DOWLADA HOOSE EE GAROOW

THE LOCAL GOVERNMENT OF GAROWE

**SOMALIA URBAN RESILIENCE PROJECT PHASE II (SURPII)**

**GAROWE MUNICIPALITY**

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## REQUEST FOR EXPRESSION OF INTEREST (REOI)

**Country:** Federal Government of Somalia (FGS)**,Puntland Government of Somalia.**
**Name of the Project**: **Somalia Urban Resilience Project Phase II (SURPII)**.
**Assignment Title:** Consultancy Services for preparation of a detailed engineering designs and bidding documents for urban roads in Garowe Phase II

**Project ID**: **P170221**
**Deadline Date:** September 5th, 2019
**Ref No.** SO-GM-125493-CS-CQS

The Government of the Federal Republic /Puntland Government of Somalia of Somalia have received financing from the World Bank towards the cost of Somalia Urban Resilience Project Phase II being implemented by the Garowe Municipality and intend to apply part of the proceeds for consulting services.

Somalia Urban Resilience Project (SURP) is a municipal governance and infrastructure development project financed by the World Bank, aimed at improving access to urban infrastructure and strengthening municipal governance in Somalia. The Project also aims to strengthen inter-governmental relationships between the federal, state, region and municipal levels. It is intended that the SURP will also strengthen the state-citizen relationship and the government's legitimacy in the eyes of its people by providing visible and tangible benefits. The Project is thus as much about urban resilience as it is about peace building and institution building. SURP builds on the preparation work carried out under World Bank's ongoing Somalia Urban Investment Planning Project (SUIPP). SUIPP financed feasibility studies and engineering design work for urban investments in the three cities of Mogadishu, Hargeisa (Somaliland), and Garowe (Puntland); carried out institutional assessments of three municipalities; and helped to set up Project Implementation Units (PIUs) and build fiduciary, safeguards, project management, and monitoring and evaluation capacity of the PIU staff.

The Garowe Municipality (GM) intend to apply part of the proceeds for consulting services to engage a firm to conduct a detailed engineering designs and preparation of bidding documents for urban roads in Garowe

The objective of the consulting services is to conduct a detailed engineering study of the proposed roads, prepare Detailed Design report, cost estimate and bidding documents for the construction of the road with appropriate packaging

The Consultant shall perform all work necessary as called for in these Terms of Reference including all technical studies, field investigations and related services. In carrying their work, the Consultant shall co-operate fully with the concerned agencies of the Puntland State Government and Garowe Municipality, in particular the Puntland Highways Authority and the Project Implementation Unit (PIU). The Consultant shall provide the necessary support services related to and necessary for the completion of the assignment. The work shall cover but not be limited to the aspects outlined in these Terms of Reference. The Consultant, with the support and assistance of the PIU staff, shall at all times ensure adequate community consultation and engagement during the study to ensure social concerns are factored in the design.

The proposed duration for the assignment is Twenty (20) Weeks from starts date.
As mentioned earlier, the study involves preparation of detailed engineering designs and bidding documents for four roads to be financed under SURP II. The investment will include roads and associated infrastructure including pedestrian walkways, road drainage, street lighting, and one bridge.

The detailed Terms of Reference (ToR) for the assignment can be found at the following website: https://puntlandpost.net/ or can be provided upon submission of application in person or by e-mail. The e-mail address is provided below.

The Municipality now invites eligible consulting firms ("Consultants") to indicate their interest in providing the Services. Interested Consultants should provide information demonstrating that they have the required qualifications and relevant experience to perform the Services (brochures, description of similar assignments, experience in similar conditions, availability of appropriate skills among staff etc.). The short listing criteria are as follows:

1. Core business of the firm and years in business.
2. Specific experience in successfully implementing similar assignments (The firm should have at least five-year experiences in the design and tender documentation of road and bridge construction projects. The firm shall have undertaken at least two assignments of a similar nature and scope. More specifically, in addition to design of roads, the firm should have undertaken a bridge design assignment.
3. Experience of relevant services in an environment similar to that of Somalia (Demonstrate experience in preparation of detailed designs for both roads & bridges and preparation of bidding documents for the roads and the bridge with similar environment as in Somalia).
4. Technical and managerial organization of the firm (provide only the structure of the organization, general qualification and number of key staff). Do not provide CVs of key staff. Key experts will not be evaluated at the short listing stage.

Attention of interested Consultants is drawn to section III, para 3.14,3.16 & 3.17 of the World Bank's *Procurement Regulations for IPF Borrowers: Procurement in Investment Projects Financing Goods, Works, Non -Consulting and Consulting Services, July 2016, revised November 2017 and August 2018* ("Procurement Regulations"), setting forth the World Bank's policy on conflict of interest.

Consultants may associate with other firms to enhance their qualification but should indicate clearly whether the association is in the form of a joint venture and/or a sub-consultancy. In the case of a joint venture, all the partners in the joint venture shall be jointly and severally liable for the entire contract, if selected.

A Consultant will be selected in accordance with the **Consultant Qualification Selection (CQS**) method set out in the Procurement Regulations.

Interested Consultant may obtain further information in person or by e-mail ***Procurement.surp@gmail.com*** at the address below during office hours from **8.00 a.m. – 3.00 p.m.** Saturday to Thursday except on public holidays.

Expressions of interest should be delivered in a written form to the address below (in person, or by mail, or by e-mail) by **Thursday, September 5th, 2019at 3.00 p.m. local Time**.

Attention; SURP-Project Coordinator
Puntland Government of Somalia
Garowe , Puntland Somalia
Email Address: Mohamed Abdirahman Gure at ***Procurement.surp@gmail.com***

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EE GAROOW

THE LOCAL GOVERNMENT
OF GAROWE

**Annex A-Terms of References**

**Somalia Urban Resilience Project (P170221)**

**Project Implementation Unit**

**Garowe Municipality**

**Puntland State of Somalia**

# SOMALIA URBAN RESILIENCEPROJECTPHASE II

# TERMS OF REFERENCE FOR CONSULTANCY SERVICES OF PREPARATION OF DETAILED ENGINEERING DESIGNS AND BIDDING DOCUMENTS FOR URBAN ROADS IN GAROWE (PHASE II)

**August 2019**

# 1. STUDY BACKGROUNDAND OBJECTIVE

## 1.1. Introduction

Somalia Urban Resilience Project (SURP) is a municipal governance and infrastructure development project financed by the World Bank, aimed at improving access to urban infrastructure and strengthening municipal governance in Somalia. The Project also aims to strengthen inter-governmental relationships between the federal, state, region and municipal levels. It is intended that the SURP will also strengthen the state-citizen relationship and the government's legitimacy in the eyes of its people by providing visible and tangible benefits. The Project is thus as much about urban resilience as it is about peace building and institution building. SURP builds on the preparation work carried out under World Bank's ongoing Somalia Urban Investment Planning Project (SUIPP). SUIPP financed feasibility studies and engineering design work for urban investments in the three cities of Mogadishu, Hargeisa (Somaliland), and Garowe (Puntland); carried out institutional assessments of three municipalities; and helped to set up Project Implementation Units (PIUs) and build fiduciary, safeguards, project management, and monitoring and evaluation capacity of the PIU staff.

## 1.2. General Project Objective

SURP Phase II contributes to the World Bank's twin goals of eliminating extreme poverty and boosting shared prosperity through provision of much-needed economic infrastructure and basic services for some of the world's poorest and most vulnerable people in one of the most fragile countries. The project also contributes to the Bank's Country Partnership Framework (CPF) (FY2019-22)Focus Area 1 which aims to strengthen institutions to deliver services while addressing the cross-cutting consideration of building resilience to fragility and shocks. This project specifically aims to delivery on Strategic Objective 1.4 which aims to build the capacity of Somali municipalities for urban resilience.

The project will also contribute to the Somalia National Development Plan (2017-2019) particularly for the Infrastructure Pillar that aims to "lay out the foundations of resilient infrastructure systems that will contribute to the country's stability and will provide necessary services for all", as well as the Resilience Pillar that aims to "create opportunities for IDPs and refugee returnees to participate in public affairs and most importantly in decision-making pertaining to their own future, such as local and urban development processes" and to "systematically enhance the absorption capacity of basic services for IDPs and returning refugees".

### 1.3. Somalia Urban Resilience Project (SURP) Roads

Garowe Municipality has set up a Project Implementation Unit (PIU) which is headed by the Project Coordinator. The PIU team includes an Engineer, Safeguard Specialist, Procurement Specialist and Finance Specialist.

Under the Somalia Urban Investment Planning Project, Garowe Municipality prepared feasibility studies and preliminary designs for 19 urban roads and also feasibility studies for 2 bridges in Garowe. Under Somalia Urban Resilience Project (SURP), four (4) urban roads with a length of 4.8km were prioritized and construction is ongoing. Garowe Municipality has contracted United Nations Office for Project Services (UNOPS) to assist in the supervision of ongoing works and management of the Works Contract.

Based on the prioritization and ranking in the feasibility study, Garowe has selected four (4) more urban roads (Gambol, Wadajir, Tawfiq, and 30 KA Road), with an estimated length of 9km and Hospital bridge for financing under SURP II. The feasibility study had estimated the four roads to cost US$4million and the Hospital Bridge on Gambol road estimated to cost US$2million. These roads will serve areas where IDPs are living, the main Garowe hospital, and other social facilities.

ThisTOR are for the preparation of detailed designs and bidding documents for the four (4) urban roads and one bridge (Gambol road and bridge, Wadajir, Tawfiq, and 30 KA Road).

### 1.4. Study Objective

The objective of the consulting services is to conduct a detailed engineering study of the proposed roads, prepare Detailed Design report, cost estimate and bidding documents for the construction of the road with appropriate packaging.

## 2. SCOPE OFWORK

The Consultant shall perform all work necessary as called for in these Terms of Reference including all technical studies, field investigations and related services. In carrying their work, the Consultant shall co-operate fully with the concerned agencies of the Puntland State Government and Garowe Municipality, in particular the Puntland Highways Authority and the Project Implementation Unit (PIU). The Consultant shall provide the necessary support services related to and necessary for the completion of the assignment. The work shall cover but not be limited to the aspects outlined in these Terms of Reference. The Consultant,with the support and assistance of the PIU staff, shall at all times ensure adequate community consultation and engagement during the study to ensure social concerns are factored in the design.

As mentioned earlier, the study involves preparation of detailed engineering designs and bidding documents for four roads (See ANNEX 1) to be financed under SURP II. The investment will include roads

and associated infrastructure including pedestrian walkways, road drainage, streetlighting, and one bridge. The details of these roads are as follows: -

| Road # | Road Name | Road length, Km | Road width, M |
|---|---|---|---|
| 01 | a) 30th A | 2.9 | 20 |
| | b) 30th B | 1.6 | 20 |
| | 30 KA (A+B) | 4.5 | |
| 08 | Wadajir | 1.0 | 10 |
| 09 | Tawfiq | 2.1 | 10 |
| 14 | Gambol – this road has a 100m span bridge at CH. 0+120 | 1.4 | 10 |
| **Total** | | **9.0** | |

The study will be conducted in three stages which consist of: -

### 2.1. Stage 1 – Feasibility Study

Under SUIPP, Garowe Municipality prepared feasibility studies for 19 roads and two bridges. Some of the roads have already been constructed by the Municipality, while construction of four other road (Jilib Road, Sagal Road, Sheikh Abdisalam, General Nur Salad) is ongoing under SURP. The Consultant will review the existing feasibility study with a view of updating any information, such as traffic analysis (traffic growth rates and forecasts) and economic analysis/evaluation that may require to be updated as will be agreed with PIU Coordinator. The alignments of the road sections shall as much as possible follow the existing road alignment. There is therefore no need of major feasibility study and alignment selection. The Consultant is expected to use the finding of this review in the design of the new roads. An updated feasibility study report is not required.

### 2.2. Stage 2 – Preliminary Design (PD)

A Preliminary Engineering Design Report for Urban Roads in Garowe was prepared by UNOPS/IPE Global in April 2017. The PIU Coordinator shall provide the Consultants with a copy of this report.

The consultants will review preliminary design, on the design of road and bridges, and identify any gaps which shall be addressed in the detailed designs of the roads, bridge and drainage works, pedestrian walkways and street lighting.The Consultant's review process shall include:

a. Review of the existing data on the proposed roads and bridge project and social and economic activities in the project study area;
b. Review of social, environmental, and physical and engineering data that is necessary to assist in the design of the project road;
c. Review of preliminary corridor definition including plot boundary information, details of encroachments and illegal allocations;
d. Review of preliminary engineering survey and design work for the optimum alignment and design standards including preliminary costs estimates and implementation schedule. Establishment of Survey controls and detailed topographical surveys, including cross- sections, plans and profiles of proposed alignment. This will include overlays of plot boundaries to show areas of encroachments and illegal structures along the corridor.
e. Review of Material testing, soils and geotechnical investigations to identify and test appropriate materials for the construction and maintenance of the road and bridges;
f. Review of climatic surveys, hydrology and hydraulic surveys, for the drainage and bridge structures and;
g. Preliminary boring and trial pits at specified road cross sections and core drilling at bridge locations.

The Consultant shall, to the extent possible, follow the design standards which were adopted for the Preliminary Design Reports in 2017 and if necessary compliment these with the local draft design standards prepared by the Puntland Highways Authority.

h. Review of Preliminary Design Drawing

The Consultant shall also review the book of drawings for Preliminary Engineering Design Report for Urban Roads in Garowe to check of their completeness and suitability of proposed road alignment, pavements and structural work including all waterway dimensions.

i. Review of Preliminary Cost Estimate

Based on the findings and review of the preliminary designs, the Consultant shall furnish Preliminary quantities and cost estimate with an accuracy of +/- 20% (twenty per cent) for the proposed road sections. The estimates shall include price escalation and contingencies. All cost estimates shall be expressed in terms of United States Dollar (US$).

<u>Deliverable for Stage 2</u>

For the PD Stage, the consultant shall prepare a Preliminary Design review report that identifies any gaps in the preliminary design report provided to them and what measures will be taken to address such gaps at the Detailed Design stage. The Consultant shall submit the PD Review Report for the approval of the PIU Project Coordinator.

### 2.3. Stage 3 – Detailed Engineering Design

After comments and approval of the preliminary design review report by the Garowe PIU Project Coordinator, the Consultant shall proceed with the Detailed Engineering Design for the construction of the project road, complete with cost estimates and bidding documents on the basis of standards agreed upon with the PIU Project Coordinator and earlier adopted in the preliminary designs. These shall be as required for the Municipality to call for bids and in such further detail as may be required for the construction work to be carried out by contractors. The Consultant shall carry out a detailed topographical survey of the area covered by the corridor. This will cover at least 100m on either side of the proposed centre-line. Cadastral/boundary information will then be integrated with the topographical information to establish the encroachments or structures which will be affected by the road construction. This information will be necessary for preparation of the Resettlement Action Plan (RAP) and Environmental and Social Management Plan (ESMP) by the PIU and Garowe Municipality.

The detailed engineering design work shall include but not be limited to:-

i. Staking out in the field the approved alignment: field survey of cross sections at regular 20 meterintervals or 10 meters where the terrain is difficult. If this field survey proves the necessity of amendments in the alignment, the Consultant shall propose such amendment and re-stake the centerline.

ii. Preparation of plan and profile drawings containing the approved alignment done to an appropriate scale. Contour lines shall be at appropriate vertical intervals depending on topography of the area but not more than 1m. The accuracy shall comply with agreed design standards.

iii. 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 with 0.5m contour intervals.

iv. The coordinates of all points shall be tied to the National Survey Grid, Universal Transverse Mercator (UTM), and Arc 1960 datum. Bench marks and levels must also be tied to the National grid.

v. Preparation of overlay of topographical data and cadastral data at appropriate scale to determine encroachments.

vi. Field survey and laboratory investigation of the materials along the proposed alignment in order 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 adopted design standards. Preparation of a Materials Report with sufficient detailed information and test results from the above and including pavement design and appropriate recommendations.

### 2.3.1. Field surveys

a. The Consultant shall carry out the necessary surveys in order to establish the specific alignment and to determine the accurate centerline for a corridor. The centerline shall be set out, cross-sectioned, and benchmarks established. No major deviations from the alignment recommended in the preliminary engineering study shall be made without the approval of the PIU Project Coordinator. The consultant shall be responsible for the accuracy of all survey data and established benchmarks.

b. The Consultant shall then carry out works as necessary for the detailed design of the proposed works, for the estimation of quantities to an accuracy of +/- 10% of final quantities as measured on completion of the works, and preparation of bidding documents suitable for competitive bidding.

The following engineering investigations shall be carried out: -

i. Ground reconnaissance survey to locate the position of the road and related town/market roads, and to indicate them on a plan.

ii. Concreted beacons shall be firmly sited, referenced and shall be as agreed by the PIU Project Coordinator and in accordance with the existing Municipality survey policies/acts.

iii. The geometric characteristics of the centre-line shall be computed and defined. Staking-out data will also be given for points at the regular intervals along the curves and the longer tangent alignments. Vertical alignments will be defined and computed. The consultant shall be responsible for the accuracy of the setting out data up to the pre-construction stage and will be required to set out the road with the client's surveyor.

iv. Detailed site investigations and hydrological surveys shall be carried out at all bridge and box culvert sites, including a sufficient length upstream and downstream to enable the hydraulic design of the structure to be carried out. All topographical surveys undertaken by the Consultant shall be to generally accept international standards for such work, and after approval by the PIU Coordinator, shall become recorded in standard survey field books that shall become the property of the Municipality at the completion of the work.

v. All topographical surveys undertaken by the Consultant shall be to the generally accepted international standards for such work, and after approval by the PIU Coordinator, shall become recorded in standard forms both hard and soft copies and shall become the property of the Municipality at the completion of the work. The survey should be able to indicate details of up to 100m radius in all junction centerlines.

vi. The consultant shall identify locations of all existing services such as telephone lines, electricity poles including underground cables, water mains, sewer lines, etc, which falls within the right of way or the approved construction corridor. Copies of book of drawing indicating the location of these services and their UTM coordinates shall be submitted together with preliminary and detailed design reports. The consultant may use appropriate technologies to achieve this including the use of Ground Penetrating Radar (GPR).

### 2.3.2.Soils and Materials investigation

a) A review shall be made of all existing relevant data followed by a general Study of the soils and materials along the route. The Consultant shall make detailed soils investigations along the road alignment.

b) Boring (or any similar methods) shall be carried out along the proposed alignment to determine rock surface levels.

c) Investigation for sources of construction materials for pavement structures shall also be carried out, and sites of suitable materials surveyed and shown in the engineering plans. Analysis and testing shall be carried out as required on the construction materials, in accordance with the adopted Road Design Manual.

d) Soil and materials borrow areas shall be prepared showing exact locations of all construction materials available with an indication of their quantities.

e) At bridge sites and for other major structures, sub-surface conditions shall be investigated by trenching, hand auguring, and/or drilling as required including the taking of undisturbed samples. Seismic investigation shall be carried out if considered necessary by the Consultant. Allowable bearing pressures of sub-surface stratum shall be determined at proposed foundation levels of structures.

### 2.3.3.Drainage and Bridge Site Investigation

a) Hydrological studies shall be carried out on all drainage structures by use of available maps and field investigation.

b) The catchment area, run-off coefficient, hydraulic slope and Design flood discharge for the appropriate return period shall be determined for each drainage structure, and the corresponding water level established.

c) Cross-sections and gradients of water courses shall be surveyed to determine the design of proper drainage and erosion control of the roadway and the protection of slopes. All storm water from each road catchment shall be drained to a nearby water course/way either by exit drains or standalone drains.

### 2.3.4.Geometric Design Requirements

a) The horizontal alignment of the road centerline shall be determined by study of the optimum alignment between control points specified as a result of the engineering investigations. Points at even increments of lengths of 20 meters along the centerline, tangent points, and such other critical points as shall be required, shall be fully defined relative to stations on the baseline by coordinates and offsets suitable for setting out the centerline. All points shall be coordinated to the National Survey Grid System (UTM) and all heights referenced to the National grid to which the road shall be referenced. Cross-sections shall be taken along the length of the road centerline and leveled at each 20 meters and at any local abnormalities in topography.

b) The vertical alignment shall take into account the design standard adopted, while optimizing the earth works involved. There shall be coordination between horizontal and vertical alignments to the extent possible. Due consideration shall be given to road safety standards in carrying out these designs, e.g. excessively long straights in the design of the horizontal alignment and ensuring balanced design between horizontal and vertical curves.

c) The design shall incorporate all the environmental aspects identified in the preliminary design and the Consultant shall investigate whether there might be any possible impact on the environment, and make proposals for remedial measures.

### 2.3.5. Earthworks and pavements

Engineering analysis shall be undertaken using the results of the soils and the materials tests, to determine the gradients of the slopes, compaction requirements, pavement design, and other engineering treatment dictated by the natural materials. Currently the Municipality is implementing SURP roads with Otta Seal surfacing. Depending on the performance of Otta Seal surfacing, the Consultant shall recommend the same for SURP II roads or with the approval of the Municipality design for a different type of road pavement and surfacing.

### 2.3.6. Drainage and Bridge Design

All existing data and the result of the field investigations for soils, foundations, hydrology, etc., shall be assessed and used as a basis for the design of drainage and bridge structures. Detailed hydraulic computation and structural designs shall be fully documented. All roadside drains, exit drains, and standalone drains and outfall drains shall be properly designed and sized. Detailed designs shall be prepared for all drainage structures having spans of 10 meters or greater. Structures of spans less than 10 metres shall be specified as standard type structures, which shall be fully designed. Bridges shall be designed to a width and loading as agreed with the PIU Coordinator.

### 2.3.7. Traffic Engineering Design

A detailed traffic engineering analysis shall be prepared to specify the design of necessary traffic control features. This analysis shall include detailed traffic assignments, including where appropriate design traffic forecasts for major intersection. Based on the traffic assignments, the Consultant shall conduct intersection capacity analyses and related traffic studies to determine the location of signs, signals as necessary, pavement markings, and other control features.

### 2.3.8. Construction Water

The Consultant shall review existing sources, and shall identify additional supplies of construction water and on this basis shall provide information on the quantities and quality of the water required and available for construction.

### 2.3.9. Engineering Plans

The Consultant shall prepare the following engineering plans for the project, using a format and title sheets as required by the PIU Project Coordinator, the originals becoming the property of the Municipality:

i. Plan and Profile, scales, 1:2,500 and 1:250 showing natural ground levels; horizontal and vertical curve details; running chainages; cross-section chainages; side drain location; description and reference to all drainage and bridge works location of benchmarks; location of road furniture; contour lines superimposed on plans; any other relevant information approved by the PIU Project Coordinator.

ii. Typical cross-sections, scales 1:25 showing: all details of road cross-sections in cut and fills; side drains; pavement thickness camber super-elevation; and pavement widening.

iii. Cross-section, scale 1:50 showing natural ground levels superimposed with the road prism at selected locations to be agreed upon.

iv. Typical culverts showing: details of all types of culverts and other drainage structures with opening less than 12 m2, their inlets and outlets, and any necessary protection work.

v. Soil plan: an alignment soils plan shall be produced showing the characteristics of soils for various sections of the route. A plan showing the locations of borrows and quarry sites shall also be produced, including a materials utilization chart.

vi. Ancillary works: A plan for all other ancillary works, including roadside drainage, pedestrian walkways and street lighting, shall be prepared.

vii. Maintenance of traffic: plan a detailed scheme for maintenance of traffic flow shall be developed to ensure that vehicle and pedestrian traffic is properly handled during the construction period. This plan shall include details of the location and design of by-pass lanes temporary structures, barriers, signing, signals and other physical features necessary to accommodate traffic flow during construction. In addition to the operations plan, the Consultant shall prepare a traffic operations plan detailing the construction sequencing plan detailing the announcements, use of traffic control devices and other activities designed to minimize traffic disruption.

viii. Preparation of encroachments and illegal allocation Plans: The consultant shall collect the entire necessary survey plans and road corridors surrender from relevant authorities and overlay with Topographical maps and organize for digital road corridor information. This shall be at an appropriate scale indicating the boundary details, physical features and structures.

### 2.3.10. Construction Quantities

The calculated quantities for the items of construction shall be based on the final design drawings. The earthwork quantities shall be derived from calculations based on the field cross-sections taken along centerline and is in accordance with accepted methods of measurement, which shall be agreed with the Project Coordinator. A detailed Bills of Quantities shall be prepared generally corresponding to the relevant sections of the Standard Specification, and including contingencies and escalation of price elements.

### 2.3.11. Cost Estimates

The Consultant shall estimate likely ruling bill rates applicable to the proposed time of construction, showing how these were arrived at. In order to make a fair and reasonable estimate of the cost of the road,

the Consultant shall prepare a unit price analysis of each item using basic costs elements (labour, materials, equipment, tools, overheads, on-site costs, profit etc.), and showing separately the cost of all taxation (direct or indirect). In addition, the cost of supervision of construction by Consultants shall be analysed on a unit price basis and included in the overall cost estimates. The estimated financial costs resulting from this analysis shall be accurate to within +/- 10% (ten percent), and shall be compared with the costs of previous projects or similar works executed in the area and adjusted accordingly. The rates of previous projects may be obtained from the PIU Project Coordinator

In order to assist in evaluating the required construction period and forward budget needs, the Consultant shall prepare a construction schedule for the proposed construction contract showing the anticipated annual expenditure. Due account shall be taken of the climatic and other conditions of the area which may have an influence on the construction schedule.

### 2.3.12. Bidding and Contract Documents

The Consultant shall prepare the following bidding and contract documents for the project roads. The bidding documents will be based on the appropriate Standard Procurement Documents version to be provided by the Project Coordinator:

1. Complete Bidding Document complete with Bidding Data Sheet, Evaluation Criteria, list of equipment and staff, work programme, etc based on agreed World Bank Standard Procurement Document (SPD);
2. General Conditions of Contract, and Special Conditions of Contract;
3. Bidding Drawings;
4. Special Specifications for the execution of the work;
5. Bills of Quantities- Separate Bills of Quantities to be prepared for each of the roads, and;
6. Engineers Cost Estimate.

Bidding drawings shall be submitted in A3 size (photo-reduced from the original A1 size). All other documents shall be submitted in A4 size. In addition, the Consultant shall submit the engineering investigation, analysis, design materials report and other relevant information.

## 3. DELIVERABLES/SPECIFIC OUTPUTS EXPECTED FROM CONSULTANT

The consultant is expected to deliver the following: -

i. Inception Report
ii. Preliminary Design Review Report and cost estimates.
iii. Detailed engineering design reports and bidding documents including drawings and technical specifications and other technical data specified in this TOR.

The consultant shall provide monthly progress reports on the performance of the assignment highlighting achievements of the work plan of activities.

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.

### 3.1. Deliverables and Time Schedule

The complete design and documentation shall be completed within the duration of the assignment as set out below. All reports shall be completed and forwarded to the PIU Project Coordinator within the period specified under the "Time Schedule Table for Design" below. The Consultant shall allow for two (2) weeks for comments and discussions with the PIU Project Coordinator between submission of each report. The Consultant shall then prepare the final design and documentation within the last one month of the assignment period.

The Consultant should be prepared to attend meetings with the Client to discuss the assignment at any stage and make overhead presentations when call upon.

#### 3.1.1.Commencement

The Consultant shall commence the study when instructed to do so in accordance with the terms of the consultancy contract.

#### 3.1.2.Reports

The Consultant shall prepare and submit to the PIU Project Coordinator the following reports. All reports shall be in English and prepared on A4 metric size paper in 4 hard copies and one electronic copy submitted as an email file attachment or shared in a cloud account.

a. Inception Report

This shall summarize initial findings and give proposals covering methodologies of the preliminary engineering studies, and the detailed work plan for the contract of the preliminary design. It will also include preliminary site visit findings.

b. Progress Reports

These shall be submitted monthly and shall detail all work performed during the reporting period and utilization of the study personnel. These 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.

c. Preliminary Design Report

This shall incorporate all revisions deemed necessary arising from comments received from the PIU Project Coordinator (and also any comments from the World Bank) following discussions and agreement between

him and the Consultant from time to time. It shall include a concise executive summary in which the project design standards and cost estimates shall be shown clearly.

d. Draft Detailed Engineering Design Report

This shall summarize the findings, analyses, results and recommendations of the

detailed engineering design, and shall contain all supporting material.

The following draft documents shall be submitted to the PIU Project Coordinator for his approval, prior to the production of final design report:

i. Draft Final engineering Report
ii. Draft Final Materials Report
iii. Draft Final Book of drawings (A3)
iv. Draft bidding Document
v. Draft Engineer's Estimate

All Draft documents shall be clearly marked as such, preferably in red on the cover of each document and on each separate drawing. The date of submission shall also be printed on the cover.

e. Final Detailed Engineering Design Report

This shall incorporate all revisions deemed necessary arising from comments received from the PIU Project Coordinator (and also any comments from the World Bank) following discussions and agreement between him and the Consultant.

Preparation of the final documentation shall include the following reports and drawings, which shall be submitted to the PIU Project Coordinator: -

i. Final Engineering Report.
ii. Factual Materials Report for Tender purpose without opinions or interpretation of Results.
iii. Materials Report.
iv. Final Book of Drawings (A3 size) as plan and profile drawings, mass haul diagram, cross-sections, layout of junctions, traffic signs, road marking, standard drawings for Resident Engineer staff housing and offices, etc.
v. Tender Document including Bills of Quantities, Special Specifications, Conditions of Contract, Instructions to Bidders and Conditions of Bid, all as necessary for the proper solicitation of bids.
vi. Schedule of services and utilities to be relocated and cost estimates thereof, separate for road.
vii. Computer output of all setting out data.
viii. Major bridges/structures design calculations.
ix. Engineer's Cost estimates.

The deliverables and estimated timeline is outlined below. The consultant is expected to achieve this timeline.

Time Schedule for Design

| # | Milestone | Activity duration, Weeks |
|---|---|---|
| 1 | Inception report | 2 weeks |
| 2 | Preparation of Preliminary designs | 6 weeks |
| 3 | Preparation of detailed designs | 8 weeks |
| 4 | Preparation of bidding documents | 2 weeks |
| 5 | Preparation of final design and bidding documents | 2 weeks |

## 4. REQUIREMENTS

### 4.1. Obligations of The Consultant

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.

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 one-month period has been included in the work plan for establishment from signing of the Agreement for these activities and prior to Commencement of the Services.

### 4.2. Required Qualifications and Experience of the Consultant (firm).

The Consultant selected to undertake the design shall have had extensive experience in the design and tender documentation of road construction projects. The firm shall have been in existence at least for the last 5 years and have undertaken at least two assignments of a similar nature and scope. More specifically, in addition to design of roads, the firm should have undertaken a bridge design assignment. At least 50% of the key staff shall be employees of the firm.

### 4.3. Team Composition

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 road design and works contract administration and more specifically have recent service as a Team Leader/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 applications and modern topographic survey equipment. Must be able to prepare road geometric and pavement designs, 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 Structural/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 structural analysis and design and construction of bridges and 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

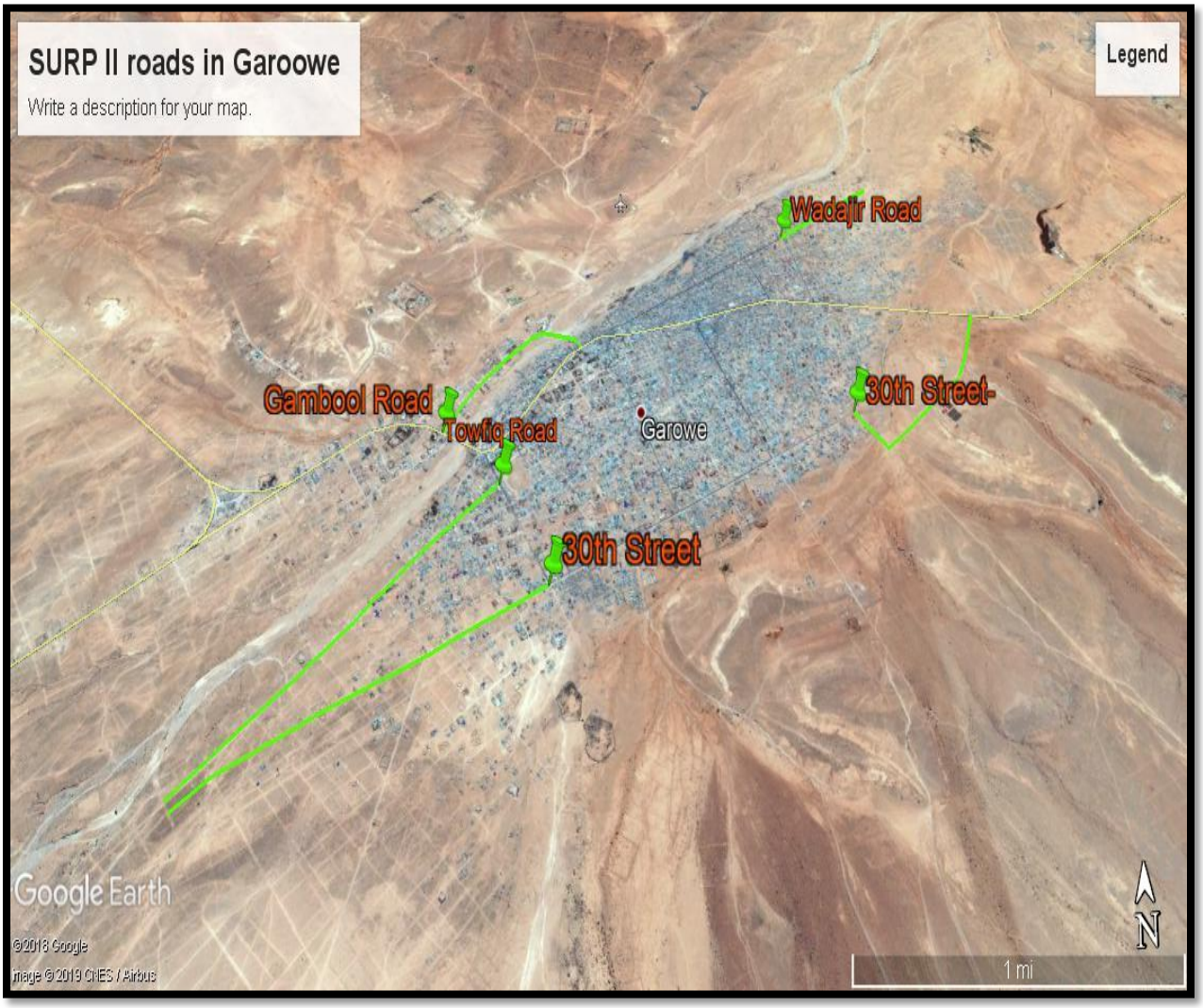
- Qualification and Skills - University degree in Electrical and Electronics Engineering or equivalent and be registered with a recognized professional body.
- General Professional Experience - A minimum of 10 years post qualification experience
- Specific Professional Experience - Must have at least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

## 5. WORK SCHEDULE

The consultant shall propose a schedule of activities and corresponding deployment of manpower, which will ensure that all duties entrusted to them, will be adequately performed. This schedule, together with a comprehensive statement justifying the proposed deployment will be incorporated in the methodology statement.

## 6. REPORTING ARRANGEMENT

The Consultants will report to the SURP PIU Coordinator at Garowe Municipality on the day to day performance of their duties. The PIU Coordinator, having satisfied himself that a report has met requirements of the TOR, will approve the report and any payments due to the Consultant.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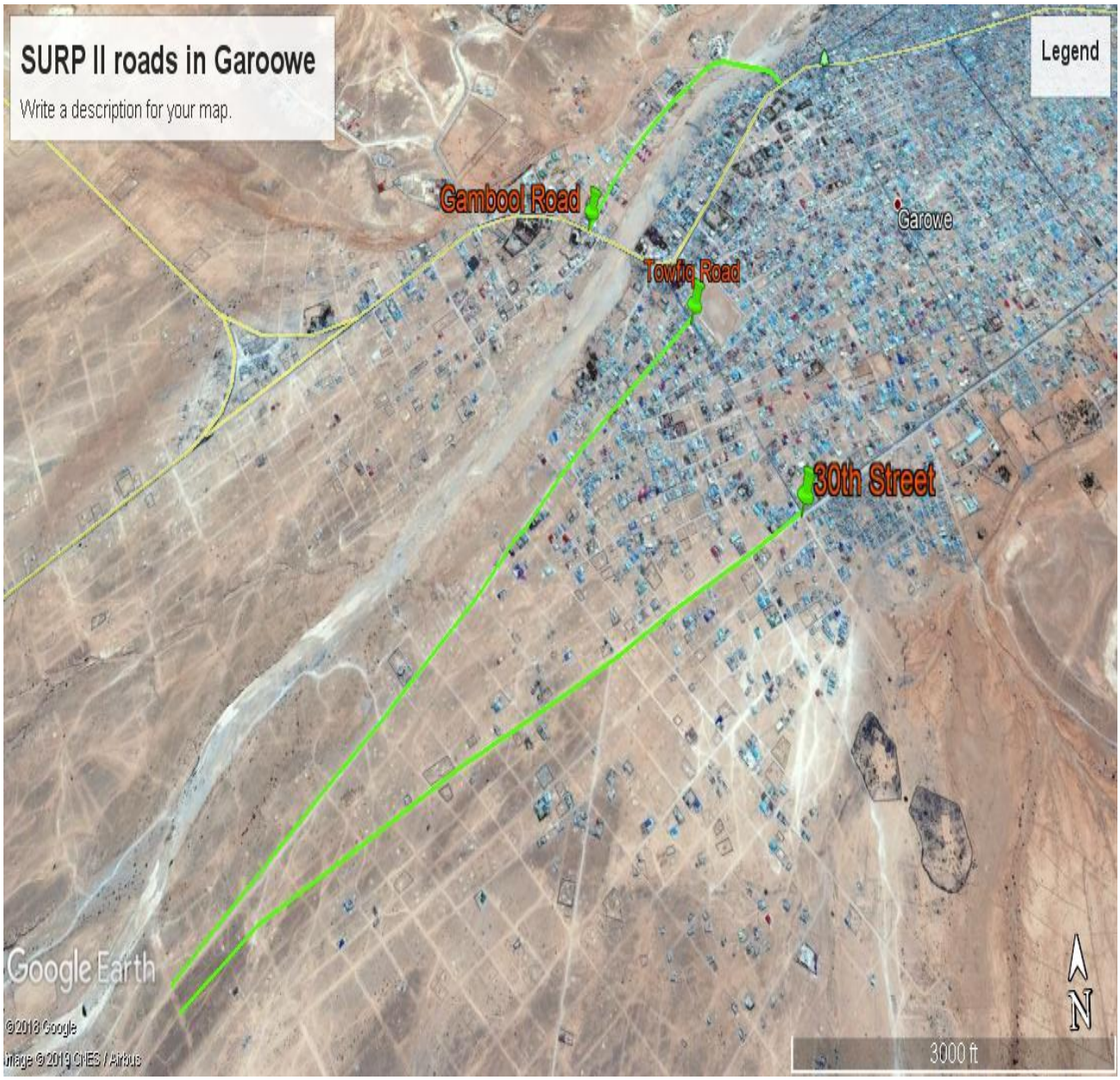
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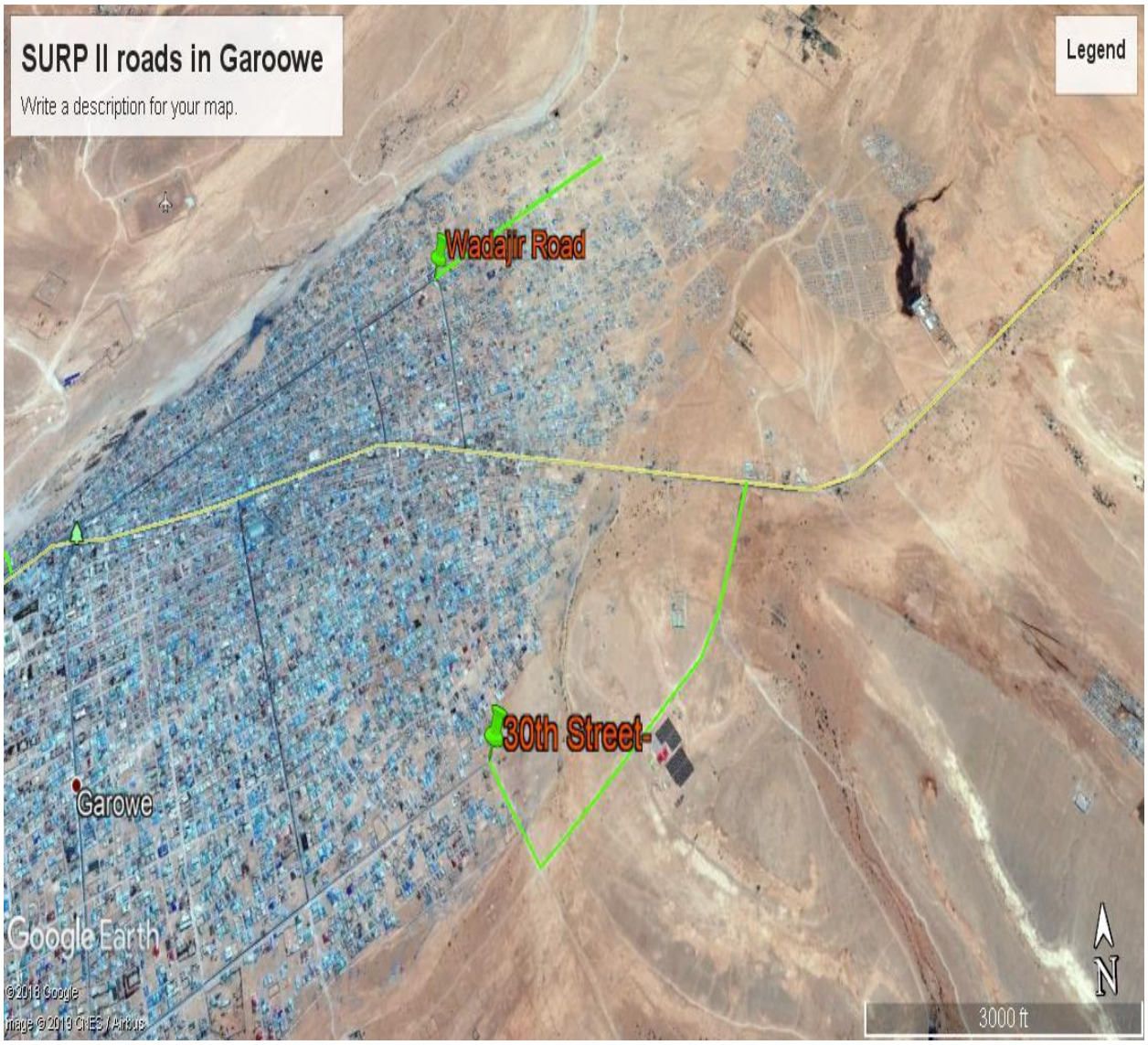


**REOI and Terms of reference for consultancy services of preparation of detailed engineering designs and bidding documents for urban roads in Garowe (Phase II)**