



ROAD ASSET MANAGEMENT PLAN

JOHN TAOLO GAETSEWE DISTRICT MUNICIPALITY

PREPARED FOR:	JOHN TAOLO GAETSEWE DISTRICT MUNICIPALITY 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		



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 JTGM is Level I. A fixed asset register (FAR) is in place and has not been adopted by council. The adoption process has been postponed since 2021. The age of the data and the quality thereof is known. The Gap analysis is attached in Appendix C. The status of RCAM has been reviewed during the past 4 years and currently being reviewed as new roads are being added.

Subsystems 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. REFER to [APPENDIX B](#) for a full, signed Declaration.

Background

The age of the data is presented in Table 1-3 below. 1312.57 km was assessed in the past year in 2024/2025. 626.08 km is not yet assessed. The total network extend was previously recorded as 2594.61, 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 657.39 km. John Taolo Gaetsewe District's network accounts for 73% in the district, currently the network extend within JTGM is reported as 3252 km and consists of 3248.62 km (10%) of paved network, 2862.93 km (88%) is unpaved, and 60.45 km (2%) are block roads. Joe Morolong LM has the largest unpaved network amounting to 369.31 km of gravel and 1027.60 km of earth roads. Gamagara (Gamagara LM) has the largest paved network, which amounts to 163.96 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 being uploaded onto the system data to update data.

All roads in JTG falls under class 4 and 5 roads. The progress of assessment in the table above, list that 2075.38 km of the total 3252 km network was assessed in past 3 years (2023, 2024, 2025) and 626.08 km of the network is not yet assessed. However, complete network assessment was achieved and reported in May 2022, the outstanding network length comprises of roads which have been added into the network.

A total of 556 135 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 556 134.62 of all LMs and, the paved roads serve 43% of the users while unpaved roads serve 57% of all user-km.

Joe Morolong's network has the largest portion in Very Poor Condition (82%). followed by Ga-Segonyana with 67 % of its network in a Very Poor condition and only 27% of Gamagara's network is in Very Poor condition. In total 70% of the total network fall within a Very Poor condition, 3% in Poor, 3% in Fair, 3% in Good and 1% in Very Good.

Structural defects, especially Potholes 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.

The Current Replacement Cost of JTG's assessed network is valued at R1.9 billion and the DRC at R382 Million with a depreciation of R1.5 billion.

The extent of 191.10 km paved (58%) of the flexible network has depreciated beyond the minimum threshold. 35% of the block paved roads and 83% of the unpaved network has deteriorated beyond the minimum threshold. Out of the total network of 3252 km, 2861.66 km or 88% of the network has deteriorated beyond the minimum threshold level.

209 km of the assessed flexible network has less than 5 years in terms of RUL. 18.24 km of the Block Roads assessed has a life left of between 5 and 10 years.

The total need of the paved network Engineering Responsive needs i.e., Rehabilitation amounts to 57.61 km at a cost of R193 897 280.00. Reconstruction accounts for the largest portion of funding needed at R594 130 000.00 for 62.5 km. The network level maintenance and rehabilitation technical Engineering responsive maintenance i.e., Reconstruct gravel accounts for the largest proportion of maintenance at R3 Billion and 1798.449 km. Routine Maintenance i.e., blading amounts to 2046.07 km for R22 Million, dust treatment amounts to R414 million at 2072.34 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

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PMS calculations are automatically performed on data submission and treatments reports generated. 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, 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 Gamagara local municipality final IDP dated 2022/27 under Chapter 5: Project List and Service delivery and Budget implementation, provides a list of projects mainly refurbishments and upgrades (reseal and construction of stormwater infrastructure) the projects are identified as new and planned for between the 2022/23 - 2026/27 financial years. However, there are no budgets allocated per year and the source of funds is indicated as internal. The total estimated cost for the resealing of roads is estimated at R18 500 000.00

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 4 954 000,00 from EPWP Integrated Grant (see breakdown below). Currently, it cannot be determined how much has been used in the employment of labour within the roads infrastructure projects by each municipality.

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, two (2) meetings took place over the year 2024-25 FY. Communication with the LMs has also improved, information such as PMS (Pavement Management System) and GRMS (Gravel Management System) reports were shared between Gamagara and Ga-Segonyana local municipalities. It has been agreed that engagements will be done quarterly and that individual engagements will be held on an as and when necessary, especially in the case of sharing information such as reports or data.

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.

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.

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.

~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

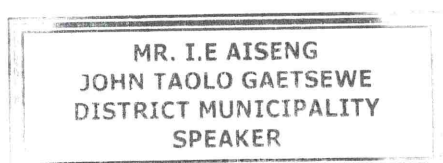
This RAMP document is an outflow of the GIAMA Act No 19 of 2007. According to the TMH22 and the GIAMA Act, the following definitions apply:

“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.”

“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 2018.

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.

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
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
	Thabo Matshediso	N. Diploma
2025	Thato Madingoane	S4
	Mohau Motlhoki	S3
	Boikago Mokgara	N. Diploma
	Thabo Matshediso	N. Diploma





Quality controller	Lesedi Foromane	PR Tech, BTEC Civil Eng
Quality controller	Pelontle Leburu	BTEC Civil Eng
Administrator / Co-ordinator	Malebogo Tshipo	BTech Human Resource Development

1.1.6 RAMS Maturity level practiced – Level I

The asset management maturity level practiced by John Taolo Gaetsewe District Municipality is 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 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 Class 5 roads) and every 5 years for structures.

Table 1-2: 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	Detailed, objective visual evaluations of	Integrated visual and instrument	Reliable and credible condition



SECTION	LEVEL I	LEVEL II	LEVEL III	LEVEL IV
	condition of each road. Traffic counts at selected positions	each road and bridge with some instrument measurements. Traffic counts cover entire road network on a regular basis	evaluations taken at the minimum frequencies defined in Section 5.3 Traffic count histories to reliably project future volumes	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

1.1.7 Declarations

1.1.7.1 The Directorate Infrastructure declares:

- 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 JTGM is Level I
- A fixed asset register (FAR) is in place and has not been adopted by council. The adoption process has been postponed for the past five years.
- The finalisation of Asset Management Committee by Council Resolution has since been postponed in 2022
- The age of the data and the quality thereof is known.
- The Gap analysis is attached in Appendix C.
- The status of RCAM has been reviewed during the past 4 years and currently being reviewed as new roads are being added.



- Subsystems 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.
- REFER to **APPENDIX B** for a full, **signed** Declaration.

1.1.7.2 Summary of the Age of the data

The age of the data is presented in Table 1-3 below. 1312.57 km was assessed in the past year in 2024/2025. 626.08 km is not yet assessed. The total network extend was previously recorded as 2594.61, 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 657.39 km.

Table 1-3: Age of data

SURFACE	2018	2019	2020	2021	2022	2023	2024	2025	NOT ASSESSED	GRAND TOTAL
BLOCK		3.01		11.36	12.72	12.72	11.58	4.13	5.13	60.45
FLEX	1.16	4.9	6.94	18.02	26.87	26.87	61.54	16.35	22.06	328.62
UNPAVED	0.10	9.78	49.24	67.65	723.22	723.22	1111.49	107.48	598.89	2862.93
GRAND TOTAL	1.26	17.69	56.18	97.03	762.81	762.81	1184.61	127.96	626.08	3252

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1.2 Background about the District Municipality

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 20 215 km², 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 1-4 below presents the area and number of wards per local municipality. Joe Morolong has the largest area and 15 wards.

Table 1-4: Network area and Number of Wards

LOCAL MUNICIPALITY	AREA (SQ KM)	NUMBER OF WARDS
Gamagara	2 648km ²	8
Ga-Segonyana	4 495km ²	14
Joe Morolong	20 180km ²	15
TOTAL	27 323KM²	37

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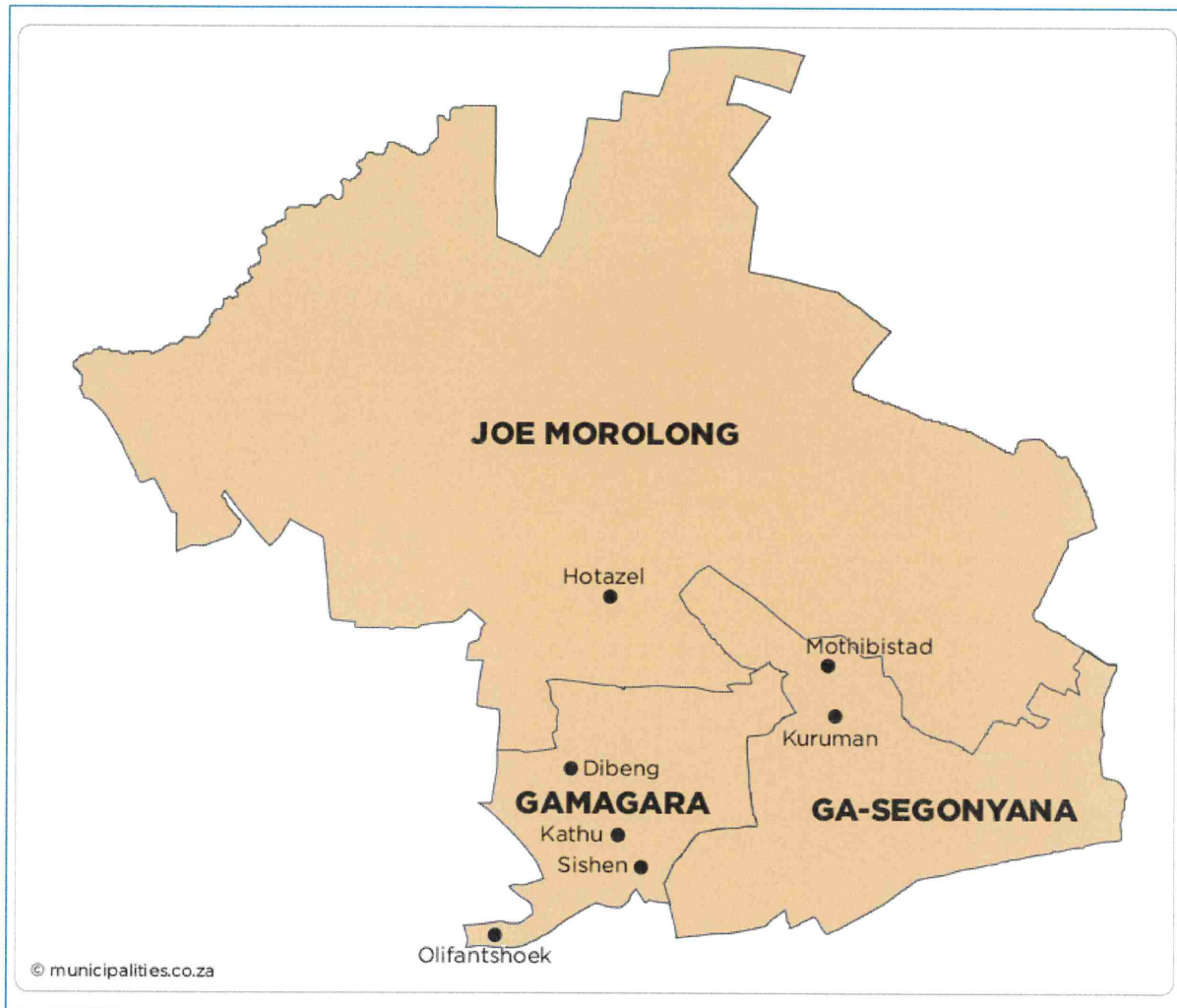


Figure 1-1: John Taolo Gaetsewe DM divided into Local Municipalities.

Figure 1-1 above represents John Taolo Gaetsewe District (JTGD) and its local municipalities. JTGD, still have 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.



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.



**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. 4
<i>Statement; Background, Goals, Framework; Planning</i>	
CHAPTER 2: ROAD NETWORK.....	Pg. 18
<i>Road Network Jurisdiction; Extent; GIS Map</i>	
CHAPTER 3: LEVEL OF SERVICE	Pg. 26
<i>Minimum Conditions; Changes to Standards; Data Collection</i>	
CHAPTER 4: SITUATION ANALYSIS	Pg. 31
<i>Inventory Data; Usage of Assets; Engineering, Functional and Comparative Conditions; Asset Value; Trend Analysis; Performance Gap</i>	
CHAPTER 5: DEMAND OR NEED DETERMINATION.....	Pg. 57
<i>Need determination, Demand for new assets.</i>	
CHAPTER 6: ASSET MANAGEMENT.....	Pg. 6
<i>Budget streams; Unconstrained Budget Project list; multi-year plans; Information Management</i>	
CHAPTER 7: FINANCIAL SUMMARY	Pg. 6
<i>Financial Statement; Cashflow; Funding Strategy</i>	
CHAPTER 8: ORGANIZATIONAL AND SUPPORT PLAN	Pg. 10
<i>Human Resources Required; Organisational; Financial Cost; Systems.</i>	
CHAPTER 9: PLAN IMPROVEMENT AND MONITORING	Pg. 13
<i>Performance Measures; Improvement program, Monitoring</i>	
CHAPTER 10: JOB CREATION AND SKILLS DEVELOPMENT	Pg. 22
<i>Number of Jobs created; Skills Development Young graduates; Contractor Development</i>	
CHAPTER 11: SWOT ANALYSIS.....	Pg. 28





Strengths; Weaknesses; Opportunities; Threats of RAMS

CHAPTER 12: REFERENCES AND APPENDICESPg. 35

References; RAMS Policy; Declaration; Gap analysis

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. The user must do the same. 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 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
- Organisational and human capacity/skills development
- Reporting on all the above via Road Asset Management Plan (RAMP)





1.5.2 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 need 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.

1.5.3 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.
- Ensure human resource capacity at municipalities for the operation of RRAMS; and
- Ensure that the RRAMS is used for planning road infrastructure projects.

1.5.4 Implementation of the Road Asset Management Plan (RAMP)

John Taolo Gaetsewe will implement the RAMP through the utilisation of a service provider wherein the district will do the monitoring and controlling of the project. The district will facilitate technical review meetings with the purpose being to interrogate the data before submission to DoT and to verify the data collected by the service provider. The service provider will host the graduates recruited within the district and will report to the district as and when.



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.

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 26% in the district, it must also be noted that the network extend has increased with 658 km, previously, the network extend within JTG was reported as 2594 km currently it is standing at 3252 km. the new length is not yet reported to NDoT due to updating and RISFSA

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

AUTHORITY	EXTENT (KM)	%
National Network	150	1%
Provincial Network	9163	73%
John Taolo Gaetsewe District Municipality Network	3252	26%
GRAND TOTAL	12565	100%

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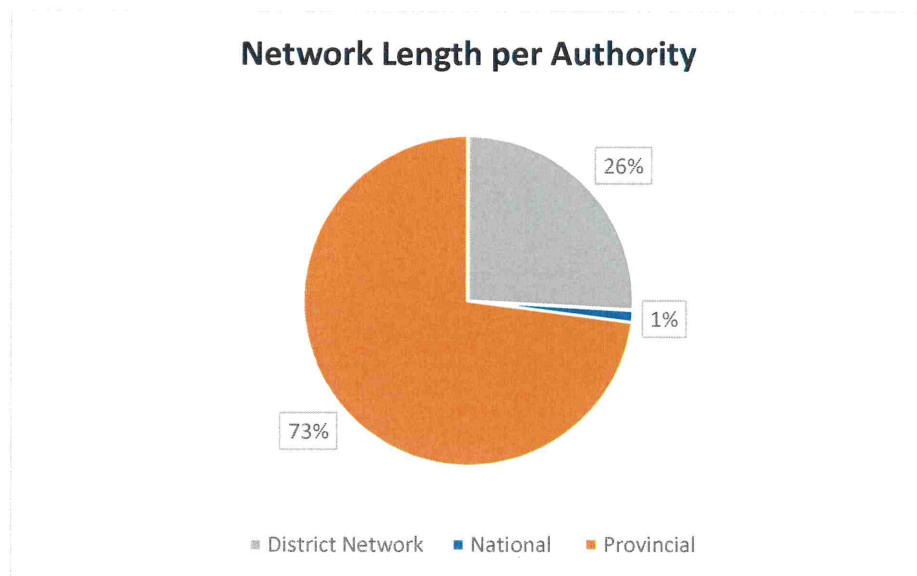


Figure 2-1: Higher Road network

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 3252 km of which 328.62 km (10%) of paved network, 2862.93 km (88%) is unpaved and 60.45 km (2%) is block roads. The network has increased with 658 km made of increase and decrease 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 = 3.86km & Block = 2.05km) and Unpaved (Earth = 646.25 km), only the gravel decreased with 173.27 km.

Table 2-2: JTG Network extent per road type

MUNICIPALITY	FLEX	BLOCK	GRAV	EARTH	TRACK	GRAND TOTAL
Gamagara	163.96	5.60	26.20	76.78	0.00	272.54
Ga-Segonyana	137.48	35.53	225.57	1137.47	0.00	1536.05
Joe Morolong	27.18	19.32	369.31	1027.60	0.00	1443.41
GRAND TOTAL	328.62	60.45	621.08	2241.85	0.00	3252

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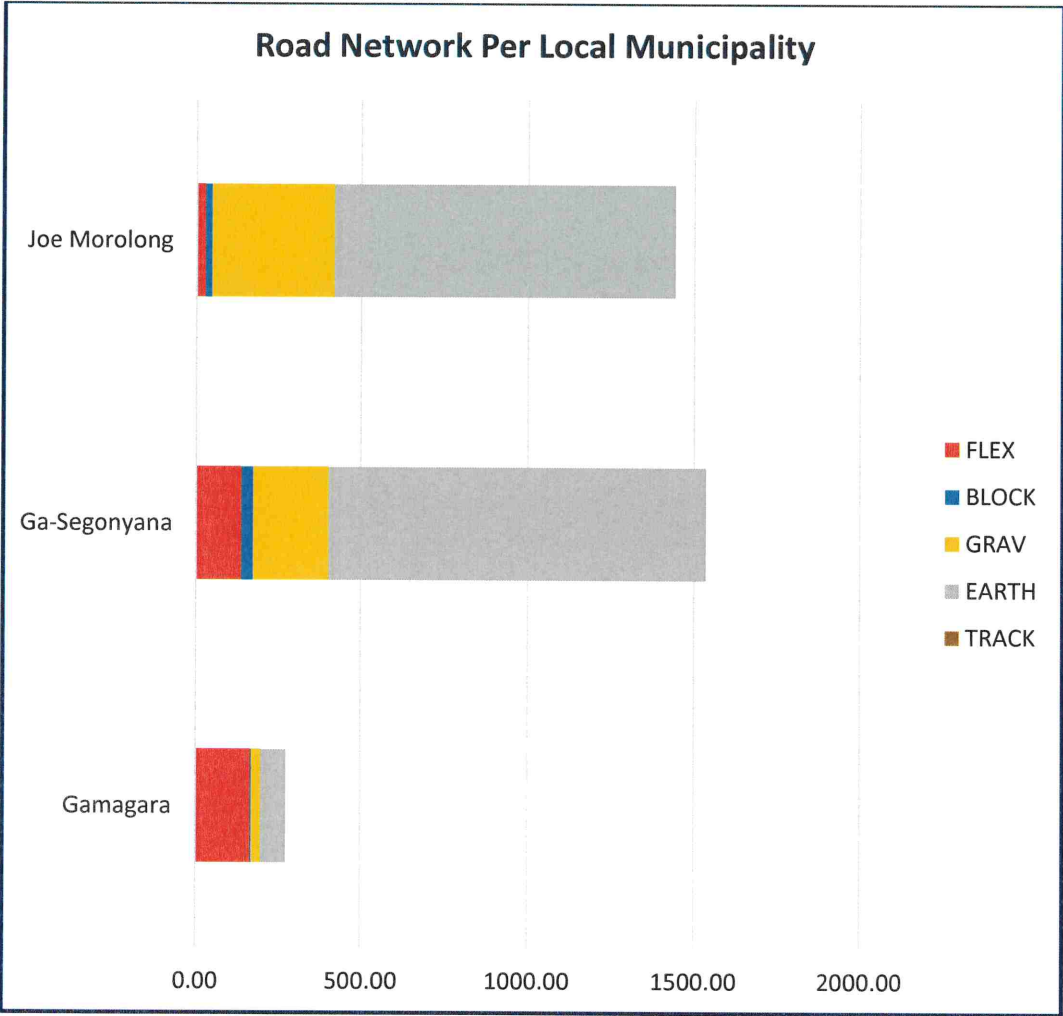


Figure 2-2: Network Extent (km)

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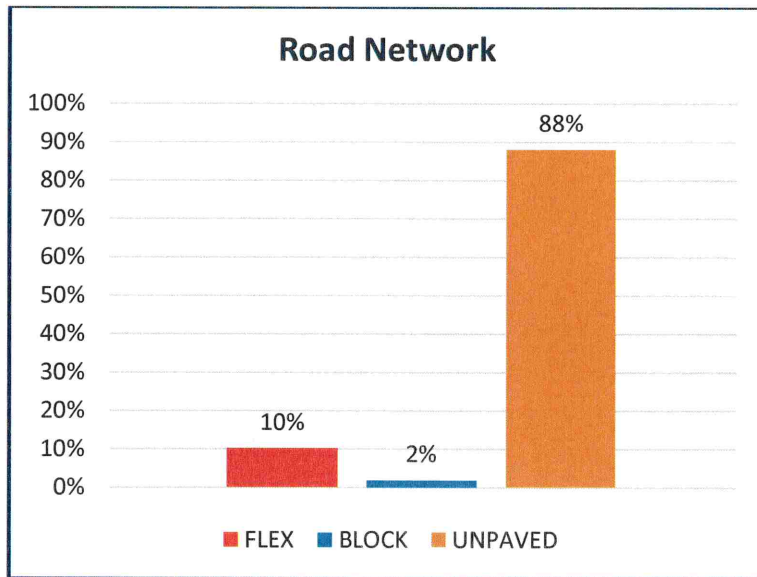


Figure 2-3: Network extent (%)

2.3 RCAM Class

Review of the RCAM classification is currently being done on the network it 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 Ga-Segonyana and Joe Morolong's network. Previously the extents of the two municipalities were 1259.57 and 1250.11 km respectively and the new extents are 1536.05km and 1443.41 km respectively. Joe Morolong has more unpaved roads which accounts for 43% 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			6.21	236.01	28.78	1.54		272.54
BLOCK				3.88	1.72			5.6
FLEX				143.37	20.59			163.96
UNPAVED			6.21	88.76	6.47	1.54		102.98
Ga-Segonyana	0.26	46.12	205.1	1202.5	53.0	29.1		1536.05
BLOCK			0.79	34.19	0.3	0.25		35.53
FLEX	0.26		5.97	113.79	17.46			137.48
UNPAVED		46.12	198.3	1054.5	35.24	28.9		1363.04
Joe Morolong		182.1	25.01	1163.9	68.57	3.72	0.1	1443.41
BLOCK				16.25	3.07			19.32
FLEX		0.33		18.63	8.22			27.18
UNPAVED		181.8	25.01	1129.0	57.28	3.72	0.1	1396.91
GRAND TOTAL	0.26	228.3	236.3	2602.4	150.4	34.4	01	3252

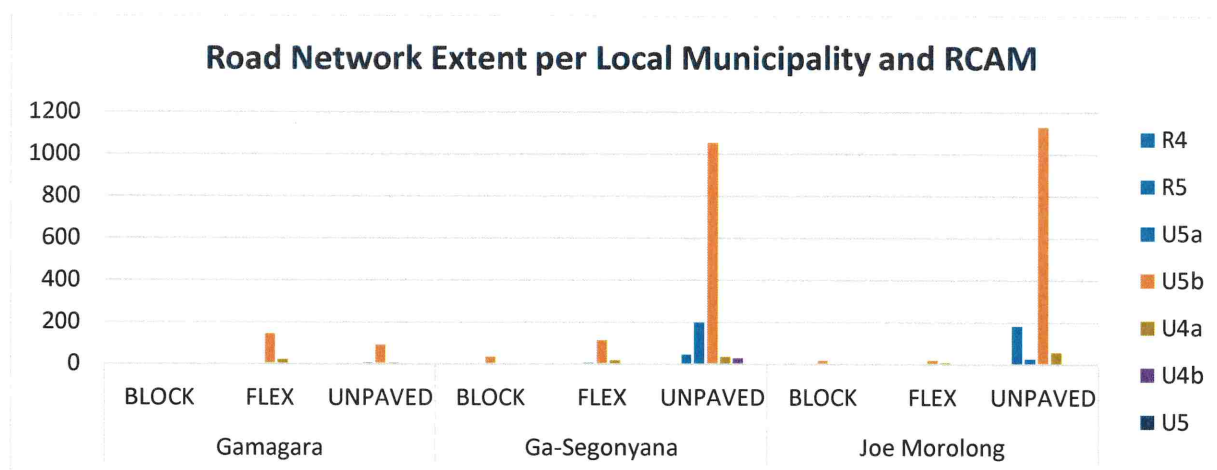


Figure 2-4: RCAM Extent (km) per Local Municipality and Road Type

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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 43% of the total road network, mostly gravel and earth. Appendix D has a detailed Map for Joe Morolong Local Municipality.

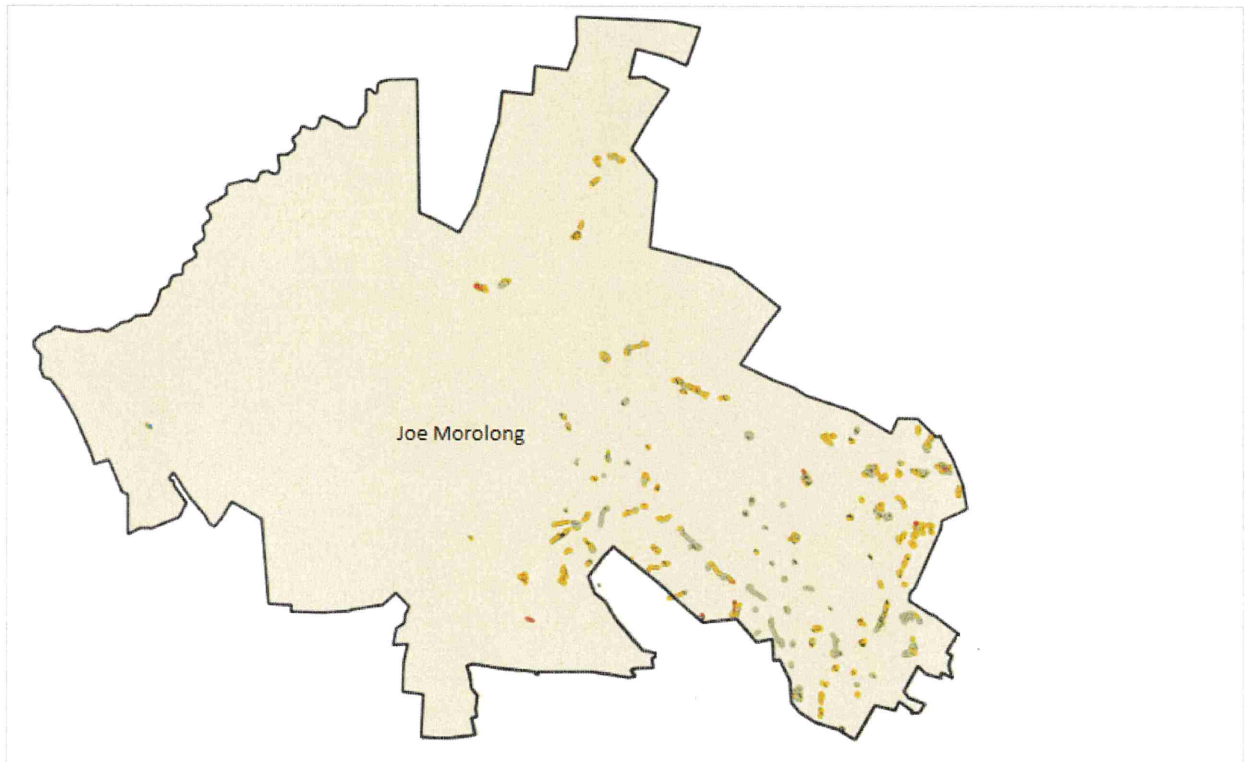


Figure 2-5: Joe Morolong Local Municipality Road network (small scale)

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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.

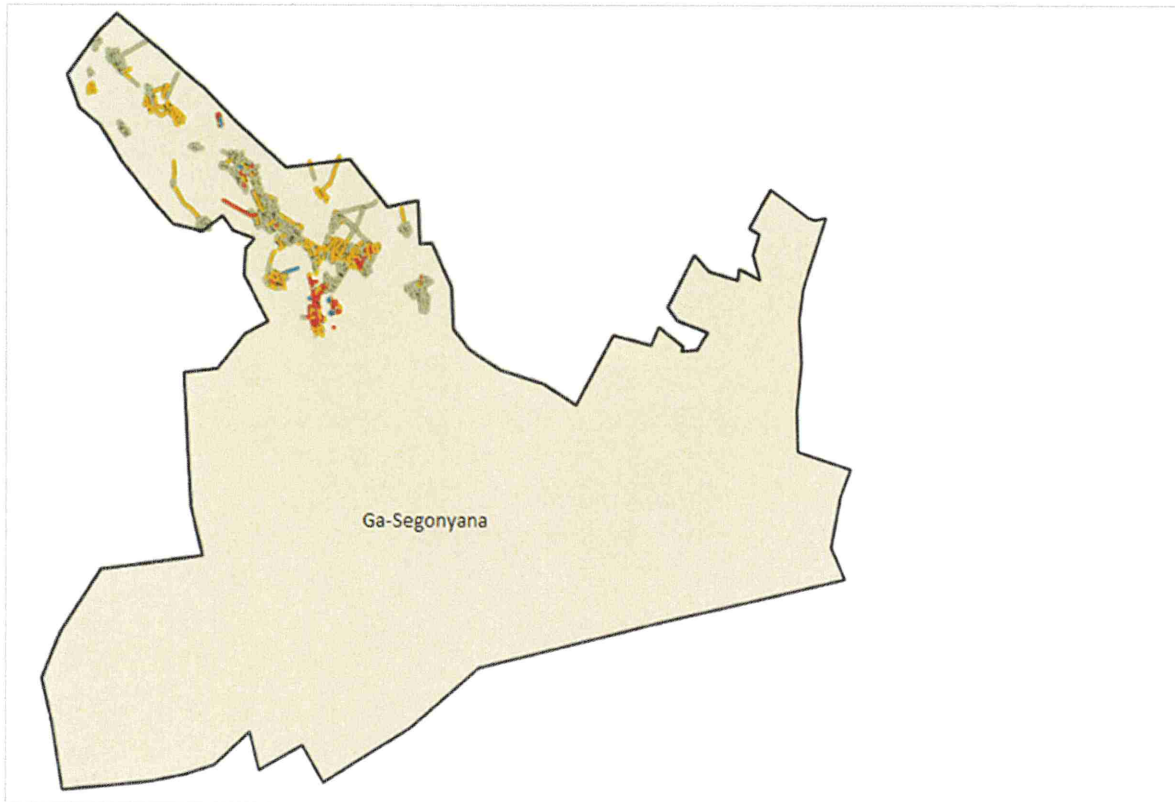


Figure 2-6: Ga-Segonyana Local Municipality Road network (small scale)

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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.

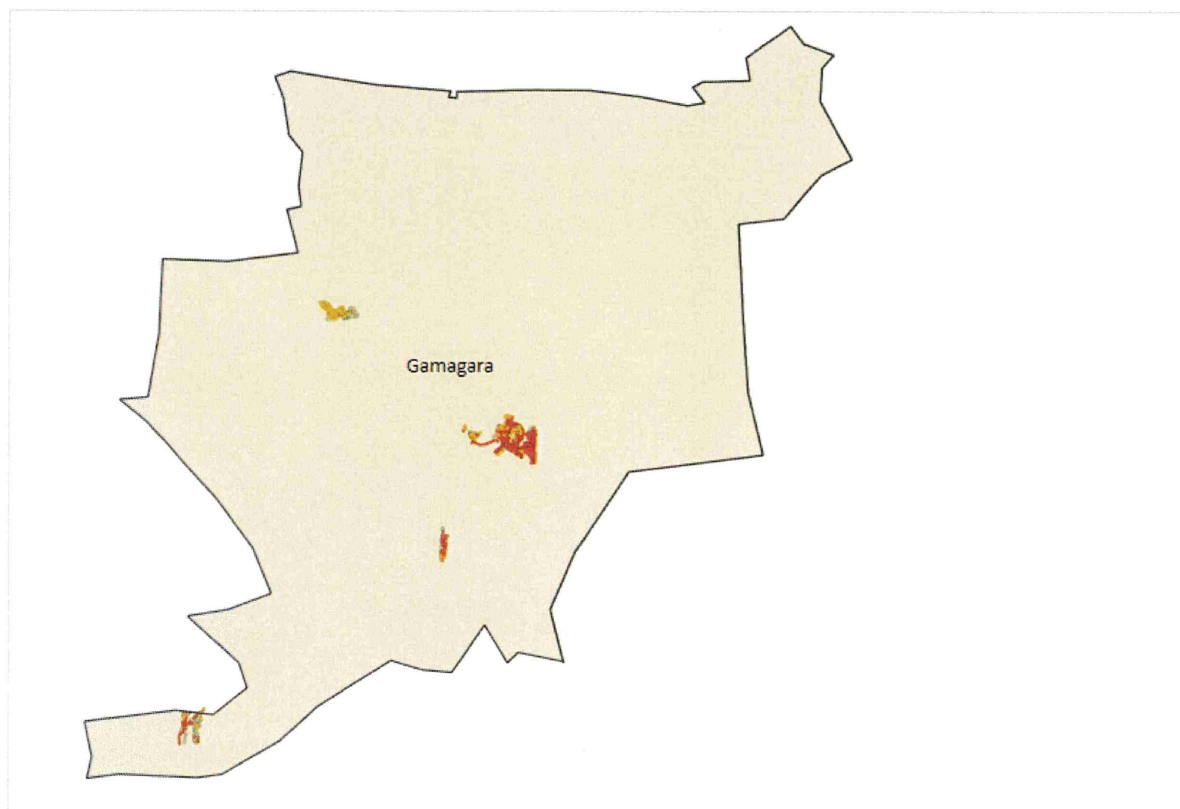


Figure 2-7: Gamagara Local Municipality Road network (small scale))

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



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 five years including the year 2025. 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	96		166	38	3892
Structures				13	10			23
Traffic	37				36			36

The traffic counts were last conducted in the year 2019 which makes the age of data more than 5 years old. To update the data, traffic counts were conducted in March 2025 and the data is currently being populated onto the system hence there is no data under the year 2025 in the table above.

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

Table 3-2: Age of Road condition Data

Surface	2017	2018	2019	2020	2021	2022	2023	2024	2025	Unassessed	Grand Total
BLOCK			3.01		11.36	12.52	12.72	11.58	4.13	5.13	60.45
FLEX	0.52	1.16	4.9	6.94	18.02	168.87	26.87	61.54	16.35	22.06	328.62
UNPAVED	14.87	0.1	9.78	49.24	67.65	179.3	723.22	1111.49	107.48	598.89	2862.93
Grand Total	15.39	1.26	17.69	56.18	97.03	360.69	762.81	1184.61	127.96	626.08	3252
3-yr TOTALS	34.34			513.9			2075.38			626.08	3252

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 2075.38 km of the total 3252 km network was assessed in past 3 years (2023, 2024, 2025) and 626.08 km of the network is not yet assessed. However, complete network assessment was achieved and reported in May 2022, the outstanding network length



comprises of roads which have been added into the network. The DM used to experience Various challenges that caused under performance in terms of achieving total network assessments within or under the 3-year period e.g., vacant position, 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.

Traffic counts were last executed in March 2025 and data is being uploaded onto the system data to update the previous captured in 2019.

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



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

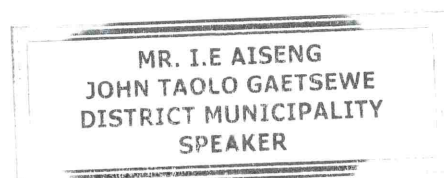
Mechanical and electronic measurements are not required for a Level I and II RAMS and therefore not included in the RAMP, hence none of the following are executed at JTG:

- 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 since 2021. 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
- 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 compliant 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 **Chapter 4.15 Performance Gap Analysis on page 54.**

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 May 2022. Additions of new roads to the network is currently being done and therefore:
 - 626.08 or 19.25 % of the network is not yet assessed.
 - Full network road condition assessments were reported in May 2022. The 19.25% 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 and bridge assessments of the attributes described complies to the standard for every 5 years for traffic and every 5 years for bridges.



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 Chapter 4.15 on page 54.

In total 1980.19 km of the network has deteriorated below the minimum VCI specified, which amounts to 71% of the 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 Network Overview

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

Table 4-1 below lists an overview of the extent of the whole road network under the jurisdiction of JTG.

Table 4-1: Extent of Municipal Roads, Traffic Counting Stations 2024/2025 Dataset

PAVED ROADS (KM)	UNPAVED (KM)	BLOCK (KM)	TOTAL (KM)	TRAFFIC STATIONS (NO)
328.62	2862.93	60.45	3252	35 (not yet captured, implemented Mar 2025)
10%	88%	2%	100%	

4.1.2 Road Surface Type

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 567.56 km of gravel and 554.72 km of earth respectively. Gamagara has the largest paved network, which amounts to 159.49 km of the total network.

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Table 4-2: Road Network in the John Taolo Gaetsewe District

MUNICIPALITY	FLEX	BLOCK	GRAV	EARTH	TRACK	GRAND TOTAL
Gamagara	163.96	5.60	26.20	76.78	0.00	272.54
Ga-Segonyana	137.48	35.53	225.57	1137.47	0.00	1536.05
Joe Morolong	27.18	19.32	369.31	1027.60	0.00	1443.41
GRAND TOTAL	328.62	60.45	621.08	2241.85	0.00	3252

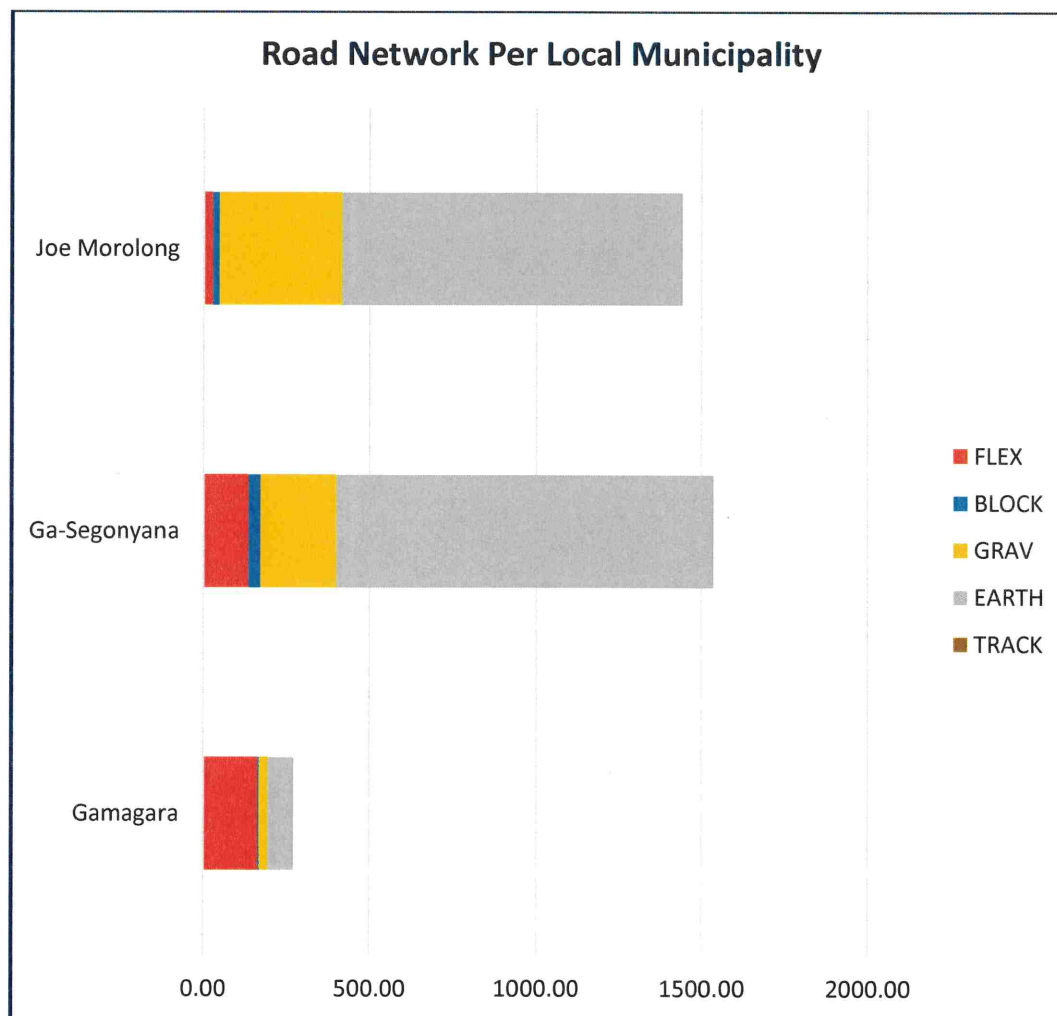


Figure 4-1: Road Surface Type

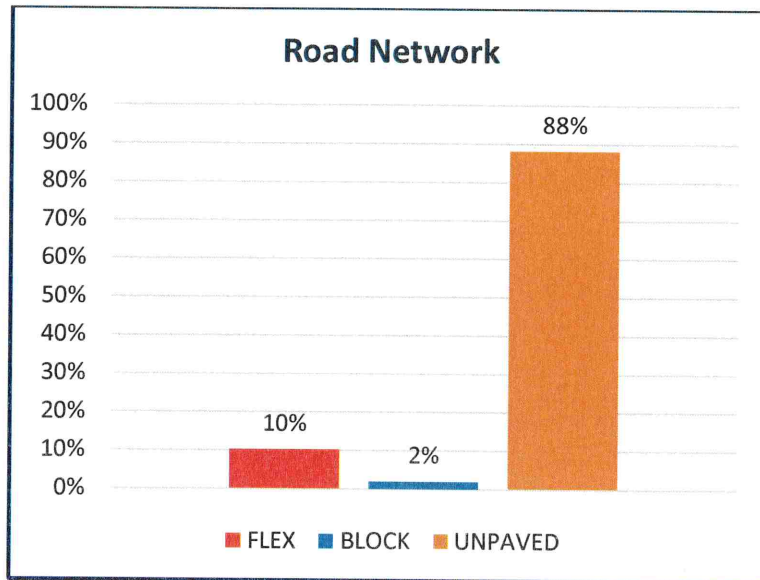


Figure 4-2: Road surface type %

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4.2 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 4-3 below.

Table 4-3: 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
Structures	no	2024	10
Road Markings & Furniture	no	2025	166

4.3 Usage of Assets

Table 4-4 and Figure 4-3 below presents the usage per road class for different surface types. A total of 556 135 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 556 134.62 of all LMs and, the paved roads serve 43% of the users while unpaved roads serve 57% of all user-km.

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

MUNICIPALITY	RCAM CLASS	FLEX	GRAV	EARTH	BLOCK	GRAND TOTAL
Gamagara	U5A	0	46.8	535.5	0	582.3
Gamagara	U4A	29855.5	1659	226.8	223.6	31964.9
Gamagara	U5B	81720.9	3958.2	6009.3	620.8	92309.2
Gamagara	U4B	0	0	138.6	0	138.6
Ga-Segonyana	R4	377	0	0	0	377
Ga-Segonyana	U4B	0	1646.4	2069.1	30	3745.5
Ga-Segonyana	U5B	64860.3	37981.8	75913.2	5470.4	184225.7
Ga-Segonyana	U4A	25317	1604.4	2827.8	39	29788.2
Ga-Segonyana	R5	0	0	4150.8	0	4150.8
Ga-Segonyana	U5A	3402.9	874.8	17411.4	126.4	21815.5



Joe Morolong	U4B	0	1041.6	0	0	1041.6
Joe Morolong	U5B	10619.1	60228	71498.7	2600	144945.8
Joe Morolong	U4A	11919	5216.4	4037.4	399.1	21571.9
Joe Morolong	R5	188.1	2308.32	14714.1	0	17210.52
Joe Morolong	U5	0	0	5.4	0	5.4
Joe Morolong	U5A	0	45	2216.7	0	2261.7

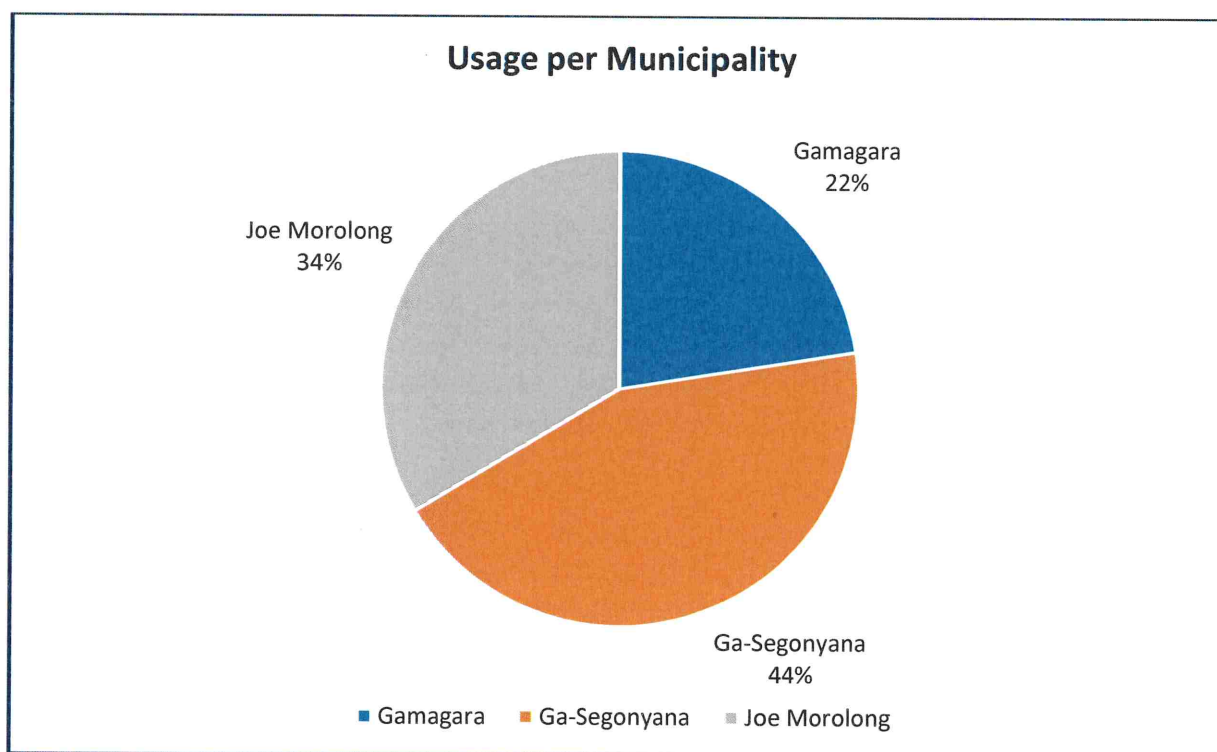


Figure 4-3: Usage per Municipality

4.4 Engineering Condition of Assets

Table 4-5 and Figure 4-4 below presents the condition of the JTG' network per surface type and Figure 4-7 gives a breakdown of the conditions per LMs. Joe Morolong's network has the largest portion in Very Poor Condition (82%). followed by Ga-Segonyana with 67 % of its network in a Very Poor condition and only 27% of Gamagara's network is in Very Poor condition.

In total 70% of the total network fall within a Very Poor condition, 3% in Poor, 3% in Fair, 3% in Good and 1% in Very Good.



Table 4-5: 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	3.1	13.67	17.3	20.17	1.08	5.13	60.45
EARTH	1631.93	38.51	4.12	4.36	1.53	561.4	2241.85
FLEX	62.54	57.61	86.88	67.15	32.38	22.06	328.62
GRAV	581.19	1.62	0.38	0.4	0	37.49	621.08
GRAND TOTAL	2278.76	111.41	108.68	92.08	34.99	626.08	3252

Figure 4-4: Condition Category per Municipality

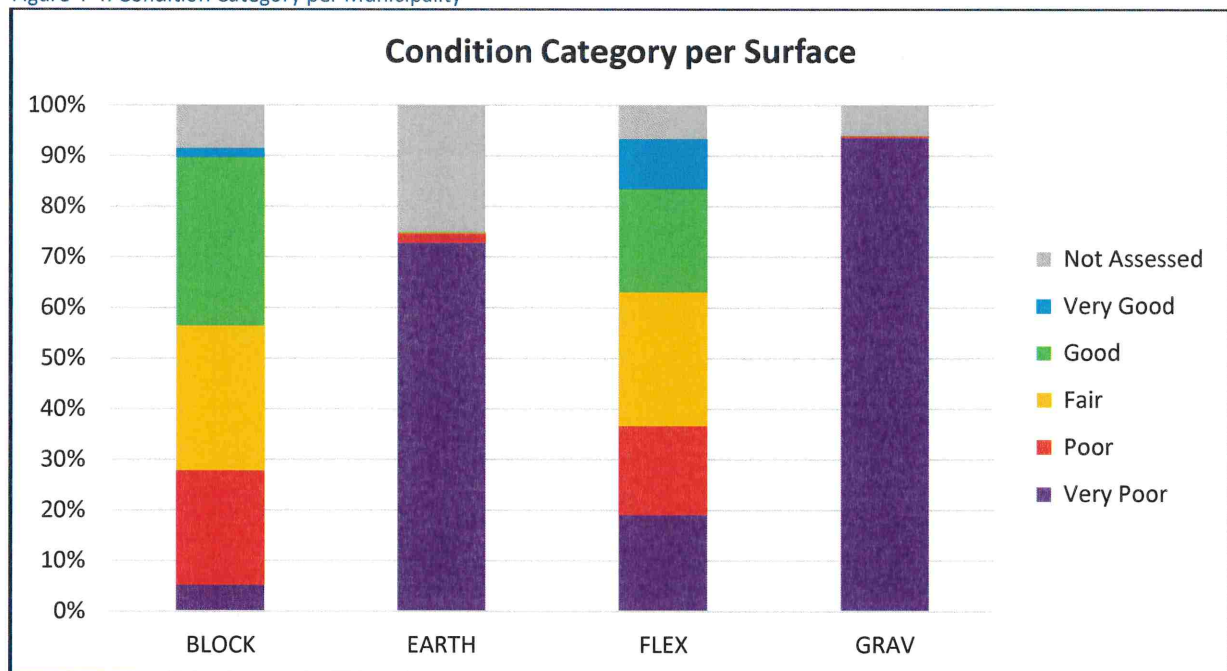


Table 4-6 below represents the Condition of the network in terms of RCAM class. All assessed roads in Class U5B are Very Poor, 2602.39 km (80%) of the network falls within a Very Poor condition. Only 34.99 km (1%) of the assessed network is Very Good.

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Table 4-6: 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	24.93	0.8	0.15	0.00	0.00	202.38	228.26	7%
U5A	0.5	0.00	0.13	0.00	0.00	235.67	236.30	7.3%
U5B	2117.25	103.01	94.32	80.60	31.77	175.44	2602.39	80%
U4B	29.64	0.00	0.11	0.07	0.00	4.56	34.38	1.1%
U4A	106.44	7.6	13.71	11.41	3.22	7.97	150.35	4.6%
Grand Total	2278.76	111.41	108.68	92.08	34.99	626.08	3252	100%
%	70.1%	3.4%	3.3%	2.8%	1.1%	19.3%	100%	

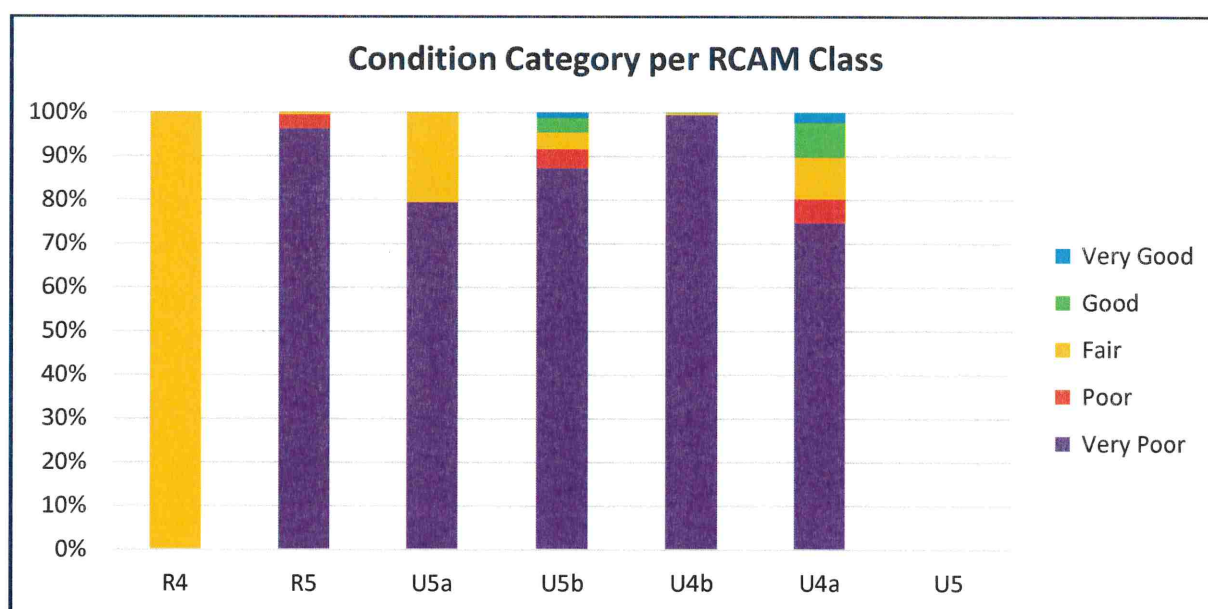


Figure 4: Condition Categories of assessed network per RCAM

4.5 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 28.
- 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.

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.

4.6 Comparative Conditions

4.6.1 Comparative conditions Flexible Roads

Figure 4-5 below represents the flexible distresses comparison. Surface failures, crocodile cracks , pumping, surface patching and surface cracking are the surfacing distresses with the largest sections falling in the Severe and Warning Category.

Structural defects, especially Potholes 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.

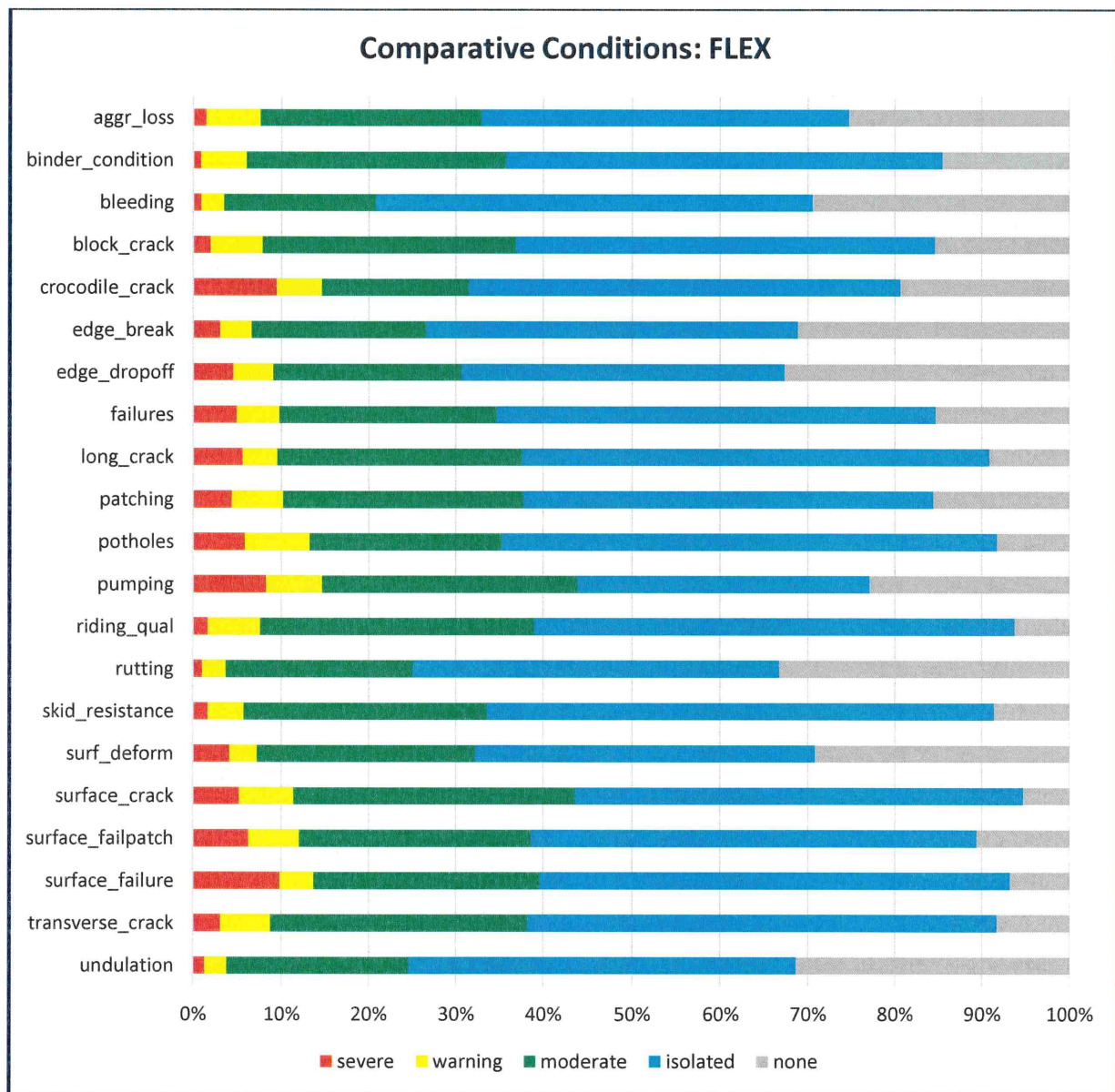


Figure 4-5: Comparative Conditions Flexible roads

4.6.2 Comparative Conditions Block Paved Roads

The comparison of the distresses for Block paved roads indicates the worst conditions exist on the surface integrity, joint losses and undulation. 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.

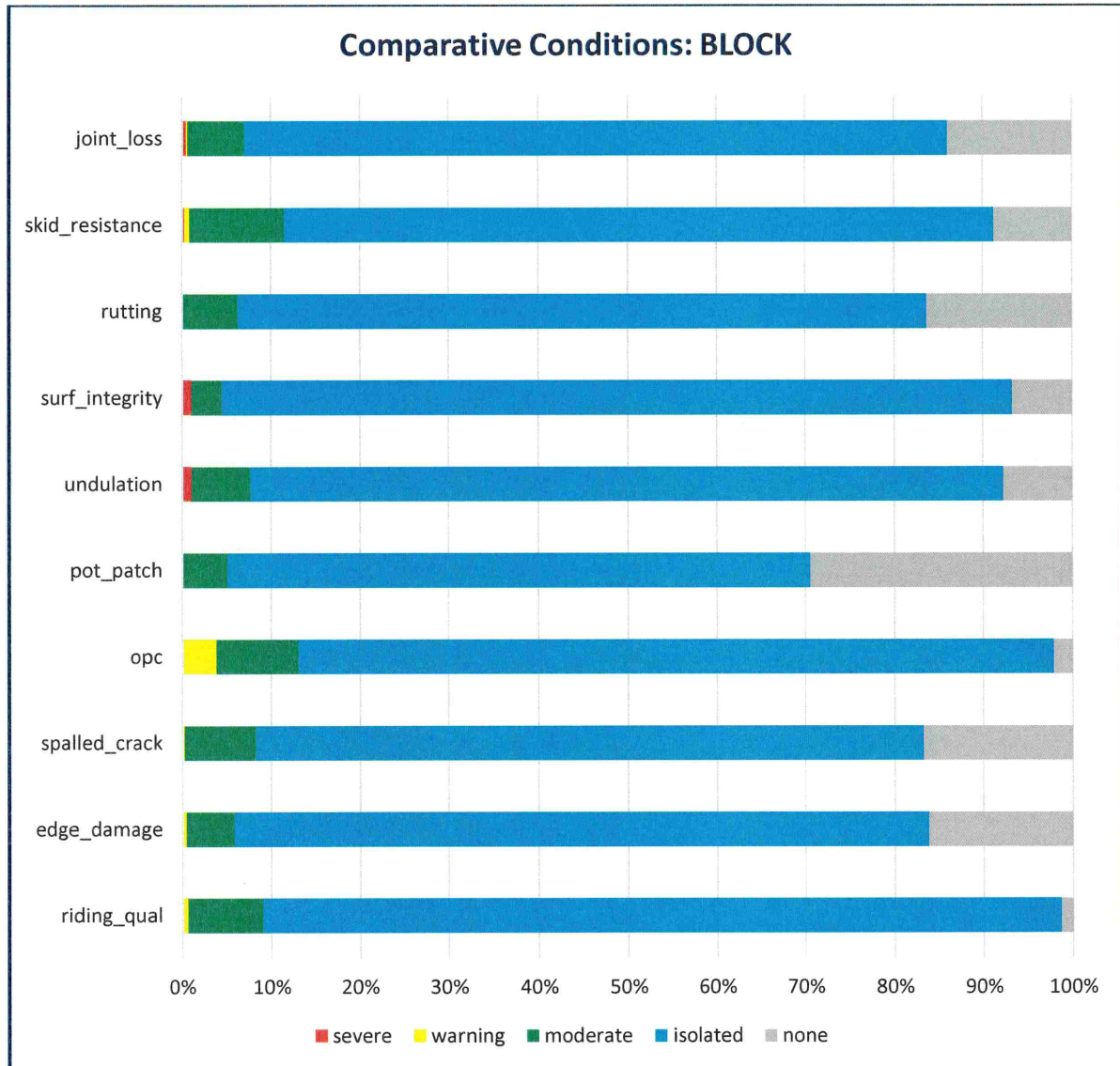


Figure 4-6: Comparative Conditions Block Roads

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4.6.3 Comparative Conditions Unpaved Network

The comparative conditions of the unpaved network shows that the quality and quantity of the gravel are the factors that contribute to most of the severe condition of the network and factors constituting the quality especially stoniness, rutting, potholes, loose material and corrugations. This indicates that blading should receive attention.

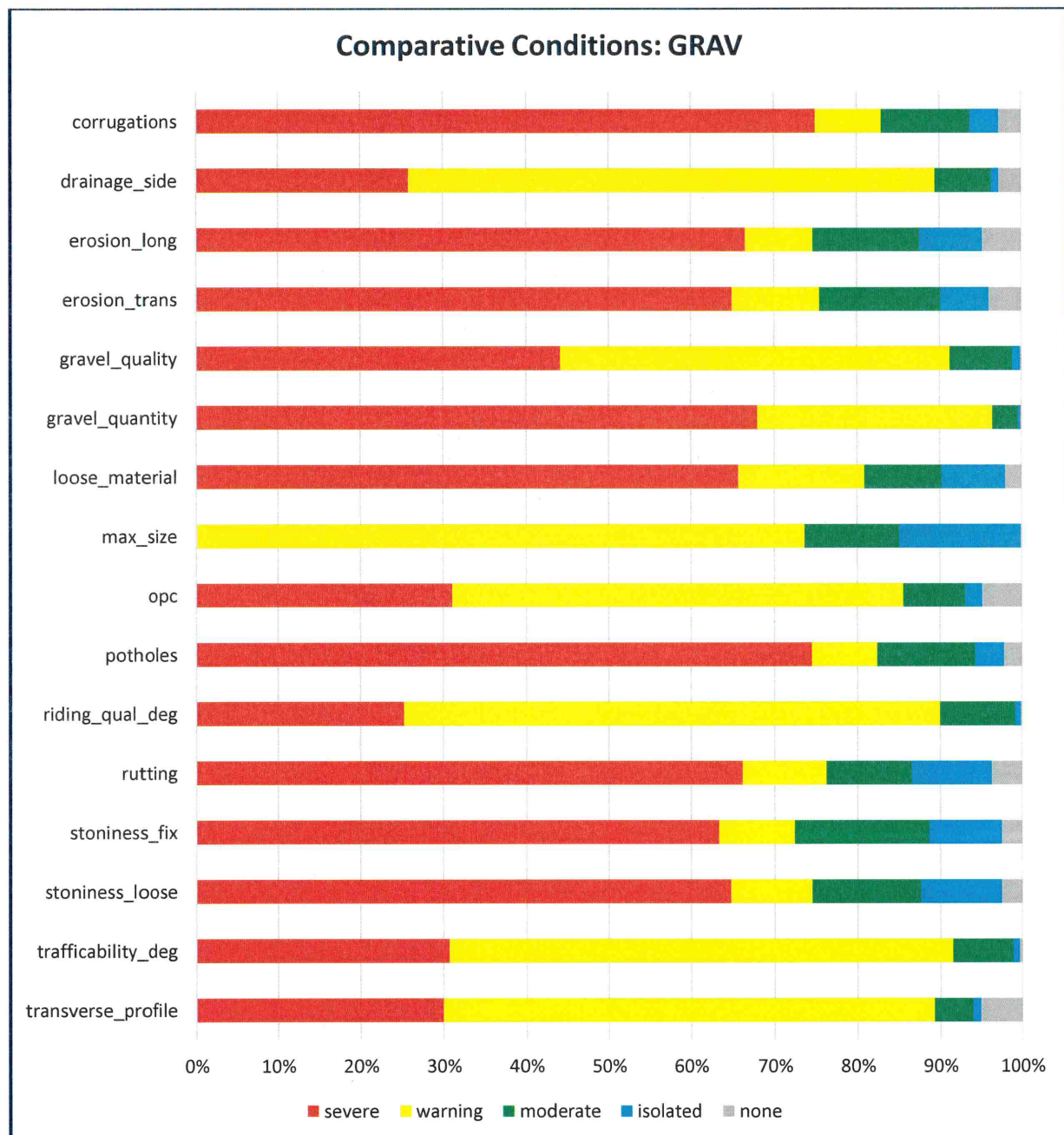


Figure 4-7: Comparative Conditions Unpaved Roads



4.6.4 RCAM Classification

Roads are classified in terms of future year classification. For RCAM classification, a distinction is made between rural and urban areas.

RCAM classification for JTG was completed in 2021, currently being reviewed with the addition and digitising of new roads.

Roads in rural and urban areas have the same six functional classes but at different scales and standards. The generic Class 1 to 6 descriptions (without the R or U) can be used in both rural and urban areas. However, if the context is not clear, the following classes presented in Figure 4-8 as extracted from TMH22 apply.

An urban area is defined as an area that has been subdivided into erven, whether formal or informal. It includes areas on which townships have been formally declared as well as informal settlements. Rural settlements of one hectare or less are also included in the urban definition.

Rural Classes		Urban Classes	
R1	Rural principal arterial*	U1	Urban principal arterial
R2	Rural major arterial*	U2	Urban major arterial
R3	Rural minor arterial*	U3	Urban minor arterial
R4	Rural collector road	U4	Urban collector street
R5	Rural local road	U5	Urban local street
R6	Rural walkway	U6	Urban Walkway

* If preferred, the word "arterial" can be substituted by "distributor" for Rural Classes 1 to 3.

Figure 4-8: Extract from TMH22

A summary of the RCAM classification is provided in Table 4-7 and Figure 4-9 below. 2561.45 km of the total network of 2773.11 km of JTG is classified as Class U5B

Table 4-7: RCAM Class of all Roads (km)

ROAD NETWORK EXTENT PER RCAM PER ROAD TYPE								
LOCAL MUNICIPALITY	RCAM CLASS							
Surface	R4	R5	U5A	U5B	U4A	U4B	U5	Grand Total
BLOCK			0.79	54.32	5.09	0.25		60.45
FLEX	0.26	0.33	5.97	275.79	46.27			328.62
UNPAVED		227.93	229.54	2272.28	98.99	34.13	0.06	2862.93
Grand Total	0.26	228.26	236.3	2602.39	150.35	34.38	0.06	3252

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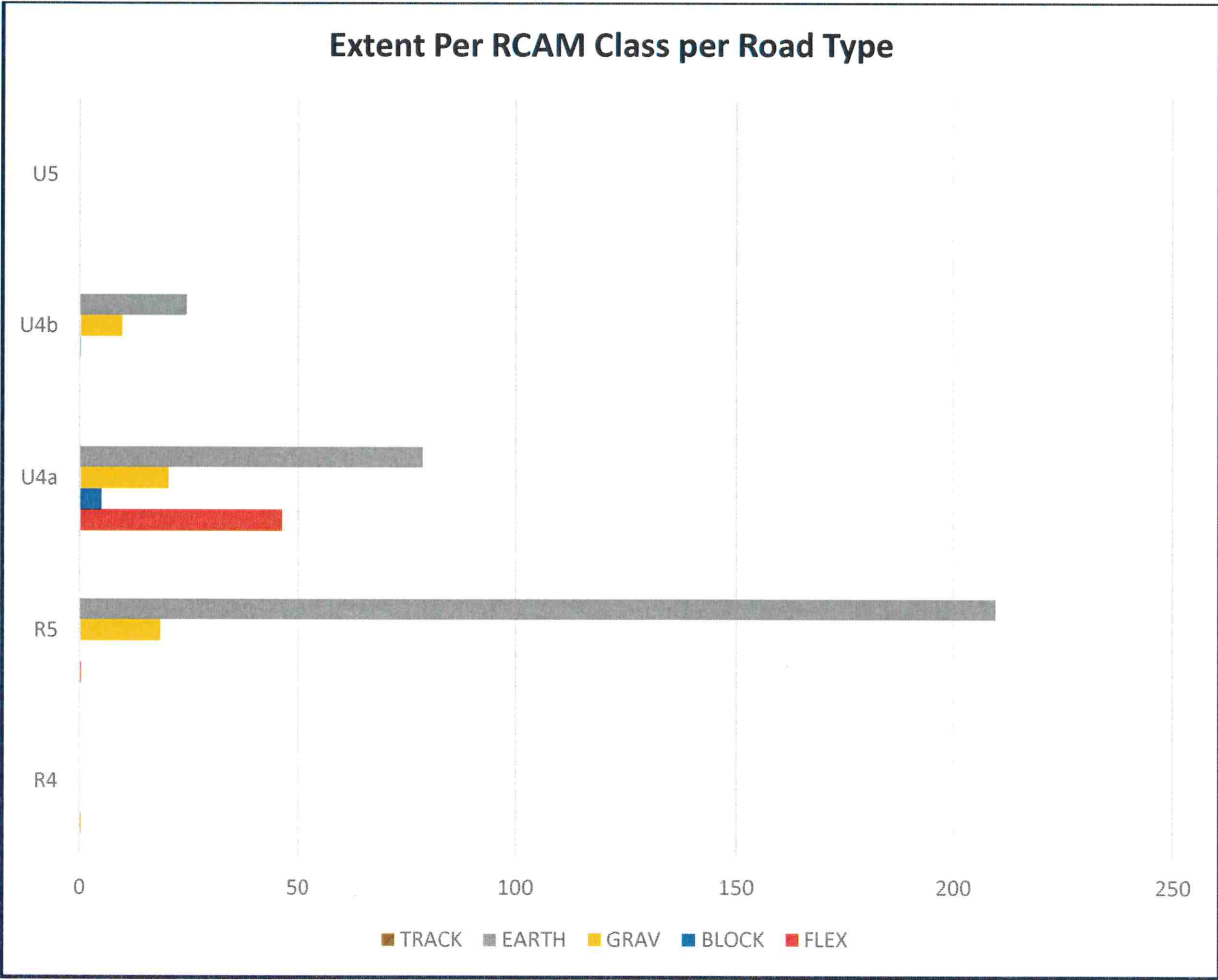


Figure 4-9: RCAM Classification

4.7 Trend Analysis

Figure below shows the network condition trend from 2016 to current year 2025. This indicates that all conditional and functional indices improved efficiently in the year 2019 with a decline in 2020 and 2023, the VCI has been in decline without improvement since the year 2022 until the current year of 2025. The VCI and VCI deduct are both in decline falling below the 20% condition index. These roads fall within the very poor condition defined by minimum VCI range lower than 35%. The roads started deteriorating in the year 2023, these means these roads require major reconstruction to return them to good state.

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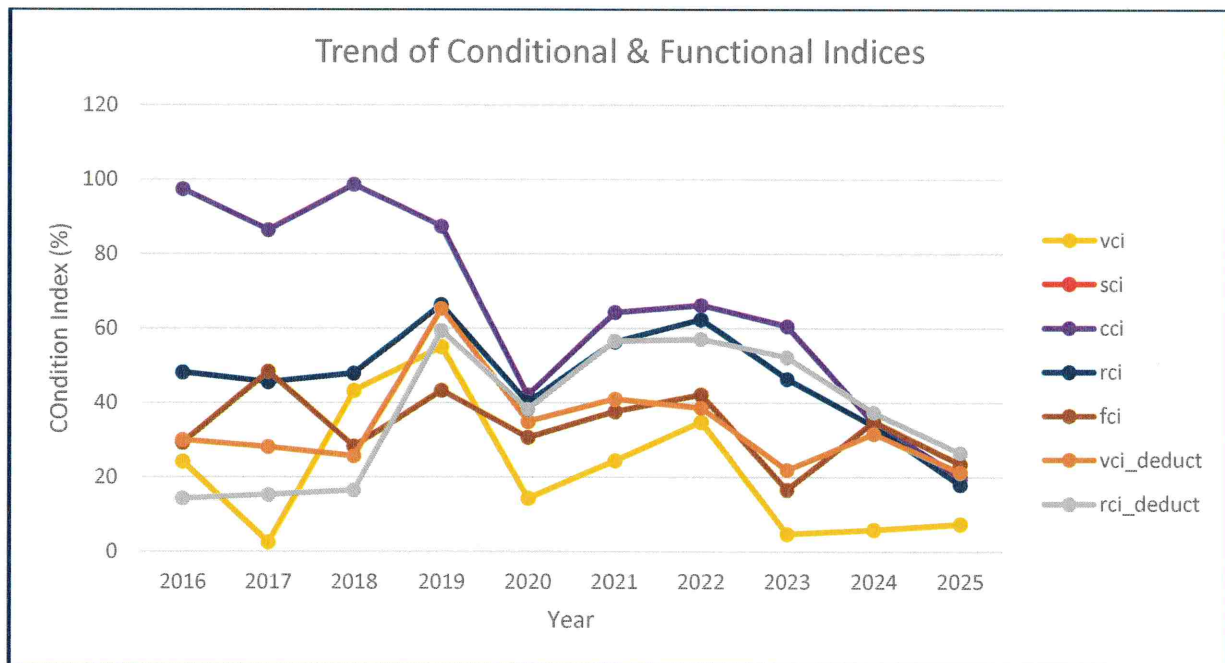


Figure4-10: Trend Analysis

4.8 Index Comparisons/Composite indices

Figure 4-10 represents the index comparisons of the 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 however be noted that the function of the road is measured subjectively via visuals and not via road surveillance measurements.

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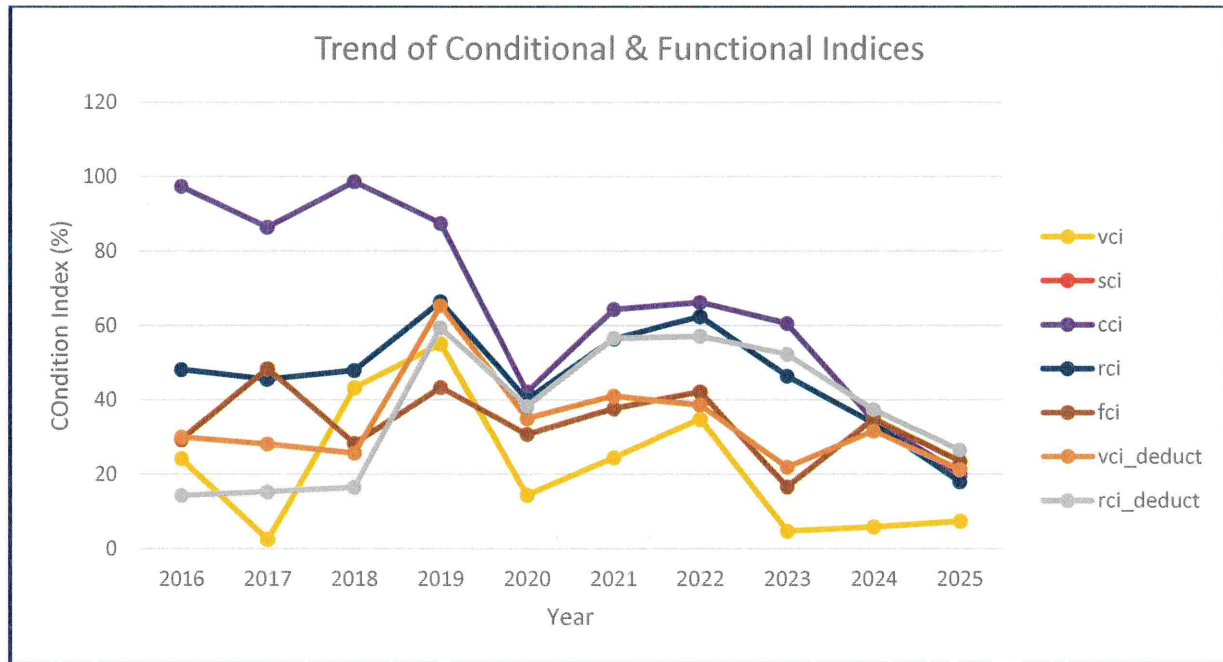


Figure 4-10: Index comparison of Flexible

4.9 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 - Refer to **Chapter 4.5 on page 39** for a detailed explanation of Functional Condition Indices, hence VOC and EUC are not calculated.

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.

4.10 Capacity Delays

As a road approach capacity, the speed of the road users will reduce, and time delays will result. While actual speed measurements are complex and are significantly affected by many factors such as intersection and passing lanes, a Level II analysis can produce reasonable results using simplified assumptions using traffic (AADT), percentage (%) heavy vehicles, equivalent vehicle units (EVU) and Speed factors.



Capacity delays are therefore dependant on comprehensive Traffic (AADT) measurement data.

Traffic data collection executed by JTG consist of simplistic data, hence Capacity delays cannot be calculated and is not reported. **Accident data** is not reported on this LEVEL I of RAMS execution.

4.11 Asset Valuation

4.11.1 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 4-8 below.

Table 4-8: Surface, terrain and Base unit costs and EUL

ID	CATEGORY	TYPE	ITEM	COST_M2	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
13	Terrain	Rolling	R	200	40
14	Terrain	Mountainous	M	400	40
15	Terrain	Other	other	386	
16	Base	Base	base	250	20

Table 4-9 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 R1.8 Billion and the DRC at R351 Million with a depreciation of R1.4 Billion.



Table 4-9: CRC, DRC and Depreciation

MUNICIPALITY/SURFACE	CRC	DRC	DEPRECIATION
GAMAGARA	R535 630 315.00	R200 855 858.76	R334 774 456.24
BLOCK	R23 034 000.00	R13 807 948.19	R9 226 051.81
FLEX	R463 433 425.00	R187 047 910.57	R276 385 514.43
UNPAVED	R49 162 890.00	R0.00	R49 162 890.00
GA-SEGONYANA	R744 177 652.01	R106 048 276.45	R638 129 375.56
BLOCK	R116 590 500.00	R63 993 055.05	R52 597 444.95
FLEX	R363 261 300.00	R41 516 445.39	R321 744 854.61
UNPAVED	R264 325 852.01	R538 776.01	R263 787 076.00
JOE MOROLONG	R495 922 870.00	R44 660 273.98	R451 262 596.02
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	R365 829 570.00	R67 079.91	R365 762 490.09
Grand Total	R1 775 730 837.01	R351 564 409.19	R1 424 166 427.82

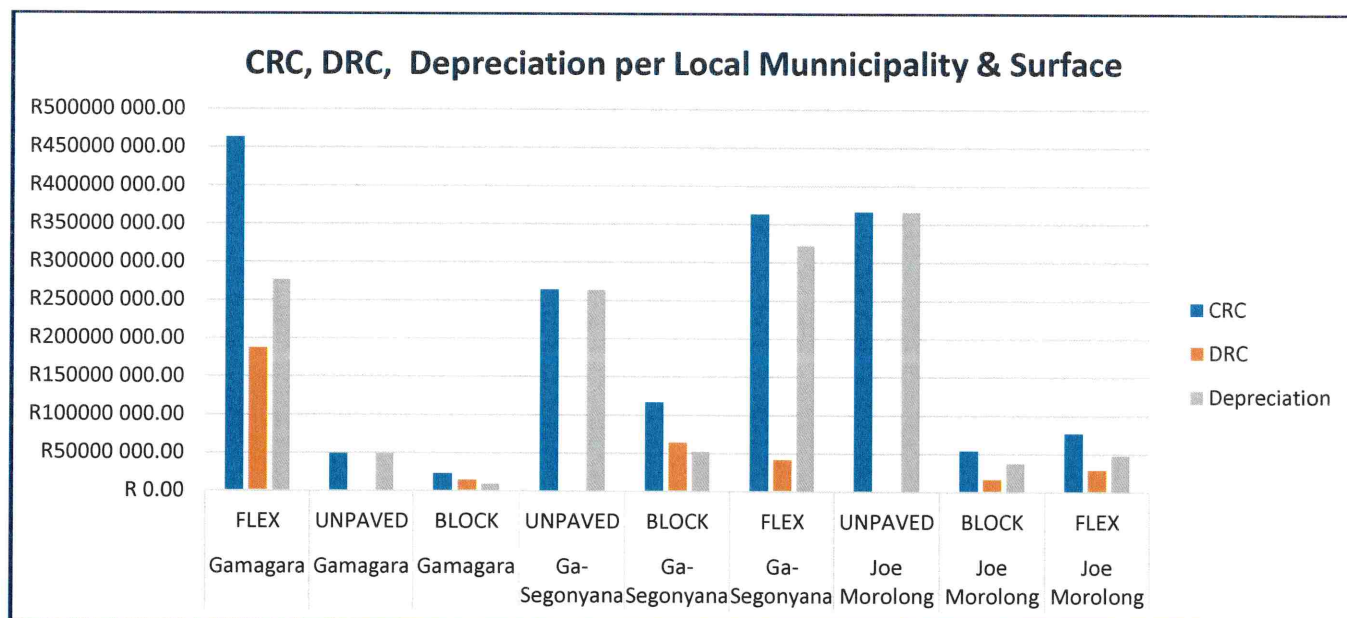


Figure 4-11: CRC, DRC, Depreciation

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4.11.2 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 4-9 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: $DRC = CRC \times [(CI - \text{Terminal CI}) / (100\% - \text{Terminal CI})]$.

4.11.3 Depreciation

The depreciation is the difference between the CRC and DRC and is indicated in Table 4-9 above.

$\text{Depreciation} = CRC - DRC$

4.12 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.



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 4-10 and Figure 4-13 below presents the extent and percentage of the network not meeting the standards above. The extent of 191.10 km paved (58%) of the flexible network has depreciated beyond the minimum threshold. 35% of the block paved roads and 83% of the unpaved network has deteriorated beyond the minimum threshold. Out of the total network of 3252 km, 2861.66 km or 88% of the network has deteriorated beyond the minimum threshold level.

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Table 4-10: Extent (km) of Road Network Depreciated beyond the threshold

EXTENT BELOW MINIMUM DRC/CRC				
RCAM_CLASS	FLEX	BLOCK	UNPAVED	GRAND TOTAL
U4A	28.26	0.96	98.99	128.21
U5B	156.78	20.01	2271.44	2448.23
U4B	0	0	34.13	34.13
R5	0.33	0	227.93	228.26
U5A	5.82	0	229.11	234.93
R4	0	0	0	0
GRAND TOTAL	191.19	20.97	2387.58	2861.66
PERCENTAGE TOTALS	58%	35%	83%	87%

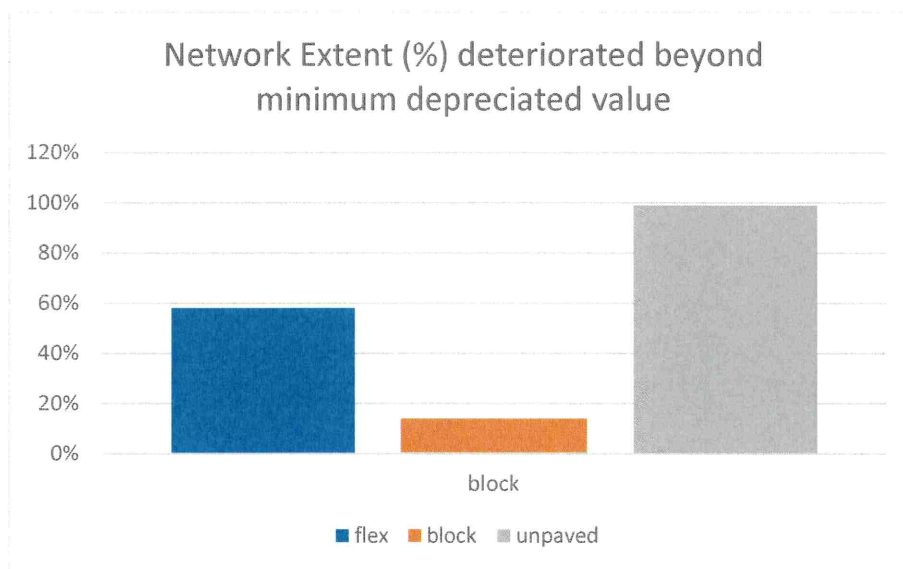


Figure 4-13: Percentage of network depreciated beyond threshold

4.13 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 4-11 and Figure 4-14 below indicates that 209 km of the assessed flexible network has less than 5 years in terms of RUL. 18.24 km of the Block Roads assessed has a life left of between 5 and 10 years.

Table 4-11: Remaining Useful Life of assets (Km)

REMAINING USEFUL LIFE OF ASSETS (KM)		
RUL (YEARS)	FLEX	BLOCK
5-10	84.48	13.87
10-15	13.01	18.24
>15		20.31
<5	209.07	2.9
GRAND TOTAL	306.56	55.32

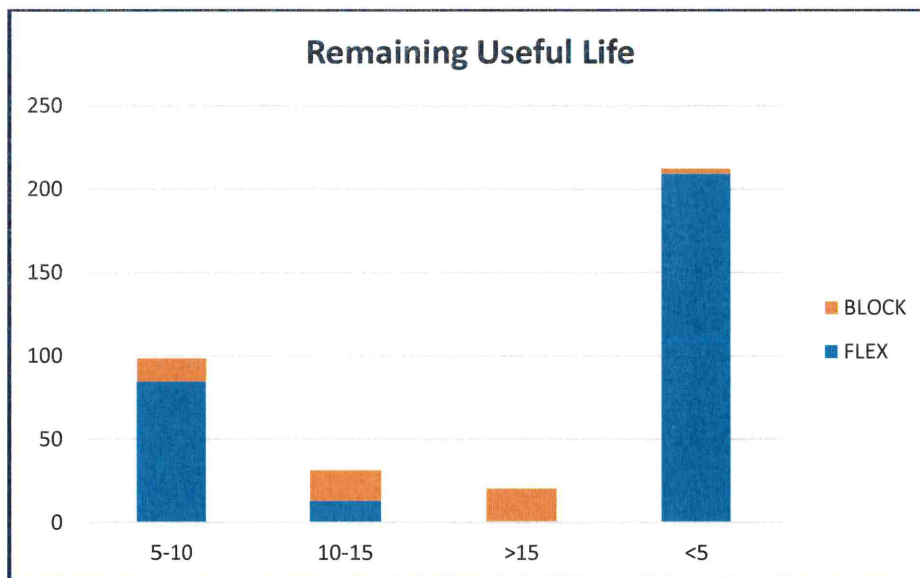


Figure 4-14: RUL

4.14 Risks

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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.

4.15 Performance Gap Analysis (Problem Statements)

The main purpose of the situational analysis is to compare actual conditions and service levels being provided (the current state) against the minimum targets as documented in TMH22 F7.5 for this RAMP.

Table 4-12 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.

Table 4-12: Minimum condition target (Extract from TMH22)

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



Table 4-13: Extent of network smaller than VCI target (km)

DETERIORATED KM BELOW VCI THRESHOLD	EARTH	FLEX	GRAV	TOTAL KM
ROW LABELS	KM	KM	KM	
vci < 30.0	1366.1	67.19	556.4	1989.61
%	61%	20%	90%	62%
Gamagara	29.79	15.26	19.04	64.09
Ga-Segonyana	563.52	46	201.24	810.76
Joe Morolong	772.79	5.93	336.12	1114.84
vci < 35.0	99.41	16.53	24.79	140.73
%	4%	5%	4%	4%
Gamagara	2.23	3.63	3.33	9.19
Ga-Segonyana	53.86	10.39	9.04	73.29
Joe Morolong	43.32	2.51	12.42	58.25
Grand Total	1465.1	83.7	581.19	2130.42
%	65%	25%	93%	67%

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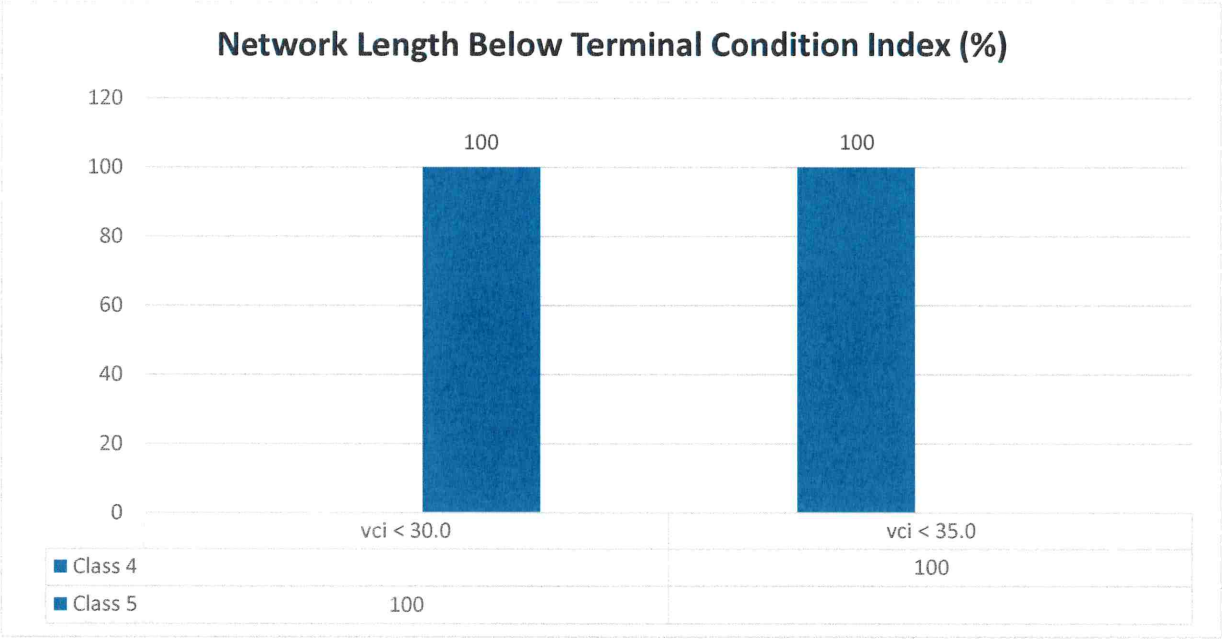


Table 4-13 above presents the extent (km) of the network individual segments which have a VCI below the target, which is “Not Complying”. In total 2130.42 km of the network has deteriorated below the minimum VCI specified, which amounts to 67% of the network.

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

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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



5.2 Need Determination of Current Assets

5.2.1 Paved Roads Initial Need Determination

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.

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 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.

The total need of the paved network is presented in Table 5-2. Engineering Responsive needs i.e., Rehabilitation amounts to 57.61 km at a cost of R193 897 280.00. Reconstruction accounts for the largest portion of funding needed at R594 130 000.00 for 62.5 km.



Table 5-2: Paved Road Network Maintenance and Rehabilitation Technical Need

PAVED NETWORK TECHNICAL NEEDS			
PROGRAM	TREATMENTS	LENGTH_KM	COST
RECONSTRUCTION		62.5	R594,130,000.00
RECONSTRUCTION	RECONSTRUCT (FLEX)	62.5	R594,130,000.00
REHABILITATION		57.61	R193,897,280.00
REHABILITATION	REHABILITATION	57.61	R193,897,200.00
RESURFACING		8.46	R7,152,600.00
RESURFACING	RESURFACE	8.46	R7,152,600.00
ROUTINE MAINTENANCE		237.36	R546,920,588.80
ROUTINE MAINTENANCE	CRACK SEAL	8.30	R3,186,150.00
ROUTINE MAINTENANCE	PATCHING, CRACK SEAL	2.58	R2,357,398.40
ROUTINE MAINTENANCE	DILUTED EMULSION, PATCH20 AND SEAL 100, PATCHING	0.78	R2,049,952.80
ROUTINE MAINTENANCE	DILUTED EMULSION, PATCHING	0.57	R821,415.60
ROUTINE MAINTENANCE	PATCHING, DILUTED EMULSION	0.57	R821,415.60
ROUTINE MAINTENANCE	PATCHING	4.63	R5,093,267.20
ROUTINE MAINTENANCE	PATCH 20 & SEAL 100	68.08	R102,348,400.00
ROUTINE MAINTENANCE	PATCH 20 & SEAL 100, CRACK SEAL	22.65	R48,798,750.00
ROUTINE MAINTENANCE	PATCH 20, SEAL 100, PATCHING	11.52	R30,794,079.20
ROUTINE MAINTENANCE	PATCH 20 AND SEAL 100, CRACK SEAL, PATCHING, DILUTED EMULSION	4.48	R11,043,750.00
ROUTINE MAINTENANCE	PATCH 20 AND SEAL 100, DILUTED EMULSION	2.4	R2,929,950.00
ROUTINE MAINTENANCE	PATCH 20 AND SEAL 100, PATCHING, CRACK SEAL	6.14	R19,243,320.00
ROUTINE	PATCH 20 AN SEAL 100,	1.27	R3,720,071.60

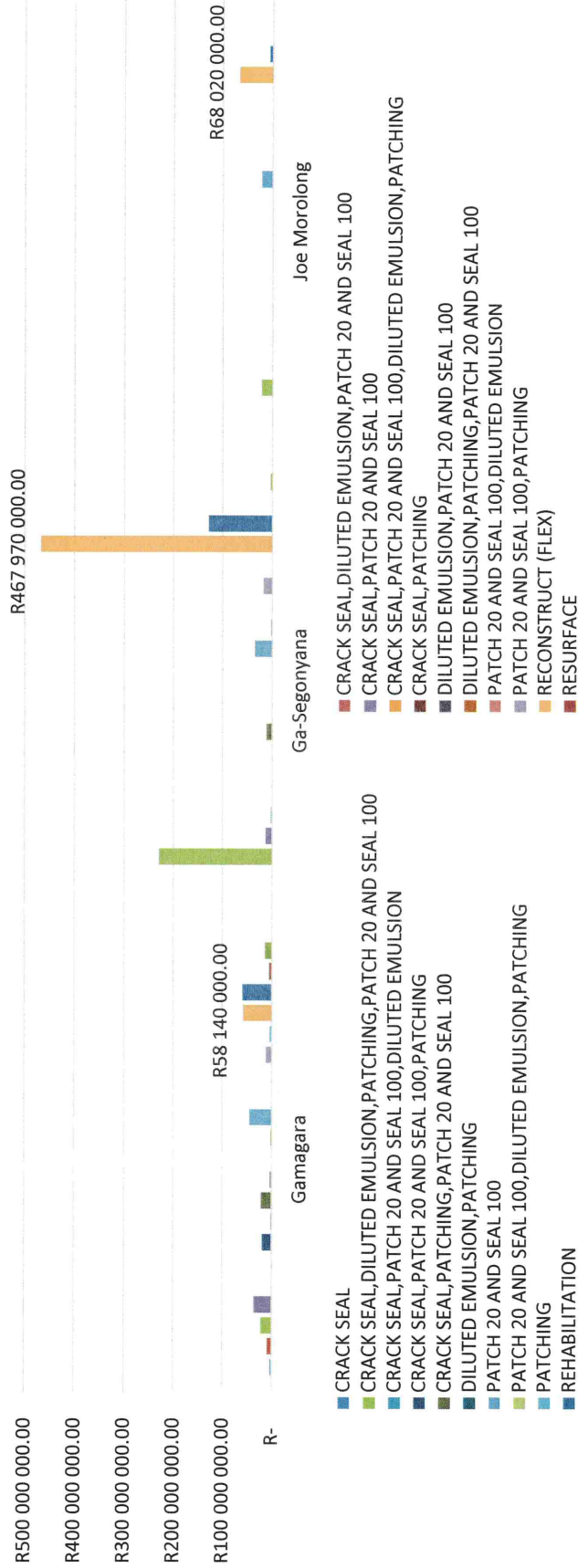


MAINTENANCE	PATCHING, EMULSION	DILUTED		
SPECIAL MAINTENANCE			10.59	R18,001,200.00
SPECIAL MAINTENANCE	SPECIAL MAINTENANCE		10.03	R18,001,200.00
GRAND TOTAL			348.68	R1,360,191,588.80

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Technical needs Paved



Figure

5-1:

Maintenance

Needs

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5.2.2 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.

The network level maintenance and rehabilitation technical needs for JTG unpaved roads is summarized as follows in Table 5-3. Engineering responsive maintenance i.e., Reconstruct gravel accounts for the largest proportion of maintenance at R3 Billion and 1798.449 km. Routine Maintenance i.e., blading amounts to 2046.07 km for R22 Million, dust treatment amounts to R414 million at 2072.34 Km. The need termination for unpaved roads is estimated to cater for total extend in each treatment category, meaning that roads are duplicated across treatment types hence the length, furthermore, this indicates that a road section or segment may need more than one treatment, or may one of the treatments depending on priority.





Table 5-3: Unpaved Maintenance Need

UNPAVED NETWORK TECHNICAL NEEDS			
PROGRAM	TREATMENTS	LENGTH_KM	COST
BLADING		2237.73	R24,553,661.00
BLADING	BLADE	2237.73	R24,553,661.00
RESHAPING		4.21	R463,870.00
RESHAPING	RESHAPE	4.21	R463,870.00
REGRAVELLING		8.71	R1,198,725.00
REGRAVELLING	REGRAVEL	8.71	R1,198,725.00
RECONSTRUCT (GRAV)	RECONSTRUCT (GRAV)	2151.78	R4,184,789,700.00
RECONSTRUCT (GRAV)	RECONSTRUCT (GRAV)	2151.78	R4,184,789,700.00
GRAND TOTAL		4402.43	R4,211,005,956.00

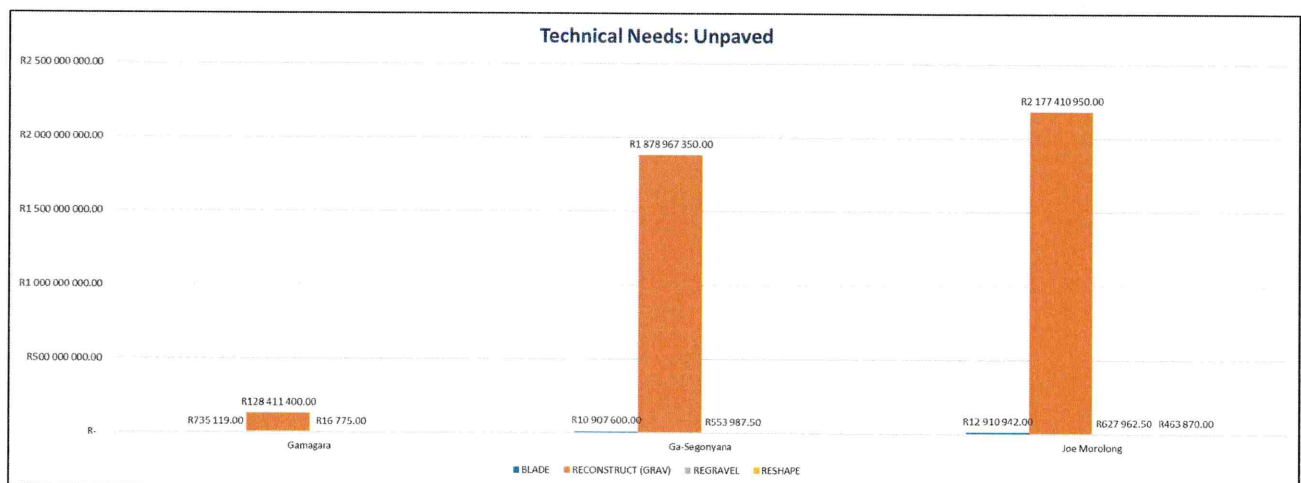
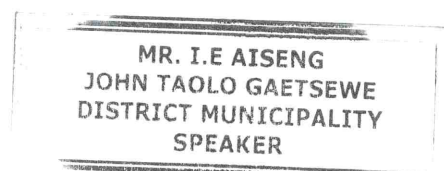


Figure 5-2: Unpaved Maintenance Need

5.3 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. This is usually difficult to implement as municipalities must ensure that existing assets are maintained. Detailed Information regarding event driven maintenance could be obtained from Gamagara LM as it gives a breakdown of the budget and expenditure over the years. Other LMs (Ga-segonyana and Joe Morolong) have planned projects and timelines without available funds or funding strategy. The identified projects are a result of related natural disasters. During flooding in 2021 bridges were washed away and some villages within the district are located on the flood line. There is a need for construction of culverts and reconstruction of bridges.





Gasegonyana Local municipality

Table 5-4: Event driven Maintenance Ga-Segonyana

Town	Assets	Budget	Year	Funding status
Maruping	Culverts	Construction of Culverts needed	2025-2028	Not Funded
Tswelelopelo	Culverts	Construction Culverts needed	2025-2028	Not Funded
Maruping	Culvert Bridge	Re-Construction	2024-2028	Not Funded
Batharos	Culvert bridge	Re-construction	2024-2028	Not Funded
Gamopedi	Foot Bridge	Re-construction	2024-2028	Not Funded
Seoding	Manmande Bridge	Re-Construction	2024-2028	Not Funded
Ga-segonyana	Resealing and patching of Potholes around town	Maintenance	2024-2028	Not Funded
Ward 2-15	Resealing and patching of Potholes	Maintenance	2024-2028	Not Funded

Planned maintenance

Table 5-5: Planned Event driven Maintenance Ga-Segonyana

TOWN NAME	LENGTH	Planned Action	Year	Budget	Funding status
Kuruman	15Km	Maintenance of Internal Street	2025-2028	R6 000 000	Not Funded
Wrenchville	7,5Km	Maintenance internal roads	2025-2028	R4 000 000	Not Funded
Mothibistad	4Km	Maintenance internal roads	2025-2028	R 2 000 0000	Not Funded
Bankhara Bodulong	3Km	Maintenance	2025-2028	R 4 000 000	Not Funded

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	main access road			
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Past years Maintenance

There is no record of past year maintenance for Ga-Segonyana local Municipality.

Gamagara Local Municipality

Olifanshoek town in Gamagara LM has been a focus point due to high demand of flood streams management. Olifanshoek is situated in a flood zone thus on heavy rainy days it experiences flooding. This flooding is affecting pedestrian safety, particularly due to the absence of designated walkways and the hazardous conditions of the flooding streams. Residents are forced to cross the streams under perilous circumstances, often leading to a tragic outcome such as drowning. The following key points need attention and are planned to be resolved within the 2025-2028 financial years.

- Construction of pedestrian bridge.
- Storm water channel crossover bridge
- Main entrance of Olifanshoek-Construction of pedestrian walkways on both sides to separate pedestrian traffic from vehicular traffic.

The municipality is in a process of sourcing out funding to resolve these challenges. Currently, no information has been shared on the status for planning of these projects.

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

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5.4 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

5.5 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](#).

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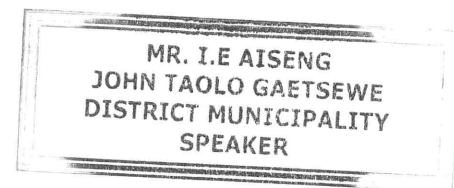
5.6 Decision support (DS) system

5.6.1 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.

5.6.2 Geographic Information System

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

5.6.3 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

5.6.4 Decision Support (DS) implemented by JTG.

A service provider 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 compliant 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 (Gasegonyana & Gamagara) have confirmed utilization of the system and that no challenges have been encountered, the district is available to provide support.

5.7 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.

5.7.1 Sector Department projects

Projects are broken down into the following sections and provide a list of the projects planned for the municipality.

MIG 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)



- 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 Bitumen Surface Road – Interlinking Villages (Churchill to Batlharos 9 Km)
- Upgrade To Interlocking Paving Block Surface Road – Interlinking Cemeteries (Seoding 5Km)
- Upgrade To Interlocking Paving Block Surface Road – Interlinking Cemeteries Sites (Mothibistad 1Km)
- 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)

5.7.2 Local Municipalities with SLPS

As mentioned in 5.7, 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 5-4: 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	R21 354 653,86		

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internal road to paved road (Tsago Road)			
TOTAL APPROVED MIG ALLOCATION	R 30 635 599,13	R 31 014 042,69	R20 789 864,91

Table 5-5: SLP Infrastructure Projects for Ga-Segonyana LM (Pg 140: IDP 2024/25)

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
Kagung pedestrian facilities (hawker facilities) and service roads to consolidate access to the N14	R2 000 000	2024-2025

Kuruman town has been experiencing a lot of pressure in traffic due to transportation of goods and minerals by heavy trucks to the mines. Due to congestion of traffic within the Kuruman town, there is a need to construct a bypass road for heavy trucks 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 Track bypass

Location: Kuruman

5.7.2.2 Gamagara Local Municipality

Table 6: Gamagara LM Current Roads Project Status Quo

FUNDER	PROJECT NAME	PROGRESS	BUDGET	EXPENDITURE
Kumba SLP	Construction of internal roads in Dibeng	Consultants appointed Detailed design completed. Project at tender stage	R20 669 286,79	R480 556,25
Kumba SLP	Construction of internal roads in Mapoteng	Consultants appointed Detailed design completed. Project at tender stage completed	R10 844 884,96	R1 628 691,34
Kumba SLP	Olifantshoek Internal roads upgrade	Busy with procurement	RR 17 250 000	R687 125
GLM	Maintenance operations and VALA ZONKE POTHOLE	Daily operational	R 1 4 00 000 (material)	R 1 200 000 (materials)



	PROJECT			
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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 5-7: Sishen Priority List for Gamagara LM

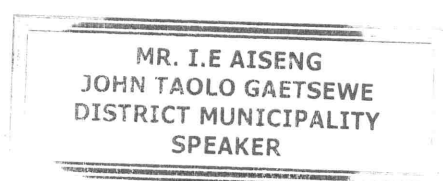
PROJECT NAME	2022 (VALUE)	2023 (VALUE)	2024 (VALUE)	2025 (VALUE)	2026 (VALUE)	TOTAL
Upgrading of internal main gravel roads in Mapoteng		1000 000		5000 000	2000 000	R 8 000 000
Upgrading of internal main gravel roads in Dibeng		1000 000		4000 000	7000 000	R 12 000 000
GRAND TOTAL		2000 000		9000 000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

Table 5-8: 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 (Table 39: Pg199: IDP 2023/24)

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





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 5-9: Joe Morolong 2023/24 Budget Allocation for roads (Pg136: IDP 2023/24)

NAME OF PROJECT	2023/24 ALLOCATION
Ncwelengwe internal road	R 12 000 000
Gahuwe to Dithakong Access Road	R 8 387 760.00
UPGRADE: MR974 LAXEY-HEUNINGVLEI	R 83 730 472
RESEAL 2.4 RES MR948 CHURCHIL-BENDEL (CHURCHHILL -BENDEL)	R 50 000
JOHN TAOLO GAETSEWE REGRAVELING	R 125 655
REHAB MR938 MAMATWAN MR884-TR5/5	R 76 000
UPGRADE: DR3342 CARDINTON-MAPHINIKI JUNCTION	R 83 730 472
TOTAL	R 188 100 359.00

Table 5-10: Joe Morolong 2024/25 progress on projects currently implemented.

FUNDER	PROJECT NAME	PROGRESS	BUDGET	EXPENDITURE
MIG	Upgrading of Ncwelenwe Internal Road Phase 2	100%	R 11 155 745,37	R 11 064 438,12
MIG	Upgrading of Gahuwe to Dithakong Access Road Phase 2	64%	R 18 045 669,70	R 13 529 277,14
SLP-Assmag Mine	Upgrading of Portion of Gadiboe to Motoloaneng Access Road	66%	R 9 567 183,00	R 5 202 765,63
SLP-Assmag Mine	Upgrading of Portion of Masankong Access Road	100% completed	R 9 200 000,00	R 9 200 000,00
SLP UMK Mine	Kokfontein Access Road	65%	R 32 545 000,00	R 19 974 014,13
KMR	Kiangkop Access Road	0%	R 12 000 000,00	-

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Table 5-11 Joe Morolong Five-year multi plan

PROJECT NAME	FUNDER	2022/23 (VALUE)	2023/24 (VALUE)	2024/25 (VALUE)	2025/26 (VALUE)	2026/27 (VALUE)	TOTAL
Upgrading of 1,5km Gravel to Block Paving in Tsaelengwe village	MIG	R11 943 058,52					
Upgrading of 700m Gravel to Block Paving	MIG	R8 200 400,25					
Upgrading of 2.9km Gravel to Tar	Slp-Kumba Mine	R 29 000 000.00					
Construction of approximately 260m of concrete pavers; Removing of the existing Portable & Rectangular Culvert Bridge and replacing it with 3 x Portable & Rectangular Culvert	SLP-Assmang Mine	R 8 302 920,00					
Removing of the existing Portable & Rectangular Culvert and replacing them with Portable & Rectangular Culvert Cell channels (10 x Portable & Rectangular Culvert Cell channels in parallel of size 1800mm x 1800mm class 75 & 4 x Portable & Rectangular Culvert Cell channels in parallel of size 3000mm x 3000mm class 75)	SLP-South 32 Mine	R 11 382 000,00					
Upgrading of 3.1km Gravel to Tar (starting in Bothithong village)	SLP-South 32	R 15 910 741,80					

All projects planned for 2022-23 FY were completed.

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 LM's within the district and must be coordinated at a senior management level.

5.8 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 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 count should be conducted on 2024/2025, financial year as the last data was captured in 2019.

Gamagara 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.

5.9 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 NSDPF'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 NSDPF 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.

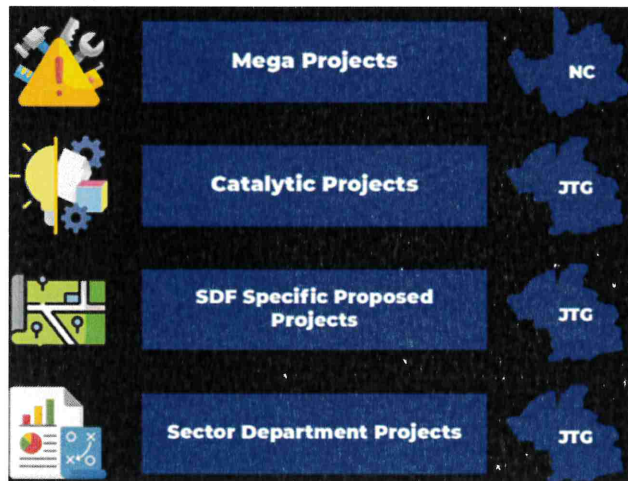


Based on the key development proposals identified in Spatial Proposals and the overall Spatial direction of all sectors of the district municipality, it has embarked on identifying projects to address key issues facing the road infrastructure and the current needs.

Ncpg Department

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:



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
- 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](#)).





6 ASSET MANAGEMENT

6.1 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.

The district is in a process of finalising a Road asset infrastructure management policy for managing these assets. Details of projects planned for maintenance of assets are discussed below per local municipality.

6.2 Transferer of Assets

Dingleton township in Gamagara Local municipality has been demolished into a mining activity area and roads in Dingleton are no longer part of the District Network. Dingleton and the Sishen mine are currently separated by a 500-meter buffer zone. The town was established by the in the 1960s to accommodate Sishen Mine employees and the quality of life of the residents had detreated throughout the years due to mining activities taking place in the Sishen mine. An application was made to the department of environment and forestry for the town to be turned into a mining activity and residents were relocated to an area more accommodative to their health. First relocation took place in 2014 and the second phase followed in 2016. Gamagara LM has confirmed the removal of these roads from their network and have shared the certificate of decommission for Dingleton roads. These roads will officially be removed from the network of Gamagara LM.

FIGURE: Dingleton roads







7 FINANCIAL SUMMARY

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 2024-25 per local municipality. The district is thus committed to the forum to give local municipalities support to manage their grants. It should be noted that this feedback was provided a month before the end of financial year 2024/25.

Gamagara LM:

The municipality performed very good as compared to the last financial year with their current expenditure of MIG budget at 100%. Gamagara LM has spent all the allocated budget for the current financial year.

Ga-Segonyana LM:

The municipality is performing fairly good on MIG with current expenditure at 74% of their allocation. No funds were stopped, instead and additional funding was received during the course of the financial and LM's plan to complete the funds by the end of June 2025.

Joe Morolong LM:

The LM is performing very good as compared to previous financial with expenditure at 80% of current allocation. The municipality did not receive any additional funding and has committed to spend 100% by end of June 2025.

7.1 Local Municipalities' Funding Strategy

Detailed financial information from all three local municipalities was not available at the time of writing this report. The only available information regarding funding in each LM is as per the information provided above under **Demand for new Assets**. 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 2025 under annexure W4. The DM and the LM have been allocated a total of R 4 358 000,00 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.



Table 7-1 EPWP Integrated Grant Allocations

FINANCIAL YEAR	2024/25	2025/26	2026/27	TOTAL
JTG	R 1 235 000.00	-	-	R 1 235 000.00
Joe Morolong LM	R 1 231 000.00	-	-	R 1 231 000.00
Ga-Segonyana LM	R 1 271 000.00	-	-	R 1 217 000.00
Gamagara LM	R 1 217 000.00	-	-	R 1 217 000.00
TOTAL				R 4 954 000.00

A total of R 475 287 000.00 from MIG has been committed to all three local municipalities. The Energy Efficiency and Demand budget allocation for Ga-Segonyana and Gamagara LMs is R9 000 000 over a period of three years starting from the year 2023/24 to 2025/26. The EEDSM is a programme that supports municipalities in the planning and implementation of energy efficient technologies, to reduce the consumption of electricity in municipalities. The applied technologies range from traffic and street lighting, lighting in buildings and the use of electrical services in water infrastructure (pumps, wastewater treatments etc.).

Table 7-2 MIG Grant Allocations in LMs

FINANCIAL YEAR	2023/24	2024/25	2025/26	TOTAL
Joe Morolong LM	R 82 527 000.00	R 74 753 000.00	R 78 116 000.00	R 235 396 000.00
Ga-Segonyana LM	R 63 399 000.00	R 66 231 000.00	R 69 183 000.00	R 198 813 000.00
Gamagara LM	R 13 285 000.00	R 13 687 000.00	R 14 106 000.00	R 41 078 000.00
TOTAL				R 475 287 000.00

Table 7-3 EEDSM Grant Allocation

FINANCIAL YEAR	2023/24	2024/25	2025/26	TOTAL
Ga-Segonyana LM		R 5 000 000.00		R 5 000 000.00
Ga- Magara LM	R 4 000 000.00		-	R 4 000 000.00
TOTAL				R 9 000 000.00



8 ORGANISATIONAL AND SUPPORT PLAN STRUCTURE

8.1 Human Resources Required

The JTG currently has four 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 roads 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
- The Visual Assessments of the Paved 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
- 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 RRAMS co-ordinator to manage and administer the RRAMS technicians, and an additional RRAMS technician. In total the JTG RRAMS implementation team consist of eight personnel, 5 technicians (assessors), a project co-ordinator, project administrator and a Roads Planning Officer.

One of the key intentions of the grant is to assist the district and its locals 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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The current organizational organogram is presented in Figure 8-1 below and indicates 10 filled positions and 18 Vacant:

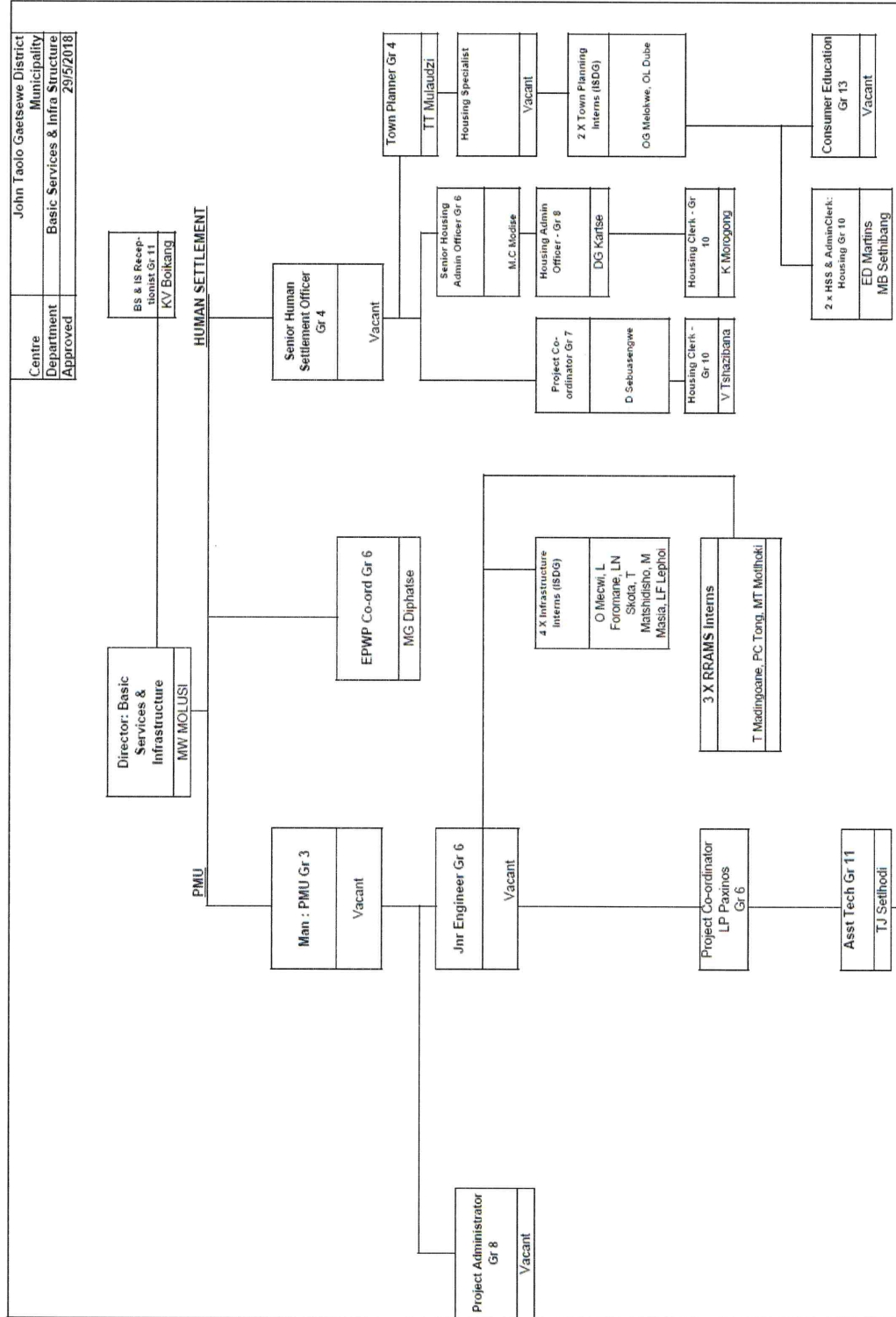


Figure 8-1: Current organisational structure



8.3.1 LMs engagement in the Programme

Engagement with LMs has improved, two (2) meetings took place over the year 2024 and one in 2025. Communication with the LMs has also improved, information such as PMS (Pavement Management System) and GRMS (Gravel Management System) reports were shared between Gamagara and Ga-Segonyana local municipalities. It has been agreed that engagements will be done quarterly and that individual engagements will be held on an as and when necessary, especially in the case of sharing information such as reports or data.

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 underwent training and have been given login details into the system.

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 2024/25 municipality financial year. The projected expenditure for the 2024/25 financial year is R2 226 000.00. The table below gives a summary of the breakdown expenditure to date for the RRAMS project in the current financial year.

Table 8-1 Summary of breakdown Expenditure 2024/25

DESCRIPTION	AMOUNT
Graduate Salaries	R 777 629.88
Graduate Training	R 115 057.50
Data Analysis	R 562 661.72
Traffic Counts	R 120 000.00
Tools & Equipment	R 11 490.00
Professional Registration	R 0
Software or Programme	R 239 818.56
Project Management & Support	R 235 905.38
Meetings Catering	R 23 937.84
Accommodation & S&T	R 139 499.12
TOTAL	R 2 226 000.00

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Table 8-2 Summary of breakdown 2025/26 Budget

Description	Amount
Graduate Salaries	R 1 003 093.44
Graduate Training	R 190 000.00
Data Analysis	R 500 906.56
Traffic Counts	R 0
Tools & Equipment	R 10 000.00
Professional Registration	R 0
Software or Programme	R 241 000.00
Project Management & Support	R 220 000.00
Meetings Catering	R 20 000.00
Accommodation & S&T	R 140 000.00
TOTAL	R 2 325 000.00

8.5 Systems and Processes

The mobile application is fully compliant 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 have gone for the training of the system.

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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.

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 Decision Support

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 compliant 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.

8.6.1.1 *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
- Basic traffic information system

8.6.1.2 *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 measured against the TMH22 standards and NDOT requirements and includes a self-evaluation check. 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 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: 2019.	Yearly
Asset Value Indicators	Representative values	Up to date algorithms and calculation methods	• Refined algorithms by GeoRAMS	Yearly
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

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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 2026
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 2026
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
Asset Management	Fully functional	Acknowledged	Asset Management Committee established.	Yearly



KEY AREA	KEY INDICATOR	PERFORMANCE MEASURE (ACCURACY AND EFFECTIVENESS)	IMPROVEMENT PROGRAMME	MONITORING AND REVIEW PROCEDURE AND REPORTING
Committee	committee	responsibilities by each member of the committee	Committee members to execute their responsibilities and participate in RAMS • RAMS committee to assist in compilation of RAMP and using RAMP for road maintenance.	
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

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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. Unfortunately, no figures about Job Creation as a result of Road Asset Management Treatments, i.e. Rehabilitation, Resurfacing, and other Maintenance, could be obtained to be reported on in this report.

As part of capacity building and skills transfer, the local Municipalities will be the co-owners of the RRAMS System that is been developed. LMs have for 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.

As indicated in the previous RAMP (2024/25), the traffic counts data was older than 5 years and therefore needed updating. 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.

Ga-Segonyana and Joe Morolong has provided information on jobs created in the implementation of their road's maintenance and upgrade projects over the past and current years. Though not comprehensive, the table give details of the numbers per project. Further detailed information on gender, age and Youth categories has been requested for future reporting and compilation into the RAMP report. Gamagara has not given report on current projects and therefore information in no longer valid, enquiry has been made on this update for future reporting.

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Table 1: Gamagara Job Creation Info

JOB CREATION: ROAD MAINTENANCE & UPGRADE IN THE PAST THREE YEARS					
FUNDER	PROJECT NAME	YEAR	JOB CREATION TOTAL	BUDGET	EXPENDITURE
EPWP	The Construction of internal street in Dibeng Phase 3	2020/2021	20 People	R 1 200 000.00	R 1 200 000.00
EPWP	The Construction of internal street in Dibeng Phase 2	2019/2020	20 People	R 1 200 000.00	R 1 200 000.00
EPWP	Upgrade /refurbish infrastructure	2022/2023	30 People	R 1 073 000.00	R 1 073 000.00
EPWP	Repair of existing storm water drainage in Welgelee and Ditlounge villages	2021/2022 2022/2023	60 People	R 5 000 000.00	R 5 000 000.00
EPWP	Repair of existing storm water drainage in Welgelee and Ditlounge villages	2021/2022	45 People	R 2 000 000.00	R 2 000 000.00

Table 2: Gasegonyane Job Creation Info

JOB CREATION: ROAD MAINTENANCE & UPGRADE IN THE PAST THREE YEARS					
FUNDER	PROJECT NAME	YEAR	JOB CREATION TOTAL	BUDGET	EXPENDITURE
Kumba	Management of storm water in Bree street	2023/2024	60 People	R 26 000 000.00	R 2000 000.00
MIG	Maruping: Upgrading of gravel internal road to paved road Tsago Road	2024/2025	28 People	R 20 916 618.32	R 20 273 160.11
MIG	Ncwelengwe Internal Road Phase 2	2024/2025	18	R 11 155 745.37	R 11 064 438.12
MIG	Gahuwe to Dithakong Access Road Phase 2	2024/2025	11	R 18 045 669.70	R 13 529 277.14
MIG	Mothibistad Learamele and Methodist Sec: Upgrading of gravel internal road to paved road	2024/2025	15 People	R 22 411 565.57	R 16 320 087.64
SLP UMK	Kokfontein Access Road	2024/2025	23	R 32 545 000.00	R 19 974 014.13
SLP Assmang	Masankong Access Road	2024/2025	17	R 9 200 000.00	R 9 200 000.00



Table 3: JTG Job Creation Info

JOB CREATION: ROAD ASSET 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 4: Joe Morolong Job Creation Info

job creation: road asset management systems					
funder	project name	year	job creation total	budget	expenditure
SLP	Masankong Access Road	2023/24	17 People	R 9 200 000,00	R 9 200 000,00
MIG	Ncwelengwe Internal Road Phase 2	2023/24	18 People	R 11 064 438,12	R 11 064 438,12
MIG	Motolwaneng Access and Internal Road	2024/25	09 People	R 9 567 183	R252 822
MIG	Kokfontein to Ellendale Access Road	2024/25	06 People	R 32 545 000	R17 452

Table 5: JTG Job Creation EPWP Info

JOB CREATION: ROAD ASSET 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	2024/25	25	R 1 235 000	R 761 693

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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 and challenges

There were four (4) 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
- 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. The following training was attended by all graduates as part of their skills development:

Table 10-1: Training Activities

TRAINING DESCRIPTION	TRAINING DATES	TRAINING SP	CPD POINTS
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

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:

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

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. Contractor Development and Small Enterprise information is awaited from the LMs.

Refer to [Chapter 9: Plan Improvement and Monitoring](#) and [Appendix C: Gap Analysis](#)).

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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





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

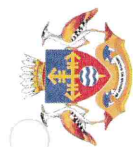
ROAD INFRASTRUCTURE ASSESSED				
ELEMENT	STRENGTHS	WEAKNESSES	OPPORTUNITY	THREATS
DATABASE /GIS	Database of Road Infrastructure available	'Lack of well-established relations with LMs to allow for ease of data information sharing for utilisation by LMs in preparation of Plans	Use data for motivation to 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 positions and	The decrease and increase of network extend due to removal of closed roads and additions of new roads because of	Use information to source funds for maintenance and rehabilitation of existing	Network has deteriorated beyond threshold levels



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ASSESSMENT THEREOF	layouts	new developments.	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, 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

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GAMAGARA & GA- SEGONYANA LM				bill to accommodate absorption of interns
	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)

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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 senior and middle management)- Ga-Segonyana LM - Young vibrant and qualified	- Bloated compliments 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

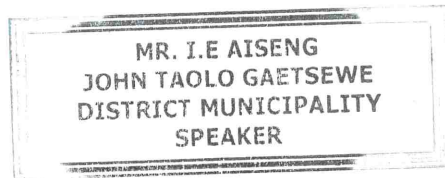
12.1 References

- a) TMH22 – Road Asset Management Manual
- b) Ga-Segonyana Local Municipality Draft Budget 2023/24 to 2025/26
- c) Ga-Segonyana Local Municipality IDP/PMS & Budget Process Plan 2023/2024
- d) SISHEN SLP 3 LED PAN 2022-2026 Priority List (provided by Gamagara LM)
- e) Khumani mine five-year project plan for local Development (provided by Gamagara LM).
- f) Joe Morolong Local Municipality IDP 2023/24
- g) Gamagara Local Municipality Final IDP 2022/2027
- h) District Infrastructure forum information enquiry-Ms Mogomotsi Diphatse

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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 adjusted for	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
		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 on must understands 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

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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

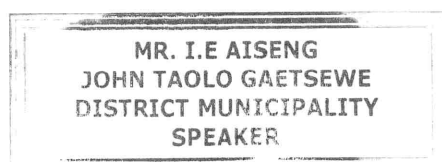
The names and designation of the official(s) of the John Taolo Gaetsewe District Municipality that supervised the preparation of the RAMP is as follows:

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 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
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
	Thabo Matshediso	N.Diploma





2025	Thato Madingoane	S4
	Mohau Motlhoki	S3
	Boikago Mokgara	N.Diploma
	Thabo Matshediso	N.Diploma
Quality controller	Lesedi Foromane	PR Tech, BTEC Civil Eng
Quality controller	Pelontle Leburu	BTEC 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 JTGM is Level I
- A fixed asset register (FAR) is in place and has not been adopted by council. The adoption process has been postponed for the past five years.
- 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 ANALYSIS](#)
- The status of RCAM has been reviewed during the past 4 years and currently being reviewed as new roads are being added.
- Subsystems 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	2017	2018	2019	2020	2021	2022	2023	2024	2025	Unassessed	Grand Total
BLOCK			3.01		11.36	12.52	12.72	11.58	4.13	5.13	60.45
FLEX	0.52	1.16	4.9	6.94	18.02	168.87	26.87	61.54	16.35	22.06	328.62
UNPAVED	14.87	0.1	9.78	49.24	67.65	179.3	723.22	1111.49	107.48	598.89	2862.93
Grand Total	15.39	1.26	17.69	56.18	97.03	360.69	762.81	1184.61	127.96	626.08	3252
3-yr TOTALS	34.34			513.9			2075.38			626.08	3252

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 ANALYSIS](#)

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

The mobile application is fully compliant 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 RAMP been studied	In Process	1	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 formulated by LM's with the assistance of 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 by LM's	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 components, and	Yes - Fully Implemented	2	

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RAMS SELF ASSESSMENT GAP ANALYSIS					
RAMS AREA	ELEMENT	CRITERIA	CURRENT PRACTICE	SCORE	IMPROVEMENT REQUIRED
		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
	Data Management	Is a Database in place to store the	Yes - Fully Implemented	2	

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RAMS SELF ASSESSMENT GAP ANALYSIS					
RAMS AREA	ELEMENT	CRITERIA	CURRENT PRACTICE	SCORE	IMPROVEMENT REQUIRED
		condition data			
	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
	Project Confirmation	Is a programme in place for panel inspections and has any been done	No	0	RAMS Need Determination and LM Road Master

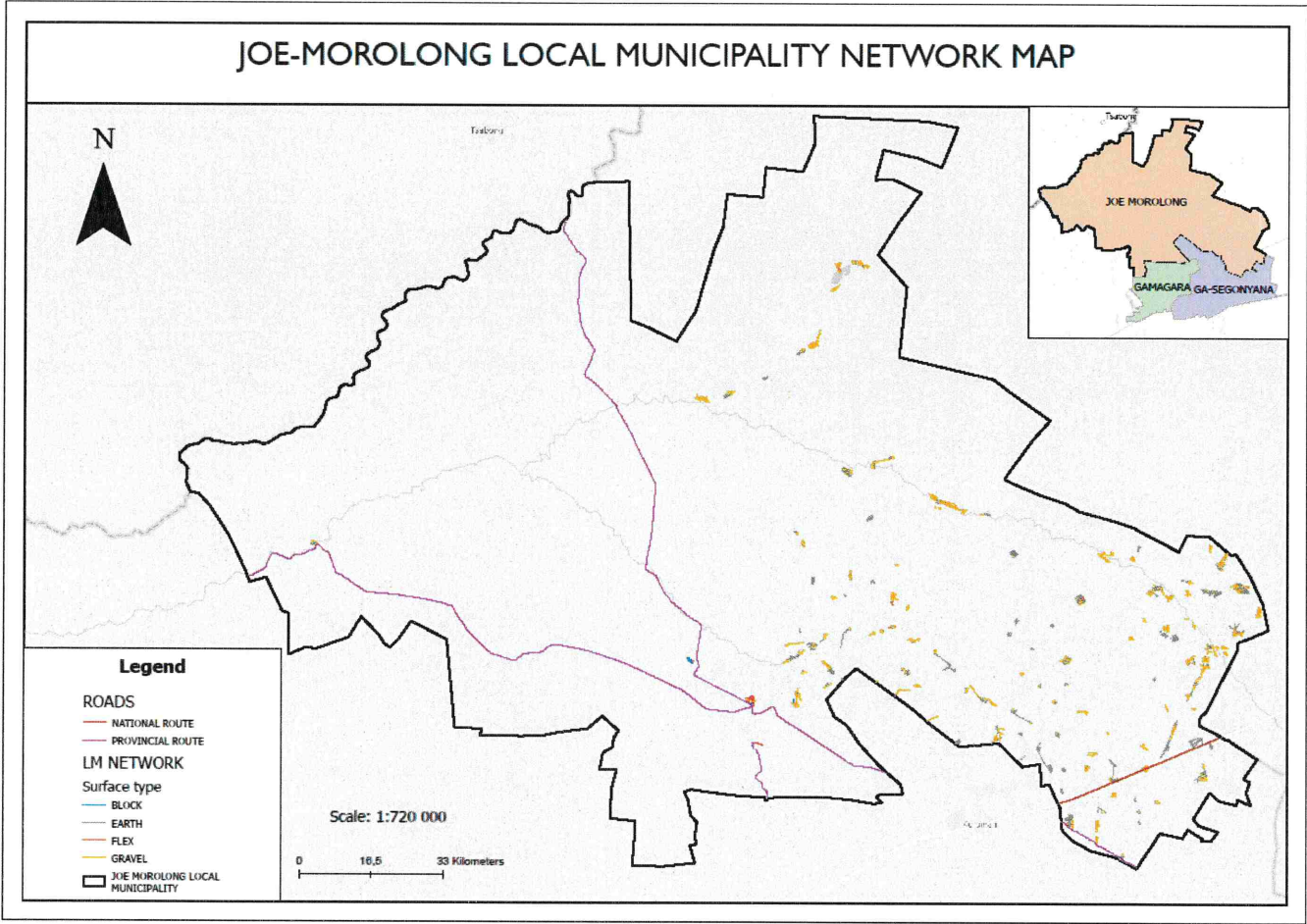


RAMS SELF ASSESSMENT GAP ANALYSIS					
RAMS AREA	ELEMENT	CRITERIA	CURRENT PRACTICE	SCORE	IMPROVEMENT REQUIRED
		the past 3 years			Plans to be aligned
Management Plans	Plan	Are annual Road Assessment Management Plans being prepared according to TMH22 requirements	Partially	1	LM to use RAMS and RAMP for 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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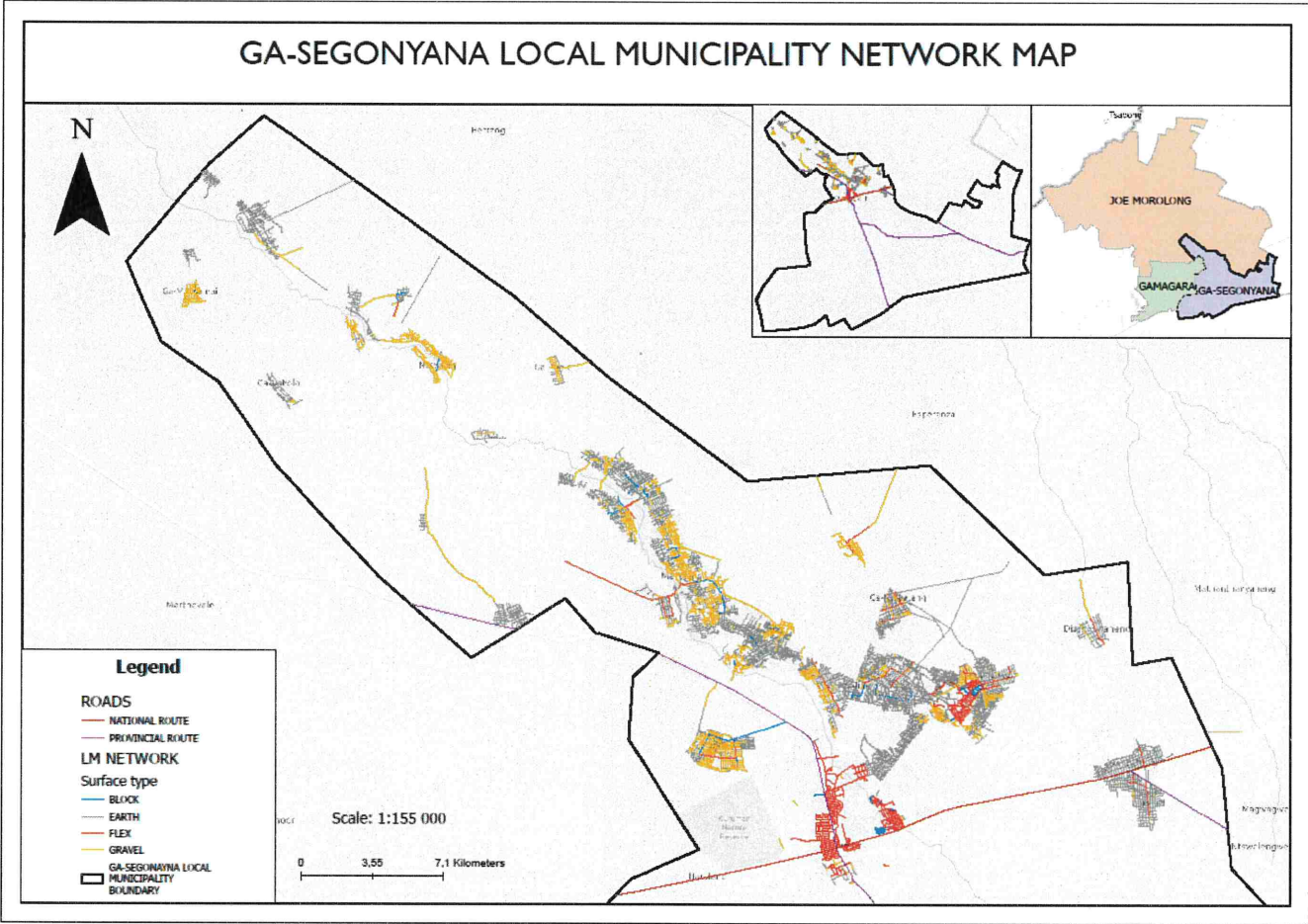
13.4 Appendix D: Joe Morolong Map



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13.5 Appendix E: Ga-Segonyana Map



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GAMAGARA LOCAL MUNICIPALITY NETWORK MAP

Legend

ROADS

- NATIONAL ROUTE
- PROVINCIAL ROUTE

LM NETWORK

Surface type

- BLOCK
- EARTH
- FLEX
- GRAVEL

GAMAGARA LOCAL MUNICIPALITY

Scale: 1:165 000

0 3.7 7.4 Kilometers

N

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13.7 Appendix G: Project List



RAMP 2025-26
Priority List.xlsx

