

FEDERAL GOVERNMENT OF SOMALIA

## SOMALIA URBAN INVESTMENT PLANNING PROJECT

## **ADDITIONAL FINANCING**

# TERMS OF REFERENCE FOR FEASIBILITY STUDIES, PRELIMINARY, AND DETAILED ENGINEERING DESIGNS AND PREPARATION OF BIDDING AND SAFEGUARDS DOCUMENTS FOR URBAN ROADS IN KISMAYO AND BAIDOA

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## **Project Background**

1. The World Bank has been supporting the Federal Government of Somalia (FGS) with funding from the Somali Multi-Partner Fund (MPF) to implement various projects. The Somalia Urban Investment Planning Project (SUIPP), which was a Project to prepare a Project – the Somalia Urban Resilience Project (SURP), has been ongoing since early 2016 and has completed preparation of feasibility studies and preliminary designs for civil works for urban and community roads in Mogadishu, urban roads in Garowe and solid and liquid waste management facility in Hargeisa. Implementation of designed works will depend on funding available. Presently, SURP with MPF funding of US\$ 9million, will implement community roads in Mogadishu and urban roads in Garowe.

2. The MPF has received an additional funding of US\$3million from the German Government to specifically address urban resilience in Kismayo in Jubaland State and Baidoa in South West State. SUIPP Additional Financing (AF) will be expanding the ongoing SUIPP to address urban resilience in Kisamayo and Baidoa. The FGS has prioritized Kismayo and Baidoa which are strategically important secondary cities that contribute to Somalia's sustainable growth and which of recent past received a large number of internally displaced persons and returnees due to prolonged drought in Somalia and the closure of some refugee camps in Kenya.

3. The SUIPP AF will focus on urban roads in Kismayo and Baidoa Municipality. The SUIPP AF will provide the technical basis – through the outputs of feasibility studies, preliminary and detailed engineering designs, safeguard instruments as well as bidding documents for the urban roads – for a follow-on investment project. This follow-on project, the Somalia Urban Resilience Project (SURP), will utilize the SUIPP AF output - final Detailed Designs, bidding documents and safeguard instruments for the selected urban roads. About US\$21million has been secured in the MPF for the follow-on SURP for capacity building and financing the priority urban roads for both Cities. The contracts that will be awarded, and the roads constructed will ultimately improve the quality of life; while at the same time providing for some employment through the contracting of Works. SUIPP AF will also support the development of safeguard instruments including the Environmental and Social Management Framework and the Resettlement Policy Framework.

## **Project Location**

4. **Kismayo is the third largest city in Somalia** and the capital of both the Lower Juba region and the Jubaland state. The city is located on the coast of the Indian Ocean near the mouth of the Juba River approximately 528km southwest of Mogadishu. The port city is of not only regional but also national strategic significance as it lies halfway between Mogadishu and the Kenyan border. For a long time Kismayo has derived its importance from this fact. In the past, it possessed the only well-protected roadstead between Mogadishu and Lamu, and thus merchandise designed for the inland towns and southern Somalia passed through its port. To date, its location makes it the commercial hub of the Jubaland region and southern Somalia. It provides an avenue of import and export trade. Kismayo is divided into five districts: Farjano, Shaqaalaha, Calanley, Faanoole and the new district of Gulwade where the most recent expansion is taking place. The 2014 population for Lower Juba is estimated at 489,307; comprising an urban population of 172,861, a rural population of 161,512, including 124,334 nomads and 30,600 IDPs.<sup>1</sup>

5. **Baidoa, locally known as Baydhabo, is a strategic town in south-central Somalia** and the interim capital of South West State of Somalia. It is situated approximately 250 kilometers west of the country's capital city, Mogadishu. Baidoa is traditionally divided into four districts: Horsed, Isha, Berdale and Hawl-Wadaag and the recently added six new quarters of Salamey, Darussalam, Towfiq,

<sup>&</sup>lt;sup>1</sup> UNFPA Population Estimation Survey 2014

Adada, Waberi and Wadajir to meet the needs of a growing population – primarily IDPs and returnees. Although the town's security and economic situations have improved over the years, it has yet to fully recover from the effects of the civil war and recurring drought, and remains highly susceptible to humanitarian crises. There are no updated population data available for Baidoa; however, it is estimated that in 2014 the Bay region population was 792,182, with an urban population of 93,046<sup>2</sup>.

6. The government institutions in both Cities do not have capacity to plan, coordinate and manage projects and this is a major challenge that hinders any durable solutions to permanently resettle IDPs and returnees, as well as address the shortage of housing stock, roads, water, and basic services for the host communities.

7. Baidoa and Kismayo Municipalities require an immediate focus on improving existing assets. A number of potential infrastructure investments were identified and explored in the Urban Assessments<sup>3</sup> carried out for Kismayo and Baidoa in 2017 by the World Bank. These included roads (both primary and secondary roads), water supply and sanitation, market development, solid and liquid waste management, power and shelter/housing. These potential investments were screened against the criteria below in discussions with Federal and State Government officials and investment in roads was highly prioritized in both Cities. During the urban assessment, Baidoa municipality prioritized 10km community roads and 19Km urban roads an investment estimate of US\$18.5million; while Kismayo municipality prioritized 5km community roads and 27km urban roads an investment estimated at US\$20.5million. However, for now SUIPP AF will only focus on improvement of urban roads in both cities.

8. In November 2017, UNHABITAT prepared Kismayo<sup>4</sup> and Baidoa<sup>5</sup> city profiles that present rapid urban planning exercise elaborating on solutions for long term urban development and current displacement crisis. These profiles were developed following Community Consultations in Baidoa's and Kismayo's urban villages, and reflecting on local, state and national strategy papers and plans (National Development Plan).

## Project Development Objective

9. The Project Development Objective of SUIPP AF would be to: (i) undertake technical assessments and designs of priority urban investments and institutional strengthening needs; and (ii) establish project implementation capacity of the executing agencies in targeted cities.

## **Project Components**

10. The proposed Additional Financing (AF) will scale-up SUIPP activities to the cities of Kismayo and Baidoa with an additional financing of US\$3 million. Overall, the SUIPP AF will finance the same activities as in the parent project, mainly:

a) Establishment of Project Implementation Units (PIUs) in target cities and provision of technical assistance to enhance the capacity of the Somali executing agencies to plan, prepare and implement urban development projects, such as Somalia Urban Resilience Project (SURP),

<sup>&</sup>lt;sup>2</sup> UNFPA Population Estimation Survey 2014

<sup>&</sup>lt;sup>3</sup> Somalia Urban Assessment: Towards an Integrated Approach to Services, Draft – August 2017

<sup>&</sup>lt;sup>4</sup> UNHABITAT Kismayo Urban Profile - Working Paper and Spatial Analyses for Urban Planning Consultations and Durable Solutions for Displacement Crises - November 2017

<sup>&</sup>lt;sup>5</sup> UNHABITAT Baidoa Urban Profile - Working Paper and Spatial Analyses for Urban Planning Consultations and Durable Solutions for Displacement Crises - November 2017

effectively and efficiently while mitigating fiduciary and safeguards risks. These activities will be client executed.

b) Technical studies and designs of the priority urban investments and institutional assessments of the implementing agencies in target cities. The selection of the priority investments will be based on the rapid urban assessment which was undertaken in Kismayo and Baidoa under SUIPP original financing, but also on pre-agreed selection criteria and a multi-stakeholder participatory selection process. The priority urban investments that will be studied under SUIPP Additional Financing will be financed under SURP, the follow-on investment project. The institutional assessments will provide an informational and analytic base for the preparation of institutional strengthening activities to be supported under SURP. Other thematic analytics may also be undertaken as needs emerge. To facilitate the quick execution of these activities and ensure quality in the fragile and conflict affected environment of Somalia, they will be executed by the Bank on behalf of the Client.

11. The infrastructure investments to be studied in Kismayo and Baidoa have been selected using the criteria listed below which were agreed to between the Bank and the governments in preparatory consultations:

- (i) *Strategic investments that contribute to urban resilience.* The investment should be aligned with a broader strategic plan or vision of the city. This plan should focus on how to make the city more resilient.
- (ii) *Inclusiveness.* Investments identified should be as inclusive as possible, i.e. incorporate needs of the IDPs, returnees, refugees and host communities. The investments should be selected in a participatory manner in consultations with community representatives.
- (iii) *Maximizing development impact*. Investments should maximize development impact and return on investment, thus avoid small scale/piece meal investments.
- (iv) *Coordination/complementarity with ongoing projects*. Investments should avoid overlap with ongoing government and development partner interventions and try to complement and build on these activities.
- (v) *Labor intensiveness.* Investments should provide short term income generation opportunities for vulnerable groups.
- (vi) *Sustainability.* Investments should build in operations and maintenance measures to ensure that they ware sustained over the long term.
- (vii) *Government visibility.* Investments should be visible to citizens and highlight the government's (both federal and state levels) lead in implementation so as to strengthen their legitimacy.

12. The AF will restructure the project components to include one component for *Technical Studies* in Kismayo and Baidoa and one component for *Project Implementation Capacity Support* across the two new cities of Kismayo and Baidoa as well as winding down activities in Mogadishu, Garowe and Hargeisa. These components are described in more detail below.

## Component 1: Technical Studies (US\$ 2 million)

13. This component will cover all technical studies to be carried out under SUIPP in preparation for the follow on SURP which includes: (i) feasibility studies and preparation of engineering designs for priority investments; (ii) environment and social due diligence work; (iii) institutional assessments of implementing agencies; and (iv) any other necessary analytical work. UNOPS is to be engaged for the technical studies under (i) and (ii) only. Other organizations/consultants will be engaged by World Bank for Components (iii) and (iv).

14. **Feasibility and preliminary design studies and detailed designs for the priority investments.** Based on the preliminary consultations with the government and findings of the rapid urban assessment undertaken in Kismayo and Baidoa, priority investments are likely to be urban roads, along with corresponding drainage system, sidewalks, and streetlighting. Under SUIPP AF, an assessment will be undertaken to examine which road segments are the most cost-effective and strategically important considering the pre-agreed selection criteria. Ultimately, the shortlist will be finalized through a participatory decision-making process that includes state and district-level governments, community (with representatives of the vulnerable such as women, poor, youth, and IDPs), and the private sector. Once the shortlist of the roads is developed, the team will undertake technical surveys to determine the optimal designs and construction methods, and prepare cost estimates. Community consultations will also be undertaken in each of the relevant catchment areas to determine how they can participate in and benefit from the implementation and maintenance of the physical investments. Detailed designs and tender documents will then be prepared for priority investment.

(i) **Environmental and social (E&S) due diligence work** will include the following activities: (i) a baseline survey of environmental and social information, data and issues that would help to identify E&S constraints, but also areas of potential enhancement of project outcomes, and provide E&S information, criteria and constraining factors for the subsequent design process; (ii) the development of an environmental and social management framework, which would constitute a generic tool for managing social and environmental risks related to urban investments, regardless of funding source for use by entities such as local governments; and (iv) the development of a resettlement policy framework which would constitute a generic tool for managing any resettlement or compensation issues that may arise related to the investments.

(ii) **Institutional assessments.** An assessment of district governments (which functions as the *de facto* municipal governments) and other relevant agencies will be undertaken for the detailed preparation and execution of institutional strengthening activities to be supported under the follow on SURP. The assessment will focus on basic functionality, performance, strategic planning capacity, technical and operational capacity, fiduciary systems, transparency and accountability mechanisms and environmental and social management capacity.

(iii) Other Analytical Studies. Urban infrastructure development projects can have both intended and unintended socio-economic and political impacts and outcomes that can vary based on different population groups such as men, women, female-headed households, the poor, host communities and the displaced, influencing their access to land, services, and jobs. The local power dynamics can also influence the process and outcome of the project. This component will therefore undertake a qualitative socio-economic assessment for the target cities. The study will undertake a stakeholder analysis and political-economy analysis to better understand the local power dynamics in each city. The study will examine how the local power dynamics may influence the participatory decision-making process, levels of participation in project activities (such as labor-intensive works), and maintenance of the infrastructure to be financed under SURP. At the same time, the study will also try to identify both positive and negative impacts the urban infrastructure investments may have on various population groups, and how negative impacts may be mitigated to the extent possible. For example, with urban investments, land value can increase which may lead to the forced eviction of IDPs or informal vendors. Alternatively, improved access may result in positive socio-economic outcomes. Additional analytic works may be considered as needs emerge.

## Component 2: Project Implementation Capacity Support (US\$ 1 million)

**15. Subcomponent 4: Kismayo Municipality (\$500,000).** To establish sufficient capacity to prepare and implement the SURP, a PIU will be established within the Kismayo municipal/district government comprising a full-time project coordinator, procurement specialist, project engineer and social and environmental safeguards specialist. Financial management support to this project will be provided by the External Assistance Finance Section (EAFS) unit located in the State Ministry of Finance. Operating and minor equipment costs related to the recruitment and employment of these positions will also be incurred. Training and capacity building for the PIU staff on fiduciary management, procurement, safeguards, project management, and monitoring and evaluation will be conducted based on their capacity and needs. Finally, costs for the financial audit would be covered under this component.

16. **Subcomponent 5: Baidoa Municipality (\$500,000)**. To establish sufficient capacity to prepare and implement the SURP, a PIU will be established within the Baidoa municipal/district government comprising a full-time project coordinator, procurement specialist, project engineer and a social and environmental safeguards specialist. Finance support to this project will be provided by the EAFS unit in the State Ministry of Finance. Operating and minor equipment costs related to the recruitment and employment of these positions will also be incurred. Training and capacity building for the PIU staff on fiduciary management, procurement, safeguards, project management, and monitoring and evaluation will be conducted based on their capacity and needs. Costs for the financial audit would be covered under this component.

## PART 1: FEASIBILITY STUDIES, PRELIMINARY AND DETAILED ENGINEERING DESIGNS FOR URBAN ROADS IN KISMAYO AND BAIDOA

## I. Specific Assignment Background and Major Deliverables

1. This section of the terms of reference describes the consultancy services required to provide the feasibility studies and preliminary designs for (i) approximately 30 kilometers of urban roads in Kismayo and (ii) approximately 20 kilometers of urban roads in Baidoa; as well as detailed designs and bidding documents for approximately 10 to 15Km urban roads in each City. For each City, the Consultant will prepare the ESMF and RPF<sup>6</sup>.

2. In Kismayo road infrastructure is in very poor condition and therefore the links of the city to the region are extremely weak. The only paved corridor is the arterial Kismayo - Mogadishu road, in great need for maintenance. The other linkages, especially towards the border of Kenya's North-Eastern province, consist of unpaved roads and need reconstruction. Also, the road transport sector suffers from the proliferation of illegal checkpoints by both state and non-state militia groups, with Kismayo's main artery reported to be among the roads with the highest number of incidents of illegal checkpoints country wide.

3. In Baidoa, all roads in Baidoa were built over 30 years ago and have not received proper maintenance for a long period during the continuing conflict. The National Development Framework 2017-2019 contains a detailed description for the road network and the strategic intervention needed. With a huge maintenance backlog, there is a significant need for reconstructing or resurfacing these existing paved roads. In 2017, the Bank financed rehabilitation of 3.5km road section in Baidoa.

4. The project proposes to engage and experienced and well-resourced consultant to undertake the feasibility assessments and preliminary design studies as detailed below. The consultant must have a compliment of skill sets within the proposed team that will be fielded to successfully undertake and complete this assignment. The main outputs are the feasibility studies, preliminary and detailed designs for the above described works. The consultant is expected to work extremely closely with the Kismayo and Baidoa municipal governments.

5. Once this assignment is completed under the Somalia Urban Investment Planning Project Additional Financing, the outputs i.e. the detailed designs and bidding documents will be the basis upon which – under the Urban Development Project – the actual construction of the roads in Kismayo and Baidoa will be implemented.

6. Reports – the format and outline structure for all reports prepared under this assignment will be discussed and agreed with the Client (the World Bank) before being adopted by the Consultant. This includes report for feasibility studies, designs and environmental and social safeguards. Where an outline is provided with this TOR, the Consultant will confirm the same with the Client before proceeding to use it. On submission of documents by the Consultant to the Client for review, the Client will be expected to provide feedback to the Consultant within 10 working days. Otherwise, the Consultant will assume there are no comments and will proceed on with the next step.

## II. Scope of Work

<sup>&</sup>lt;sup>6</sup> ESMF – Environment and Social Management Framework, RPF – Resettlement Policy Framework

### General

7. The consultant will make use of existing satellite imagery and GIS platforms to enhance the discussions and planning with the Kismayo and Baidoa technical staff. A major source for the satellite imagery and GIS of the road networks in the UN Habitat program in the Somalia region. Existing resources should be utilized to a maximum before new imagery is ordered by the consultant. As the assignment progresses, all roads that are adopted for investment under the Somalia Urban Resilience Project (SURP) will be located on a master GIS covering the entire city. This provides a good check and overview on the interconnectivity issues between districts to ensure a holistic network of investments.

## **Roads and Associated Drainage**

8. Under the SUIPP AF, urban roads will be studied and designed, and under the SURP constructed in two urban areas in the region; Kismayo and Baidoa. The technical specifications and standards for each of these locations will be different, one of the first tasks of the consultant is to establish with the two State Government and Municipality what technical specifications and standards apply to the two urban areas. The consultant will advise the two local authorities (separately) as to good "best practice" regional roads standards (Ethiopia, Tanzania, Kenya) which might be adapted if these two local authorities do not have adequate existing roads standards and specifications.

9. Based on the preliminary consultations with the government and findings of the rapid urban assessment undertaken in Kismayo and Baidoa, priority investments are urban roads, along with corresponding drainage system, sidewalks, and streetlighting. Under this study, an assessment will be undertaken to examine which road segments are the most cost-effective and strategically important considering the pre-agreed selection criteria. Ultimately, the shortlist will be finalized through a participatory decision-making process that includes state and district-level governments, community (with representatives of the vulnerable such as women, poor, youth, and IDPs), and the private sector.

10. In Kismayo, based on the rapid urban assessment and subsequent consultation with government, the Municipality list of priority urban roads for rehabilitation/reconstruction include: *Majengo road, Afmado, Tawakal, Dala'ada, Suuga Xoolaha, Qacleva-Badad, Mogadishu-Kisamyo, and Seaport* – total length approximately 30Km (see map in Annex 1). However, due to the limited funding, all these roads may not be improved. In general, the limits of proposed improvements is to be kept within the Municipal boundaries. The Consultant will through a consultative process and feasibility study assist government to arrive at the final investment of roads for SURP funding.

11. In Baidoa, based on the rapid urban assessment and subsequent consultation with government, the Municipality list of priority urban roads for rehabilitation/reconstruction include: (1) Hospital Road to improve access to IDP camp to the South and the airport, (2) 30KA Road which is a bypass to the city, (3) Unaye Road and Hanan 02 Road to improve transport to IDP camps and expansion of the City to the North, (4) Baidoa main road which is the key road through the city and to the North where IDP camps will be located, (5) Ali Amhar Road to the rich agricultural region to ease transport of agricultural products to the North East, and (6) Sharif Gamay Road to the cereals growing areas to the South of the City – total length approximately 20Km (see map in Annex 2). As in the case of Kismayo, due to the limited funding, all these roads may not be improved. In general, the limits of proposed improvements is to be kept within the Municipal boundaries. The Consultant will through a consultative process and feasibility study assist government to arrive at the final investment of roads for SURP funding.

## Feasibility Study and Preliminary Engineering Design

12. Since the roads to be reconstructed in Kismayo and Baidoa are all existing roads with existing alignments, there should be little or no resettlement; a resettlement action plan will however be prepared by separate study. In relation to the scope of the feasibility study, the primary options to be considered would be in relation to the standards to be adopted e.g. the pavement surface – asphaltic concrete or chip seal, assumed maximum axle loading etc. The costs of the roads are dependent on these design assumptions and adopted standards.

13. Within the scope of the feasibility study and preliminary design, the consultant shall conduct all topographical surveys, hydrological studies, sub-surface soil exploration, material surveys and other field and laboratory investigations that are required for the examination of the proposed alignment and the identification of sources of suitable construction materials and water source required for construction among others. The consultant shall take account of these factors in the preliminary engineering design.

14. The preliminary design shall be carried out as detailed hereunder, including all required field surveys and investigations. The alignment of the road section shall as much as possible follow the existing road alignment. Preliminary design shall include:

- a) Establishment of survey controls and topographical surveys including existing crosssections, plans and profiles of the existing road alignment.
- b) Hydrological and hydraulic studies.
- c) Material testing in site soil investigation and pavement evaluation to identify and test the appropriate road alignment.
- d) Material investigations to establish the source of suitable construction materials
- e) The consultant shall describe the climatic conditions of the study area, providing details of:
  - Rainfall (monthly distribution and intensity, including rainy days per month) and historical rainfall data including (frequency of) return floods.
  - Temperature (minimum, median and monthly ranges throughout the year)
  - Other climatic features of importance (e.g. wind, erosion, effects of extreme temperatures on the alternative wearing course designs.)
- f) The consultant shall provide a topographical description of the area traversed by the road, including the effects of relief on the vertical alignment.
- g) Material testing, soils and geotechnical investigations to identify and test appropriate materials for the construction and maintenance of the road;
- h) A catalogue of the relevant geological features of the study area including description of the soils and rocks along the road's alignment and their effect and influence on such factors as route location and design shall be compiled by the consultant. The influence of geology and the availability of road construction materials and water are of great importance and shall be given due consideration by the consultant. The consultant shall provide, as far as possible, the information on the estimate of quantities, quality and potential sources of water and other materials required for construction purposes.
- i) Collection of other physical and engineering data which are necessary to justify the technical feasibility of the proposed road.

## Hydrology and Drainage Investigations

15. The consultant shall provide a complete description of the hydrological features of the area including:

- a) Information about soil drainage along the existing alignments such as sub-soils drain ability, drainage impedance, flooding of flat areas
- b) Characteristics of required water crossings
- c) Alternative road drainage for flat areas and in the urban environment must be taken into consideration on the existing road alignment only.

16. The consultant shall collect sufficient information and analyze the same based upon the guidelines provided in the road design manuals and supplemented by other relevant sources of information to justify and provide the basis for the preliminary engineering design of all drainage systems and structures and for preliminary costing purposes.

17. The consultant shall be fully responsible for obtaining all the data and information necessary for him to carry out hydrological and drainage investigations and designs.

## **Preliminary Materials Investigations**

18. The consultant shall undertake all preliminary soil investigations and tests and identify type and sources of construction materials necessary for the construction project. Material sources shall be considered when selecting final alignments.

19. The availability of suitable conventional road construction materials and the appropriate and economic use of the same are viewed as key factors influencing the choice of pavement and wearing surface design. The consultant shall assess possibility for specific problems arising from the use of proposed materials, which may be specific to particular sections of the road under study, quality and recommend appropriate counter measures.

## Preliminary Engineering Design

20. Preliminary engineering designs will be prepared for 30km urban roads in Kismayo and 20Km urban roads in Baidoa. The consultant shall investigate alternative pavement and structural proposals with a view to obtaining the optimum solution commensurate with the road design manuals, topography, climate, aesthetics and costs. Further the consultant shall advise the Client of any modifications that he considers should be made to the above – mentioned manuals in the light of conditions revealed during the preliminary design work.

21. Based on traffic studies and projections, economic analyses and geotechnical tests, the consultant shall develop different pavement profile types for the road project and shall analyze the merits and drawbacks of each option to determine the final standard to be adopted for the road. The design life should be taken as 20 years. It will be necessary for the consultant to provide comparative data for construction and maintenance costs for the different pavement design standards considered, to support the final designs adopted for the project road.

22. The maximum axle load restrictions applicable in Somalia shall be observed. If no such axle load restrictions exist, the consultant will help the Kismayo and Baidoa Municipalities develop these quickly. This is most important in Kismayo as some of the proposed roads are near the port area, heavy lorries may be an issue for these roads. If the axle loads are underestimated, the useful life of the roads will be reduced. The use of appropriate traffic equivalence factors shall be determined by appropriate means for pavement design purposes. Pavement design shall be in accordance with the standards approved by the World Bank.

- 23. The preliminary engineering design work shall include the following as well:
  - a) Preparation of maps showing topographical surveys strips containing the alignment alternatives.
  - b) The maps shall be prepared in scale 1:5000/1:500 and critical cross-section drawings to scale 1:200.
  - c) Accuracies shall comply with adopted design manual and specifications.
  - d) An analysis of land usage potentials or other likely developments that may take place along the road alignment and which may affect the layout of the road. The consultant in preparing his preliminary report shall consider the land usage.
  - e) Preliminary engineering drawings and cost Estimates.

#### **Economic Impacts**

## (1) Traffic Analysis

24. The consultant shall determine the type and volume of the existing traffic for the road by analyzing all existing statistical data, and by conducting and analyzing such traffic counts and origindestination studies as required, to determine the nature of the traffic and the present volume of freights and passenger movements on the road. The consultant as required shall undertake other field investigations.

- 25. Traffic studies will include:
  - a) Existing traffic composition, occupancy and volume counts
  - b) To ascertain that the selected roads for design and rehabilitation fit "logically" into the current roads network
  - c) Forecasts of annual average daily traffic composed of normal, generated and diverted flows, by appropriate vehicle types
  - d) NMT considerations and aspects of the roads networks.

26. Traffic survey shall generally be of one-week duration and comprise day counts with at least one-night count. Where considered appropriate, the consultant shall divide the road into sections and conduct the relevant traffic analyses and studies accordingly Detailed proposal for the traffic surveys shall be submitted beforehand for approval to the World Bank.

27. The consultant shall identify, describe and quantify existing and potential traffic generating factors in the immediate areas served by the road, or in areas likely to be influenced by its future improvements, based on the economic development of the region, and future needs for road transport. Such needs will result inter alia from:

- a) Population growth and changes in rural urban population distribution.
- b) National and regional economic growth.
- c) Development of agriculture, industry, commerce, tourism and exploitation of natural resources within the project area.
- d) Development of social services facilities
- e) Immigration and emigration
- f) Other important factors as may be identified by the consultant
- 28. Based on the analysis, the consultant shall make:

- a) Detailed annual traffic forecasts for a period of 10years after the completion of the road
- b) More general projections of future traffic for the following 10years.

29. Although greater emphasis given to accurate forecasting in the earlier part of the project's life, all traffic forecasts shall be given three growth rates namely; low, medium and high. The consultant shall select one of the three levels of forecasts for use in the final economic evaluation of the project, indicating the reasons for the selection, and shall also use the other two levels in the sensitivity analysis.

30. In developing the final traffic forecasts, the consultant shall give attention to the future mix of vehicles in the traffic population. Due attention should therefore be given to changes in vehicles sizes and types that will arise when improvements are made in the conditions of the road.

## (2) Economic Costs

31. The consultant shall examine all available information on vehicle operating costs, and road maintenance costs and shall produce valid current estimates of such costs for the project road in its present and improved state.

32. Since the greatest component of measurable and quantifiable user benefits to be derived from the improvement of the road are in practice, derived from savings in vehicle operating costs, the consultant shall give particular attention to the development of valid current estimates of such costs applicable to Somalia as a whole and the project road in particular. Where other computer- based highway investments models are used which are derived from or based on any program developed by an international agency or research organization, the consultant shall ensure that all individual factor unit costs (such as tires, fuel, wages, parts, maintenance, insurance) which are input into the model are derived from direct investigation of local sources of supply.

33. Also, the consultant shall ensure that the individual parameters of the highway characteristics such as roughness, altitude, rise or fall, curvature etc., which are input into the model to determine the different components of vehicle operating costs shall be those that apply to the individual design standards as being evaluated. It is expected, therefore that where design standards evaluated in the study have significantly different parameters, these differences shall be reflected in vehicle operating costs. HDM-4 model for checking the Engineering and Economic viability of the investments in road projects is recommended for this study.

34. The consultant shall carefully detail in the reports all the data, assumptions and parameters that have been in developing estimates for current vehicle operating costs.

35. For road maintenance costs the consultant shall ensure that such costs are strictly related to current and forecast volumes and shall detail in the reports all the data assumptions and parameters which have been used to develop estimates of current and future road maintenance costs.

36. In determining the economic costs for all factors in the project, the consultant shall ensure that all costs are net of all taxes and duties, or any other transfer payments to the government, and shadow priced where necessary to reflect the true scarcity value of the resources being used.

## (3) Economic Evaluation

37. The consultant shall undertake evaluations of the economic viability of the roads project for the 20years following the completion of the construction of the road. The economic evaluation shall

be done on at least three pavement design standards. For this, the economic costs of construction of the design standards being evaluated shall be compared with the relevant level of economic user benefits derived from implementing the project at the different design levels, and that the level of design that results in the greatest volume of user benefits in relation to costs shall be determined as the optimum design level and selected for implementation.

38. User benefits shall be expressed primarily in terms of:

- a) Savings in vehicle operating costs
- b) Savings in road maintenance expenditure
- c) Residual value of the road's structure at the end of the evaluation period
- d) Any other factor that the consultant may consider for the analysis.

39. Since many indirect economic and social benefits arising from the improvements in road conditions are "intangible" or are difficult to quantify accurately, the consultant shall list such benefits in a descriptive manner and provide recommendations for each road studied.

40. Only such benefits demonstrated in quantitative terms should be included in the economic analysis. In all other cases these benefits will not be included in the economic evaluation of the project but may be used as a secondary justification for project implementation.

- 41. The evaluations shall be expressed in the terms of:
  - a) The economic internal rate of return (EIRR)
  - b) The net present value (NPV) in relation to the government's current opportunity cost of capital.

42. The consultant shall also undertake sensitivity analysis on the results of the finally selected design standards. In these, apart from the levels of traffic forecasts previously discussed, all costs and benefits shall be varied by up to +/- 20%, or at another level deemed appropriate for the analysis and agreed with the team leader, project technical team.

43. The Consultant will also undertake a Multi-Criteria Analysis (MCA). Multi-criteria analysis (MCA) is a method used to evaluate a project against a number of criteria. The Consultant will evaluate the project against a number of criteria that will include social, economic, environmental, technical, financial, safety and security, and so on. Quantitative analysis (through scoring, ranking and weighting) of these qualitative impact categories and criteria will be used for measurement of indicators and ranking of outcomes. The intention is to evaluate the project against a complete set of objectives for sound decision making. The MCA may influence policy decision and will therefore be used to ensure a project meets key government objectives other than economic. In combination with cost benefit analysis (CBA) the MCA will be used to prioritize the roads for selection of the priority investment.

44. It is expected that the consultant will undertake the preliminary designs with overall due diligence and specifically, enough testing of the soils resulting in the preliminary design accurate enough to have a cost estimate within 15% to 20% of the eventual actual costs.

## Detailed Engineering Design

45. The consultant shall prepare detailed engineering design and cost estimates for the pavement design option confirmed and adopted at the preliminary design stage for a priority investment of approximately 15km roads in each City, depending on the budget available and the final unit rate of construction.

46. Each detailed engineering design shall be carried out to a degree of accuracy that will enable quantities of principal items of construction materials to be estimated. Such principal items shall include earth work, sub-base materials, base course materials, surfacing/resealing materials, drainage structures, and other structures including street lighting and road furniture.

47. The consultant will undertake a complete review of the condition of the selected roads in Kismayo and Baidoa, and make detailed recommendations for the rehabilitation or reconstruction measures considered necessary. To make such recommendations the consultant shall undertake topographical surveys, geotechnical surveys, identify sources for construction materials and make quantitative and qualitative assessment of them, traffic counts, axle load measurements and riding quality surveys. The works proposed shall be quantified and specified in terms of materials and workmanship quality required and their location clearly identified.

48. No major realignments are considered necessary, but the consultant shall nevertheless make a careful assessment of the existing horizontal and vertical alignments and present possible proposals for improvement to the Municipality for consideration.

49. After approval of the preliminary design of the project road by the Client, the Consultant shall proceed with the Detailed Engineering Design for the construction of the project roads, complete with cost estimates and bidding documents based on standards agreed upon with the Client and the Municipalities. These shall be as required for the Government to call for tenders. The detailed Engineering Design work shall include but not be limited to:

- Set out the roads along existing alignments, place survey control points, temporary benchmarks, and with indelible paint mark on existing structures the chainage at the start and end points of the road construction."
- Preparation of plan and profile drawings containing the approved alignment done to an appropriate scales whose original and design levels are legible.
- Topographic survey indicating road edges and all structures along the road and preparation of site plans of all major structures and major junctions to the scale 1:500.
- The coordinates of all points shall be tied to the National Survey Grid, Universal Transverse Mercator (UTM), and Arc 1960 datum or GCS WGS 1984. Bench marks and levels must also be tied to the National grid.
- Field survey and laboratory investigation of the materials along the proposed alignment to determine the suitability of these materials for road formation and/or pavement construction. Further survey and investigation of potential borrow pits and quarries for earthworks and pavement construction as specified in the adopted specifications. Preparation of a Materials Report with sufficient detailed information and test results from the above and including pavement design and appropriate recommendations.
- 50. The rehabilitation/reconstruction work shall include:
  - a) Reconstruction of the existing road surface and shoulders.
  - b) Rehabilitation of existing drainage or construction of new drainage facilities.
  - c) Non-Motorized Transport (NMT) requirements especially in built up areas.
  - d) renewal of road furniture- road signs and pavement marking including other control features.
  - e) Streetlighting adopting appropriate technology and green energy.
  - f) Roadside drainage and any critical trunk drainage connections if needed.

51. Detailed surveys shall be carried out where missing. This will include centerline staking, setting out of beacons and permanent reference marks for principal points of curves and inter-visibility points on straight sections to enable detailed design of the road (geometrical and structural) together with structures and appurtenances.

52. The design period for the rehabilitation or reconstruction works shall be 20 years, assuming satisfactory routine maintenance and resealing at 5 or 6-year intervals.

53. Where failure of base course, subbase or subgrade has occurred, the consultant shall decide on which rehabilitation measures shall be taken: reconstruction, and if so which type of reconstruction, or overlay, both followed by a surface treatment or other type of road finish.

54. As part of the materials survey the consultant shall identify suitable quarry sites to produce road aggregates including surface dressing stones.

55. A Materials Report and a Design Report shall be prepared. The Materials Report shall include test results and information on borrow areas and quarries such as location, accessibility, suitability of materials, and estimated yields. The Design Report shall describe the background for the project, summarize the surveys carried out and the design methodology used. Setting out data shall be included in the design report.

56. Based on the surveys and design the consultant shall provide an estimate of the cost of the constructions broken down into major items in a detailed priced bill of quantities. The costs shall be given in US\$ throughout.

- Based on the above analyses and findings the consultant shall provide a bill of quantities to be used for the proposed road construction. The estimated bill of quantities shall be within an accuracy of +/- 20%. The principal quantities shall include key components such as: earthworks, sub-base and base materials, surfacing materials, various sizes of drainage structures, major structures, road furniture and miscellaneous items.
- Engineering cost estimates with an accuracy of +/- 20% for construction of the road. This estimate shall be based on recent construction prices or locally derived unit prices appropriate from the previously estimated quantities.
- The estimates above shall give details of foreign and local costs by main items, as well as of taxes and duties to be paid. Estimated labor costs and contractor overheads and profits should be captured as well.
- In addition, the consultant shall present separately a detailed analysis of the taxes, levies and duties component of the cost estimates.

57. To assess the economic justification of the investment which the rehabilitation costs represent, the consultant shall carry out economic analysis of the project for the twenty-year period following the completion of the road rehabilitation. The evaluation shall be expressed in terms of:

- a) the economic internal rate of return (EIRR); and
- b) the net present value (NPV) in relation to the Government's current opportunity cost of capital.

58. A preliminary economic analysis for the selected roads and the project shall be carried out at the earliest possible stage, i.e., as soon as the necessary minimum of traffic surveys, geotechnical surveys and test results, and relevant cost data have been obtained.

59. The consultant shall submit his findings to the Client. A subsequent meeting will be held between the Client, Municipality and the consultant to discuss the technical proposal and alternative technical solutions.

60. The consultant shall in his design ensure that the road project causes a minimum of damage to the environment. The consultant shall likewise ensure that construction traffic and deviations do not infringe on the cultural heritage or any other vulnerable areas.

## **Design Standards**

61. As mentioned earlier in these TOR, it is currently unclear as to the roads standards and specifications to be used for both Kismayo and Baidoa. The consultant will work closely with both the Municipalities and State Ministry of Public Works to come up with a temporary solution in terms of adopting standards from elsewhere for these designs and contracts.

## **Preparation of Tender Documents**

62. The Consultant shall prepare bidding documents that shall comply with the requirements of the World Bank and the Government. The preparation of tender documents should make reference to and consider the ESMPs for priority investments, which will be prepared separately by the PIUs, to ensure that relevant measures recommended in the ESMP are also included in the bid document.

- 63. Bid documents shall include:
  - a) Instructions to Bidders and qualification information;
  - b) Form of Bid and Form of Agreement;
  - c) Conditions of Contract in two parts: Part I shall be the World Bank Harmonized FIDIC General Conditions for Works Contracts or Bank's Standard General Conditions of Contract for Small Works as the Client will advise; and Part II shall be Conditions of Particular Application;
  - d) Technical Specifications in two parts: Part I shall be Municipality Standard Specifications if available or other Standard Specifications approved by the Municipality and Client; Part II shall be Specifications of Particular Application;
  - e) Bills of Quantities; including priced bills of quantities with estimate cost for the Client.
  - f) Tender Drawings shall be produced in A3 size. To the extent possible drawings shall be prepared in accordance with internationally acceptable standards.

64. The consultant shall assist the Municipality in the bidding process. In particular, the consultant shall:

- a) Produce three (3) sets of tender documents for the Municipality and provide digital copies.
- b) On the dates specified in the letter of invitation assist the Municipality by attending to the site visit (if any) and the pre-bid meeting/conference. Consultant shall also prepare the minutes of these meetings and submit them to the Kismayo and Baidoa Municipalities. The Municipalities will then circulate them among the prospective bidder's attending.
- c) During the tender period assist the Municipality to respond to all clarifications from prospective bidders in accordance with the bidding documents and prepare for issue any addendum as necessary. Before and during the procurement process, the Client will organize training sessions for the Project Implementation Unit and relevant

Municipal/State Government staff in both Kismayo and Baidoa to build their capacity in procurement of works and evaluation of bids.

## Assessment of Local Construction Industry, Market Research and Analysis

65. The Consultant will assess the capacity of the local construction industry to determine the adequacy to undertake works of scope and complexity as designed. In doing this, the Consultant will consult with the Municipality, State Ministry of Public Works and other relevant state departments. Included in the Feasibility Study will be a section on assessment of the local construction industry. This information and the assignment outputs will provide sufficient information for the Kismayo and Baidoa Municipalities prepare the Project Procurement Strategy for Development (PPSD) required by the World Bank. The Consultant will assist the Municipalities to complete the PPSD form.

## **Road Maintenance Plans**

66. The Consultant will assist the Municipalities to develop road maintenance plans. The plans will be prepared in close consultation with the State Ministry of Public Works and the Municipality and will assign responsibility for the various maintenance activities, identify budget for the plan, identify involvement of the Community with option of training the community on road maintenance etc.

## Transfer of knowledge to government staff

67. The Consultant will work closely with the State Government and Municipality in both Kismayo and Baidoa to ensure there is transfer of knowledge. The State Government and Municipality in both Cities will assign qualified personnel from the municipality and other relevant departments as counterparts to assist the Consultant to undertake their duties. The Consultant shall discuss and agree the numbers and competencies of counterparts with the State Government/Municipality during mobilization. The Consultant shall ensure that appropriate knowledge transfer occurs between the Consultant and any counterpart staff assigned to it. The transfer of knowledge will take place during the feasibility study, design and bid documentation stages as well as in the bidding process. All costs related to Counterpart staff will be borne by the Project and the Consultant is not required to budget for such costs.

## PART 2: PREPARATION OF ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK AND RESETTLEMENT POLICY FRAMEWORK

This TOR includes the preparation of Environmental and Social Management Framework and Resettlement Policy Framework. Both documents will be developed by UNOPS.

#### **Environmental and Social Management Framework**

1. For all the proposed roads infrastructure investments, the consultant will develop an Environmental and Social Management Framework (ESMF) derived from Bank OP/BP 4.01. The basic objective of the ESMF is to provide and initial, general understanding of the environmental and social impacts of the potential investments and propose preliminary, generic measures to mitigate these impacts in line with international good practice norms, the ESMF will provide the basis for the detailed Environmental and Social Impact Assessments and Management plans that will thereafter be prepared.

#### **ESMF** Task Description

2. Environmental and Social Management Framework (ESMF) is normally used where it is not possible to obtain all necessary information about the project design and potential impacts otherwise required prior to project appraisal. The purpose of ESMF is to provide a framework to guide subsequent assessment of environmental and social aspects of activities to be undertaken within the project, including preconstruction, construction and operational phases. It also provides guidance in the environmental and social screening of the long list of investments in the preparation of the ESMP for each of the priority investment.

3. The ESMF will entail outlining the process for the environmental and social screening of the planned project activities and guidance on determination of the policies triggered and specific instruments to be prepared and the process of and institutional responsibilities for screening, reviewing, preparing the instruments, implementation, monitoring and supervision as well as grievance redress.

4. The consultant will be expected to travel to the prospective project sites, wherever the security situation permits; meet with technical staff from the clients, as well as engineering consultants and review relevant planning and design documents (such as spatial plans, feasibility studies, conceptual design) as far as the scope of project activities and investments has been defined.

- 5. The ESMF will encompass the development of the following:
  - Provide guidance on assessment of subprojects including tools for screening, designation of categories and procedures for clearing and approval of environmental categories
  - Review the context of the national environmental assessment and review procedures and those required by the World Bank and develop specific environmental and social procedures for the project activities
  - Provide a description of common environmental impacts/issues associated with projects
  - Provide the range, scope and social relevance of social impacts of sub projects. This includes impacts covered under World Bank social safeguard policies (OP 4.10, Indigenous Peoples, and OP 4.12, Involuntary Resettlement) as well as other social impacts that may be significant

in the project context. It also includes description of both potential project-related benefits as well as potential adverse impacts.

- Provide guidance on the potential social impacts within the broader national context in Somalia as well as local context of Baidoa and Kismayo related to land tenure, population displacement, rapid urbanization, conflict, community dispute resolution and other relevant factors.
- Description of institutional arrangements and responsibilities and the capacity of the PIU and relevant institutions as well as the risks and recommendations on how to address them.
- Provide guidance on future consultation process and project specific information disclosure and document in the ESMF of the consultation process conducted, summary of key concerns and agreements, methods/means of consultation. ESMF should also identify the potential stakeholders and the process for stakeholder engagement.
- Lay out the grievance mechanisms regarding environmental/social issues and principles for ensuring access to grievance mechanisms including formal grievance redress mechanisms.
- Assessment of existing monitoring and evaluation mechanism of the implementing agency. Identify on the IA's capacity, capability and organization to monitor the implementation of the EMP and resources and budget required to meet the M and E requirements commensurate with the requirements for effective environmental management.

## Resettlement Policy Framework (RPF)

6. Even though there is little relocation expected, the Consultant will prepare the Resettlement Policy Framework (RPF) which is an instrument derived from the World Bank's Involuntary Resettlement Policy OP/BP 4.12 and covers direct economic and social impacts that both result from Bank-assisted investment projects.

7. The RPF will give guidance in the following key areas for the development of project specific instruments ARAP:

- Establish the resettlement and compensation principles and implementation arrangements for SURP components and subprojects;
- Describe the legal and institutional framework underlying Somali approaches for resettlement, compensation and rehabilitation, along with OP/BP 4.12 principles;
- Develop the gap analysis and gap filling measures that will apply to this RPF to ensure compliance with both sets of laws/Policies;
- Define the eligibility criteria for identification of PAPs and entitlements; define organizational procedures for delivery of entitlements
- Describe methods for valuing of affected assets
- Describe the consultation procedures and participatory approaches involving PAPs and other key stakeholders;
- a description of the implementation process, linking resettlement implementation to civil works
- procedures for filing grievances and resolving disputes; and
- Arrangements for monitoring and reporting by implementing body.

## Public Participation and Engagement

8. It is expected that the assignment will involve a series of in-country consultations at various levels. The draft ESMF and RPF prepared by the consultant will be disclosed to a broader stakeholder spectrum through appropriate channels to validate findings and observations and discussed in a series

(probably 2-3) of public hearings in various locations within Kismayo and Baidoa as appropriate. The assignment includes the preparation of the programs, invitations, presentations, materials, handouts for public hearings; the presentation of the ESMF and RPF during hearings in format and language accessible by the local population; response to questions and comments by the public; production of detailed records/minutes of all public hearings; and incorporation of relevant comments and concerns from the public into the final ESMF version.

#### PART 3: DELIVERABLES, OBLIGATIONS OF CONSULTANT, TIMELINES AND TEAM COMPOSITION

### **Deliverables/Specific Outputs Expected from Consultant**

1. The consultant is expected to deliver the above described tasks in distinct sets of standalone deliverables for Kismayo and Baidoa (separate reports for each city). These are:

- (i) Site Visit Report.
- (ii) Feasibility (Engineering and Economic) study reports.
- (iii) Preliminary engineering drawings and cost estimates. .
- (iv) Detailed engineering design reports and bidding documents including drawings and technical specifications and other technical data specified in this TOR.
- (v) Environmental and social management framework (ESMF).
- (vi) Resettlement Policy Framework (RPF).

2. All deliverables will be presented to the Client for review and comment, then revision by the Consultant followed by final approval. The review and comment process by the Client should be turned around within 10 working days; if no written response is received within 10 days it is considered that approval has been given and the consultant can proceed accordingly. Payments will be dependent upon the final approval of the deliverables.

#### **Obligations of The Consultant**

3. The consultant shall include in his proposal the numbers and types of personnel and their periods of employment, together with curricula vitae, that he needs to carry out the services required to complete the assignment within the timeframe outlined below.

4. The consultant shall make his own arrangements for establishment that includes all office and living accommodation, transportation, supplies, surveys, investigations, testing, secretarial services etc. in connection with the work. A two-month period has been included in the workplan for establishment from signing of the Agreement for these activities and prior to Commencement of the Services.

5. Timeline – The estimated timeline is outlined below. The consultant is expected to achieve this timeline.

Milestone	Month from commencement of the services as per the workplan	Activity duration, months
Site Visit Report (separate for each City)	1.5	1.5
Draft MCA Report for Kismayo and Baidoa	3.0	2.0
Final MCA Report for Kismayo and Baidoa	4.0	1.0
Draft Feasibility study and ESMF and RPF (with continuous review by the Client. If	4.0	4.0

#### Timelines

there is smooth flow of the study and final		
approval can be given, the final feasibility		
study may be ready within 4 months)		
Final Feasibility Study Report and Final ESMF	6.0	2.0
and RPF (A float time of 2 months is provided		
to finalize the Feasibility Study, ESMF and		
RPF)		
Draft Detailed Engineering Design and Draft	5.0	3.0
Bidding Documents		
Final Detailed Engineering Design Report and	6.0	2.0
Bidding Documents		
Assistance with Procurement of Works (Pre-	1 month during	1.0
bid meeting and response to request for	bidding period	
clarification by Bidders)		

#### **Team Composition**

6. The Consultant shall provide the following staff required for the performance of the duties described above. The profiles of the key experts to be provided by the Consultant for this assignment are as follows:

## Key expert 1: Team Leader/Project Manager

- *Qualifications and skills* Must possess University Degree BSc (Civil Engineering) or equivalent and be register with a recognized professional body.
- General professional experience A minimum of 15 years practical post-qualification experience
- Specific professional experience Must have extensive broad experience in design and works contract administration and more specifically have recent service as a Project Manager and have experience working on at least one road construction contract of comparable magnitude. Previous experience on road projects in East Africa will be an advantage.

## Key expert 2: Senior Road Design Engineer

- *Qualifications and Skills* Must possess University Degree BSc (Civil Engineering) or equivalent and be registered with a recognized professional body.
- *General professional experience* A minimum of 15 years practical post-qualification experience in road projects
- Specific professional experience At least 15 years of recent experience in geometric design of roads using the latest road design computer. Must be able to prepare road geometric design drawings and carry out estimation of quantities and write technical specifications. Experience on road projects in East Africa will be an advantage.

#### Key expert 3: Senior Drainage Engineer

- *Qualifications and skills* Must possess University Degree BSc (Civil Engineering) or equivalent and be a registered engineer with a recognized professional body.
- *General professional experience* A minimum of 10 years practical post-qualification experience
- Specific professional experience Experience in design and construction of road drainage structures including urban drainage systems. Should be familiar with latest Computer Aided Design applications.

### Key expert 4: Senior Geotechnical / Materials Engineer

- *Qualifications and skills* Must possess University Degree BSc (Civil Engineering) or equivalent and be registered with a recognized professional body.
- *General professional experience* a minimum of 12 years practical post-qualification experience in road projects
- Specific professional experience Must have relevant experienced in soils and materials sampling and testing for large road construction contracts. Experience with analytical pavement evaluation methods is desirable. Previous experience on road projects in East Africa will be an advantage.

#### Key expert 5: Geospatial Technical Officer / Surveyor

- *Qualifications and skills* Must possess University Degree of B Sc. (Survey) or equivalent and be registered with a recognized professional body.
- *General professional experience* A minimum of 10 years practical post-qualification experience in road projects
- Specific professional experience At least 10 years of recent experience in carrying out topographic survey and mapping of large road projects using the latest electronic survey equipment including Smart Stations and associated computer applications like CAD and GIS. Experience on road projects in East Africa will be an advantage.

#### Key expert 6: Environmentalist/Resettlement Specialist (short term input)

- *Qualifications and skills* Must possess University Degree (BSc. in Environmental Management) or equivalent and be licensed by a recognized authority.
- *General professional experience* A minimum of 10 years practical post-qualification experience.
- Specific professional experience Must have broad experience in Environmental Assessment, Resettlement and Social Assessment of at least one highway construction project of comparable magnitude. Must have previous experience in World Bank safeguard policies and safeguard instruments. Previous experience on road projects in East Africa will be an added advantage.

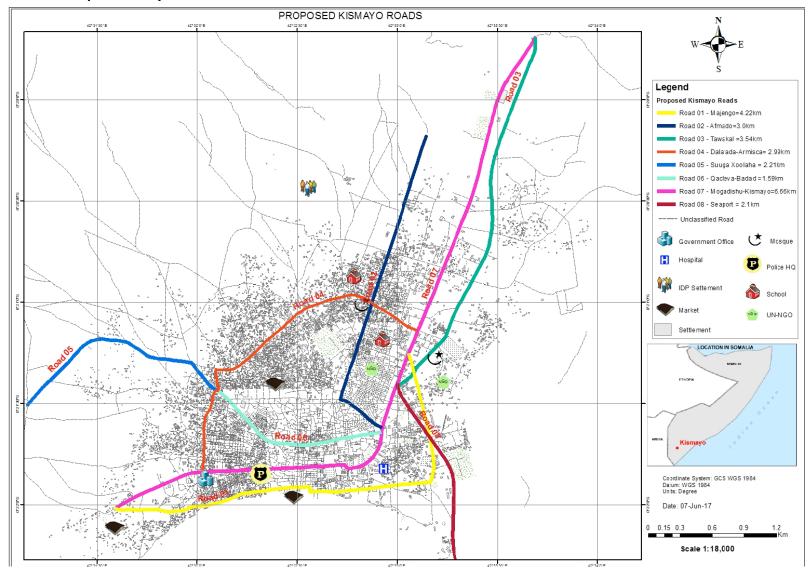
#### **Key expert 7: Transport Engineer/Economist**

- *Qualification and Skills* University degree in Transport Planning/Economics or Master's degree in Transportation Engineering or equivalent.
- *General Professional Experience* A minimum of 10 years post qualification experience
- Specific Professional Experience Must have at least 5 years of recent experience in transportation planning/traffic engineering and economic analysis in the roads sector. Knowledge of inter-modal transport systems desirable.

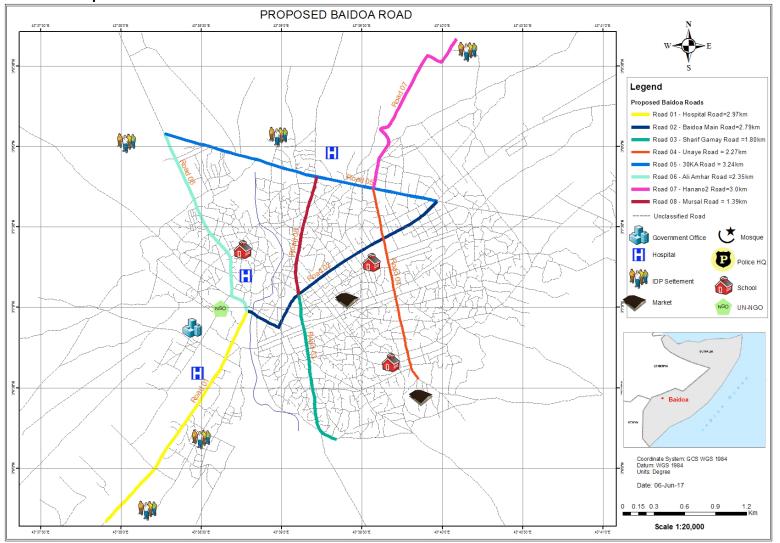
#### Key expert 8: Electrical Engineer

- *Qualification and Skills* University degree in Electrical and Electronics Engineering or equivalent and be registered with a irecognized professional body.
- General Professional Experience A minimum of 10 years post qualification experience
- *Specific Professional Experience* Must have at least 5 years of recent experience in Street Lighting installation and operations.

Annex 1 - Map of Kismayo Urban Roads



Annex 2 - Map of Baidoa Urban Roads



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