



KENYA URBAN ROADS AUTHORITY

Efficient and safe urban roads

IKM PLACE, Bishops Road, Tel: 254-020-8013844

Email: info@kura.go.ke Web: www.kura.go.ke

P.O. Box 41727-00100, GPO, NAIROBI

Ref. No: KURA/F&A/PROC/3/Vol.23 (93)

Date: 26th March, 2019

To All Bidders

RE: ADDENDUM 1

Reference is made to the above subject matter.

This is to notify all bidders that an addendum has been issued for the tenders below:

S/NO	TENDER NO.	TENDER NAME	AMENDMENT
1	KURA/DEV/HQ/174/2018-2019	Feasibility Study, Preliminary Engineering Design and Environmental and Social Impact Study of Roads within Mbale Town and Busia Town in Vihiga and Busia Counties.	Replace pages cover page, pages 9,10,29-32,42,46-54 and 68-70
2	KURA/DEV/HQ/173/2018-2019	Feasibility Study, Environmental and Social Impact Study and Preliminary Engineering Design of Narok and Kajiado Town Roads	Replace pages 10,30,31,33, 34, 44-56 and 70.

The mandatory Pretender Site Conference has been moved to 2nd April, 2019 for Feasibility Study, Environmental and Social Impact Study and Preliminary Engineering Design of Narok and Kajiado Town Roads and 4th April, 2019 for Feasibility Study, Preliminary Engineering Design and Environmental and Social Impact Study of Roads within Mbale Town and Busia Town in Vihiga and Busia Counties.

The closing/opening date has been changed to 12th April, 2019 at 10.00am. Bids to be delivered at the tender box on 4th floor at IKM place, 5th Ngong Avenue. Details of the addendum can be accessed on www.kura.go.ke.


Saadia H. Adankhalif

Deputy Director, Supply Chain Management

FOR: DIRECTOR GENERAL

APPENDIX "A"

Reference Clause

- 1.1 & 2.1 The name of the Client is:
**Director General,
Kenya Urban Roads Authority**
- 1.2 Technical and Financial Proposals are requested: **Yes**
A Technical Proposal only is requested: **No**
The name, objectives, and description of the assignment are:
Consultancy Services for Feasibility Study, Environmental and Social Impact Study and Preliminary Engineering Design of Narok and Kajiado town roads
Pre-tender conference will be held: **Yes. Mandatory on 2nd April 2019 from 10am at the KeRRA board room in Kajiado Town. Tenders open for Consultants registered in Kenya only**
- 1.3 The name(s), address(es) and telephone numbers of the Client's official (s) are:

Eng. Abdulrashid S. Mohammed	Richard Kyalo
Director, (PS&C)	Deputy Director, (S&EP)
Kenya Urban Roads Authority	Kenya Urban Roads Authority
P.O. Box 41727-00100	P.O. Box 41727-00100
<u>NAIROBI</u>	<u>NAIROBI</u>
Tel: +254-020-8013844	Tel: +254-020-8013844
Email: <u>asmohamed@kura.go.ke</u> OR <u>rkyalo@kura.go.ke</u>	
- 1.4 The Client shall also give assistance to facilitate the timely granting of the Consultant and his personnel of:
- i). Unobstructed access to all sites and locations involved in carrying out the services.
 - i) The Consultant will be responsible for determining the number of professional staff months to be assigned for any activity.
 - ii) The duration required to complete the assignment is: **twelve (12) months.**
 - iii) The minimum required experience in years of proposed professional staff is detailed in the Terms of References under Personnel requirements.
- 3.3 This minimum required experience in years of proposed professional staff is detailed in the Terms of References under Personnel requirements
- 3.4 (i) Training is a specific component of this assignment: **Yes**
The Consultant shall
- (a) train at least two (2) No. Project supervision staff (Public Service JG 'S') nominated by the Client in a relevant approved programme at ESAMI (Project Formulation & Feasibility Studies / Monitoring & Evaluation of Projects) during the Contract period.
 - (b) offer two internships, (with government approved allowance) during the contract period, the interns shall be nominated by the client as well as
 - (c) provision of training in the use of HDM4 software and provide a new lap top (Hp Spectre x360 Convertible 13 Intel 8th Generation, Core i7-8550U, 1.80GHz, 16GB DDR4 1000GB SSD 13" 4K UHD Display Wi-Fi Webcam HDMI Backlit Keyboard) to project team within the first month of commencement of consultancy.
- The Consultant shall include the cost of training of Clients two staff in his financial proposal, including the associated allowances.

1. INTRODUCTION

1.1. General

The Government of Kenya (GoK) has mobilized resources through the Development Vote/RMLF and intends to apply a portion of proceeds from this fund to eligible payments for **Consultancy Services for Feasibility Study, Environmental and Social Impact Study, and Preliminary Engineering Design of Narok and Kajiado Town Roads**

The Government of Kenya, through its implementing agency, the Kenya Urban Roads Authority (KURA) shall require the Consultant to render all technical support services which may be deemed relevant to the above services. The detailed description of the consulting services to be performed is described in these Terms of Reference (TOR).

1.2. Project Description

1.2.1 Project Location

The project roads are located in Narok Town in Narok County and Kajiado Town in Kajiado County with a total length of approximately **230.0 km** as detailed below. The project roads traverse through built up areas and consist of gravel and earth roads.

Table 1.1 (a): Narok Town Roads

S/No	Name of the Road	No of Km
1	Southern Bypass	15
2	Northern Bypass	35
3	Noolmong-Lenana-Lexington	5
4	Police Line-Majengo	7
5	Town Council-Majengo	5
6	Manyatta –Mercedonia	4
7	Maasai Mara University-Mercedonia	7
8	Ensda –Imani – House loop	3
9	Full Gospel -Pulunga	4
10	Motonyi – Olorroito Loop	8
11	Highway - Mwamba	6
12	Greatstars-Highway Bomet	6
13	Majengo- Fanaka- Olopito	8
14	Nairasirasa- Nkareta	10
15	Slaughter- Monjo	7
Total		130Km

Table 1.1 (b): Kajiado Town Roads

S/No	Name of the Road	Length in Km
1	Jua Kali-Oloosuyian-Olyiankalai Road	10
2	Oloosuyian-Oloilalei-Hospital Road	10
3	Showground (THRU Dumpsite)-Airstrip Road	5
4	Police Station –Sajiloni-Ilderkes Aare Road	10
5	Kiroka Junction-Iltareto Pri-Sajiloni Road	10
6	Empeut-Airstrip-Olengoti-Jua Kali Road	5
7	JNC A104-Olkejuado High School Road	4
8	Almaktum- Outering Road	2
9	Kajiado Town (Municipality CBD) Access and Link Roads	20
10	Iseuri-Nasianta Junction	4
11	Demonstrations firm Economic/Investment Stimulus Roads	20
	Total	100Km

1.3. Selection Criteria

The Consultant selected to undertake the Services shall have had extensive experience in the Feasibility Studies, Environmental and Social Impact Assessment, Tender Documentation and Engineering Designs.

This is a Lumpsum Contract.

1.4. Project Objectives

The roads are critical to promote and facilitate traffic movement within and around the target towns. The roads are meant to increase mobility, divert through traffic from the town centre and to serve the expansion needs of the towns.

A feasibility study will be prepared that will fully inform the Government of Kenya (GoK) on the engineering, economic, environmental and social aspects of upgrading the roads.

2. STUDY OBJECTIVES

Obay 3

3.3 Scope of Feasibility Study and Preliminary Engineering Design

A feasibility study will be prepared that will fully inform the GoK on the engineering, economic, environmental and social aspects of upgrading the roads individually. Economic analyses of roads shall be separately prepared. Associated tasks comprise but are not necessarily limited to:

- a) **Social analysis** of the Project area of influence to determine numbers of beneficiaries and socio-economic profiles. Assessment of suppressed demand if any for road transport services;
- b) **Field surveys** of the road, including preliminary topographic, pavement, drainage and structures. Preliminary assessment of slope stability and identification of options for mitigation of potential instability, and areas of potential instability which may result from upgrading;
- c) **Traffic surveys.** Preparation of traffic forecasts taking into account existing and proposed developments in the project area of influence as well as any findings related to suppressed demand;
- d) Identification of sources of construction materials including potential quarry sites (evaluation of material quality not necessary at this stage);
- e) Estimation of the incremental cost of incorporating measures to accommodate forecast changes in climate characteristics in the project.
- f) Preparation of preliminary designs and cost estimates for upgrading options, including varying cross sectional configurations;
- g) Preparation of an economic evaluation of the proposed road upgrading options in accordance with National Guidelines for Economic Analysis of Projects, including switching value calculations, sensitivity analysis for variations in key parameters and budget constraints. Where National Guidelines do not exist, International guidelines such as African Development Bank and World Bank shall be adopted;
- h) Undertake risk analysis in accordance with National Guidelines for integrating Risk Analysis of Projects. Where National Guidelines do not exist, International guidelines such as African Development Bank and World Bank shall be adopted;
- i) Based on the economic analysis, estimation of the expected distribution of project net benefits among freight transport users, passenger transport users, personal car users; NMT, the government and the economy in general;
- j) Assessment of land acquisition and resettlement needs in accordance with National guidelines, and prepare a resettlement action plan (RAP). Where National Guidelines do not exist, International guidelines such as African



Development Bank and World Bank shall be adopted;

- k) Preparation of an initial poverty and social assessment and screening for resettlement impact and indigenous peoples issues in line with National guidelines. Where National Guidelines do not exist, International guidelines such as African Development Bank and World Bank shall be adopted;
- l) Assessment of potential environmental impacts in accordance with EMCA Act and other national Guidelines. Where National Guidelines do not exist, International guidelines such as African Development Bank and World Bank shall be adopted;

At the very end, the feasibility is focused on the Economic Analysis, in particular the economic indices of:

- i. Net Present Value (NPV),
- ii. Economic Internal Rate of Return (EIRR).
- iii. Benefit Cost Ratio (BCR)
- iv. First Year Rate of Return (FYRR)

Preferred software for use in analysis is HDM4 software

The Feasibility Study in its entirety includes review of all components which are contributing, affecting and being affected by the construction of these roads.

They include (but are not limited to):

- a) **Poverty and Social Assessment of project influence area, including:**
 - Public Consultation;
 - Gender Assessment;
 - Social Action Plan;
 - Indicators for Monitoring.
- b) **Environmental Scoping, including:**
 - Description of the Environment;
 - Screening of Potential Environmental Impacts and Mitigation Measures;
 - Environmental Management and Monitoring Plan;
 - Public Consultations and Information Disclosure;
 - Findings and Recommendations;
- c) **Environmental Assessment Review Procedure, including:**
 - Assessment of Legal Framework and Institutional Capacity;
 - Existing Environmental Guidelines and Policies;
 - Anticipated Environmental Impacts;
 - Environmental Assessment for Subprojects and/or Components;
 - Consultation, Information Disclosure, and Grievance Redress Mechanism;
 - Institutional Arrangement;
 - Monitoring and Reporting.
- d) **Engineering: Technical Investigation & Preliminary Design, including:**
 - Introduction & Description of Project Roads;
 - Technical Field Investigations;
 - Technical Design Standards and Guidelines;
 - Bio-Engineering Measures;
 - Climate Change Adaptation;
 - Proposed Road Upgrading Alternatives including “Do Nothing”;



4.2 Commencement

The Consultant shall commence the study within fourteen (14) calendar days of the effective date of the contract.

4.3 Reports

The Consultant shall prepare and submit to the Project Manager, KURA Technical Team the following reports. **All reports shall be in English and prepared on A4 metric size paper. All reports will be submitted in five hard copies and two soft copies in CD ROM format.** The consultant will discuss and get approval of the software format used to prepare the soft copies for drawings to ensure compatibility with available software in the Client's establishment. In order to facilitate speedy review by the Client of Consultant's work, the Consultant is encouraged to organize parts of the main reports into working papers for prior discussion with the Client before compilation into deliverables.

a) **Inception Report (One (1) Month)**

This shall summarize initial findings and give proposals covering methodologies of the preliminary engineering studies, and the detailed work plan for the conduct of the preliminary design – 5 hard copies and two softcopies for the client.

b) **Preliminary Feasibility Study Report (Two (2) Months):**

This shall summarize the findings, analysis, results, and recommendations of the study, and shall contain all supporting material and include an executive summary.

The Consultant shall prepare preliminary design drawings and reports in accordance with the format and title sheets as directed by the Team Leader, Project Technical Team. These documents to be submitted in 5 hard copies and two softcopies to be submitted to the Team Leader-Project Technical Team shall include a description of: -

- i. Feasibility Study, Environmental and Social Impact Assessment
- ii. Topography, geology, rainfall, vegetation and land use
- iii. Hydrological analysis, existing drainage structures and requirements.
- iv. Traffic survey and forecast
- v. Soil and materials investigations
- vi. Recommendations for the new construction
- vii. Estimate of the quantities and construction cost within an accuracy of approximately +/- 20% and a description of physical and pricing problems that may arise during the construction
- viii. Location plans to scale 1:50,000, plan and longitudinal profile drawings to a scale of 1:2,500 and 1:250 vertical, typical cross-section details, and
- ix. General arrangement drawings for the main drainage structures.
- x. **Preliminary Design Report:** This shall incorporate all revisions deemed necessary arising from comments received from the Team Leader, Project Technical Team, following discussions and agreement between him and the

Consultant. It shall include a concise executive summary in which the project design standards and cost estimates broken down into foreign and local currencies shall be shown clearly – 5 hard copies and two softcopies to be submitted to the Team Leader-Project Technical Team.

The report will generally incorporate comments generated from the presentation of the Inception Report as well as comments from the Client's Technical Team.

c) Draft Final Feasibility Study Report (Five (5) Months)

This report will encompass the entire scope of the consultancy in detail, including all technical investigations and studies: engineering; traffic; socio-economic and environmental, preliminary engineering design, including topographic surveys, alternative alignment design drawings, alternative upgrading scenarios, cost estimates, land acquisition plans and material source plans. The report shall also include economic evaluation and financial viability analysis.

The report will generally incorporate comments generated from the presentation of the Preliminary Feasibility Study Report as well as comments from the Client's Technical Team.

The Draft Feasibility Study Report shall conform to the report structure shown in section 4.7 of the Terms of Reference.

d) Final Feasibility Study Report (Four (4) Months)

The report will generally incorporate comments generated from the presentation of the Draft Final Feasibility Study Report as well as comments from the Client's Technical Team. (Ten hard copies and Two soft copies)

The Final Feasibility Study Report shall conform to the report structure shown in section 4.7 of the Terms of Reference as a bare minimum.

The environmental and social impact assessment reports, as well as the Preliminary Engineering design Report shall be packaged as separate volumes.

e) Progress Reports (Monthly)

These shall be submitted monthly and shall detail all work performed during the reporting period and utilization of the study personnel. This shall contain preliminary conclusions (covering such topics as traffic studies and design standards), based on the analyses substantially completed, and shall also identify actual and anticipated difficulties and delays in the work, their causes and the remedies proposed to solve them – 3 hard copies and two softcopies to be presented to the Team leader-Project Technical Team

4.4 Records of Documents



Addendum 1

After delivery of all final documentation, the originals of the following documents are to be deposited with the Team Leader, KURA Technical Team;

- i) All drawings, both full size and photo-reduced, inclusive of land acquisition drawings, all in transparent material.
- ii) Tabulated test result of the materials investigations and any interpretation therefrom inclusive of materials charts
- iii) Earthworks computations inclusive of mass-haul diagram
- iv) Structural calculations
- v) Hydrological and water way calculations
- vi) Setting out data and earthworks computation on CD ROM.

4.5 Time Schedule

The feasibility study and preliminary engineering designs shall be completed and forwarded to the Team Leader, KURA Technical Team within Twelve (12) months of the commencement of the assignment. The Consultant should be prepared to attend meetings with the Client to discuss the assignment at any stage.

4.6 Lateness in reporting

Where a report required is delayed beyond the stipulated time for submission, the consultant shall provide to the Client an explanation satisfactory to the Client for the delay in submission and the remedial measures to be undertaken.

4.7 Report Structure

The “Feasibility Study Report shall include the following Chapters, Sub-Chapters, and Appendices as a bare minimum:

Executive Summary

Chapter 1 – Introduction

- Background
- Objectives and Scope of the Project
- Terms of Reference – Feasibility Study
- Report Structure

Chapter 2 - Socio-Economic Review

- Introduction
- National Economic Framework – Vision 2030
- Population and Land Area
- Transport Implications
- Selected Socio Economic Characteristics
- Predominant Economic activity and related Facilities

Chapter 3 - Strategic Development Plan

- General
- National Transportation Planning Framework



Addendum 1

- National Roads Network – Goals & Strategy (Road Sector Investment Programme, Annuity Programme, Low Volume Sealed Roads programme)
- The National Development Goals and Planning

Chapter 4 – Preliminary Engineering Design

- Introduction & Description of Project Roads
- Technical Field Investigations
- Technical Design Standards and Guidelines
- Climate Change Adaptation (El – nino)
- Proposed Road Upgrading Alternative Scenarios (including “Do Nothing” as base scenario)
- Cost Estimates
- Engineering Appendices:
 - Appendix 1. Preliminary Topographic Survey data
 - Appendix 2. Preliminary Engineering Design Drawings
 - Appendix 3. Proposed Land Acquisition Plans and estimated costs
 - Appendix 4. Materials Source Maps
 - Appendix 5. Cost Estimates

Chapter 5 - Social & Poverty Assessment and Safeguards

- Socio-Economic Context of Regions and Districts
- National Poverty Reduction Strategy
- Causes and Characteristics of Poverty
- Poverty in the Project Area
- Socio-Economic Profile of the Study Area
- Consultation Meetings
- Beneficiary Profile
- Poverty and Social Impact Assessment (PSA)
- Gender Assessment
- Social Action Plan
- Indicators for Monitoring
- Resettlement Framework
- Conclusions
- Social Appendices
 - Appendix 1 - Resettlement Screening
 - Appendix 2 - Resettlement Action Plan
 - Appendix 3 - Poverty reduction and social strategy
 - Appendix 4 - Socio – Economic Profile

Chapter 7 - Environmental Impact Assessment

- Introduction
- Assessment of Policy, Legal Framework and Institutional Capacity
- Anticipated Environmental Impacts
- Environmental Assessment for Subprojects and/or Components
- Consultation, Information Disclosure, and Grievance Redress Mechanism
- Institutional Arrangement
- Monitoring and Reporting
- Appendices
 - Appendix 1- Environmental Assessment Checklist Form



➤ Appendix 2 - Environmental Impact Assessment Report

Chapter 8 - Climate Change Adaptation

- Climate Change
- Identified Environmental Risks and Climate Change Vulnerability
- Climate Change as a Development Challenge
- Anticipated Risks of Climate Change on Road Upgrading

Chapter 9 – Traffic – Reviews of Existing Studies

- Background and Data Sources
- Road Network in the Study Area
- Survey Methodology
- Surveys Conducted
- Average Daily Traffic (ADT) & Average Annual Daily Traffic (AADT)
- Road Side Survey (O-D) in respect of the Bypass roads
- Induced Traffic
- Estimated Traffic Growth Rate
- Future Traffic Generators
- Traffic Demand Forecast for the Project roads
- Appendices:
 - Traffic Survey Forms
 - Detailed Traffic Data, by Vehicle Type
 - Traffic Demand Forecasts

Chapter 11 - Economic Evaluation

- Introduction
- Objectives of Economic Evaluation
- Analytical Scenarios/Alternatives
- Road Characteristics & Cost Estimates of Alternative Scenarios
- Unit Costs and Operating Data, by Vehicle Type
- Traffic
- Quantifiable Benefits
- Estimating Multiplier & Retainer Local Share of Investment/Maintenance Costs
- Proxy for Social Benefits and Affected Population
- Residual Share of Bridges and Special Culverts
- Environmental/Road Safety Impacts
- Standard Economic Analysis, 12% Discount Rate - Summary Results
- Alternative Economic Analysis - at 5% Discount Rate
- Sensitivity Analysis
- Distribution of Benefits
- Risk Analysis
- Conclusion and Recommendations

Chapter 11: Financial Viability Analysis

- Financing options
- Repayment Plan
- Repayment capacity analysis
- Conclusions and recommendations



5 OBLIGATION OF THE CLIENT AND CONSULTANT

5.2 Documents and Reports

The Client will supply all pertinent data and information in its possession and give such assistance as shall reasonably be required for the conduct by the Consultant of his duties under this contract save that such assistance shall not be extended to the provision of any supplies or services. The Consultant will be required to pay for purchase fee of maps, manuals and other documents.

The following will on request be supplied by the Team Leader, KURA Technical Team to the Consultant who will be awarded the consultancy: -

- i) Standard specifications for Road and Bridge Construction 1986
- ii) Road Design Manual Part I – Geometric Design of Rural Roads 1979
- iii) Road Design Manual Part III – Pavement design and Materials 1987
- iv) Analysis of Contract Rates, latest edition
- v) Sample standard drawings

Please note that appropriate charges will be levied for certain documents.

The Client will:

- (i) Ensure free access to all sites and locations connected with the execution of the study;
- (ii) Provide the Consultant with any assistance as the Consultant may be entitled to in accordance with the Terms of Reference
- (iii) Provide the Consultant with all documents, data, any existing photographs and other information pertaining to the study that are available within the Authority.
- (iv) Provide, at their option, two (2) counterpart personnel (interns) for on-the-job training with the consultant during the contract period. The interns are to be remunerated at government approved rates.
- (v) Facilitate the issuance of work permits and entry visas for the Consultant's expatriate staff.

In particular, the Client shall provide the following

- (i) All data and reports pertaining to the design studies that have been carried out for the road under study if any;
- (ii) Available data and information on road inventory and traffic counts;
- (iii) Recent road construction and maintenance costs; and
- (iv) Unhindered access to pertinent data.

5.3 Liaison

Addendum 1

The Project Technical Team shall provide liaison with other Ministries and Departments in order to introduce the Consultant to them. The Consultant shall be fully responsible for collecting data and information from these agencies, including paying for it where necessary.

The Consultant shall be fully responsible for collecting data and information from Government agencies, paying for it where necessary.

5.4 Correspondence

The Client shall ensure that correspondence exchange in respect of the implementation of the study is treated promptly by the agency in order to avoid any delay. Correspondence by e-mail shall be on Microsoft Outlook (for Client).

5.5 Consultant's Obligations

(a) All information, data and reports obtained from the Client in the execution of the services of the Consultant shall be properly reviewed and analyzed by the Consultant. The responsibility for the correctness of using such data shall rest with the Consultant. All such information, data, and reports shall be treated as confidential and returned to the Client upon completion of the assignment.

The consultant shall be responsible for analyses, interpretation, and conclusion made from the data and information provided by the client.

(b) The Consultant shall be responsible for arranging for all necessary office and living accommodation, transportation, **(including 200 days per diem allowance at JG 'S' and transport for Client supervision staff and provide a vehicle for the supervision team for half of the contract period)**, equipment and supplies, surveys, investigations, materials testing, secretarial services, related to the performance of the works. Specifications and provisions for vehicle are as follows: 4WD Double Cab less than 4 years old, a driver, travel per month of 4,000Kms and vehicle shall revert back to consultant after 6 month use by client.

The Consultant shall be responsible for the printing of all reports, drawings, maps, etc.

The Consultant shall provide a training plan for any two (2) No. interns as approved by the Client paid at government approved rates

All reports and documents relevant to the project, maps, field survey notes, computer programs and electronic data, etc. shall become the property of the Client. The Consultant shall provide the originals of maps, plans and all drawings with final tender documents both in hard and soft copies in CD ROMs and in acceptable electronic format.

6 PERSONNEL REQUIREMENTS

The feasibility team shall comprise the following members. The detailed tasks assigned to each team member are not necessarily limited to those listed.



6.1 The Consultant's Key Personnel

The Consultants shall at a minimum, provide the key staff described below. Curriculum Vitae not exceeding four pages per person shall be provided in respect of each key staff.

It is anticipated that **45 staff man– months** of key professional staff stated below would be required to accomplish the tasks stated in the TOR of the assignment:

a) Project Director (PD)

The PD will oversee, plan, manage and monitor the consultancy and will advise the Client on all aspects of works contract implementation. The PD will provide the overall backstopping for the project, to ensure timely execution and completion of the project.

The PD should be a qualified and competent registered professional civil engineer with a recognized degree in Civil Engineering or equivalent and a minimum of 15 years post qualification experience in management and supervision of similar works contracts in developing countries, particularly in the Africa region.

The PD shall have at least 10 years' experience at Project Director level on road rehabilitation projects of similar nature. The PD should be able to combine this engineering experience with management and communication skills in order to support the Kenya Urban Roads Authority in ensuring that all objectives and deliverables of the consultancy and the works contract are achieved. The candidate must have a proven record as Project Director/ Deputy Project Director for at least three successfully completed large assignments of similar nature in the last five years. Fluency in both written and spoken English is essential.

b) Transport Economist (TE)

The TE will lead the Feasibility Study activities. The TE will perform the following specific tasks:

- Lead the feasibility sub-study task team;
- Ensure all deliverables are prepared in accordance with quality and time constraints;
- Research and review data, including that associated with planned government or private development in the area of influence of the road and incorporate in the economic analysis as appropriate;
- Determine financial and economic vehicle operating costs for representative vehicle types;
- Prepare an economic evaluation of the proposed road upgrading options following National Guidelines for the Economic Analysis of Projects. Reduction in travel time and transport costs, cost of accidents, increased agricultural production and other net social benefits arising from the project will be taken into account;
- Identify the cost benefits of climate change adaptation options and provide recommendations based on most cost effective measures;
- Undertake switching value calculations and sensitivity analysis for variations in key parameters and budget constraints.
- Undertake risk analysis in accordance with National Guidelines for

Integrating Risk Analysis of Projects;

- Analyse how limited access to transportation services contributes to poverty in the project area of influence;
- Based on the economic analysis, estimate the expected distribution of project net benefits among freight transport users, passenger transport users, vehicle owners, NMT and the government;
- Prepare feasibility reports for submission to the Client. The report should be prepared following National guidelines, taking into account direct and indirect impacts during pre- construction, construction and operation, and of implementing mitigation measures and monitoring plans.

The TE shall be a qualified and qualified and registered Civil Engineer with a post graduate degree in Transportation Engineering, Transport Economics or equivalent and a minimum 10 years post-graduate experience, of which not less than 5 years have been in undertaking studies in road upgrading and construction projects.

c) Urban Highway Design Engineer

The HE will be responsible for the preliminary designs underpinning the feasibility studies. The HE will perform the following tasks:

- Lead the preliminary engineering design sub-study task team;
- Ensure all deliverables are prepared in accordance with quality and time constraints;
- Review available engineering data, including any data relating to availability and quality of construction materials.
- Identify potential future climate change impacts that should be catered for design of the road and evaluate costs associated with incorporation of adaptation measures in the project design.
- Assess recommendations and inputs from the Structural / Drainage Engineer and Environment Specialist for other potential adaptation measures which could be incorporated into the design.
- Guide topographic and other preliminary physical surveys.
- On the basis of projected traffic levels, determine cost effective options for upgrading the road taking into account varying terrain characteristics along the route, and minimum serviceability standards.
- In conjunction with the Materials / Geotechnical Engineer, survey areas of actual and potential slope instability, analyse their cause and develop preliminary recommendations for mitigating them.
- Review road safety implications for each design alternative and prepare preliminary designs for road safety features.
- Review environmental implications of construction, including those related to opening of borrow pits and disposal of spoil.
- Estimate the civil works costs for each design alternative, separately identifying taxes and duties to an accuracy of $\pm 15\%$.



Addendum 1

- Prepare a preliminary engineering design report, consolidating all technical inputs from other specialists as appropriate.

The HE should be a qualified and competent registered professional civil engineer with a recognized degree in Civil Engineering or equivalent and a minimum of 12 years post qualification professional experience as a Highway Design Engineer on major road contracts of similar nature. Knowledge of various internationally accepted design codes and methodologies and familiarity with internationally 'best practices' as well as proficiency in latest computer aided road design software is essential. Experience in roads design, supervision and construction management will be required. Fluency in both written and spoken English is essential.

d) Environmental Expert (EE)

The EE will undertake an environmental assessment of the project in accordance with the EMCA Act. The Environmental Specialist will perform the following tasks:

- Ensure that the project is prepared in compliance with both the government's environmental policies and environmental assessment guidelines;
- Assess the potential environmental impacts of the project in accordance with the EMCA Act and other national policies and guidelines;
- Prepare an Environmental Impact Assessment Report taking into consideration direct and indirect impacts during pre-construction, construction and operation, and identifying costs of mitigation measures and implementation of a monitoring plan;
- Identify potential impacts of the road on surrounding vulnerability;
- Synthesize the most recent and relevant assessments of future climate changes, within the scope of the project objectives, and provide recommendations to the project team of expected climate changes, including their probabilities of occurrence and certainty;
- Prepare recommendations for integrating climate change considerations into the design of the project;

The Environmentalist shall be a Registered Lead Expert and having a Valid Practicing License issued by NEMA, registered as a member of Environment Institute of Kenya (EIK) and must hold at least a Graduate Degree in environmental science, environmental engineering or any other relevant field and at least 10 years professional experience after graduation, of which not less than 5 years have been in undertaking environmental impact assessments of road sector related projects. Familiarity with World Bank, Africa development Bank and NEMA environmental impact assessment guidelines is essential. Fluency in both written and spoken English is essential.

e) Socio- Economic Specialist (SES)

The SES will undertake screening and scoping for social impacts. The Social Safeguards Specialist will perform the following tasks:

- Undertake screening and scoping and prepare the resettlement and indigenous peoples screening forms and checklists for the project.



Addendum 1

- Assess land acquisition and resettlement impacts in accordance with the National resettlement guidelines and prepare a resettlement plan (RP).
- Submit the RP;
- Assess the social impacts of the project and prepare analyses for inclusion in the feasibility study reports and in the IEE. Recommend mitigation measures where needed and estimate their cost.

Must possess University Degree (BSc or BA) in socio – Economic Studies or equivalent. Must have a minimum of 15years practical post-qualification experience. Must have broad experience in socio – economic assessment and of at least three (3) roads construction project of comparable magnitude within urban setup. Previous experience on road projects in East Africa will be an added advantage.

f) Materials / Geotechnical Engineer (ME)

The ME will provide inputs relating to slope stability, availability of construction materials and design of pavement options. The ME will perform the following tasks:

- Identify potential geotechnical constraints on the proposed road upgrading, particularly identifying specific locations where mitigation measures will be required.
- Guide site specific surveys as required for preliminary assessment and design of mitigation measures for geotechnical instabilities.
- Prepare preliminary designs in sufficient detail for assessment of cost, and social and environmental impacts, particularly resettlement impacts.
- Assess potential sources of materials, particularly pavement materials required for the works, along with processing requirements and oversee preliminary laboratory testing.
- Prepare a detailed program, implementation schedule and budget for geotechnical investigations necessary for the design of the works.

The ME should be a qualified and competent registered professional civil engineer with a recognized degree in Civil Engineering and a minimum professional experience of 12 years (post qualification) as a materials engineer of which 5 years should be on major road contracts. Thorough knowledge of modern techniques of materials investigation and laboratory testing is essential. The PME shall have at least 10 years of experience in pavement engineering including design using diverse pavement materials and methods, in preparing specifications and in construction control of pavement structures. The PME shall have at least 6 years of on-site experience in construction control. Fluency in both written and spoken English is essential.

g) Engineering Surveyor (ES)

The ES will be responsible for all topographic survey. The Survey Manager will:

- Acquire necessary physical / cadastral plans from the relevant Government bodies, and use the same to identify existing road corridors;
- Manage a team of technician surveyors, ensuring best practice and appropriate accuracy;
- Conduct control surveys and install permanent and stable benchmarks



- suitable for reference during detailed design work and construction;
- Conduct preliminary topographic surveys of the road corridor, sufficient for preliminary design work;
- Ensure timely and accurate transfer of survey information to the design engineers;
- Prepare land acquisition plans.

The ES will be a competent and qualified candidate, with a degree in Survey & Photogrammetry and a minimum of 10 years post qualification professional experience, of which not less than 5 years have been in survey for design and construction of major highway contracts of similar nature. The candidate should be conversant with modern methods of survey including the use of Total Stations and GPS equipment. Fluency in both written and spoken English is essential.

h) Structural / Drainage Engineer (SDE)

The SDE will be responsible for the preliminary design and cost estimation of drainage and drainage structures including bridges, culverts and side drains. The Structural Engineer will undertake the following tasks:

- Study the existing hydrological regime based on an analysis of rainfall, flood records and local inquiry.
- Estimate the required hydraulic capacity of bridge structures, including an estimate of the incremental capacity needed to cater for climate change considerations. A period of 50 years will be considered for major drainage structures and bridges, and 20 years for minor drainage structures including side drains and culverts.
- Assess existing structures and bridges along the route and recommend retention or otherwise.
- Assess the need for new drainage structures, where the existing structure is inadequate, or realignment requiring new drainage structures is proposed and prepare preliminary designs and cost estimates,
- Assess the need for new bridges and large drainage structures, where the existing structure is inadequate, or realignment requiring new structures is proposed and prepare preliminary designs and cost estimates,
- Prepare a program of geotechnical investigation needed for the design of drainage structures and bridges. Estimate the cost of the proposed geotechnical investigations;
- Prepare a program of geotechnical investigation needed for the design of drainage structures. Estimate the cost of the proposed geotechnical investigations.

The Structural Engineer shall have at least 10 years relevant experience and shall be a professionally qualified civil engineer. Fluency in both written and spoken English is essential.



6.2 Support Staff – 30 Man-months

The consultants shall provide the necessary support staff – including junior engineers, draftsmen, field surveyors, laboratory technicians, field supervisors and office support staff – needed in order to carry out their tasks and fulfill their responsibilities effectively.

It is anticipated that about **30 staff-months** of support staff would be required

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SPECIAL CONDITIONS OF CONTRACT

Number of GC Clause	Amendments of and Supplements to Clauses in the General Conditions of Contract
1.1(i)	The Member in Charge is _____ [name of Member]
1.4	The addresses are: Client: Director General Kenya Urban Roads Authority (KURA) P. O. Box 41727 – 00100 <u>Nairobi, Kenya</u> Attention: Director (Policy, Strategy & Compliance) Consultant: _____ Attention: _____ Telephone; _____
1.6	The Authorized Representatives are: For the Client: Director, Policy Strategy & Compliance For the Consultant: _____
2.1	The date on which this Contract shall come into effect is Upon the Contract being signed by the Client specified in Clauses 1.1 and 2.1 of Appendix A <i>Note: The date may be specified by reference to conditions of effectiveness of the Contract, such as receipt by Consultants of advance payment and by Client of bank guarantee</i>
2.2	The date for the commencement of Services is Fourteen (14) days after issue of Commencement Letter
2.3	The period shall be <u>Twelve (12) Months</u>. The Consultant shall be charged Liquidated Damages at the rate of 0.05% of the contract sum per day for the extra days beyond the official contract period plus any time extensions granted by the Client, to a maximum of 5% of the Contract Sum, beyond which the Contract shall be terminated in accordance with the conditions of this contract. <i>Note: Fill in the period, e.g., four months or such other period as the Parties may agree in writing.</i>

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