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MINISTRY OF WATER AND ENERGY
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Water Supply and Sanitation Sector

URBAN WATER SUPPLY STUDY, DESIGN AND CONSTRUCTION SUPERVISION DESK

TERMS OF REFERENCES (TOR)

FOR

SELECTION OF CONSULTANTS FOR DESIGN REVIEW AND SUPERVISION
CONSTRUCTION DRILLING BOREHOLE WATER SUPPLY & SANITATION PROJECT FOR
LAHA TOWN, KOIYISHA TOWN AND WOLKITE TOWN



October, 2025
Addis Ababa, Ethiopia

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1. INTRODUCTION

Drinking water is indispensable for human survival and is one of the most vital natural resources on Earth. Access to safe drinking water is not only essential for good health but also recognized as a basic human right and a key component of effective public health policy. Therefore, every effort must be made to ensure the provision of safe and adequate drinking water to promote better health and sustainable development.

The Ministry of Water and Energy was established to give greater attention to the water supply sector in order to achieve the government's planned development goals. The Ministry supports and monitors the implementation of various water supply projects across all regions of the country. However, ensuring adequate water supply services for the growing urban population remains a major concern, particularly in improving living conditions and supporting sustainable urban development.

Among them planned for the development of water supply provision for specific towns begins with identifying the problem and assessing the availability of potential water sources in the vicinity. The selected towns Laha, Koiyisha, and Wolkite are implementing consultancy services for the design document review and update, as well as the supervision and contract administration of borehole drilling activities

The overall objective of this assignment Selection of Consultants for Design Document Review and Supervision and Contract Administration of borehole drilling activities for the Laha Town, Koiyisha Town and Wolkite Town Water Supply Project is to review and update the detailed study and design, ensure the implementation of sustainable technical solutions, and address the town's ongoing water supply challenges. The project aims to ensure that residents receive water in accordance with their demand requirements and within reasonable distances.

The Consultant will serve as the Employer's authorized representative, responsible for supervision and administration as outlined in the Terms of Reference (TOR). This includes the deployment of qualified and experienced personnel, effective management and coordination, and timely execution of services. The consultancy assignment will be implemented under a mixed lump-sum and time-based contract over a total duration of **twelve (12) months**, covering detailed design document review/update, supervision, and contract administration for borehole drilling activities.

The consulting firm to be engaged must be highly competent and reputable, with a team of experienced professionals and adequate technical and administrative support staff who possess proven experience in similar water supply projects.



2. GENERAL OBJECTIVES

The general objective of this assignment is to address the existing shortage of potable water and sanitation challenges in Laha Town, Koiyisha Town and Wolkite. This will be achieved through the preparation of a Detailed Engineering Design Document Review, Update, and Supervision and Contract Administration of borehole drilling activities. The ultimate goal is to ensure that residents have access to an adequate, reliable, and sustainable water supply within reasonable distances and in accordance with current and future demand.

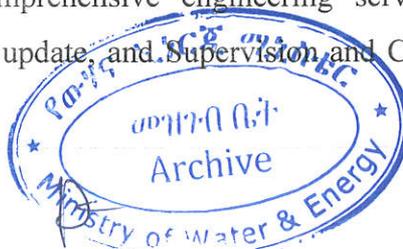
3. SPECIFIC OBJECTIVES

The Consultant will be overall responsibility of the Consultant to carry out the Detailed Engineering Design Document Review, Update, and Supervision and Contract Administration during the drilling borehole production activities for the Laha Town, Koiyisha Town and Wolkite town Water Supply Project. The Consultant shall work in close collaboration with all relevant stakeholders, including Regional, Zonal, and Woreda Water Offices as well as local project communities.

- **Detailed Engineering Design and study Review and Update:** Review and update the Detailed Engineering Design and study. Conduct a feasibility appraisal of alternative water sources.
- **Supervision and Contract Administration during drilling Borehole:** Supervision during the drilling's borehole: installation, development, test pumping to ensure specifications, oversee contractor performance, dispute resolution, progress reporting, and verification of payments and time extensions are met and water is sediment-free.
- **Preparation of Tender Document and Reporting:** Complete tender documents, Prepare BOQs, and final design and study reports with economic, environmental and technical justifications. Present findings and recommendations during client appraisal sessions.
- **Project Prioritization, Assessment, and Capacity Building:** The Consultant will prioritize project clusters based on resource adequacy, technical and economic feasibility, and environmental and social factors. A baseline assessment of existing WASH conditions and management systems will be conducted, accompanied by a capacity-building needs assessment. On-the-job training and knowledge transfer to client personnel will be facilitated throughout the project.

4. SCOPE OF THE ASSIGNMENT

The Consultant shall carry out comprehensive engineering services related to the detailed engineering design document review, update, and Supervision and Contract Administration during



the drilling borehole production activities for the Laha Town, Koiyisha Town and Wolkite town Water Supply Project.

The scope of services shall include, but not be limited to, the following tasks:

1. Design and study Review and Update

- Review, update, and finalize the detailed engineering design and study documents for the Laha Town, Koiyisha Town and Wolkite town Water Supply Project.
- Conduct on-site verification and assessment of the existing design parameters.
- Review and revise, as necessary, the water supply system layout, design criteria, and hydraulic analysis.
- Review and update the draft Bill of Quantities (BoQ), design drawings, and related documentation prepared by the previous consultant.

2. Assessment of Existing Water Supply System

- Conduct a comprehensive review and analysis of the existing water supply system across the entire project area.
- Evaluate the operation and maintenance (O&M) practices, revenue collection mechanisms, financial management, and customer service activities of the water utility.
- Review and assess the adequacy and reliability of the power supply for the water system and explore cost-effective energy alternatives.
- Assess the impact of current water quality on system components and the suitability of proposed materials and technologies.

3. Institutional Review

- Evaluate the functionality of the existing water board and utility management structures.
- Assess the relationships and coordination among the water board, management teams, the Water Bureau/Zone Water Office, and customers.
- Provide recommendations to strengthen institutional capacity and governance.

4. Training and Capacity Building

- Provide on-the-job training and skill transfer to the Client's personnel who may be seconded to the Consultant during the project period (as required).
- Ensure that the Client's technical staffs gain practical experience in supervision, quality control, and project management.

5. Recommendations and Tender Documentation



- Based on the review findings, recommend a technically and economically feasible water supply system from source to consumer.
- Prepare complete and updated tender documents (including technical specifications, BoQs, drawings, and bidding forms) for the implementation phase.

The Consultant shall exercise full professional care and diligence in performing the assignment and shall provide adequate qualified personnel, resources, and management to complete all tasks within the stipulated time frame.

5. GENERAL OVERVIEW OF THE PROJECT AREA

5.1. Location

5.1.1. Location of Laha Town

Laha town is situated in Melokoza woreda Gamo Gofa Zone, South Ethiopia Regional state and about 266 km South West of Regional woliata sodo. The town can be accessed via asphalt road elongated from Hawassa –Sodo-Selamber-Sawula- Laska- Laha road. The Geographical location of some point taken in Laha Town is located in the following table.

Table 1: A GPS location point was taken in Laha Town

| No | Town | Addendum, UTM, Zone -37 N | | | Remark |
|----|------|---------------------------|----------|-----------|--------|
| | | Easting | Northing | Elevation | |
| 1 | Laha | 233231 | 715228 | 1449 | |

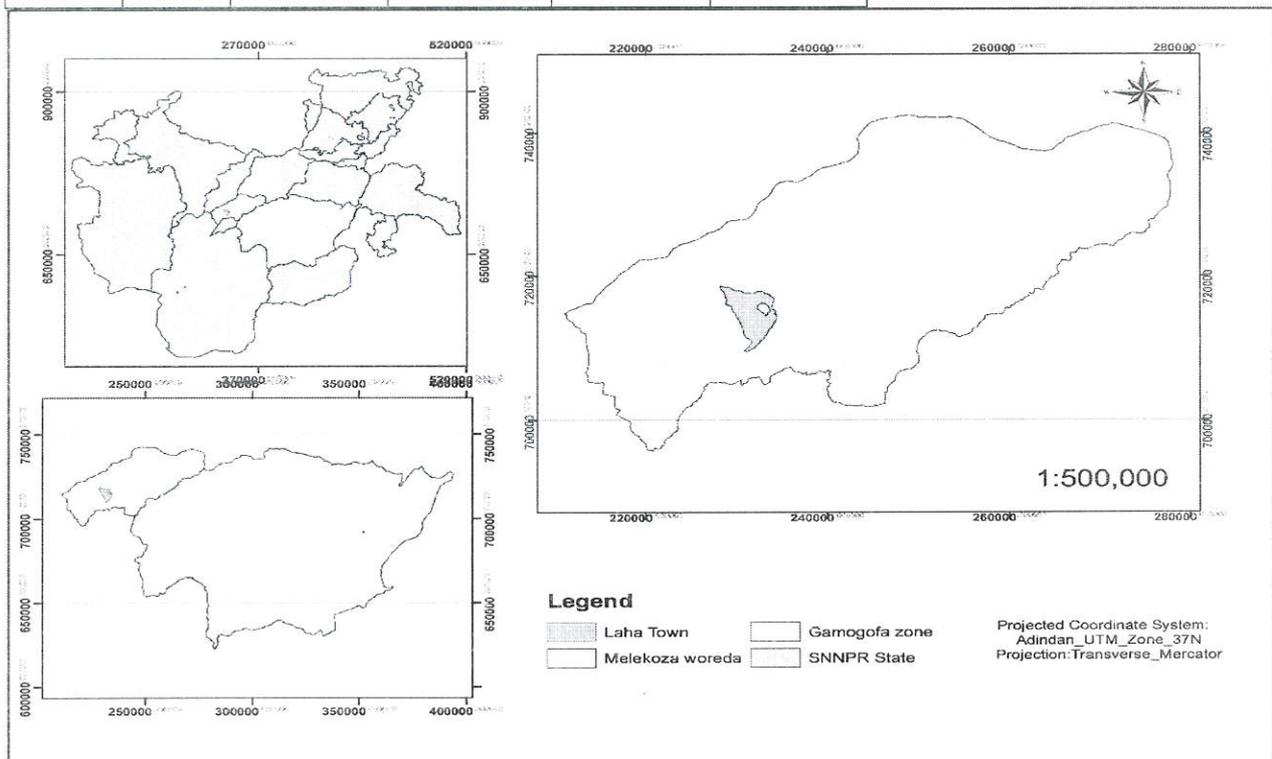


Figure 1: Location Map of Laha Town



5.1.2. Location Koyisha Town

Koyisha town is located in South West Ethiopia Regional state, Koyisha Woreda. It has got a total area of 225,376 hectares. Hills, plateaus, and valleys dominate the landscape. With such a rugged topography it has got altitude ranging from 700 to 2700 masl. The specific project area is Koisha town. Geographically, it is located in between 60 41'--60 43' North and 360 33' --360 36' East.

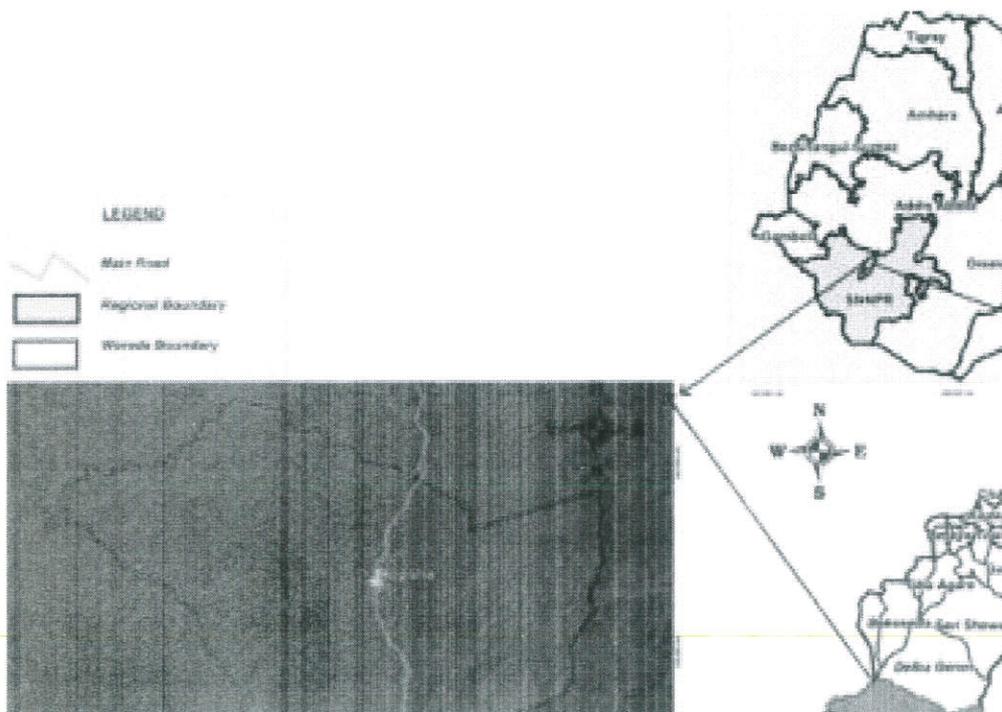


Figure 2: Location Map of Koisha Town

5.1.3. Location Wolkite town

Wolkite Town is located in the Central Ethiopia Regional States in Guraga Zone, 256km from Hawassa on the way to Hawassa-Shashemene–Batu-Butajera-Agena-Wolkite and 258km from Hawassa-Shashemene-Halaba-Wulbarga-Werabe-Butajera-Wolkite.

Table 2: Topographic Location of the Town

| Town_Name | Adindan, UTM, Zone -37N | | |
|--------------|-------------------------|-----------|-----------|
| | East | North | Elevation |
| Wolkite Town | 366015.40 | 916746.08 | 1907 |



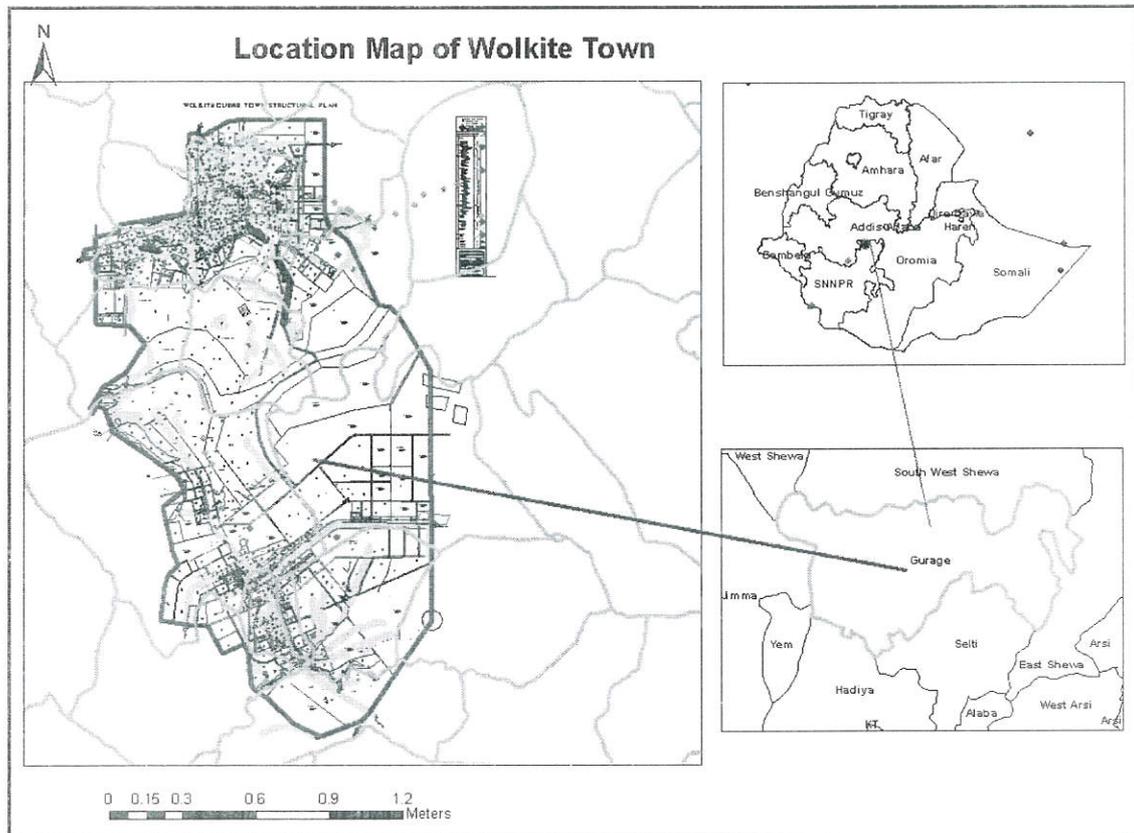


Figure 3: Location Map of Wolkite Town

5.2. CLIMATE

5.2.1. Climate Condition of Leha Town

The water consumption is less in area where the average temperature is low and high where temperature is very high. Laha Town has a minimum mean annual temperature of 18°C & maximum temperature of 25 °C with mean annual temperature of 20°C. Accordingly, Laha town falls under mean annual temperature between 18°C & 20°C. Hence the climatic factor of 1.0 is considered.

5.2.2. Climate Condition of Koyisha Town

The project area is in the Kolla agro-ecological zone. According to this study, Ameya station, relatively in the vicinity of the proposed project, is the nearest station from which the climatic data were inferred.

The rainfall regime of the area is bi-modal type; characterized by a double peak rainfall pattern with a maximum peak in July and August. The main rainy season often extends from June to October; small rains in March to May, the rest of the months are entirely dry.



According to Ameya met-station long year records, the mean annual rainfall amounts 1333.0mm at the project area. Mean monthly profiles illustrate local seasonal rainfall variation within the study area.

Long-term records of temperature, relative humidity, wind speed, sunshine hour and potential evapo-transpiration data of Ameya station have been analyzed by this study. The monthly mean temperature shows relatively small fluctuations; the range being from 21.3 in August to 24.5oC in March.

The mean annual maximum temperature at the project area estimated to be about 24.50c and the mean annual minimum temperature is 21.30c. In general, mean annual temperature is about 22.80c.

5.2.3. Climate Condition of Wolkite Town

The Wolkite is the capital of Gurage zone. The average elevation of the city is 1900m above sea level. Wolkite is a town located on a mountainous plateau, making it windy and cold. As such, it is one of the most woynadega climates in Ethiopia. Wolkite has a large discharge spring and groundwater options, but residents have not had access to safe drinking water for a long time. However, it is believed that the drinking water project which is currently being studied, will provide adequate response to the residents.

5.3. Existing Water Supply System

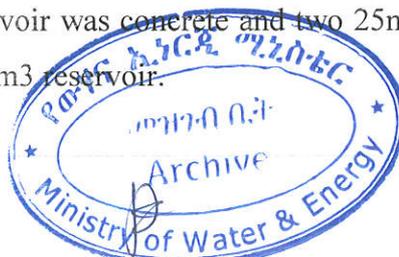
5.3.1. Existing Water Supply System of Laha Town

Laha town community does not get protected water source. The town community accesses water from the spring which is currently even though functional it's yielding is too less and which have met the demands of the town community. The data on the spring water have a discharge of 11l/s. The current problem associated with existing water source posed water shortage of the town population.

Table 3: - Laha Town Existing Water Supply Scheme Sources

| No | Name | Easting | Northing | Elevation | Q (l/se) |
|----|-------------|---------|----------|-----------|----------|
| 1 | Toba Spring | 238705 | 714959 | 1910 | 4.5 |
| 2 | SirsoSpring | 356692 | 821945 | 2127 | 1.5 |
| 3 | Auto spring | 235705 | 715952 | 2339 | 5 |

The existing reservoirs of Laha town water supply system are located at elevated ground in the compound of Laha town. 100m³ reservoir was concrete and two 25m³ sandwich reservoirs and one steel rectangular reservoir near to 100m³ reservoir.



Water is distributed to the existing distribution system by gravity from service reservoir. The total length of the distribution main is 12221m and the material in the distribution system is PVC. There are 5 water points from which only three is functional. The coverage of the distribution system is low with respect to the current extent of the area.

The distribution of the water in the town is limited to the area that has been developed earlier and does not cover every corner of the town including the recently developed area and their surroundings. The pipe network does not have proper design thus it is difficult to control the flow of water in the distribution system. Generally, the existing water distribution system does not have a capacity to give proper service to residents of the town.

5.3.2. Existing Water Supply System of Koisha Town

The water supply source of the Koisha town is mainly from spring and groundwater through boreholes drilled. The town has currently 6 boreholes, 4 of it fitted with hand pump and two still capped. Majo spring is one of the major springs which serve the Koisha town communities. It has a yield of about 1.1 liter/sec. There are two additional spring sources with combined yield of less than 0.3 l/s, which need rehabilitation of the capping structure and distribution main.

The water from the source is transported to town by GI pipe of two-inch size and is stored in 10m³ rotto tanker approximately after 1.7 km distance from the main source. From this storage water is distributed to different water points in the town.

The existing distribution system in the town is made up of Galvanized iron pipes (GI), and High ductile (HDP) pipes with the diameter range starting from 1-inch to 2-inch. According to the information obtained from town water office, the estimated total pipe length of the distribution network is more than 3.2 km.

Water from 10 m³ tank is transported by gravity system to the town by 2-inch GI pipe. This pipe line distributes water to different water points on its way. Accordingly, three water points found on the left side and one on the right side of the main line on different points. Totally, there are six water points with four faucets and shallow wells in the town for community water demand.

5.3.3. Existing Water Supply System of Wolkite Town

The major Wolkite Town water supply system source is from one spring and four boreholes.

The town has a water supply and sewerage enterprise. The existing water supply system of Wolkite town consists of a water source, service reservoir, Balancing Reservoir, Wet well, transmission mains, existing electromechanical equipment's and distribution system.



The Wolkite town water supply system is supplied mainly from Bojaber spring located at about 30 km to the southern side of the town in Cheha Woreda and Four existing boreholes (i.e., IRE and Rebu Boreholes) which has a yield of 4.5l/s and 7l/s, Two Tatessa Boreholes pump stations having a safe yield of BH1=9.4l/s and BH2=14.6l/s. In addition, there is one additional existing borehole at gubre sub city with a yield of 3 l/s though currently, it is not supplying water to the system due to a pump failure problem.

The Bojaber spring source measured by the floating method 261 l/s is estimated currently Wolkite Town use 63 l/s due to illegal connection, the product water supply to the town is not enough to serve the current population. There are 1035 households illegally connecting water from gravity main way to 500m³ Wet Well to 1000m³ Service Reservoir.

5.4. Population

5.4.1. Population of Leha town

The population of Leha town is estimated by different organization including the Urban Development and House Biro, Water supply master plan, and CSA. The census conducted year 2018 indicates that the population of Leha town is 5944, out of which 50.4 percent are males and 49.6 percent are females. The population of Leha town according to Urban Development and House Biro conducted year 2010 indicates that the population of Leha town is 5,113.

5.4.2. Population of Koisha town

According to municipality of the town, for the year 2017/18, the total population of Koisha town is estimated to be 5,372. Out of this figure 2,747 (51.13%) is male, while the balance 2,625 (48.87%) is female. There are 900 households, of which (12.77%) are female headed.

5.4.3. Population of Koisha town

The 2007 population and housing census of Ethiopia were used as a base for population projections. The projected population and maximum daily water demand at the end of design are become 31,151 and 12.31 l/sec respectively.

6. TECHNICAL REQUIREMENTS

Together with other requirements mentioned elsewhere in these terms of reference the following are the technical requirements of the assignment

The Consultant is expected to respond to all of these technical requirements in their proposal as a minimum level of compliance and to:



1. Demonstrate the depth of understanding of the technical requirements and project implementation,
2. Identify where quality and performance improvements can be made
3. Identify where technical innovations and creative solutions may be appropriately introduced to provide added value to the project.

7. CONSULTANT'S TEAM COMPOSITION

The Consulting firm shall be legally established firm and committed to put together a team of the required qualification with direct experience and excellent understanding in their area of engagement in the construction supervision and contract administration a package of the Laha Town, Koiyisha Town and Wolkite town Water Supply Project.

The consultant shall complete the team composition and task assignment in sufficient detail to ensure that all technical requirements fall under the responsibility of a named expert.

The consultant shall submit CVs for all the key staff in their proposed team. All CVs must meet the minimum requirements as indicated below. Resumes of the qualifications and experience of the key members of the team along with mandatory professional equipment's and transportation vehicles will be the key criteria used to evaluate proposals.

8.1.1. COMPOSITION OF THE CONSULTANT'S STAFF

In The team compositions of the key staffs for the consultancy service of the project is arranged by categorizing as per the Tasks.

Lamp sum part of the contract, which is detail design review & update.

Table: 4

| Key personnel for the consultant selection for the project | | | | |
|--|---------------------------------|--------------|--|--------------|
| S/No | Position | No of person | Qualification and Experience | Person Month |
| 1 | Project Manager/ Team Leader | 1 | BSc or above in water supply, hydraulic, water resources, civil, and environmental engineering with a minimum of 10 years of professional experience in the water supply sub-sector with a high credit to experiences in Team Leader / project management, construction supervision, and contract administration of similar/lager water supply projects. - Skill on AutoCAD and Water CAD ^ water GEMS is also a credit | 12 |
| 2 | Hydro geologist | 2 | BSc or above in Geology/Applied Geology/Hydrogeology with a minimum of 12 years of professional experience in the water supply sub-sector with a high credit to experiences in project management, construction supervision and contract administration of similar/lager water supply projects. | 4 |



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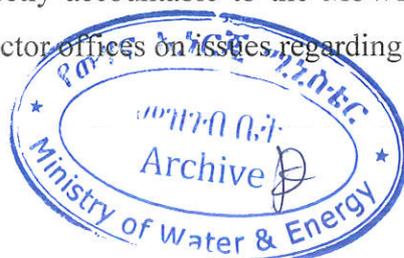
| | | | | |
|----|--|---|---|---|
| 3 | Water Supply/ Hydraulic Engineer | 2 | BSc or above in water supply, hydraulic, water resources, civil, and environmental engineering with a minimum of 10 years of professional experience in the water supply sub-sector with a high credit to experiences in project management, construction supervision and contract administration of similar/lager water supply projects. | 6 |
| 4 | Structural/Civil | 2 | M.Sc. / BSc. degree in structural or Civil related fields and Experience 8 and 10 (and above) respectively, in Civil and structural design Buildings and Water of water supply projects with similar scope and complexity. Renewed Professional license | 4 |
| 5 | Electromechanical Engineer | 1 | BSc or above in Electrical and/or Mechanical engineering with a minimum of 10 years professional experience in the similar/lager water supply projects with treatment plant. | 4 |
| 6 | Socio-Economist | 1 | BSc or above in Economics with at least 10 years with experience of two similar purpose project. The expert shall have the experience in effective management of safeguard measures a redressing procedure. | 3 |
| 7 | Environmental Expert | 1 | BSc or above in Analysis and Environmental Management He/ She should have qualifications in Environmental Engineering and preferable have an advanced in an environment impact assessment. | 3 |
| 8 | Water Quality Expert | 1 | BSc or above in Sanitary/ Environmental Engineering Chemistry or related field with minimum 6/8 years' experience in water supply and sanitation and related infrastructure projects. Experience in water quality. | 3 |
| 9 | Quantity surveyor | 1 | MSc or above degree in Civil with a minimum of 8 years of professional experience. | 3 |
| 10 | Structural Engineer | 1 | MSc or above degree in Structural/Civil related field/ Engineering with a minimum of 8/10 years of professional experience and construction supervision of large water supply Structural with similar scope. | 3 |
| 11 | CAD Expert | 1 | BSC in surveying or Diploma in AUTOCAD with minimum of 6 years similar working experiences in water supply project implementation | 3 |

8.1.2. EQUIPMENT

The Consultant shall be responsible for all logistical requirements, including but not limited to office space and furnishings, accommodation, consumables, utilities, vehicles, transportation costs, and costs of duplication or acquisition of all reports, maps and other data shall include in the technical and financial proposal.

8.1.3. CONSULTANT'S ADMINISTRATION

The consultant firm is directly accountable to the MoWE but works in cooperation with the Regional Bureau & local sector offices on issues regarding execution of the intended work.



Reports to be submitted for the project

- ❖ Monthly Progress reports and drilling well completion Report
- ❖ Inception reports
- ❖ Final details engineering design review & update report, drawings, BOQ, supervision construction during the drilling's borehole, development and test pumping of production Wells and tender document

Reports and Schedule of Deliverables

The consultant is expected to submit the following reports (5 hard copies and 5 electronic copies.) in due time, format and details acceptable as per national and international construction supervision and contract administration practices;

Table: 5

| Item No. | Deliverable (Report) | Deliverable Contents to be included but not limited to | Number of Copies | Time frame (M-Month) | Payment Schedule |
|----------|---|---|------------------------|----------------------|------------------|
| 1 | Draft Inception report (Phase-I) | The report includes: Intensive review of available documents and collected data, different thematic layers for multi-criteria overlay Detail Engineering Design & EM for Water Supply system investigation using overlay analysis, identified data gaps for further phase works and proposed methodology and final work plan for the next phases | 5 | M+1 | - |
| 2 | Final Inception report (Phase-I) | Final inception report submission after incorporating comments/feedbacks of Workshop-1 | 5 | M+1.5 | 10% |
| 3 | Draft Feasibility studies and Detail Engineering Design Document Review and update Report | Review and update the draft Detail design report considering the sources, transmission line pipe and fittings, electromechanical equipment sizing, distribution pipe and fittings sizing, power supply alternative sizing and recommendations with justification considering economic, technological and environmental issues. Prepare a detailed implementation plan for the installation, testing and commissioning of the project. | 5, 20-training manuals | M+4.5 | - |



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| Item No. | Deliverable (Report) | Deliverable Contents to be included but not limited to | Number of Copies | Time frame (M-Month) | Payment Schedule |
|----------|---|--|------------------|----------------------|------------------|
| 4 | Final Feasibility studies and Detail Engineering Design Document Review and update Report | Final Detail Engineering Design Document Review and update Report after incorporation of comments and suggestions from Workshop-3 | 5 | M+5 | 30% |
| 5 | Supervision construction during the drilling's borehole, development and test pumping of production Wells | The Supervisor the drilling borehole with all requirement specification depth penetration rate, and sample collection. The Supervisor shall ensure that the Drilling Contractor adheres to the depth interval for sample collection in the Drilling Contract or agreed upon otherwise. As a permanent record, the samples will be photographed | 5 | M+11 | 30% |
| 6 | Final Tender document for Detail Engineering Design and drilling boreholes with EM for Water Supply system. and update Report | Final Tender document for Detail Engineering Design Document Review and update and drilling boreholes with EM for Water Supply system. and update Report | 5 | M+12 | 30% |

8.1.4. Client's Input for the Service

The client will:

- ❖ Avail to the consultant copy of the contract agreement for the consultancy work
- ❖ Avail to the consultant the draft study and detail engineering design document to review and update report
- ❖ Assign project Coordinator,

8. PAYMENT MODALITY FOR THE CONSULTANT

Payment to the Consultant shall be made on a lump-sum basis, linked to the successful completion and submission of deliverables as per the agreed schedule. All payments will be made upon submission and approval of the corresponding reports by the Ministry of Water and Energy, following the incorporation of all comments and feedback provided by the Client.



Table: 6 Payment Schedule

| Milestone / Deliverable | Description of Work / Condition for Payment | Payment (% of Lump Sum Contract Amount) |
|-------------------------|--|---|
| 1st Payment | Upon submission and approval of the submission of Final Inception report within 45 days against equivalent after Final Inception Report, incorporating Client comments and feedback. lump-sum contract | 10% |
| 2nd Payment | Upon submission and approval of the Final Detailed Engineering Design Document Review and Update Report, after incorporating all Client comments and recommendations. lump-sum contract | 30% |
| 3rd Payment | Upon completion of the Supervision of Borehole Drilling, Development, and Test Pumping, confirming compliance with all technical specifications, including depth penetration rate and sample collection. time-based contract | 30% |
| Final Payment | Upon submission and approval of the Final Tender Documents and the Comprehensive Final Report, covering Detail Engineering Design Document Review, Update, and Electromechanical (EM) works for the Water Supply System. lump-sum contract | 30% |

