



KENYA RAILWAYS

KENYA URBAN MOBILITY IMPROVEMENT (KUMIP)

**TERMS OF REFERENCE FOR INDIVIDUAL
CONSULTANT - RAILWAY OPERATIONS EXPERT**

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Abbreviations

Term	Meaning
AFCS	Automated Fare Collection Systems
BEMU	Battery Electric Multiple Units
CHMP	Cultural Heritage Management Plan
ERP	Enterprise Resource Planning
ESS	Environmental & Social Commitment Plan
ESIA	Environmental & Social Impact Assessment
ESMF	Environmental & Social Management Framework
ESS	Environment and Social Safeguards
FEED	Front-End Engineering Design also known as Basic Engineering
GOK	Government of Kenya
KR	Kenya Railways
KUMIP	Kenya Urban Mobility Improvement Project
LMP	Labour Management Procedure
MDBs	Multilateral Development Banks
NCR	Nairobi Commuter Railways
NEMA	National Environment Management Authority
PIT	Project Implementation Team
RAP	Relocation Action Plan
RPF	Resettlement Policy Framework
SA	Sexual Assessment
SEA	Sexual Exploitation & Abuse
SHP	Sexual Harassment Plan
SRA	Sexual Risk Assessment
SEP	Stakeholder Engagement Plan
TA	Technical Assistance
TOD	Transit Oriented Development

Terms of Reference for Railway Operations Expert Consultant for Support to the Kenya Urban Mobility Improvement Project

1. Background

Kenya Railways (KR) is a State Corporation established in 1978 pursuant to the Kenya Railways Act, Cap 397 Laws of Kenya. It is mandated to develop an integrated rail network and provide rail and inland waterways transport services in the Country.

The Government of Kenya (GOK) has applied for financing from World Bank toward the cost of the Kenya Urban Mobility Improvement (KUMIP) and intends to apply part of the proceeds for consulting services. The project financing agreement is subject to the World Bank's Procurement Regulations for Investment Project Financing (IPF) Borrowers, Goods, Works, Non-Consulting and Consulting Services, Seventh Edition, September 2025.

The Nairobi Metropolitan Area faces significant urban mobility challenges including traffic congestion, inadequate public transport Infrastructure, and limited multi-modal connectivity. The Kenya Urban Mobility Improvement Project aims to address these challenges by improving commuter rail services.

The project development objectives are to improve urban mobility services in the catchment area of Nairobi Metropolitan Area and enhance institutional capacity for resilient and a green urban transport development in Kenya. The major components of KUMIP relevant to this assignment include:

Component 1: Urban Mobility Improvement in the Nairobi Metropolitan Area

a) Revamping the Commuter Rail Service

- Comprehensive upgrade of signalling and train control systems, telecommunications infrastructure, and electrical power systems;
- Conduct feasibility study, Front-end Engineering Design (FEED)/Basic Engineering Design, and preparation of bidding documents for upgrading of the Nairobi commuter rail network with emphasis of signalling, telecommunication and electrical systems;
- Track rehabilitation, upgrading/construction and capacity enhancement of the Nairobi Central Station- Thika line, including assessment of signalling, telecommunication and electrical infrastructure impact and compatibility requirements;

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- Improved access to railway-to-railway stations including deployment of fibre-optic telecommunication backbones and power distribution networks to support Non-Motorized Transport (NMT) facilities and feeder bus services.
 - Purchase new multiple trainsets, associated equipment and spare parts with full compatibility verification between rolling stock on-board system and wayside signalling/telecommunication equipment;
 - Establishment of a workshop for maintenance of new trainsets including dedicated signalling testing laboratory, telecommunication diagnostic equipment and electrical testing facilities;
 - Improve and develop selected stations along stations along the Nairobi Central Station- Thika line, including multimodal interchange facilities integrated with telecommunication and power infrastructure;
 - Develop Enterprise Resource Planning (ERP) Architecture for KR including communication system integration for real-time rail operations, maintenance management, and asset tracking;
 - Support KR in implementing Automated Fare Collection System (AFCS) with integration to platform screen doors/gates and associated signalling interlocks where applicable.

b) Green Mobility Solution

- Carry out detailed design of Battery Electric Multiple Unit (BEMU) or hybrid electric trains with comprehensive electromagnetic (EMC) management and revised electrical infrastructure requirements;
- Support implementation of e-mobility policy and technical assistance for e-bus deployment business models;

Component 2 Transit-Oriented Development along Commuter Rail. The key activities are: -

- TOD planning, station accessibility improvement, and implementation support;
- Institutional strengthening for TOD.

Component 3: Institutional strengthening and capacity building in urban mobility

This component will support institutional strengthening in urban mobility, providing technical assistance to Ministry of Roads and Transport, Kenya Railways Corporation and NAMATA.

KR has prepared detailed Terms of Reference for the Feasibility Study and Front-End Engineering Design (FEED)/Basic Engineering Design for the entire Nairobi Commuter Rail (NCR) network. The Consultant for FEED/Basic Engineering Design is expected to complete the feasibility study within 24 months of contract effectiveness, with priority given to the Nairobi-Thika Line (Line 2)

The project requires robust operations planning to ensure that the infrastructure being designed reflects realistic, safe, and efficient service requirements. KR has identified internal capacity gaps including in timetable modelling, operations simulation, station flow planning, yard operations, rolling stock deployment strategies, signaling operations, and integration of operations with infrastructure planning. KR therefore seeks to engage an Individual Consultant—Rail Operations Expert—to provide specialized support during the Feasibility Study and FEED phases.

2. Objective of the Assignment

The objective of this assignment is for the individual Consultant to provide expert operational oversight, review, and advisory support to KR, ensuring that all operational components of the Feasibility Study and FEED are feasible, efficient, safe, and aligned with KR's long-term service delivery objectives.

3. Scope of Services

The individual Railway Operations Consultant will perform, but not be limited to, the following tasks:

- i) Review operational concepts, service scenarios, and traffic forecasts prepared by the Feasibility Study and FEED Engineering Consultant.
- ii) Validate timetables, headway calculations, and operational capacity modelling prepared by the Feasibility Study and FEED Engineering Consultant.
- iii) Evaluate station operations, passenger flows, and built-in safety provisions.
- iv) Assess yard layouts, depot workflows, fleet deployment strategies, and maintenance integration.
- v) Review signaling, train control, dispatching systems, and operational control center concepts.
- vi) Participate in meetings with the Feasibility Study and FEED Consultant, KR technical teams and other stakeholders.
- vii) Provide expert advice on operational risks, efficiency improvements, and optimization opportunities in submissions by the Feasibility Study and FEED Engineering Consultant.
- viii) Advise KR in defining operational requirements for the NCR network.
- ix) Support review of rolling stock specifications, crew rostering concepts, and operational readiness.
- x) Recommend improvements for integration between operations and infrastructure design.

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- xi) Review training plan prepared by the FEED Consultant related to operations modelling, simulation, and performance monitoring.
 - xii) Review draft Standard Operating Procedures (SOPs) and guidelines for operational readiness submitted by the FEED Consultant.
 - xiii) Prepare periodic technical reports summarizing key findings and recommendations on the submissions of the FEED Consultant.
 - xiv) Support capacity building of KRC staff on railway operations, based on identified needs and agreed priorities.
 - xv) Provide technical advisory services on railway operations to KRC, as requested.

4. Outputs and Deliverables

In line with the scope, the Railway Operations expert will deliver the following outputs:

- i) Inception Report outlining methodology, review approach, and work plan.
- ii) Comment matrices on operational submissions from the Feasibility Study and FEED Consultant.
- iii) Monthly or quarterly operations review reports.
- iv) A final report upon project completion summarizing outcomes, performance metrics, lessons learnt and future recommendations related to operations.

5. Assignment Duration and Location

5.1. Assignment Duration

The total Level of Effort (LoE) is 12 person-months over a period of 24 months coinciding with the duration of the feasibility study and FEED/Basic Engineering Design phase. The Consultant's inputs shall be intermittent and demand-driven, based on project needs. The Consultant will undertake tasks as agreed with the Client, each assigned an indicative number of person-days prior to commencement. These person-days may be adjusted through prior consultation and mutual agreement between the Consultant and the Client.

The Consultant shall not exceed the agreed LoE ceiling without prior written approval from the Client.

5.2. Mode of Engagement

The engagement will be structured as a hybrid arrangement with flexibility to accommodate project requirements. The Consultant is expected to provide intermittent inputs aligned with key project milestones including document review periods, design workshops, and technical meetings. Time inputs may be non-continuous and will be adjusted based on project progress and deliverable submission schedules from the design consultant

5.3. Assignment location

The in-country assignment will be primarily based in Nairobi, Kenya, at Kenya Railways offices. Periodic site visits to the Nairobi-Thika rail corridor and associated project sites will be required. Remote working arrangements may be accommodated for specific tasks such as document reviews, per agreement with the Client and ensuring effective communication and responsiveness.

6. Qualifications and Experience

The individual expert shall be a suitably qualified and experienced professional railway engineer, with the following qualifications and skills.

6.1. Minimum Qualification Requirements

- i) Bachelor's degree in Railway Operations, Transport Management, Engineering, or related discipline.
- ii) Minimum 15 years of experience in railway operations, modelling, simulation, or planning.
- iii) Demonstrated experience in commuter rail, metro, or heavy rail operational planning >USD 30Million.
- iv) Strong understanding of signaling, train control, and traffic management systems.
- v) Proven capability in reviewing operational concepts and advising on operational readiness.
- vi) Experience with World Bank-funded or projects funded by similar development partners, specifically FIDIC Red/Yellow/Silver Book.
- vii) Excellent communication, leadership, and stakeholder management skills, with the ability to coordinate multidisciplinary teams and ability to mentor. All recommendations shall be impartial, evidence-based, and vendor-neutral, with no preference for specific suppliers unless transparently and technically justified.
- viii) Knowledge of industry safety codes such as ISO standards, FRA/EN standards, or equivalent.

6.2. Desired Skills and Competencies

- i) Ability to work with engineering, signalling, rolling stock, and commercial departments to ensure operational readiness.
- ii) Proficiency in using railway operations software/tools, such as timetabling systems, traffic simulation platforms, or operations management systems.
- iii) Ability to exercise sound and timely judgment.
- iv) Exceptional interpersonal skills and effective communication (maintaining stakeholder influence logs), both orally and in writing.
- v) Analytical and problem-solving skills.
- vi) Presentation, reporting, editing, and proofreading skills.
- vii) Leadership and administrative skills,

The expert should be able to advise the PIT on all aspects of the project regarding the interpretation of recommendations made by consultant(s) in feasibility studies and design reports, and will follow up on recommendations from the consultants' reports. The expert shall provide a signed declaration confirming the absence of any actual, perceived, or potential conflict of interest related to this assignment.

7. Reporting

7.1. Reporting structure

The Individual Consultant shall report directly to the Project Team Leader of the Kenya Railways Project Implementation Team (PIT). The reporting structure is designed to ensure effective coordination, timely decision-making and clear accountability throughout the assignment.

7.2. Working Relationships

The Consultant will work closely with and interface with the following entities:

- Kenya Railways Project Implementation Team (PIT) - primary client and day-to-day coordination;
- FEED/Basic Engineering Design Consultant - technical reviews and design discussions;
- Kenya Railways Operations Department - operational requirements input;
- Kenya Railways Engineering and Technical Services Department - maintainability and lifecycle considerations;
- World Bank Task Team - periodic progress updates and safeguards compliance;
- Other project consultants and technical specialists as required.

7.3. Coordination mechanisms

- Bi-weekly technical coordination meetings with FEED consultant during active design periods;
- Monthly progress meetings with PIT senior management;
- Ad-hoc technical workshops and review sessions as required by project milestones.

7.4. Decision making authority

The Consultant shall:

- Have authority to request additional information and clarifications from the FEED consultant;

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- Provide technical recommendations and approval/non-approval recommendations to PIT;
 - Escalate critical technical issues requiring management decisions to Project Team Leader;
 - Not have direct contractual authority over the FEED consultant - all formal communications shall be channeled through PIT.

7.5. Quality Assurance

The Consultant's work will be subject to quality assurance review by the Project Team Leader. The World Bank may conduct periodic supervision missions and review the Consultant's technical outputs as part of project oversight activities.

8. Payment Schedule

8.1. Payment Basis

Payments shall be made monthly based on actual person-days worked, supported by invoices and certified timesheets approved by the Project Team Leader. The minimum threshold for payment certification is 10 person-days.

8.2. Payment Frequency

Payments shall be made monthly, subject to submission and approval of timesheets and brief progress reports.

8.3. Contract Ceiling

The total payments shall not exceed the ceiling corresponding to twelve (12) person-months (264 person-days).

8.4. Approval of Payments

All payments shall be subject to approval by the Project Team Leader.

8.5. Reimbursable Expense

Reimbursable expenses shall be limited to pre-approved travel and subsistence costs and shall be reimbursed at actual cost upon submission of supporting documentation.

8.6. Estimated Time-Input

The table below presents the estimated time-input for the assignment. The allocation of person-days below is indicative only and may be adjusted based on assignment requirements. It does not constitute payment milestones.

Table 1: Indicative Level of Effort Allocation

Item	Activity	Activity Description	Output / Deliverable	Estimated Expert Input Duration (Person-Months)
1	Inception Phase	Review and familiarization with all relevant project documents, contracts, and feasibility study inception report and any other technical support related to the project	Expert's Inception Report and comments as applicable	1
2.1	Feasibility Study	Review of Draft Feasibility Reports (as per Section 3(vii)) and any other technical support related to the project	Review Report on Draft Feasibility Study and comments as applicable	1
2.2	Feasibility Study	Review of Final Feasibility Reports (as per Section 3(vii))	Review Report on Final Feasibility Study	1
3	FEED / Basic Engineering Design (Corridor Level)	Review of Designs / FEED / Basic Engineering Reports and Bid Documents for Nairobi–Ruiru–Thika Line, Access Roads, and TOD and any other technical support related to the project	Review Report on FEED / Basic Engineering Designs and Bid Documents (Nairobi–Ruiru–Thika) and comments as applicable	2
4.1	Network-Wide FEED Review	Review of Interim Design / FEED / Basic Engineering Report for Entire Commuter Rail Network, Access Roads, and TOD and any other technical support related to the project	Review Report on Interim FEED and comments as applicable	1
4.2	Network-Wide FEED Review	Review of Draft Final Design / FEED / Basic Engineering Report for Entire Commuter Rail Network, Access Roads, and TOD and any other technical support related to the project	Comments and Review Report on Draft Final FEED and comments as applicable	2

Item	Activity	Activity Description	Output / Deliverable	Estimated Expert Input Duration (Person-Months)
4.3	Network-Wide FEED Review	Review of Final Design / FEED / Basic Engineering Report and Bid Documents for Entire Commuter Rail Network, Access Roads, and TOD and any other technical support related to the project	Comments and Review Report on Final FEED and Bid Documents and comments as applicable	1
5	Investment Program	Review of Investment Program for NCR Network, Station Areas, Access Roads, and Transit-Oriented Development	Review Report / Comments on Proposed Investment Program and comments as applicable	1
6	Operations, Safety & Security	Review of Operations, Safety, and Security Plans and any other technical support related to the project	Review Report on Operations, Safety, and Security Plans and comments as applicable	1
7	Capacity Building & Completion	Input into Capacity Building Program for Counterpart Staff and Verification of Completion Deliverables and any other technical support related to the project	Capacity Building Review & Completion Report and comments as applicable	1
Total				12

8.7. Withholding of Payments

Payments may be withheld in case of unsatisfactory performance or missing reports.

8.8. Time Records and Audit

Time records may be audited by KR and the World Bank.

8.9. Currency of Payment

Payment shall be made in Kenya Shillings with a USD option for expatriate consultants.

9. Facilities to be Provided by the Client

KR will provide necessary workspace, access to Feasibility Study and FEED documents, operational data, and logistical support for meetings or site visits.

10. Obligations of the Consultant

10.1. Professional standards

The Consultant shall:

- Comply with Kenya Railways code of ethics

10.2. Resource provision

The Consultant shall:

- Provide all necessary resources including laptop computer, software licenses, technical reference materials, and professional subscriptions required to execute the assignment;
- Maintain access to international railway standards and technical literature necessary for comprehensive design review;
- Ensure availability and responsiveness throughout the assignment duration according to agreed time commitments

10.3. Quality Assurance

The Consultant shall:

- Ensure that all deliverables meet contractual requirements and professional quality standards;
- Conduct thorough self-review and quality checks before submission of reports and technical documents;
- Ensure technical outputs are consistent with contractual requirements, professional standards, legal frameworks, and international best practices;
- Respond to Client comments and revise deliverables as required within agreed timelines.

10.4. Communication and Coordination

The Consultant shall:

- Maintain regular communication with the Project Team Leader and report on assignment progress;

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- Immediately notify the Client of any issues that may affect deliverable quality, schedule, or budget;
 - Participate in coordination meetings, technical workshops, and review sessions as scheduled;
 - Maintain professional and constructive working relationships with all project stakeholders.

10.5. Confidentiality and Data Security

The Consultant shall:

- Maintain strict confidentiality of all project information, data, and documents not in the public domain;
- Sign a Non-Disclosure Agreement (NDA) with Kenya Railways prior to commencement of services;
- Implement appropriate cybersecurity measures to protect sensitive project data, particularly information related to signalling systems, telecommunication network architecture, and security-sensitive infrastructure details;
- Not disclose, reproduce, or utilize confidential information for purposes other than this assignment without prior written consent from Kenya Railways;
- Return or securely dispose of all confidential documents and data upon completion of the assignment.

10.6. Health Safety and environment

The Consultant shall:

- Comply with all applicable health, safety, and environmental regulations during site visits and field activities;
- Use required personal protective equipment (PPE) and follow KR safety protocols when accessing operational railway infrastructure;
- Report any safety incidents or near-misses immediately to the Project Team Leader

10.7. Conflict of Interest

The Consultant shall:

- Disclose any actual or potential conflicts of interest that may arise during the assignment;

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- Not have any business or financial relationships with the FEED consultant or potential bidders for the design-build contract;
 - Maintain independence and avoid any activities that could compromise objectivity in technical reviews and recommendations.

10.8. Compliance with laws and regulations

The Consultant shall comply with all applicable laws, regulations, and administrative requirements of the Republic of Kenya, as well as World Bank procurement and safeguards policies applicable to the assignment.