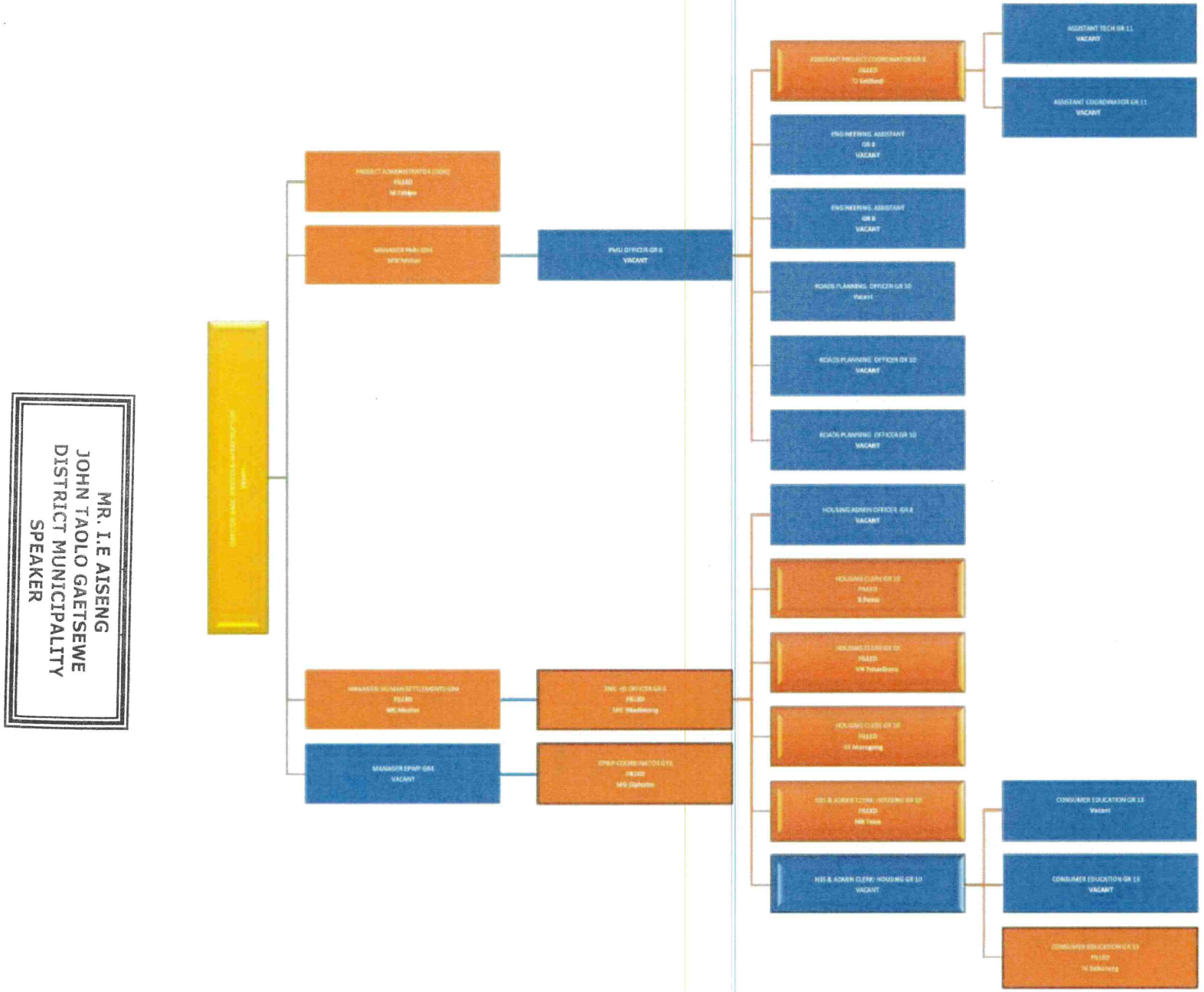
One of the key intentions of the grant is to assist the district municipality and its local municipalities to develop in-house skills and to create employment opportunities to unemployed university graduates. The service provider is appointed for a 3-year period. Skills transfer is major focus point of the RAMS programme.

The DORA stipulates the following for the district municipality:

- Make provision to maintain the RRAMS after the lifespan of the grant.
- Employ suitable unemployed graduates be trained and skilled in the operation of the RRAMS, road infrastructure planning and maintenance.
- Ensure human resource capacity at municipalities for the operation of RRAMS; and
- Ensure that the RRAMS is used for planning road infrastructure projects.

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VOTE 4 – DEVELOPMENT AND PLANNING



8.3.1 LMs engagement in the Programme

Engagement with LMs has improved, meetings are held quarterly. Communication with the LMs has also improved, roads are added on instruction by LMs and any other verifications are done successfully with the consultation of the respective LMs.

As part of capacity building and skills transfer, the local Municipalities have been granted access to the GEORAMS system used for storing data. All LMs have access to the system and their respective data. The system has been upgraded, and the district is planning to hold a workshop for LMs to familiarize them with the new updates.

Refer to Chapter 9: Plan Improvement and Monitoring.

8.4 Financial Cost of Maintaining Functionality

Although the grant allocations are provided over an MTEF period, this business plan focused mainly on the 2025/26 municipality financial year. The projected expenditure for the 2025/26 financial year is R2 325 000.00. Table 8-1 below gives a summary of the breakdown expenditure as at the end of the third quater for the RRAMS project in the current financial year.

Table 8-1 Summary of breakdown Expenditure as at the end of Q3 - 2025/26

DESCRIPTION	AMOUNT
Graduate Salaries	R 513 820,40
Graduate Training	R 84 280,05
Data Analysis	R 122 028.26
Traffic Counts	R 0
Tools & Equipment	R 84 280,00
Professional Registration	R 0
Software or Programme	R 336 065,65
Project Management & Support	R 580 286.01
Disbursements	R 82 409.09
Accommodation & S&T	R 32 078,02
TOTAL	**R1 750 967,48**

The next financial year (2026/27) has been allocated a budget of R 2 419 000.00. Activities to be implemented are planned as follows:

- Conduct Visual Assessment of both paved and unpaved roads in Ga-Segonyana
- Development of PMS & GRMS reports for both Gamagara and Ga-Segonyana local municipalities.

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- Conduct a system familiarization workshop with the local municipalities.
- Hold PSC meetings on a quarterly basis.
- Ensure attendance of at least two RRAMS related courses by assessors.
- Annual subscription (License) of the web-based software for data collection
- Salaries for the graduates (assessors).
- Procurement of PPE and equipment for assessments.
- Project management and administration of the programme
- Hosting of quarterly meetings with NDoT.

8.5 Systems and Processes

The mobile application is fully complaint to the TMH18 standards and condition assessments are automatically sent and imported into the system. GRMS and PMS calculation are automatically performed on data submission and treatment reports generated. TMH18 reports are generated automatically for exporting.

The system fully complies to the data management system requirements of TMH22 section D.5.5.

8.5.1 Systems and Processes Required for successful RAMS implementation

GeoSmart Software Solutions has developed the GeoRAMS system for JTG. The system is developed as an integrated system for the road network data. Each local municipality has access to the data for its area, with the District Municipality having access to the data for each of the Local Municipalities.

The system will still be operated even after the lifespan of the contract. The district municipality and its local municipalities will be the maintainers of the system hence they underwent training of the system and workshops are held as the system is upgraded.

8.5.1.1 *Data Collection Tools*

The assessment of the RRAMS survey is done manually and through tablets loaded with the form, by conducting site visits using a particular form based on the type of assessment to do. The following tools are used during assessment:

- A device loaded with the GeoRAMS Tablet/Mobile Application: To assist on getting the coordinate of the location and draw tracks of new links if non-existent on the existing GIS system and captures all roads furniture and road profiles.
- Measurement wheel: Assists to measure length of a link and,
- Digital camera: Captures all roads furniture and road profiles.

8.5.1.2 *Conformance with National Standards*

All through execution of the project, the assessments for paved and unpaved roads and bridges and conduct traffic data will be in accordance with the Technical Method for Highways (TMH9, TMH19 and TMH22). Not to forget that the systems developed to record data must comply with DoT specifications (TRH26 and TMH22) and the data electronic exchange formats in accordance to TMH18.

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8.5.2 Data quality processes

Data quality processes which are implemented by GEORAMS include the following:

- Data Management Plan
- Quality Targets
- Quality Assurance
- Quality Control
- Production of Deliverables

8.6 System Efficiency

A service provider (GeoSmart) was appointed to implement an integrated web-based road asset management system with the following capability:

- Web/mobile based system with interactive mapping function
- User configurable dashboards and reports
- Relational spatial database
- GRMS and PMS calculations
- Treatment calculations and reports
- TMH18 downloads
- Mobile data collection according to TMH18 standards
- Sharing and collaboration capability with access control

The mobile application is fully complaint to the TMH18 standards and condition assessments are automatically sent and imported into the system.

GRMS and PMS calculation are automatically performed on data submission and treatment reports generated. TMH18 reports are generated automatically for exporting.

The system complies to the data management system requirements of TMH22 section D.5.5, as outlined in the following paragraphs.

8.6.1 System Scope

The following asset management functions are supported in the GeoRAMS system:

- Central road network register, with spatial display in a related GIS.
- Pavement Management System (PMS);
- Unpaved Road Management System (URMS);
- Bridge inventory.
- Inventory management system for road furniture, including drainage assets; and

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- Basic traffic information system

8.6.2 Data Management System

The following data management requirements are supported by the GeoRAMS system:

- Data stored in a competent relational database.
- Multi-user system with data stored in the cloud.
- Fully integrated to in field data collection (roads, furniture, traffic, bridges)
- Ability to import and export data (i.e. MS Excel)
- Export of data to central repository (i.e. TMH18)
- Data backup function

8.7 GAP Analysis

The performance of the RAMP itself, as well as the implemented RAMS system serves as the measure to which the effectiveness of the implemented systems and processes are measured. The GAP analysis and improvement initiatives are listed in Appendix C: GAP ANALYSIS

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9 PLAN IMPROVEMENT AND MONITORING

Performance measures are reported on two levels:

- How the RAMP itself is performing against TMH22 and NDOT standards
- and the Performance of RAMS at JTG.

9.1 Performance measures of the RAMP

RAMP performance levels are assessed against the TMH22 standards and NDoT requirements and include a self-assessment checklist submitted together with the RAMP. This checklist is also used by NDoT officials during the evaluation process to determine the final score. The previous RAMP report achieved an overall performance score of 80%, with some sections being well addressed while others contained only partial information. A new checklist has been issued for the preparation of the current RAMP, and it has been followed to ensure that all sections are comprehensively addressed.

The GAP analysis presented in Appendix C is compiled to determine the short comings of RAMS and the performance of RAMS in terms of maturity levels. Table 9-1 below lists a summary of improvement initiatives.

9.2 Performance Measures to execute RAMS at JTG

The measures to execute RAMS is focused on the following:

- Is RAMS effectively executed at JTG
- Is RAMS used by Local Municipalities to manage their road network
- Are resources sufficient/efficient?
- Is RAMS budgets allocation sufficient and efficient?

The GAP analysis presented in Appendix C is compiled to determine the short comings.

9.3 Proposed Way Forward for RAMS and RAMP

The success of Road Asset Management at the District level depends on whether the output of the system is used at Local Municipality level. The Asset Management Plan is a joined effort between the District Municipality and the three Local Municipalities i.e. Joe Morolong, Ga-Segonyana and Gamagara Local Municipalities. In 2019 John Taolo Gaetsewe District Municipality (JTG) together with the 3 Local Municipalities (Ga-Segonyana LM, Gamagara LM and Joe Morolong LM) established the Infrastructure Forum in which the Provincial Sector Departments including Department of Water and Sanitation, Public Works and CoGTA amongst others are part of this forum. The purpose of this forum is for support and monitoring infrastructure projects within the district including local municipalities. The meetings are held every quarter.

The DM is engaging relevant stakeholders on the RRAMS through the established forum. The province is aware and has been providing support in the engagements. It was previously discovered that some of the

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LMs (Gamagara and Ga-Segonyana) have been appointing service providers to conduct visual condition assessments which then meant duplication of work.

In rectifying this, JTG has ensured that the LMs have access to the GEORAMS system, is engaging with the LMs on a quarterly basis through RRAMS PSC meetings. The system has information in relation to roads infrastructure in each LM network. Information is limited to each LMs' respective network information only.

In conclusion many chapters in this RAMP needs refinement and needs to incorporate a unified approach between the DM and the LM's. Taking into consideration of the progress made with involving and engaging LMs, it is anticipated that the objectives of the RRAMS will be achieved. The DM and the service provider need to be consistent and continue to build proper communication channels with the LMs.

9.4 Improvement Programme

9.4.1 Proposed Mitigating Factors to execute RAMS effectively

Effectiveness of RAMS execution at JTG depend on the implementation of the following mitigating factors as follows:

- The RAMP is compiled at District Level (DM), and the roads are maintained at Local Municipality (LM) level, hence collaboration between senior management of DM and LM's is of critical importance.
- The LMs need to start using RAMS to know their network and implement maintenance decisions.
- Successful implementation/establishment of Asset Management Committee consisting between DM and LM officials
- As improvement initiative to execute RAMS more successfully, all critical vacant positions should be filled relating to RAMS with appropriately qualified personnel
- In terms of funding, budget dedicated for RRAMS and associated overheads should be advocated.
- There must be enough budget allocated to operate the RRAMS and collection of the necessary data and operating RAMS and the GIS system.

9.5 Improvement and monitoring Plan

Table 9-1 lists the improvement and monitoring criteria and elements to improve the accuracy and effectiveness of the RAMP as well as RAMS.



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Table 9-1: RAMP Improvement and monitoring plan

KEY AREA	KEY INDICATOR	PERFORMANCE MEASURE (ACCURACY AND EFFECTIVENESS)	IMPROVEMENT PROGRAMME	MONITORING AND REVIEW PROCEDURE AND REPORTING
Data collection and quality	TMH22 Frequency of data collection	Quality Data	• Mobile application - TMH18 compatible • Improvement to data collection processes and integration with GIS; • RCAM classification to be updated yearly • Assessment of total network in one cycle of 3 yrs – total Update and verification of data for addition of new roads • Traffic counts data available and still valid – last count date: 2025.	Yearly
Asset Value Indicators	Representative values	Up to date algorithms and calculation methods	• Refined algorithms by GeoRAMS	As required with updates
Compliance to TMH22 criteria	Each section to comply	Updated sections and new assessment data included	• Do internal reviews • Local Municipalities to concord with RAMS and contribute information for the RAMP, because ultimately the RAMP is compiled for them to do Road Maintenance	Yearly
Asset Management Policy Level II	Compliance to TMH22 Level II	Aim for higher level of RAMS maturity i.e. Level II: Asset Management policy to be reviewed and refined	• Assess effectiveness of current Policy followed by Review and monitoring • Local Municipalities to adopt policy	Yearly
Maturity Level of RAMP	Perform at optimal maturity level	Level I reached for all elements, aim for Level II	• Do internal assessments /reviews. Implement improvements and strive for excellence for each version of RAMP	Yearly

KEY AREA	KEY INDICATOR	PERFORMANCE MEASURE (ACCURACY AND EFFECTIVENESS)	IMPROVEMENT PROGRAMME	MONITORING AND REVIEW PROCEDURE AND REPORTING
Asset Management Plan- Chapter 6 of this document	Asset Management plan and budgets updated	Up to date Asset Management Plan, which is actively used by the District and Local Municipalities as the basis for budgets and expenditures	• Local Municipalities to start using the RAMS provided by DM and provide their road maintenance information for inclusion into the RAMP	May annually
Financial Summary	Financial summary include expenditure forecast for road infrastructure	Expenditure forecast for Road Infrastructure to be current; The RAMP should serve as input into the budgets for maintenance for the LM's	• Local Municipalities to start using the RAMS provided by DM and provide their road maintenance information for inclusion into the RAMP	May annually
Institutional Capacity	Effective RAMS execution	Institutional Shortcoming in organogram structure/ availability of resources to be identified and mitigation factors to be implemented	• Actively plan to fulfil all requirements; • Collaboration between DM and LMs critical for successful RAMS implementation • Vacant positions to be filled with skilled personnel.	Continuous
Job Creation and Skills Development	Improved skills and jobs created	Up to date reported figures	• DM staff to developed to successfully execute RAMS • LMs to participate in providing information for RAMP for reporting purposes	Yearly
Gap Analysis	Acknowledgement of Status of RAMS	Fully completed and attached Gap Analysis	• Participation by all stakeholders: i.e. (RAMP supervisor, RAMP compiler), when completing the Gap Analysis; Gap Analysis to be included in every version.	Submission of every RAMP

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KEY AREA	KEY INDICATOR	PERFORMANCE MEASURE (ACCURACY AND EFFECTIVENESS)	IMPROVEMENT PROGRAMME	MONITORING AND REVIEW PROCEDURE AND REPORTING
Asset Management Committee	Fully functional committee	Acknowledged responsibilities by each member of the committee	• Asset Management Committee established. Committee members to execute their responsibilities and participate in RAMS • RAMS committee to assist in compilation of RAMP and using RAMP for road maintenance.	Yearly
Organisational/Authoritative collaboration in terms of RAMS	Collaboration between District Municipality and Local Municipalities	RAMP fully functional and usable document	• Unified approach for RAMS between DM and LMs • LMs to start using RAMS and use RAMS as tool for road maintenance	Continuous

10 JOB CREATION AND SKILLS DEVELOPMENT

10.1 Number of Jobs Created

Local Municipalities are the owner of the road assets and JTG is the custodian and the compiler of this RAMP. Local municipalities must provide Job Creation information of projects in relation to Road Asset Management Treatments, i.e. Rehabilitation, Resurfacing, and other Maintenance.

As part of capacity building and skills transfer, the local Municipalities will be the co-owners of the RRAMS System that is being developed. LMs have access to the system used by JTG for data. LMs are encouraged to communicate with the DM and the service provider for any consultation regarding operation of the software.

In March 2025, traffic counts were conducted between Ga-Segonyana and Gamagara LMs. The two local Municipalities were invited in the process of recruiting enumerators to do the traffic counts. The enumerators were sourced locally from the two municipalities as part of job creation.

About 55 enumerators were employed during the traffic counts. The enumerators were a combination of youth, female and male targets as per the EPWP requirements.

Joe Morolong has provided information on jobs created in the implementation of their road's maintenance and upgrade projects in the current financial year. No record of created jobs by Gamagara on any roads project was reported. The Ga-Segonyana IDP 2025/26 has record of 68 jobs created under Public Works project for routine road maintenance., a breakdown on the figure (male, female & youth) could not be obtained.



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Table 1: Joe Morolong Job Creation Info

PROJECT NAME	NO. OF JOBS	FEMALE	MALE	YOUTH	YEAR
Ncwelengwe internal road	22	7	5	10	2025/26
Gahuwe to Dithakong access road	14	1	2	11	2025/26
Mentu access road	23	9	3	11	2025/26
Kokfontein access road	30	9	4	17	2025/26
Masankong Access road	18	3	4	11	2025/26
Motolwaneng – Gadiboe access road	19	5	3	11	2025/26
Kiangkop access road	10	3	2	4	2025/26
Gasese to Mokalawanoga access road phase 2	17	2	5	10	2025/26
TOTAL	**153**	**42**	**35**	**85**	

Table 3: JTG Job Creation Info

JOB CREATION: ROAD ASSSET MANAGEMENT SYSTEMS					
FUNDER	**PROJECT NAME**	**YEAR**	**JOB CREATION TOTAL**	**BUDGET**	**EXPENDITURE**
RRAMS	Traffic count	2015/2016	20 People	R45 000.00	R45 000.00
RRAMS	Traffic count	2020/2021	10 People	R 44 000.00	R 44 000.00
RRAMS	Traffic Counts	2024/25	55 People	R 100 000	R 120 000.00

Table 5: JTG Job Creation EPWP Info

JOB CREATION: ROAD ASSSET MANAGEMENT SYSTEMS					
FUNDER	**PROJECT NAME**	**YEAR**	**JOB CREATION TOTAL**	**BUDGET**	**EXPENDITURE**
EPWP	Manufacturing block paving brick	2023/24	21	R 950 000,00	R 950 000,00
EPWP	Manufacturing block paving brick & National Housing Needs Register Data Capturers	2024/25	25	R 1 345 000	R 1 345 000
JTGDM Equitable share	Manufacturing block paving brick & National Housing Needs Register Data Capturers	2025/26	25	R 584 783,20	R 584 783,20

10.2 Skills Development for Young Graduates

The skills development of young graduates is limited to the graduates employed for RAMS only.

10.2.1 RRAMS Technicians/Graduates status

There are three (3) Civil Engineering Graduates or trainees' that have been recruited on the project. The intention is to have at least one graduate allocated to a local municipality at deployment. Unfortunately, the vastness of the area requires that more technicians are appointed. The availability of skilled staff in RRAMS activities in the Northern Cape is a huge challenge.

The skill development of the trainees is focused on the following:

- Paved Road Visual Condition Assessments
- Road Inventory Data Collection
- Data Quality Control

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- Geographic Information System Software (ArcGIS and QGIS) – Introductory Level
- Unpaved Road Visual Condition Assessments
- Analysis of Visual Condition Data
- Traffic Data Collection Techniques
- Traffic Data Analysis Techniques
- Geographic Information System – Proficient Level
- Management of Roads Asset Management System (RAMS)
- Project Life Cycle for Roads Engineering

The graduates underwent training, in terms of roads infrastructure and development, and the RRAMS. The following training was attended by all graduates as part of their skills development in the past years:

Table 10-1: Training Activities

TRAINING DESCRIPTION	TRAINING DATES	TRAINING SP	CPD POINTS
ISO 55001:2024 Implementation Training Aligned to RAMS TMH22/CIDMS	26-28 November 2025 (3 days)	ICCASA	N/A
ISO 55001:2014 Training for Road Asset Management system aligned to TMH22 COTO Road Asset Management Manual	10 -12 September 2024 (3 days)	ICCASA	N/A
55001: Training for Road Asset Management system aligned to TMH22 COTO Road Asset Management Manual	10 -12 June 2025	ICCASA	N/A

10.2.1.1 *DMs Student/Graduate Absorption Plan*

It is proposed that a task team to be formed with a mandate of providing a mechanism/solution for the absorption of interns. This task team proposed will be constituted by the following members:

- Municipal Manager
- Project manager client
- Project manager service provider
- Representative from LMs
- One representative of interns

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They will further be persuaded to register with ECSA as Technicians in training for which a commitment undertaking in respect of their professional development will be documented and maintained through a designated mentor as stipulated by ECSA.

Furthermore, they will be afforded training opportunities to improve on their skills both internally and externally.

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10.3 Contractor Development / Small Enterprises

The LMs are the custodians of the road assets and are responsible for repair and maintenance of the road assets. This creates opportunity for development of contractors and Small Enterprise, records of such information must be recorded by LMs and reported on to form as a performance indicator with targets.

Refer to Chapter 9: Plan Improvement and Monitoring and Appendix C: Gap Analysis.).



11 SWOT ANALYSIS

The SWOT analysis below was executed to allow for achievable goals/objectives to be set for the District Municipality.

Definitions used in the SWOT analysis:

Strengths: characteristics of the business, or project team that gives it an advantage over others

Weaknesses (or Limitations): are characteristics that place the team at a disadvantage relative to others.

Opportunities: external likelihoods to improve performance (e.g., make greater profits)

Threats: external elements in the environment that could cause trouble for the business or project

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The following table list the strengths, weaknesses, opportunities and threats of RAMS within the Road Authority (Points indicated for the LMs were obtained from the IDPs of the respective LMs):

Table 11-1: SWOT analysis

ROAD INFRASTRUCTURE ASSESSED				
ELEMENT	**STRENGTHS**	**WEAKNESSES**	**OPPORTUNITY**	**THREATS**
DATABASE /GIS	• Database of Road Infrastructure available	• 'Lack of well-established relations with LMs to allow for ease of data information sharing for utilisation by LMs in preparation of Plans	• Use data for motivation to source funds.	• inability to obtained funds effectively due to non-utilisation of data as concrete motivation for maintenance funds.
RAMS PROGRAMME	• Strategy and program in place for assessment	• No committee formed to assist the DM with implementing the RRAMS and ensuring achievement of the objective • Lack of equipment, no allocation of vehicle dedicated to the project for assessment	• Development of new assessment technology • Engagement with the mines to assist with resources that can be used in the assessments (vehicle donations)	• Continual funding. • LMs not using RAMS for road maintenance, Afterall RAMS is implemented for the authority responsible for road maintenance. • Lack of commitment by LMs in terms of RAMS and RAMP • No unified Asset Management Plan between DM and LMs
DATA QUALITY	• Network cleaned and re-based with proper sequencing and attribute features • RCAM classification done	• Fluctuation / inconsistency of the network extend due to removal of closed roads and additions of new roads because of new developments.	• Continual development of new quality checks	• No established GIS unit within the DM, unit required to provide support and assistance on related matters.
PHYSICAL ROAD ASSETS AND	• Known infrastructure	• The decrease and increase of network extend due to removal of closed roads	• Use information to source funds for maintenance and	• Network has deteriorated beyond threshold levels

ASSESSMENT THEREOF	positions and layouts	and additions of new roads because of new developments.	rehabilitation of existing roads.	• Reduction of the network length due to ceding of roads to mines. • Network length inconsistent due to new developments by tribal authorities (houses build in the roads)
GAMAGARA & GA-SEGONYAN LM	Developed Unit or department with qualified personnel for roads and stormwater	Old infrastructure	Realise the benefits of the RRAMS programme and use the RAMP to develop strategies for the maintenance of roads and well as funding.	Lack of maintenance of existing roads infrastructure may lead to reduced network length in terms of surface type due to deterioration.
STRATEGIC OBJECTIVES OF THE ROAD AUTHORITY				
ELEMENT	**STRENGTHS**	**WEAKNESSES**	**OPPORTUNITY**	**THREATS**
RAMS UNIT	• District committed to implement and execute sustainable RAMS	• Internal Capacity lacking to fully execute RAMS	• Team of professionals appointed to assist District in reaching its goals and targets with RAMS; • Improved RAMP will lead to improved Road Infrastructure which results in: Jobs, Skills Development, and Improved Economic Activity and Attraction of Businesses/ Industries to Northern Cape	• Custodian and owner of RAMS different entities. • Lack of collaboration and interaction between DM and LM's • LM's not committed to RAMS process and/or use/collaborate on RAMS/RAMP

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GAMAGARA & GA-SEGONYANA	Well-developed policies (Ga-Segonyana) Political and social stability	Ineffective internal systems and control- Gamagara LM	Management of relationships with mining industry to contribute in maintenance of infrastructure (Ga-Segonyana) * internal systems could be improved – Gamagara LM	Political instability (Gamagara LM)
FINANCIAL REQUIREMENTS				
ELEMENT	**STRENGTHS**	**WEAKNESSES**	**OPPORTUNITY**	**THREATS**
FUNDING FOR RAMS	• Funding for RAMS available.	• Funding to maintain network according to need not enough	• RAMP may serve as a tool to obtain more budget	• Funding different for custodian and owner of the assets as it is different authorities. • Failure to spend enough funds on deteriorating Road network will stifle economic growth. • • NDOT may not transfer fund allocation for RAMS, which will affect RAMS execution • Non-compliance by DM in terms of timeous report submission might lead to discontinuation of fund allocation • Inadequate budget to fund salary bill to accommodate absorption of interns

GAMAGARA & GA-SEGONYANA LM	High potential for economic growth (Gamagara LM)	Revenue collection (Ga-Segonyana LM)	Well packaged plans to obtain funding from the mines (Ga-Segonyana LM)	• Reduction of available grant allocations (Ga-Segonyana LM)



INSTITUTIONAL/ORGANIZATIONAL CAPACITY OF THE ROAD AUTHORITY				
ELEMENT	**STRENGTHS**	**WEAKNESSES**	**OPPORTUNITY**	**THREATS**
DISTRICT MUNICIPALITY	• Team of professionals appointed to assist with RAMS implementation, upgrading, - execution, - skills transfer. • 3 x Graduates appointed • LM's are supporting RAMS through Project Steering Committees	• Staff retention and attraction mechanisms struggle to be sustained • Ability to procure goods and services in DM is slow • Key personnel positions vacant and need to be filled with personnel skilled in RAMS. • Graduates need to be absorbed by municipalities	• Improved DM/LM strategies will lead to optimized funding expenditure • LM's to use technical reports/RAMP to acquire MIG funding for access roads	• Failure to execute RAMS efficiently will stifle economic growth • Inadequate budget to fund salary bill to accommodate absorption of interns. • Organogram structure and business strategy between DM and LM's not developed in terms of RAMS • DM does not have influence over LM Budgets and cannot compel them to collaborate on RAMS/RAMP
ASSET MANAGEMENT COMMITTEE	• Guidance available through service provider	• Committee not yet established	• Fully functional committee will lead to excellence in RAMS	• Collaboration between DM and LM not fully functional
GAMAGARA & GA-SEGONYANA LM	• Well-developed organisational structure (qualified skilled senior and middle management)- Ga-Segonyana LM • Young vibrant and qualified	• Bloated staff compliments –Ga-Segonyana • Poor leadership, Low staff morale		

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	staff – Gamagara LM			
RAMP				
ELEMENT	**STRENGTHS**	**WEAKNESSES**	**OPPORTUNITY**	**THREATS**
ROAD ASSET MANAGEMENT PLAN	• Committed to compile a RAMP that adheres to standards;	• Information from LM's not available due to lack of commitment to RAMS	• Concerted effort to improve RAMP quality ongoing	• Alignment of Asset Management Plan and Road Master Plans of LM's • LMs not using RAMP/RAMS to do road maintenance

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12 REFERENCES

12.1 References

a) TMH22 – Road Asset Management Manual

b) Ga-Segonyana Local Municipality Roads and stormwater Projects status -March 2026

c) Ga-Segonyana Local Municipality IDP 2025/2026

d) Ga-Segonyana Local Municpality Master Condition Assessment Plan -2025

e) Joe Morolong Local Municipality IDP 2025/26

f) Gamagara Local Municipality Final IDP 2025/2026

g) John Taolo Gaetsewe District Municipality Integrated Infrastructure Plan 2025/2026

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13 APPENDICES



13.1 APPENDIX A: ROAD ASSET MANAGEMENT POLICY

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13.2 APPENDIX B: DECLARATION

DECLARATION

The John Taolo Gaetsewe District Municipality declares the following:

13.2.1 Name of Unit that prepared the RAMP

The unit that prepared the RAMP is the Directorate Basic Services and Infrastructure of John Taolo Gaetsewe District Municipality in consultation with Reneilwe Consulting and Planners.

13.2.2 RAMS Maturity level practiced – Level I

John Taolo Gaetsewe District Municipality is practicing RAMS at Level I. The COTO minimum level required for road asset management for larger Provincial Road authorities is level II.

The asset management maturity level practiced by Johan Taolo Gaetsewe District Municipality for most criteria is level I, with some elements of asset management at Level II. The level of maturity reached by John Taolo Gaetsewe District Municipality is highlighted in green in Table 1-1.

Level I category includes road condition assessment every 3 years (Class 4 and Class5 roads) and every 5 years for structures.

Table 13-1: Asset management levels being practiced by John Taolo Gaetsewe District Municipality

SECTION	LEVEL I	LEVEL II	LEVEL III	LEVEL IV
Policy	Expectations set in vision and mission statements	Defined Policy Statements for service levels and minimum conditions	Regular review of achievements and adjustment of policy statements to reflect intent together with short term objectives and related action plans	Policy statements and strategies integrated into all business processes and regular review.
Inventory	Detailed listing of all roads	Integrated GIS and road and bridge inventory together with engineering details of each link	All road assets divided into components with different expected useful lives together with construction details	Inventory seamlessly integrated with planned roads, asset register, all acquisition data and related information material to performance
Valuation	Valuations per km or sq. m of each road type	Valuations per sq. m of road type	Valuation per component adjusted with estimates of	Valuation per component reliably adjusted for remaining useful

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SECTION	LEVEL I	LEVEL II	LEVEL III	LEVEL IV
		adjusted for expected useful life	remaining useful life and estimates of unit costs.	life and unit costs based on detailed statistics of current construction costs.
Condition and Usage	Visual evaluations of condition of each road. Traffic counts at selected positions	Detailed, objective visual evaluations of each road and bridge with some instrument measurements. Traffic counts cover entire road network on a regular basis	Integrated visual and instrument evaluations taken at the minimum frequencies defined in Section 5.3 Traffic count histories to reliably project future volumes	Reliable and credible condition and usage data that is used to accurately determine excess user costs and predict future excess user costs and related risks
Decision Support	Judgment of future condition and departmental priorities	Decisions based on reliable strategies and rankings based on condition and importance	Optimisation used to adapt strategies and improve returns on rehabilitation expenditure	Optimisation based on reliable performance predictions and linked to confirmation of performance based on past history
Management Plans	Minimal information on planned service levels and future expenditure forecasts	Impacts of plans shown in terms of future service levels with basic information on expenditure forecasting	Plans demonstrate achievement of objectives and likely service levels subject to budget constraints	Fully integrated with customer expectations of service levels and comprehensive risk analysis and trade-offs related to budget constraints
Feedback Loop	Anecdotal feedback of performance of actions.	Performance of actions measured as part of on-going condition evaluation and linked to strategy	Specific planned activities implemented to assess performance and risk and to feed into prediction models and tactics	Regular measured performance of all actions integrated into prediction models and planned actions

13.2.3 Names and Qualifications of compilers of the RAMP

The Road Asset Management Plan (RAMP) was prepared jointly by the District Municipality and the Service Provider. The service provider prepared the document and further submitted to the client for review, inputs and approval however one must understands that the district municipality owns the business plan.

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The Roads Asset Management Plan (RAMP) is used to guide the management of municipal roads-related Infrastructure assets in the John Taolo Gaetsewe District. The need for the development of the RAMP is informed by the requirements attached to the Rural Road Asset Management Grant (RRAMG), as reflected in the Division of Revenue Act (DORA).

13.2.3.1 *Directorate staff – Supervision of RAMP*

The names and designation of the official(s) of the John Taolo Gaetsewe District Municipality that supervised the preparation of the RAMP is as follows:

Mr. M Molusi – Technical Director Basic Services and Infrastructure.

Table 13-2 below lists the names of condition assessors and compilers of the RAMP document.

Table 13-2: Assessors and compilers of RAMP

COMPILERS	NAME	QUALIFICATION
Service Provider- Compilation of RAMP	Ms. Mandy Rakabe	Post Grad Dip Project Management (Regent Business School), NDip Civil Engineering (VUT)
	Me V. Pretorius	PR Tech Eng., BSc (Hons) Transportation Planning (UP), BTech Civil (CUT), N.Dip Civil (CUT)
ASSESSORS AND QUALITY CONTROL	**NAME**	**QUALIFICATION**
2020	Pelontle Leburu	N.Diploma
	Thato Madingoane	S4
	Mohau Motlhoki	S3
2021	Thato Madingoane	S4
	Mohau Motlhoki	S3
	Ohemetse Melokwe	N.Diploma
	Boikago Mokgara	N.Diploma
2022	Thato Madingoane	S4
	Mohau Motlhoki	S3
	Ohemetse Melokwe	N.Diploma
	Boikago Mokgara	N.Diploma
2023	Thato Madingoane	S4
	Mohau Motlhoki	S3
	Ohemetse Melokwe	N.Diploma
	Boikago Mokgara	N.Diploma
2024	Thato Madingoane	S4
	Mohau Motlhoki	S3
	Ohemetse Melokwe	N.Diploma
	Boikago Mokgara	N.Diploma

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	Thabo Matshediso	N.Diploma
2025	Thato Madingoane	N.Diploma
	Mohau Motlhoki	S3
	Boikago Mokgara	N.Diploma
	Thabo Matshediso	N.Diploma
2026	Thato Madingoane	N.Diploma
	Mohau Motlhoki	S3
	Thabo Matshediso	N.Diploma
Quality controller	Pelontle Leburu	BTech Civil Eng
Administrator / Co-ordinator	Malebogo Tshipo	BTech Human Resource Development

13.2.4 Declarations

13.2.4.1 *The Directorate Infrastructure declares:*

- The level of maturity currently practised by JTG is Level I
- A fixed asset register (FAR) is in place and has not been adopted by council. The adoption process has been postponed.
- The Asset Management Committee is not fully established. Negotiations between the District and Local Municipalities are ongoing to establish the committee.
- JTGM's Asset Management Policy should be accepted and implemented.
- The age of the data and the quality thereof is known.
- The Gap analysis is attached in Appendix C: GAP ANALYS
- The status of RCAM has been reviewed during the past year and currently being reviewed as new roads are being added.
- Sub-systems implemented includes: GEORAMS system consisting of GIS system accessible to the District Municipality and Local Municipalities.
- Plan Improvement and Monitoring is compiled in Chapter 9: PLAN IMPROVEMENT AND MONITORING
- SWOT analysis is compiled in Chapter 11: SWOT

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13.2.4.2 *Summary of the Age of the dataset collected*

The age of the data reported in this RAMP is presented in Table 3-2:

Table 13-3: Age of data

SURFACE	2019	2020	2021	2022	2023	2024	2025	2026	NOT ASSESSED	GRAND TOTAL
BLOCK	3.01		11.36	7.38	12.72	11.58	9.79	3.48	5.13	64.45
FLEX	4.12	5.54	18.02	10.4	25.93	61.19	167.02	28.6	11.65	335.40
UNPAVED	9.78	37.98	67.81	102.76	613.19	1111.86	195.5	200.56	622.57	2969.16
GRAND TOTAL	**16.91**	**43.52**	**97.19**	**120.54**	**651.84**	**1184.63**	**372.31**	**232.64**	**639.35**	**3369.01**

The asset data mentioned as the extent of the network listed in Table 13-3 above, concluded the total network. The condition data, asset usage and valuation data are reported on Gap analysis – refer to Appendix C.: GAP ANALYS

13.2.5 Sub-Systems implemented by the Road Authority

The following sub-systems are implemented by JTG in terms of RAMS:

- Central road network register, with spatial display in a related GIS;
- Pavement Management System (PMS);
- Unpaved Road Management System (URMS);
- Bridge inventory;
- Inventory management system for road furniture, including drainage assets; and
- Basic traffic information system

13.2.6 Decision Support System

The Decision Support System implemented at JTG RAMS include the following:

- Web/mobile based system with interactive mapping function
- User configurable dashboards and reports
- Relational spatial database
- GRMS and PMS calculations
- Treatment calculations and reports
- TMH18 downloads
- Mobile data collection according to TMH18 standards
- Sharing and collaboration capability with access control

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The mobile application is fully complaint to the TMH18 standards and condition assessments are automatically sent and imported into the system.

GRMS and PMS calculation are automatically performed on data submission and treatment reports generated. TMH18 reports are generated automatically for exporting.

The system complies to the data management system requirements of TMH22 section D.5.5.

DECLARED BY: _____

_____

PRINT NAME

TECHNICAL DIRECTOR BASIC SERVICES AND INFRASTRUCTURE

DATE: _____

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13.3 APPENDIX C: GAP ANALYSIS

GAP ANALYSIS OF ASSET MANAGEMENT'S MATURITY LEVEL I

RAMS SELF ASSESSMENT GAP ANALYSIS					
RAMS AREA	**ELEMENT**	**CRITERIA**	**CURRENT PRACTICE**	**SCORE**	**IMPROVEMENT REQUIRED**
Policy	RAMP	Has the requirements of COTO RIAMP been studied	Yes - Fully Implemented	2	Policy to be executed by DM and accepted by LMs
	TMH 22	Has the COTO TMH22 Manual requirements been studied	Yes - Fully Implemented	2	
	RAAMP	Has a Road Authority Asset Management Policy been formulated by top management and signed by them	In Process	1	Policy to be executed by DM and accepted by LMs
	AM Committee	Has an Asset Management Committee been established as defined in the RAAMP	Committee appointed, but not yet functional	1	AM Committee members to accept and perform responsibilities
Inventory	Network	Has the Road Network been defined	Yes - Fully Implemented	2	
		Have the fixed assets in the network been identified	Yes - Fully Implemented	2	
		Has the fixed asset register been prepared	Partially Implemented	1	FAR to be finalised
	Facility	Is a detailed list and length of different roads available	Yes - Fully Implemented	2	
	Asset Component Items	Are the Roads divided into the different asset types, their	Yes - Fully Implemented	2	

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RAMS SELF ASSESSMENT GAP ANALYSIS					
RAMS AREA	**ELEMENT**	**CRITERIA**	**CURRENT PRACTICE**	**SCORE**	**IMPROVEMENT REQUIRED**
		components, and Items			
	GIS	Is an Integrated GIS developed	Yes - Fully Implemented	2	
Valuation	Extent	Has the extent/size of each asset been defined	System implemented	2	Valuation done
Usage and Condition	Roads Visuals	Have visual evaluations on the roads been carried out in the past two years according to TMH9	Yes -Achievable	2	Total network assessed in one cycle of 3 years.
	Roads Instrument	Have Instrument Roughness, Rutting and Texture measurements on the roads been carried out in the last two years	N/A	N/A	Not applicable on Level I RAMS
	Roads Deflection	Have Deflection measurements on the roads been carried out in the last 5 years	N/A	N/A	Not applicable on Level I RAMS
	Traffic	Have Traffic counts been carried out in the last 3 year	Yes -Fully	2	Last Traffic counts done in 2019. New counts executed in March 2025, data currently being updated on the system
	Structures	Has inspections on the structures been carried out in the last 5 years according to TMH	Partially Implemented	1	Structure conditions to be updated onward for next 5-year cycle.
	Ancillary Assets	Has inspections on the ancillary assets been carried out in the last 3 years	Partially Implemented	1	Condition rating of the ancillary assessment done during inventory update

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RAMS SELF ASSESSMENT GAP ANALYSIS					
RAMS AREA	**ELEMENT**	**CRITERIA**	**CURRENT PRACTICE**	**SCORE**	**IMPROVEMENT REQUIRED**
	Data Management	Is a Database in place to store the condition data	Yes - Fully Implemented	2	
	Data Quality	Is a Data Quality Management process in place to validate the condition data and check accuracy & Integrity	Yes - Fully Implemented	2	
Decision Support	Condition Indices	Is a RIAMS in place that can process the Condition data to produce Condition Indices	Yes - Fully Implemented	2	
	Functional Indices	Is a RIAMS in place that can process the Condition & Traffic data to produce Functional Indices	Yes - Fully Implemented	2	
	Identification of treatment	Is a RIAMS in place that can process the Condition data to produce maintenance and rehabilitation actions for each asse	Yes - Fully Implemented	2	
	Prioritising	Is a RIAMS in place that can rank the maintenance and rehabilitation actions identified	Yes - Fully Implemented	2	
	User Cost	Is a system in place that can calculate User Costs	N/A	N/A	Not applicable on Level I RAMS
	Depreciation	Is a RIAMS in place that can calculate remaining useful life	N/A	N/A	Not applicable on Level I RAMS

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RAMS SELF ASSESSMENT GAP ANALYSIS					
RAMS AREA	**ELEMENT**	**CRITERIA**	**CURRENT PRACTICE**	**SCORE**	**IMPROVEMENT REQUIRED**
	Project Confirmation	Is a programme in place for panel inspections and has any been done the past 3 years	No	0	RAMS Need Determination and LM Road Master Plans to be aligned
Management Plans	Plan	Are annual Road Assessment Management Plans being prepared according to TMH22 requirements	Partially	1	LM to use RAMS and RAMP for road maintenance and to be involved in RAMS
	Strategy	Is a maintenance strategy in place	Partial	1	LMs not using RAMS/RAMP – commitment lacking
		Is an operational plan in place	Partial	1	LMs not using RAMS/RAMP – commitment lacking
	Financial	Is the asset valuation calculated	Partial	1	Feedback needed from LM's
Feedback		Is a feedback system in place to ensure continual updating of the RIAMS	Partial	1	LMs not using RAMS/RAMP – commitment lacking

Score	Current Practice
0	No - Not Practice
1	Partially Implemented
2	Yes- Fully Implemented

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13.4 Appendix G: Project List

