



**Republic of South Sudan
NATIONAL AUDIT CHAMBER
Office of the Auditor General**



**Performance Audit Report of the Auditor General
On Juba – Rumbek Road Construction**

Ministry of Roads and Bridges
August 2023



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List of Abbreviations

MOR&B	Ministry of Roads and Bridges
NAC	National Audit Chamber of Southern Sudan
RSS	Republic of South Sudan
ESIA	Environmental and Social Impact Assessments
GOSS	Government of South Sudan
RA	Roads Authority
SSLA	South Sudan Legislative Assembly

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Executive summary

Background to the audit

Juba – Rumbek Road project is a lifeline project which connects the capital city Juba and Bahr El Ghazal region with a total length of **392 Kms**. The road is designed as asphalt concrete surface with **10 meters** width, 2 ways - 2 lanes, and optimized pavement structure to cope with the expected heavy traffic load along the road.

The Ministry of Roads and Bridges contracted Shandon Hi – Speed Nile Investment and Development Co. Ltd to construct Juba – Rumbek Road at an initial cost of **US\$ 711,125,700** which was later raised to **US\$ 736,533,725** as per addendum contract and be completed within a period of **44 Months**. This means that the project was to be completed by 12 July 2023.

Motivation

The construction of Juba - Rumbek Road is projected to connect the capital city Juba and the Bahr El Ghazal region. It enhances social cohesion and social fabric, thus leading to peace among the ethnic communities in the country. In addition, it will boost economic growth, for example, fish mongers of Terkeka county will get easy access to markets in the capital city Juba. The potential effect is that transport costs will reduce and lower the overall costs of production thus enabling businesses to operate more efficiently.

In the cabinet meeting of February 1, 2019, the Council approved allocation of **10,000 Barrels** of crude oil per day to be remitted to China Exim Bank for financing infrastructures developments including Juba - Rumbek Road construction contract worth **US\$ 736,533,725**. Despite the big investment, the Government halted work on Juba - Rumbek Road construction in May 2020 after heavy rains and floods washed away the tarmac on parts of the newly constructed road at kilometer 3 near Bilpam causing great public outcry. Therefore, the citizens need assurance that there is value for money in this investment.

Juba-Rumbek Road will contribute to the achievement of Sustainable Development Goals (SDGs) since investment in infrastructure and innovation are crucial drivers of economic growth and development. Construction, upgrading and expansion of the existing roads are key priorities that will help to end poverty and ensure that by 2030 all people enjoy good road network.

Audit objective

The audit objective was to assess whether the Ministry of Roads and Bridges has ensured construction of Juba- Rumbek Road within the agreed time, at reasonable cost and according to the required quality.

Scope of the audit

The audit focused on construction of Juba-Rumbek Road by the Ministry of Roads and Bridges. The team examined project implementation with regards to the design process, procurement processes of the contractor and consultant, supervision, funding, timeliness in the implementation of the project. The scope covered the contract period from 2019 to 2022. The audit was conducted between February – March 2023. The team conducted project site visits to examine the quality of the road, existence of the bridges, culverts, and bus bays.

Audit Findings

Juba – Rumbek Road project started on 12 November 2019, and as of February 2023, **63 Km** from Juba – Terkeka was substantially complete. The project has also provided social benefits to the local community which includes construction of a secondary school in Nyuwa village and a road in Molobor village, both projects are at work-in-progress status. However, the audit revealed setbacks which affected efficient implementation of the road project as discussed below:

1. Public procurement procedures not properly followed. The contractor for Juba-Rumbek Road construction was not procured through open competitive tendering, but through single sourcing. It was therefore not possible to confirm whether the contract was awarded to the most competent contractor at the most reasonable contractor price.
2. The South Sudan Roads Authority Act, 2011 mandates the Roads Authority to take the role of project managers for all trunk roads in South Sudan. Juba-Rumbek Road is a trunk, but the audit revealed that the Authority was not involved in the construction of the road. It was only involved when a committee was formed to investigate and recommend remedial actions after the road was destroyed by floods in May 2020. It was not clear why the Road Authority was not involved in the road construction. There is therefore a risk that, the quality of the road may be compromised when the Ministry of Roads and Bridges prepares the policies, standards, and specifications for road construction and again monitor and supervise the implementation of the road construction.
3. There was a delay in Juba – Rumbek Road construction as the construction work started on 12 November 2019 and was expected to be completed by 11 July 2023, but as of February 2023, **36 months (82%)** of the contract period had elapsed and **only 63 Km or 16 %** of the work had

been done. There is therefore a risk that the remaining **333 Km (84 %)** may not be completed within the remaining period of the **8 months**. The delay was attributed to delay in making advance payments and nonpayment of Interim Payment Certificates (IPCs)

4. There was inadequate supervision of the road construction as the appointed consultant worked for only one year (2020-2021), but the contract was not renewed due to lack of funds. In the absence of the consultant, the resident Engineer who was supposed to monitor the implementation of the road was also doing supervisory work. Therefore, there is risk that supervision of the road may not have been properly done and the quality of the road works may have been compromised.
5. The Ministry of Environment and Forestry was not initially involved in feasibility study for the construction and upgrading of Juba-Rumbek Road. As a result, the design was inadequate and hydrological information on the volume of water was missing in the feasibility study. Consequently, the river catchment areas along the route were grossly underestimated. As a result, the contractor installed inadequate drainage structures causing water accumulation near Bilpam which eventually washed out a section of the road. Construction work was halted, and the design was revised causing delay in execution of the work and an additional cost of **USD 25,408,025** which increased the contract price from **USD 711,125,700** to **USD 736,533,725**. The delays and the extra cost could have been avoided if the Environmental Social Impact Assessment had been properly done from the beginning.
6. Unclear Financing Agreements. The financing for the construction of the road was a bilateral agreement between the Government of South Sudan and the Government of China. Initially the financing was to be through the sale of crude oil, but this was cancelled. As at the time of audit in February, 2023 the Ministry of finance had not given the audit team clear breakdown on how the construction of the road was being financed. Though the Ministry of Petroleum indicated that **21,780,134 barrels** of crude oil worth **USD 1,558,763,802** had been shipped between 2019 to 2022, it has not been possible to know how much of that oil was meant for financing construction of Juba – Rumbek Road.

CONCLUSIONS

- I. Juba Rumbek Road has not been constructed within the agreed time. As at the time of audit in February 2023, only **63 Km or 16 %** of the whole works had been done, leaving **333 Km or 84 %** for the remaining 8 months. There is a risk that the road will not be completed within the remaining period. The slow pace in the road construction was mainly attributed to delay in making advance payments and nonpayment of Interim Payment Certificates.
- II. Juba – Rumbek Road may not have been constructed at the most reasonable cost. There was no open competitive tendering, the contractor was acquired through single sourcing, thus there is a possibility that the Ministry did not procure the best contractor at the best market price. In addition, the original design was not properly done and had to be revised at an additional cost of **USD 25,408,025**.
- III. Juba-Rumbek Road may not have been constructed in accordance with the required design and specifications. The design of the road was inadequate since the Ministry of Environment and Forestry was not involved in the Feasibility Study and Environmental and Social Impact Assessment. In addition, construction of the road was not adequately supervised, since the ministry of Roads and Bridges was both the implementer and the supervisor, and the Road Authority was not involved at all.

RECOMMENDATIONS

From the audit findings and conclusions, the Auditor General proposes the following.

- 1) To ensure proper procurement procedures are followed, the Government should always ensure that procurement of road construction contractors is done in collaboration with the Ministries of Roads and Bridges, Finance and Planning and the Road Authority.
- 2) To ensure that the desired quality of the road is achieved the Road Authority should implement the project in line with the policies, standards, and specifications made by the Ministry of Roads and Bridges.
- 3) To ensure the road works meets the required specification, the Road Authority should ensure the works are effectively supervised by competent engineers and corrective action taken on a timely basis.

- 4) To ensure that road construction projects are completed within the contract period, there should be clear financing arrangements, the project amount should be budgeted for, and the contractor's payments are made on time.
- 5) To ensure that adequate road design and specification are properly done, the Ministry of Roads and Bridges should ensure all the relevant Government institutions are involved in the design process. These includes Feasibilities Studies and Environmental and Social Impact Assessment.

1. Background to the audit

1.1 Introduction

Juba – Rumbek Road project is a lifeline project which connects the capital city Juba and the Bahr El Ghazal region. The road plays a great role in boosting the economic, political, and social development of the country. The total length of the project is **392 Km**, it starts from the capital city Juba and passes through Terkeka, Awerial, Bunagok, Yirol and Rumbek. The road is designed as asphalt concrete surface with 10 meters width, 2 ways - 2 lanes, and optimized pavement structure to cope with the expected heavy traffic load. Along the road, several bridges, culverts, animal viaducts, bus parking bays, rest stations, were constructed which fit the actual requirement of the road users in South Sudan.

On 25th March 2019, The Ministry of Roads and Bridges, Republic of South Sudan (RSS), and Shandon Hi – Speed Nile Investment and Development Co. Ltd entered in to Engineering, Procurement and Construction (EPC) agreement to construct Juba – Rumbek Road at an initial cost of **US\$ 711,125,700**. The contract amount was later raised to **US\$ 736,533,725** as per addendum contract and the project was to be completed within a period of **44 Months**.

The total estimated track length in South Sudan is approximately **90,200 km**, which includes approximately **14,000 km** of primary and secondary roads, and 6000 km of tertiary tracks. The current interstate and international roads network consist of around 5,000 km of gravel roads with approximately 300 km of tarmac roads. Construction of Juba-Rumbek Road (**392.7 km**) will therefore increase the tarmac road to **692.7 km**. Currently, only one international road, the **192 km** stretch between Juba-Nimule on the Ugandan border is tarmacked. Most other tarmacked roads are urban roads within the capital city Juba. All other national, interstate, and urban roads consist of non-maintained untarmacked roads.

1.2 Motivation

The construction of Juba - Rumbek Road is projected to connect the capital city Juba and the Bahr El Ghazal region. It enhances social cohesion and social fabric, thus leading to peace among the ethnic communities in the country. In addition, it will boost economic growth, for example, fish mongers of Terkeka county will get easy access to markets in the capital city Juba. The potential effect is that transport costs will reduce and lower the overall costs of production thus enabling businesses to operate more efficiently.

In the Council Cabinet meeting of February 1, 2019, the Council approved allocation of **10,000 barrels** of crude oil per day to be remitted to China Exim Bank for financing infrastructures developments, amongst others, Juba - Rumbek Road construction contract worth **USD 736,533,725** which is a big investment for the country. The citizens need assurance that there is value for money.

In May 2020, the Government halted work on Juba - Rumbek Road construction, after heavy rains and floods washed away the tarmac on parts of the newly constructed road at kilometer 3 near Bilpam causing great public outcry.

Juba-Rumbek Road will contribute to the achievement of Sustainable Development Goals (SDGs) since investment in infrastructure and innovation are crucial drivers of economic growth and development. Construction, upgrading and expansion of the existing roads are key priorities that will help to end poverty and ensure that by 2030 all people enjoy a good road network.

2. Design of the audit

2.1 Audit objective

The audit objective was to assess whether the Ministry of Roads and Bridges has ensured construction of Juba- Rumbek Road within the agreed time, at reasonable cost and according to the required quality.

2.2 Scope of the audit

The audit focused on construction of Juba-Rumbek Road by the Ministry of Roads and Bridges. The team examined project implementation with regards to the design process, procurement processes of the contractor and consultant, supervision, funding, timeliness in the implementation of the project. The scope covered the contract period from 2019 to 2022. The audit was conducted between May 2022 – March 2023. The team conducted project site visits to examine the quality of the road, existence of the bridges, culverts, and bus bays.

2.3 Methods used together audit evidence.

We conducted the audit in accordance with International Standard of Supreme Audit Institution (ISSAI's) Issued by the International Organization of Supreme Audit Institutions (INTOSAI) and Audit policies and procedures established by the National Audit Chamber of South Sudan.

To gather audit evidence, we carried out documentary review, interviewed heads of departments and units and conducted physical verification on the **63 kilometers** of the road constructed including installation of culverts, cattle crossing outlets and bridges.

The following documents were reviewed:

- a. The contract agreement - To understand the project specifications, scope of work, the contract duration, the roles of the Ministry of Roads and Bridges and the contractor with respect to the construction of Juba-Rumbek Road.
- b. Works progress reports - To examine the site Engineer Reports for the parts of the project completed and the work in progress, also examined the Interim Payment Certificates (IPC) issued in relation to the parts of the work done (Interim Payment Claims).
- c. Payment Vouchers - To determine the Interim Payment Certificates paid and subsequently establish the IPC not paid.

To understand the progress in construction of Juba-Rumbek Road, we interviewed.

- i. Director General for roads and Bridges to understand the progress of the work, and the reason for delayed implementation of the project.
- ii. Director General for Administration and Finance to understand the financing agreement, procurement of the contractor, and payment of Interim Payment Certificates (IPCs).
- iii. Site Engineer to understand whether the road has been constructed according to required standards and specifications, including quality of the materials used, and possible reasons for delay in construction of the road. The site engineer also helped us to understand whether the contractor was competent to do the work.
- iv. Contractor to understand why there were delays in the road construction, the quality of the materials used, timeliness in delivery of the materials, prompt payments of IPCs and any other challenges.

We also carried out physical verification of the work done against the IPCs and bill of quantities.

The detailed methodology is documented in **Appendix 1**

2.4 Audit criteria

The criteria were derived from the following documents.

- i. The Contract Agreement for construction of Juba – Rumbek Road and its Addendum signed on March 25, 2019.
- ii. South Sudan Public Procurement and Disposal of Assets Act, 2018.
- iii. Road Authority Act, 2011.
- iv. Best practice.

3 Description of the Audit.

3.1 Background information:

Statutory Mandate of the ministry of Roads and Bridges

The mandate of the ministry of Roads and Bridges is derived from the policy framework of the Ministry of Roads and Bridges issued in November 2012, which mandates the Ministry to develop roads and bridges construction for the efficient and safe provision of road services.

Vision

To be the promoter of safe, secure and efficient road networks for a prosperous Republic of South Sudan

Mission

To serve the people of the Republic of South Sudan by building high quality and cost-effective well-maintained roads and bridges which meet their service expectations as well as enhancing their lives now and, in the future.

Objectives of the ministry

The objectives of the ministry include:

- i. To develop and improve accessibility to state capitals and other urban population centres.
- ii. Establish improved standards for design and construction.
- iii. Develop standard specifications for roads and bridges in the Republic of South Sudan.
- iv. Preserve investments through suitable maintenance management of roads network and efficient axle load control.
- v. Upgrade and construct roads and bridges to open agricultural areas and promote national and regional transportation exploitation and the strategic geographical positioning of the Republic of South Sudan in the region.
- vi. Ensure that environmental and safety concerns are adequately addressed in the design, rehabilitation, and maintenance of roads and bridges.

Organizational structure

The Organizational structure of the Ministry of Roads and Bridges provides both institutional and functional framework for implementation of the strategic plan. The offices of the Minister, Advisors and Undersecretary provide critical good governance and leadership oversights in ensuring proper implementation of the ministry strategic plans. The offices of Director Generals (DGs) provide continuous

functional leadership supported by teams of both technical and administrative experts in each of the four directorates:

- i. Directorate of Roads and Bridges
- ii. Directorate of Administration and Finance
- iii. Directorate of Planning and Policy Formulations
- iv. Directorate of Materials and Research

The organizational chart of the Ministry of Roads and Bridges is as attached in **Appendix 2**.

Directorate of Roads and Bridges

Functions of the directorate of Roads and bridges in respect to road construction: -

- I. Set benchmarks for the implementation of the planned projects, evaluate the performance of the plan against approved budget lines and generate reports to the undersecretary for management as required.
- II. Supervise the construction of roads and bridges projects to ensure that they are built according to carefully drafted plans.
- III. Recommends methods of resolving unusual and complex problems and improving materials and practices, interprets applicable engineering and administrative directives, policies, and standards.
- IV. Review organizational work processes and recommend organizational development initiatives and interventions in line with the Ministry's strategic plan.
- V. Report on all road's issues to the undersecretary.
- VI. Represent the Directorates views to other branches of government including both the civil and military authorities.
- VII. Seek clarification from concerned authorities for any problematic or delayed roads and bridges programs and development.

Directorate of Administration

Oversee all administrative and financial functions and responsibilities for the department, including human resources, and accounting records. Manage budgets and staff, including hiring, training, and performance evaluations.

Directorate of Planning and Policy Formulations

Functions of the directorate of Planning and Policy Formulations in respect to road construction

- i. To carry out policy research on all ministry operations
- ii. Review business processes and
- iii. Set professional standards to be complied with in the ministry operations.

Directorate of Materials and Research

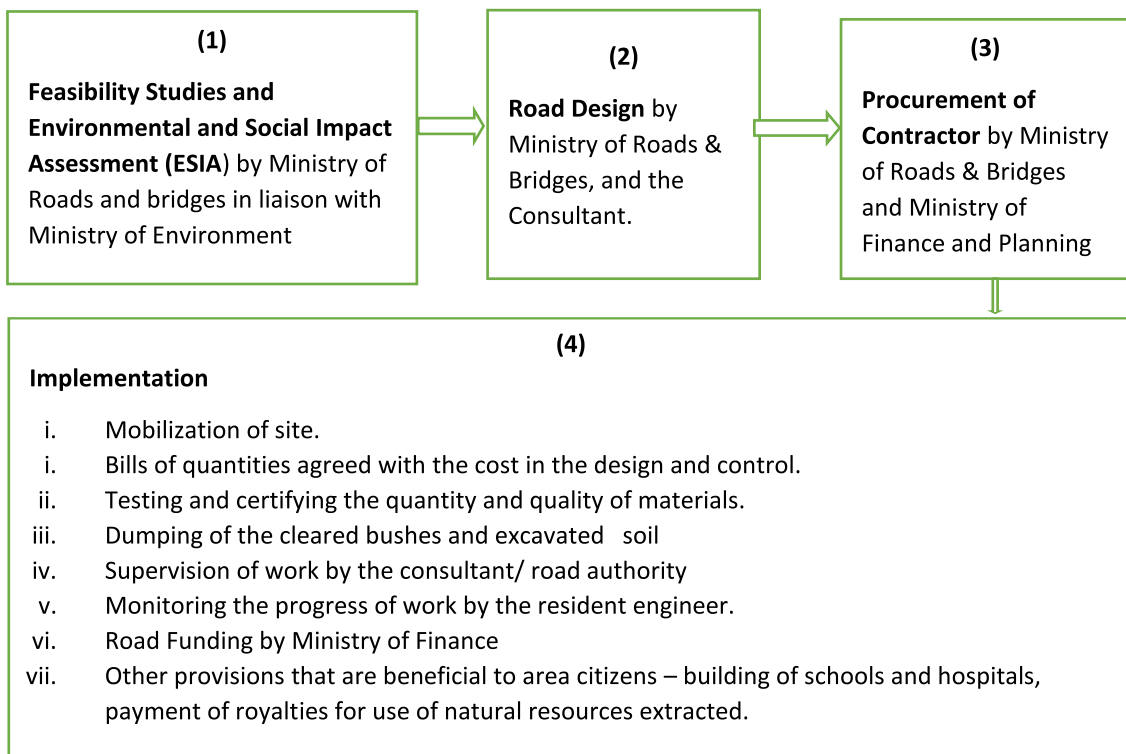
Functions of the directorate of Materials and Research in respect to road construction

- i. Draw up the Ministry's annual administration work plan and monitor the implementation of materials acceptable testing standards.
- ii. Plan and review preliminary pavement rehabilitation design options.
- iii. Plan, review and coordinate the most specialized asphalt testing, including the evaluation and designing of asphalt base and surfacing layers.
- iv. Plan and coordinate automated concrete presses and automated temperature control.

3.2 System and process description

The process description for construction of roads in South Sudan is summarized in figure 1 below.

Figure 1: Process description.



3.3 Funding of Juba -Rumbek Road Construction

The budget of the Ministry of Roads and Bridges is provided by the Ministry of Finance, and Planning. Upon project inspection and confirmation of actual works done, the Ministry of Roads and Bridges issues certificates of work done and sends the Interim Payment Claims (IPCs) to the ministry of Finance and planning, after which the ministry pays the contractor. Details of last Payment status up to August 2022 is seen in the table below:

Table 1: Juba – Rumbek Road Payment Status August 2022

Payment Description	Payment request submitted in USD	Status	Amount Paid in USD
Advance payment	106,650,000		89,537,200
Urgent intervention			14,500,000
Total payment			104,037,200
Amount Outstanding USD			2,612,800
Interim Payments Claims (IPCs)	IPC Submitted in USD	Status	Amount paid. USD
IPC 1	10,786,385	Certified	0
IPC 2	36,527,975	Certified	0
IPC 3	7,240,362	Certified	0
IPC 4	31,285,520	Certified	0
IPC 5	23,507,807	Under review	0
Total	109,348,048		0

Summary

Details	Amount submitted	Amount paid	Amount outstanding. USD
Advanced payments	106,650,000	104,037,200	2,612,800
Total of 5 IPCs (IPC 1 – 5) submitted	109,348,048	0	109,348, 048
Total	215,998,048	104,037,200	111,960,848

3.4 Roles of the Key Stakeholders

Ministry of Petroleum

The role of the Ministry of Petroleum is to ship crude oil of Nile Blend (Bentiu) by cargos to the global markets to facilitate construction of roads in South Sudan including Juba-Rumbek Road amongst others.

Ministry of Environment

The role of the Ministry is to ensure that any development project such as the road construction that will likely impact the environment is subjected to environmental and social impact assessment. This is besides ensuring that the design, implementation, operation, and subsequent decommissioning of the development project is carried out in such a way as to minimize the negative impacts and enhance the potential benefits to the environment and the project affected communities.

Ministry of Finance

The Ministry of Finance and Economic Planning is responsible for maintaining control over public spending, setting the direction of the South Sudan's fiscal policy, and is working to achieve strong, equitable and sustainable economic growth.

Other Stakeholders

In addition to the key stakeholders indicated above, other stakeholders include the Roads Authority, the National Legislature, and the Consultant firm. The contribution of the key and other stakeholders including their interest and what they stand to gain or lose from the construction of Juba-Rumbek Road is explained in **Appendix 3: Stakeholder analysis**.

4 Audit findings

Juba – Rumbek Road project started on 12 November 2019, and as of February 2023, only 63 Km from Juba – Terkeka was substantially complete with adequate installation of bridges, Pipe Culverts, Box Culverts, and Viaducts for safe crossing of livestock and wildlife. The project provided social benefits to the citizen which included construction of a secondary school in Nyuwa village and a road in Molobor village. both projects are work in progress.

Audit verification of the road works carried out in February 2023 confirmed that, the quality of the materials used was tested both in the lab and on the field before use. This ensured the road was done according to the required specifications.

However, the audit revealed setbacks which affected efficient implementation of the road project as discussed below:

4.1 Public Procurement Procedures not properly followed.

Section 41 of the Public Procurement and Disposal of Assets Act, 2018, provides the procedures to be followed in procurement of contractors. These includes the evaluation criteria, the pricing, and the competency of the contractor. In addition, Section 55 (1) of the same Act requires the Government institutions to make procurement through open competitive tendering.

However, the audit revealed that, the contractor for Juba-Rumbek Road was not procured through open competitive tendering, but instead the contractor was acquired through single sourcing. Therefore, it was not possible to confirm whether the contract was awarded to the most competent contractor at the most reasonable contractor price. As a result, it was not possible to confirm whether the citizens got the best value for money.

4.2 Failure to involve the Road Authority in the Road Construction.

The Southern Sudan Roads Authority Act, 2011 mandates the Roads Authority to take the role of project managers for all trunk roads in South Sudan. The role of the Roads Authority as defined in the Act is to be the developer, manager, rehabilitator, and maintainer of all trunk roads in South Sudan. Juba-Rumbek Road is a trunk road since it links South Sudan to the international borders and other states in South Sudan. The Road Authority does the implementation of the projects, based on policies, standards and specifications laid down by the Ministry of Roads and Bridges.

The audit revealed that, the Road Authority has not been involved in the construction of the road. It was only involved when a committee was formed, to investigate and recommend remedial actions after the road was destroyed by floods in May 2020. It was not clear why the Road Authority was not involved in the road construction. There is therefore a risk that, the quality of the road may be compromised when the Ministry of Roads and Bridges prepares the policies, standards, and specifications for road construction and again monitor and supervise the implementation of the road construction.

4.3 Delay in construction of Juba – Rumbek Road

The Addendum to the Contract for construction and upgrading of Juba-Rumbek Road, required the project to be completed within **8 months** after the elapsing of the original completion time of 36 months. This meant that the road was to be completed within **44 months**. The audit revealed that construction work started on 12 November 2019 thus was expected to be completed by 11 July 2023. However, it was noted that as of February 2023, **36 months (82%)** of the contract period had elapsed and **only 63 Km or 16 %** of the work had been done. There is therefore a risk that the remaining **333 Km (84 %)** may not be completed within the remaining period of the **8 months**. The delay was attributed to delay in making advance payments and nonpayment of Interim Payment Certificates (IPCs) as discussed below: -

4.4 Delay in advance payment

Section 14.2 of the Contract Agreement requires that, the amount of advance payment for the project shall be **15 %** of the total contract price of the project, which shall be paid to the contractor in three equal instalments of **5 %** each, after receiving Guarantee amount equivalent to **5 %** of each instalment. The original contract price was **USD 711,125,700**, thus **15 %** advance payment required was **USD 106,668,855**. However, as at the time of audit in February 2023, the amount of advance payment made was **USD 104,037,200** leaving a balance of **USD 2,612,800** unpaid. There was no evidence to confirm whether the contractor had provided the required bank guarantee. The delayed advance payments were attributed to lack of commitments by the Ministry of Finance and has contributed to slow construction of the road.

4.5 Delay in Payment of Interim Payment Certificates (IPCs)

Sub-Clause 14.2 of the contract agreement requires that the repayment of advance payment shall begin once the total of accumulated interim payments has accumulated to **20 %** of the contract price i.e., **USD 142,225,144** (Contract price -**USD 711,125,779 x 0.2 = USD 142,225,144**). The advance payment shall be repaid with the percentage of deductions in interim payments to be **20%** until the full amount of advance has been repaid.

As at the time of audit in February 2023, the contractor had submitted 5 Interim Payments Certificates amounting to **USD 109,348,047** which had been certified and approved by the MoRB as indicated in **table 1 below**. As per the contract terms, **20 %** of the IPCs which totals to **USD 21,869,609** was supposed to be recovered towards repayment of advance payments and the balance of **80 %** totaling **USD 87,478,438**, ought to have been paid to the contractor but had not been paid.

Sub-Clause 14.8 of the contract agreement requires that, if the contractor does not receive any due and unpaid amounts payable by the employer, the Employer shall pay the contractor delay interest charges of **8 %** per annum. As at the time of audit in February 2023, the amount of **USD 87,478,438** was still outstanding attracting interest charges amounting to **USD 6,998,275 (8% of 87,478,438)** which will continue accruing until full amount is paid.

Table 1: Summary of Certified Interim Payment Certificates

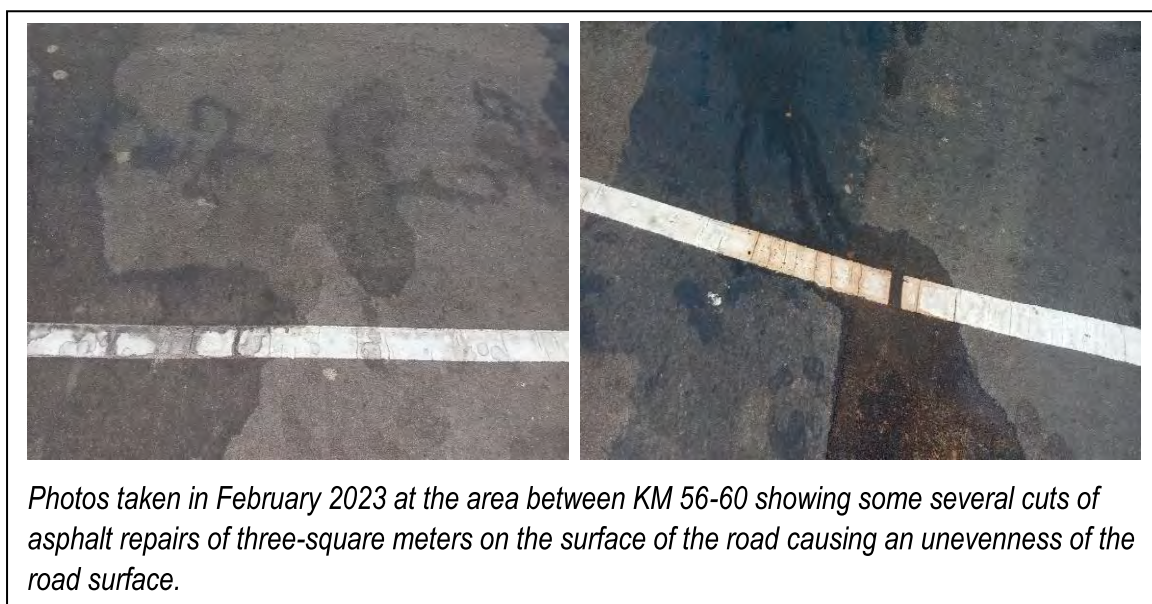
IPCs	Date of issue	Period	Amount of IPCs
IPC - 1			10,786,384.82
IPC - 2	8/ 12/ 2021	Jan. 2020 to Dec. 2020	36,527,975.04
IPC - 3	26 / 03/ 2021		7,240,361.55

IPC - 4	8/ 12/ 2021	March 2021 to July. 2021	31,285,520.09
IPC - 5			23,507,806.80
Total			109,348,047.68

4.6 Inadequate supervision of the road construction

The Contract Agreement Clause (9) required that the employer shall appoint a reputable consultant firm to review the design and supervise the whole works of the construction and upgrading of the road. It was however observed that the appointed consultant worked for only one year (2020-2021), and the contract was not renewed due to lack of funds. In the absence of the consultant, the resident engineer who was supposed to monitor the implementation of the road was also doing supervisory work. Therefore, there is a risk that supervision of the road may not have been properly done and the quality of the road works may have been compromised. For instance, physical inspection on the section of Juba –Terkeka road reveals that, the area between **KM 56-60** has some several cuts of asphalt repairs of three-square meters on the surface of the road causing an unevenness of the road surface as shown in **picture 1** below. There is a possible risk that this area of the road will not hold for long due to the heavy load of the trucks passing through.

Picture 1: KM 56-60 section of the road showing several cuts of asphalt repair.



4.7 Inadequate Road Design

Interview conducted with the Ministry of Environment and Forestry indicated that it was the responsibility of the MoRB as the project owner to engage a third party to conduct the Environmental and Social Impact Assessment (ESIA). The project owner was also responsible for ensuring that the ESIA was adequate

and comprehensive. The Ministry of Environment and Forestry was then expected to review the ESIA report and issue a no objection letter to permit the development activity to proceed.

The audit revealed that the Ministry of Environment and Forestry was not initially involved in feasibility study for the construction and upgrading of Juba-Rumbek Road. As a result, the design was inadequate and hydrological information on the volume of water was missing in the feasibility study. Consequently, the river catchment areas along the route were grossly underestimated. Due to the underestimation of the volume of water, the contractor installed inadequate drainage structures causing water accumulation near Bilpam which eventually washed out a section of the road. The Ministry of Environment and Forestry was only involved after the section of the road was washed out. Construction work was halted, and the design was revised causing delay in execution of the work and an additional cost of USD 25,408,025 increasing the contract price from **USD 711,125,700** to **USD 736,533,725**. The delays and the extra cost could have been avoided if the ESIA had been properly done from the beginning.

Further, the Addendum to the Contract Agreement section 5 (Structure), required the contractor to at least design and install the following structures to enhance the quality and sustainability of the road.

- i. 11 Bridges
- ii. 35 box culverts
- iii. 300 pipe culverts
- iv. 4 weighbridges
- v. 21 viaducts for safe crossing of livestock and wildlife

The exact alignments, sizes, spans, and other aspects of these structures were to be determined using the results of the approved reports of updated Feasibility studies and ESIA. However, these reports were not provided for the audit review. It was therefore not possible to confirm whether the design of the contractor has considered these structures. There is a risk that the road will miss critical structures which may affect effective use of the road.

4.8 Unclear Financing Agreements

The contract agreement states that, ministry of Road and Bridges is desirous to urgently construct and upgrade the Juba-Rumbek Road where it has opened the security account with the China Central Bank Account to deposit the proceeds of the crude oil for the immediate funding of the Juba – Rumbek Road construction.

The financing for the construction of the road was a bilateral agreement between the Government of South Sudan and the Government of China. Initially the financing was to be through the sale of crude oil,

but this was cancelled, and an account was opened in China Central Bank through South Sudan Central Bank for depositing proceeds of crude oil.

As at the time of audit in February 2023 the Ministry of finance had not given the audit team clear breakdown on how the construction of the road was being financed. Though the Ministry of petroleum indicated that **21,780,134 barrels** of crude oil worth **USD 1,558,763,802** had been shipped between 2019 to 2022, as shown in **Appendix 4**, it has not been possible to know how much of that oil was meant for financing construction of Juba – Rumbek Road.

5 Conclusion

- 1) Juba Rumbek Road has not been constructed within the agreed time. As at the time of audit in February 2023, only **63 Km or 16 %** of the whole works had been done, leaving **333 Km or 84 %** for the remaining **8 months**. There is a risk that the road will not be completed within the remaining period. The slow pace in the road construction was mainly attributed to delay in making advance payments and nonpayment of Interim Payment Certificates.
- 2) Juba – Rumbek Road may not have been constructed at the most reasonable cost. There was no open competitive tendering, the contractor was acquired through single sourcing, thus there is a possibility that the Ministry did not procure the best contractor at the best market price. In addition, the original design was not properly done and had to be revised at an additional cost of **USD 25,408,025**.
- 3) Juba-Rumbek Road may not have been constructed in accordance with the required design and specifications. The design of the road was inadequate since the Ministry of Environment and Forestry was not involved in the Feasibility Study and Environmental and Social Impact Assessment. In addition, construction of the road was not adequately supervised, since the ministry of Roads and Bridges was both the implementer and the supervisor, and the Road Authority was not involved at all.

6 Recommendation

From the audit findings and conclusions, the Auditor General proposes the following: -

- i. To ensure proper procurement procedures are followed, the Government should always ensure that procurement of road construction contractors is done in collaboration with the Ministries of Roads and Bridges, Finance and Planning and the Road Authority.
- ii. To ensure that the desired quality of the road is achieved, the Road Authority should implement the project in line with the policies, standards, and specifications made by the Ministry of Roads and Bridges.
- iii. To ensure the road works meets the required specification, the Road Authority should ensure the works are effectively supervised by competent engineers and corrective action taken on a timely basis.
- iv. To ensure that road construction projects are completed within the contract period, there should be clear financing arrangements, the project amount should be budgeted for, and the contractor's payments are made on time.
- v. To ensure that adequate road design and specification are properly done, the Road Authority should ensure all the relevant Government institutions are involved in the design process. These includes Feasibilities Studies and Environmental and Social Impact Assessment.

Sign:

Amb. Steven Kilion Wonda

Auditor General

Republic of South Sudan

Juba

Date :.....

Appendix 1: Documentary Review and Interviews.

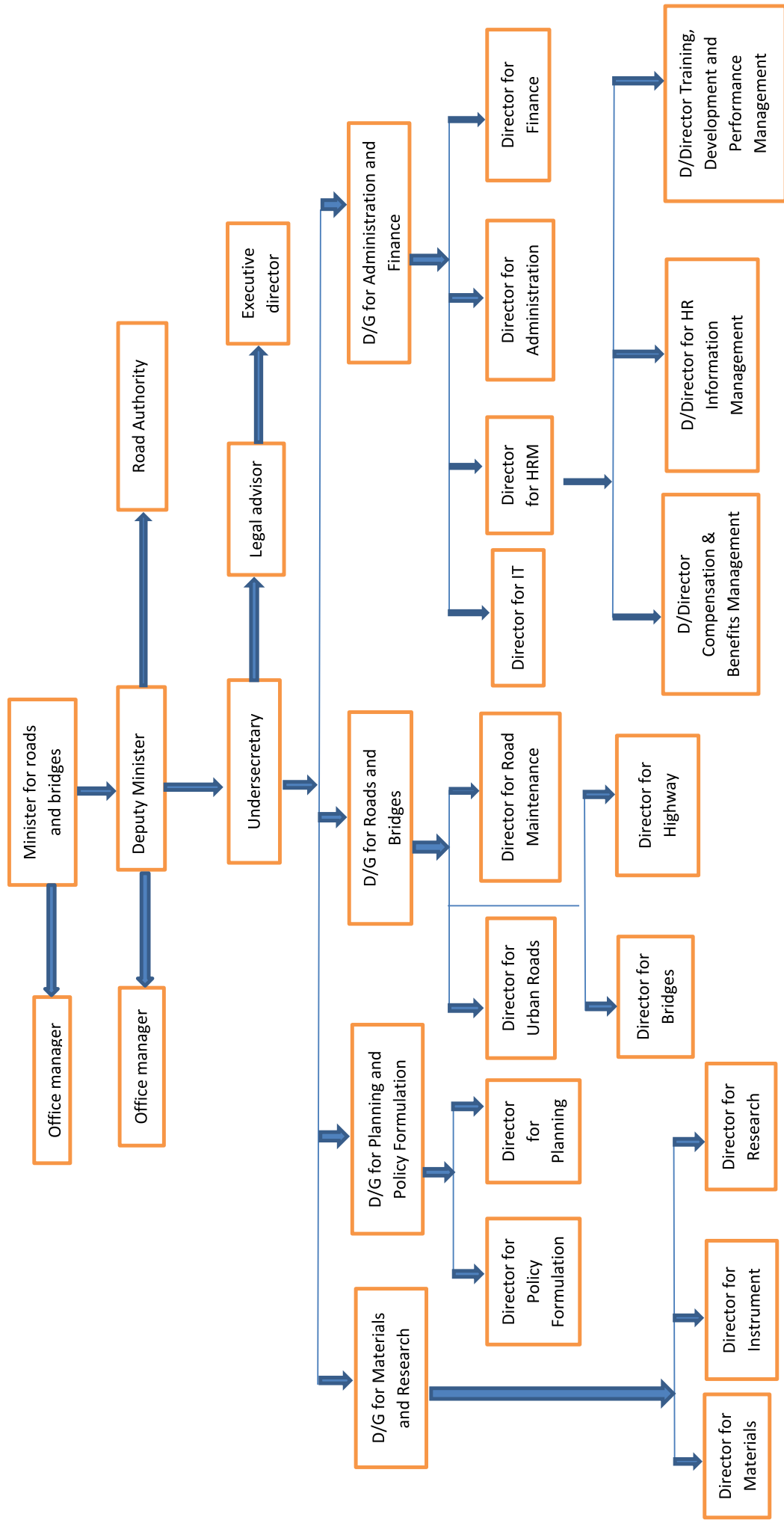
a. Documentary Review	
Document	Purpose(s) of Review
The Contract Agreement	<p>Purpose(s) of Review</p> <ol style="list-style-type: none"> a. To understand the Project specifications, implementation schedules, the contract duration and schedules for payments as agreed upon by the employer and contractor. b. To understand the scope of work and basis of the construction contract agreement c. Understand the role of both the Ministry of Roads and Bridges with respect to the construction of Juba-Rumbek Road d. To understand the responsibilities of the contractor.
Procurement document of consultant for supervision and monitoring of the road construction	<p>Purpose(s) of Review</p> <ol style="list-style-type: none"> i. To understand how the consultant was procured. ii. To understand consultancy agreement with the ministry of road and bridges and the terms of agreement. Consultant's functions iii. To examine the consultant's reports on the progress of the work and determination of the interim payment certificates
Contract Payment documents	<p>Purpose(s) of Review</p> <ol style="list-style-type: none"> 1. To understand payment procedures – schedule of payment of crude oil 2. To understand the total contract value paid or Interim Payment Certificate (Interim Payment Claim -IPC) paid and 3. To understand the Interim Payment Certificate (Interim Payment Claim -IPC) not paid and 4. To analyse the payment vouchers
Public Procurement and disposal of assets Act 2018	<p>Purpose(s) of Review</p> <ol style="list-style-type: none"> 1. To examine the requirements of the open competitive tendering. 2. To understand whether the contractor was procured according to the provision of the public procurement Act 2018.
Reports of Consultancy firm.	<p>Purpose(s) of Review</p>

	To establish the scope of the consultant's work and assess whether the consultant performed according to the contract agreement.
Work – in - Progress Reports	<p>Purpose(s) of Review</p> <p>To examine the site engineer reports for the parts of the project completed and the work in progress, also examined the Interim Payment Certificates (IPC) issued (Interim Payment Claims) in relation to the parts of the work done.</p>
Payment Vouchers	<p>Purpose(s) of Review</p> <p>To determine the interim Payment Certificates paid and subsequently establish the IPC not paid.</p>
b. Interviews conducted.	
Officer and the Ministry/Office	Purpose of Interview
Eng. John Kenyi Sasa, Director General for Road and Bridges, Ministry of Roads, and Bridges.	<p>To understand:</p> <ul style="list-style-type: none"> i. The Road construction designed, Procedure of procuring the contractor, Procedure of procuring the consultant, Payment procedures, i. The role of Road Authority in construction of Juba Rumbek Road, i. The role of the Ministry of Petroleum in respect to construction of Juba Rumbek Road payments of 10,000 barrels of crude oil per day, v. The role of the Ministry of finance and planning, its role in relation to Juba Rumbek Road construction, v. The role of Ministry of environment in respect to construction of Juba Rumbek Road
Simon Chol Martin, Director of Marketing and Petroleum Economic and Mr. Khidir Ajack, Deputy Director of Marketing and Petroleum Economic – Ministry of Petroleum	<p>To understand: -</p> <ul style="list-style-type: none"> i. The role of the Ministry of Petroleum and Mining in shipment and sale of crude oil, i. The approved allocation of 10,000 barrels of crude oil per day to be remitted to China Exim Bank for financing infrastructures developments amongst Juba – Rumbek Road construction worth USD 711,125,700, i. The total amount of crude oil shipped and sold in payment of Juba – Rumbek Road construction, k. The price of 10,000 Barrels per day, how it was calculated to come up to the total cost of the contract value USD 711,125,7000.? and k. The steps taken to mitigate any future increase or decrease in prices of crude oil in the international markets that may

	adversely affects the total cost of the contract value USD 711,125,700.
Engineer Henry Jenaro Amock, Project Manager Ministry of Roads and Bridges	To understand: The role of the site Engineer in relation to Juba – Rumbek construction, the process how the site Engineer will monitor and evaluate the standards and specifications required, any reports of inadequacies with certain aspects of South Sudan standards and specifications, the basis approving or issuing the Interim Payment Claims (IPC) to the contractor. The relationship of the site Engineer and Consultant Firm, How the quality of the Road construction could be controlled
Hon: Joseph Africana Bartel Undersecretary Ministry of Environment and Forestry	To understand: - The role of the ministry of Environment and Forestry in respect to Juba – Rumbek Road construction, The extend in which the ministry of Environment is involved in collecting information on Feasibility Studies and Environmental and Social Impact Assessment (ESIA) in designing Juba – Rumbek Road construction, The extend in which the information collected in the Feasibility Studies and Social Impact Assessment (ESIA) is sufficient in designing Juba – Rumbek Road construction, the consequences of not involving the Ministry of Environment in the Feasibility Studies and Social Impact Assessment (ESIA) in designing Juba – Rumbek Road construction and the Quality control of road construction
Simon Ayuen Chuiir, Former Director General for Finance and Administration Ministry of Roads and bridges	To understand: - To understand how the contractor and Consultant Firm is procured, and how the contractor is paid.
Road Authority 1. Kenyatta Warille, PE / Executive Director and 2. Mading Aguer / Internal Auditor	To understand: The Role of the South Sudan Road Authority in respect to Juba - Rumbek Road Construction, The Role of South Sudan Road Authority in setting up internationally Acceptable Standards for Road Construction, The Relationship between the Roads Authority and the Ministry of Roads and Bridges, and Quality Control Measures to be followed in Road Construction and Other Relevant Information.
Shandong Hi Speed Nile Investment & Development Company Ltd – at Camp (K17)	To understand:

<p>1. Eng. John Yuol Maduk – MRB / D/ Project Manager</p> <p>2. XUE: D/ PM</p> <p>3. Leo: Site Engineer</p> <p>4. David Sun: Translator: Tel 0920755073</p>	<p>To know the commencement date of the work- that is site handing over minutes/ ground- breaking.</p> <p>To understand the funding procedures of the Juba – Rumbek Road construction.</p> <p>To understand the reasons why there is delay in finishing the road construction (36 months period).</p> <p>To know the amount of the Interim Payment Claims paid and not paid up to date. To understand the reasons of on non-payment of the IPCs.</p> <p>To understand how you manage to continue constructing the road without payment of the IPCs by the employer. Summary of Interim Payment Claims not paid for the finished 63 Km.</p> <p>To understand the role of consultant’s firm (Liberty Engineering & construction Ltd) in supervision activities. Is it effectively continuing? Material testing results (reports)</p> <p>To understand the quality of the road – especially the area between 56 – 60 KMs at Lojora</p>
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Appendix 2: Organizational Structure of the Ministry of Roads and Bridges.



Appendix 3: Stakeholders Analysis

1. Road Authority

- a. What is the stakeholder's role / interest in the construction Juba-Rumbek Road?
 - Implementing policies of the Ministry of Roads and Bridges for Road construction.
- b. What does the stakeholder stand to gain were the entity fulfil its mandate well?
 - Ensures that road construction is constructed according to the internationally acceptable standards.
 - The public will have confidence in Road Authority in discharging their mandates.
- c. What does the stakeholder stand to lose were the entity fails?
 - The public will lack confidence in Road Authority in implementing road constructions policies.
- d. What would the Stakeholder want to know from our report?
 - Whether Juba – Rumbek Road construction is accomplished according to the internationally acceptable standards.
- e. From where and how we will get this information?
 - Interview the executive director.
 - Review internationally acceptable standards

2. Consultant Firm

- a. What is the role / interest of the Consultant Firm in respect to Juba – Rumbek Road Construction
 - To review the design, monitor the works,
 - provide progress report, and
 - supervise and approve every stage of Works on behalf of the Ministry of Roads and Bridges.
- b. What does the Consultant Firm stand to gain were the entity fulfil its mandate well?
 - It gains a good reputation in providing consultancy service on road construction.
- c. What does the Consultant Firm stand to lose were the entity fails to fulfil its mandate well?
 - The public will lack confidence in the Consultant Firm in providing consultancy service on road construction.
- d. What does the Consultant Firm want to know from our report?
 - The Consultant Firm wanted to know whether Juba-Rumbek Road is well constructed and is of high quality as agreed in the contract agreement.
 - The Consultant Firm wanted to know whether the resources allocated for Juba-Rumbek Road construction are used efficiently and effectively.
- e. From where and how we will get this information

- We will get this information by conducting interviews with the consultant, conduct site visits on Juba to Terkeka road construction, Review consultant reports, and standards and policies issued by MoRB.

3. Ministry of Environment

- a. What is the role / interest of the Ministry of Environment in respect to Juba – Rumbek Road Construction
 - Formulation of national policies on protection, conservation, and sustainable use of the natural resources of South Sudan
 - Ensure that adequate information on Feasibility Studies and Environmental and Social Impact Assessment (ESIA) for the design of Juba – Rumbek Road construction is obtained.
- b. What does the Ministry of Environment stand to gain were the entity fulfil its mandate well?
 - An assurance that adequate drainage structures were installed on Juba – Rumbek Road construction.
 - Ensures that conservation and sustainable use of the natural resources (use of marram, gravels) are cared for.
- c. What does the Ministry of Environment stand to lose were the entity fails to fulfil its mandate well?
 - The public will lack confidence in the Ministry of Roads and Bridges on road design, Ministry of Environment is not part of the road design.
 - Inadequate Feasibility Studies and ESIA led to inadequate drainage structures on the road construction and created a bad image on the Ministry of Roads and Bridges. The Ministry of Environment was not consulted.
- d. What does the Ministry of Environment want to know from our report?
 - The Ministry of Environment want to know whether the audit reported the noninvolvement of the Ministry of Environment in the Feasibility Studies and Environmental and Social Impact Assessment and
 - Whether the audit has provided recommendations for future involvement of the Ministry of Environment on Feasibility Studies.
- e. From where and how we will get this information
 - Conduct Interview s in the Ministry of Environment.
 - Review environmental guidelines.
 - Conduct site visits to areas where natural resources (marram, gravels) are extracted.

4. Ministry of Finance and Planning

- a. What is the role / interest of the Ministry of Finance and Planning in respect to Juba – Rumbek Road Construction
 - Setting Fiscal Policies, Allocating and monitoring public spending,
 - Participate in the procurement process of the contractor.
 - Effect payment to the contractor

- b. What does the Ministry of Finance and Planning stand to gain were the entity fulfil its mandate well?
 - Assurance that adequate funds are allocated for construction of Juba – Rumbek Road and resources are used efficiently and achieved the intended objective.
- c. What does the Ministry of Finance and Planning stand to lose where the entity fails to fulfil its mandate well?
 - The public may lack confidence in the Ministry of Finance in allocating and managing resources for projects implementation.
- d. What does the Ministry of Finance and Planning want to know from our report?
 - The ministry wanted to know whether the resources allocated for construction of Juba – Rumbek Road are used economically and efficiently and intended objectives are achieved.
- e. From where and how we will get this information
 - Conduct Interview with various directors in the Ministry of Finance and Planning
 - Review Free balance and bank Statements.

5. Ministry of Petroleum and Mining

- a. What is the role / interest of the Ministry of Petroleum in respect to Juba – Rumbek Road Construction
 - Provide information on the sale of **10, 000 barrels** of crude oil per day for payment of Juba – Rumbek Road construction.
- b. What does the Ministry of Petroleum stand to gain where the entity fulfils its mandate well?
 - Assurance that **10,000 barrels** of crude oil per day is allocated for construction of Juba – Rumbek Road and are used efficiently.
- c. What does the Ministry of Petroleum stand to lose where the entity fails to fulfil its mandate well?
 - The public may lack confidence in the ministry of Petroleum and mining in allocation of resources.
- d. What does the Ministry of Petroleum want to know from our report?
 - The ministry wanted to know whether the **10,000 barrels** of crude oil per day allocated for construction of Juba – Rumbek Road are used economically and efficiently.
- e. From where and how we will get this information
 - Conduct Interview in the Ministry of Petroleum and mining.
 - Review documents for sale of **10,000 barrels**.

6. National Legislature and Presidency

- a. What is the role / interest of the National Legislature and Presidency in respect to Juba – Rumbek Road Construction
 - To enact and review laws on infrastructure development.
 - Approve budgets related to Juba – Rumbek Road construction.
 - Provide oversight in Juba – Rumbek Road construction.

- b. What does the National Legislature and Presidency stand to gain where the entity fulfils its mandate well?
 - Assurance that funds allocated for Juba – Rumbek Road construction are used appropriately.
 - The public will have confidence in parliament in discharging their mandate.
- c. What does the National Legislature and Presidency stand to lose where the entity fails to fulfil its mandate well?
 - The credibility of Parliament in the eyes of other stakeholders is hampered.
- d. What does the f National Legislature and Presidency want to know from our report?
 - Whether funds allocated for construction of Juba – Rumbek Road are used efficiently and effectively.
 - Whether the quality of Juba-Rumbek Road is constructed as per the required standards.
- e. From where and how we will get this information
 - Review laws related to road construction,
 - Review approved budget for Ministry of Roads and Bridges.

Appendix 4: Audit Design Matrix

Audit sub-Objective	Audit Question	Sub Questions	Criteria	Data Collection and Analysis			Expected findings
				Audit Evidence needed	Methods of data collection	How to analyze the evidence	
To assess whether Juba Rumbek has been constructed within the agreed time.	Has Juba Rumbek Road been constructed within the agreed time?	Has the commencement of work-started on time?	The official commencement date shall be 12 th November 2019.	The advance payment was paid immediately after commencement date.	Documentary review and interviews	Compare the date when the project was started against when it was supposed to end	Delay in commencement of the project.
		Has advance payment paid on time?	The expected date of the payment of the advance payment	The exact date of payment of advance payment	Documentary review and interviews	Compare the date when the advance payment was done against when it was supposed to paid	Delay in payment of advance payment
		Has Interim payment claims (IPC) paid on time?	The expected date of the payment of the IPCs.	The exact date of the payment of the IPCs	Documentary review and interviews	Compare the date when the IPCs were paid against when they were to be paid	Delay in payment of IPCs.
		Are construction materials tested on time?	The construction material should be tested within a reasonable time	How long the testing of the construction materials takes	Documentary review and interviews	Assess whether the materials are tested within a reasonable time	Delay in testing of the construction materials

Audit sub-Objective	Audit Question	Sub Questions	Criteria	Data Collection and Analysis			Expected findings
				Audit Evidence needed	Methods of data collection	How to analyze the evidence	
To assess whether Juba Rumbek has been constructed within the reasonable cost	Has Juba Rumbek Road constructed at a reasonable cost	How was the contract price arrived at?	Section 55 (1) of the Public Procurement and Disposal of Assets Act 2018 requires that, the government institutions shall plan their public procurement and disposal of assets activities annually and shall use single source public procurement of assets only if no other method is available.	Whether Public procurement procedures followed.	Documentary review and interviews	To confirm whether the procurement procedures were followed.	The procurement procedures were not followed.
		was the contract awarded at a least cost?	Section 41 of Public Procurement and Disposal of Assets Act 2018, provide the evaluation criteria and procedure to include price and the experience, reliability and professional and managerial competency of the contractor and the personnel to be involved in	The price at which the contract was awarded	Documentary review and interviews	To confirm whether the contract was procured at the best possible price	The road was not constructed at the most reasonable cost

Audit sub-Objective	Audit Question	Sub Questions	Criteria	Data Collection and Analysis			Expected findings
				Audit Evidence needed	Methods of data collection	How to analyze the evidence	
			providing the subject matter.				
To assess whether Juba Rumbek Road has been constructed according to the required quality.	Has Juba Rumbek Road been constructed according to the required quality.	Was the road constructed according to require design and specifications	Part 3 of the general conditions of the EPC Contract agreement on Technical Standards and Specification and regulations requires that: the design, the contractor's documents, the execution and the completed Works shall comply with country's technical standards, buildings, construction and environmental laws and other standards specified in the employers' requirements, applicable to the works or defined by the applicable laws.	Well-constructed road and confirmation from the site engineer on the quality of the road.	Documentary review and interviews and physical visit	Confirm that the road design and specifications were adhered to in the construction of the road	The road was not constructed according to the required quality

Audit sub-Objective	Audit Question	Sub Questions	Criteria	Data Collection and Analysis			Expected findings
				Audit Evidence needed	Methods of data collection	How to analyze the evidence	
		Was supervision of the road construction carried out according to the contract agreement	Clause 9 of the EPC Contract agreement on Procurement of the consultant by the employer requires that the employer appoint a reputable consultant firm to review the design and supervise the whole works of the construction and upgrading of the road.	Consultant's and site engineer reports	Documentary review and interviews	To confirm whether the consultant and site engineer carried out the supervision of road construction	The construction of the road was not adequately supervised
		Were construction materials used tested to ensure quality required	Part 3 of the General Conditions of the EPC Contract agreement on Testing (7.4) requires that the contractor shall provide all apparatus, assistance, documents and other information, electricity, equipment, fuel consumables instruments, labor, materials, and suitable qualified and	Report of the material testing results	Documentary review and interviews	To confirm whether the quality of the materials used for the construction of the road conform to required	The road was not constructed at the required quality

Audit sub-Objective	Audit Question	Sub Questions	Criteria	Data Collection and Analysis			Expected findings
				Audit Evidence needed	Methods of data collection	How to analyze the evidence	
			experienced staff, as are necessary to carry out the specified tests efficiently. The contractor shall agree, with the employer, the time and place for the specified testing of any plant, materials, and other parts of the works.				

Appendix 5: Total Crude Oil Shipped Between 2019-2022

Window	Net BBL Barrels	Awarded Company	Price FOB	Pre-finance values in USD
2019				
Apr. 21-23,2019	600,261	Sahara	64.84	38,920,923.24
May 20-22,2019	600,219	Zhenhuaoil	70.61	42,381,463.59
June 26-28,2019	600,205	Sahara	63.2	37,932,956.00
July 15-17,2019	570,176	Unipec	61.07	34,820,648.32
Sept 26-28,2019	629,739	Addax	63.57	40,032,508.23
Nov 23-25,2019	570,228	Trafigura	63.92	36,448,973.76
Dec 20-22,2019	600,454	Trinty	66.49	39,924,186.46
Total	4,171,282			270,461,659.60
2020				
Jan. 20-22,2020	629,769	BB.Energy	65.29	41,117,618.01
Feb, 20-22,2020	596,778	BB.Energy	33.59	20,045,773.02
May 21-23,2020	600,433	BB.Energy	21.5	12,909,309.50
May 27-29,2020	600,185	NASDEC	23.39	14,038,327.15
June 26-28,2022	570,090	Trinity	35.72	20,363,614.80
July 27-29,2020	570,205	BB.Energy	42.43	24,193,798.15
Aug. 26-28,2020	570,605	Chiangwei	43.22	24,661,538.10
Oct. 04-06, 2020	570,022	Trafigura	38.01	21,666,536.22
Oct. 26-28,2020	570,670	BB.Energy	37.65	21,485,725.50
Nov. 25-27,2020	570,620	Trinity	39.92	22,777,150.40
Dec. 25-27,2020	570,509	BB.Energy	48.63	27,743,852.67
Total	6,419,886			251,003,243.52
2021				
Jan. 25-27,2021	570,196	BB.Energy	52.37	30,859,007.52
Mar. 17-19,2021	570.727	BB.Energy	63.53	36,258,286.31
Apr. 17-19,2021	570,482	BB.Energy	61.95	35,341,359.90
May 17-19,2021	570,595	BB.Energy	66.85	38,144,275.75
June 20-22,2021	570,848	BB.Energy	72.53	41,403,605.44
July 20-22,2022	570,110	BB.Energy	73.48	41,891,682.80
Sep 20-22,2021	570,265	Addax En	71.58	40,819,568.70
Oct. 20-22,2021	629,834	Addax En	81.22	51,155,117.48
Nov. 17-19,2022	570,366	Litasco	79.08	45,104,543.28
Total	4,623,267			360,977,447.18
2022				
Jan. 26-28,2022	57,214	Litasco	73.22	41,751,069.08
Feb.26-28,2022	629,679	Addax En	87.77	55,266,925.83
Apr. 24-26,2022	570,447	Addax En	101.39	57,837,621.33

May 25-27,2022	570,167	Litasco	101.45	57,843,442.15
June 19-21,2022	570,362	BB.Energy	120.5	68,728,621.00
Jun 26-28,2022	570,362	BB.Energy	109.47	62,437,528.14
July 27-29,2022	628,050	Addax En	109.45	68,740,072.50
Aug 26-28,2022	628,768	Trinity	90.74	57,054,408.32
Sep t01-03,2022	628,270	Addax En	88.37	55,520,219.90
Sept 21-23,2022	570,477	BB.Energy	86.37	49,272,098.49
Oct 10-12,2022	570,850	Addax En	87.84	50,143,464.00
Oct 26-28,2022	571,053	BB.Energy	90.58	51,725,980.74
Total	6,565,699			676,321,451.48
Grand Total	21,780,134			1,558,763,802