

## Terms of Reference (TOR)

### Package 1: Preparation of Maps of structures and pipe network of NWSC and water supply schemes at Lahan Municipality

#### 1. INTRODUCTION

Established in 1987, **WaterAid** Nepal is an international non-governmental organization focused on improving people's access to safe water, improved hygiene and sanitation. It works on the basis that water and sanitation are human rights, and are essential services vital for health, education and livelihoods.

WaterAid Nepal, Water Industry Partnership Project is conducting a detail assessment pipe network and existing structures of Nepal Water Supply Corporation (NWSC) in Lahan in Siraha district by recruiting a team of consultants. This Terms of Reference guide the consultant about assessment.

#### 2. BACKGROUND

In 2015, the government prepared a 15-year national WASH sector development plan for achieving Sustainable Development Goal 6-sustainable access to water and sanitation for everyone, every where by 2030. Although national water supply coverage is reported to be over 86%, only about 25% of current water supply systems are fully functional. A sustainable WASH sector is needed, with all agents playing a role in constructing, maintaining, monitoring and rregulating the supply of safe water to the whole population. Technical, advocacy, policy and planning skills need to be brought together, underpinned by government, business and aid funding to provide a whole system approach to WASH.

While there is a good national level plan and regulatory environment for water supply in Nepal, there is a gap in how these national level plans and policies are being delivered at local and district level. The effect is often seen as dis-jointed planning processes with gap-s in delivery and capacity. Recently shaping federal structure and elected local bodies have provided an opportunity to move ahead for achieving the goal and effective implementation of the Nepal Constitution of 2015. In order for the government to succeed in delivering their national water, sanitation and hygiene (WASH) plan, new and creative thinking is neded. Thinkig which goes beyond isolated construction projects.

WaterAid Nepal, Anglian Water Alliance and Nepal Water Supply Cooperation (NWSC) is modelling an alliance approach/project to delivering inclusive municipal-wide water sanitation

and hygiene (WASH) services in Lahan Municipality in Siraha District with a view to replicating the model at district, and ultimately, national level together with local communities and the government to trial a truly sustainable approach to municipality-wide water provision, making significant contribution to delivering Nepal's WASH plan and commitments and transforming the role of water utilities in Nepal for years to come. The overall objectives of the project is to support to achieve the Sustainable Development Goal for water and sanitation by implementing WASH sector plan. The specific objectives are to :

- a. Model a municipal-wide approach in Lahan as part of the district –wide model for Siraha district.
- b. Support the efficiency and expansion plans of NWSC in Lahan with a focus to reach marginalized and poor communities.
- c. Leverage the model in Lahan for district and national benefit.

Lahan is a medium sized town and municipality in Siraha district of Southern Eastern Nepal. It has a population of approximately 80,000. Siraha has a large group of marginalized people, particular Dalits. It is also amongst the 8 priority Terai districts of the government for WASH interventions. Water supply system in Lahan is currently managed by NWSC, a public utility organization and autonomous government body formed under the Nepal Water Supply Corporation Act 1989. It operates under the Ministry of Water Supply and Sanitation. It estimates only 35% of people are benefiting from piped water supply. Lahan municipality water supply has problems with leakage and contamination. Iron concentration also exceeds the accepted levels for deep bored water. Some of the challenges faced by the utility in Lahan are non revenue water, leakages, system management, customer support etc. According to the 27<sup>th</sup> Anniversary Annual report 2016, NWSC has been delivering services by using old and outdated pipes, electro-mechanical equipment which requires rehabilitation and further expansion according to their conditions. In addition, the major issue that NWSC is facing is the human resource management.

Based on the objectives above, the first five years of the initiative will have three phases. These are:

1. Establishing the project (8 months)
2. Supporting expansion in Lahan (2-3 years)
3. Leveraging the model in Lahan for district and national benefit (2-3 years or longer)

Recognizing the remnant of NWSC is water, the initial first three to four years will focus on water provision, though sanitation and hygiene are integrated in the extension component.

Interventions and support in later years are expected to have a larger sanitation and hygiene focus.

In order to ensure adequate and safe drinking water supply to the consumers, minimization of wastage of water and extend the service to marginalized groups, WaterAid Nepal seeks a qualified consultanting firm to to prepare mapping of the existing system.

### **3. RATIONALE**

4. In the current situation, functionality of water supply facilities is becoming a major issue in Nepal's WASH discourse. For efficiency of the system and its sustained operation, this area needs to be considered particularly from the angle of optimizing the existing network system to minimize the leakages, non-revenue water and not functioning structures of the pipe system networks in one hand. On the other, though small in quantity the expansion of the network by optimizing the system thereby generating additional volume of water, is aimed to serve unreached and unserved communities particularly focusing on marginalized communities and commercial area/establishments in the service areas. This at the end will help for generating revenue for NWSC. For this operational efficiency of the system is required and NWSC's own capacity and internal management mechanism needs to be enhanced for the purpose. To realize all the aforementioned interventions, the necessary preparatory works as reflected below in the relevant section needs to be carried out efficiently, effectively and with good quality work as this forms a very basis for further intervention in this regard of ensuring access of consumers, specially unreached and unserved groups to adequate and safe dwelling water supply at an affordable tariff through the optimization technique, though expansion could be small event to start with.

Therefore WAN is intended to have an expert team of consultant to commence the work within a limited time thereby fulfilling the expectations of WAN team and assuring the quality at most. The hiring of consultant also helps WAN not only in realizing its purpose but also helps to bring their best practices and learning gained from their engagement in the past from the similar nature of the works.

## 5. OBJECTIVE OF THE ASSIGNMENTS

Overall objective of this assignment is to prepare mapping of structures and pipe networks and beneficiaries mapping of the NWSC in Lahan municipality in achieving universal and equitable access to safe and affordable drinking water for all in the city by optimizing the water. Specific objective will be to:

- Know the coverage of water supply of existing and newly added wards of Lahan municipality with gaps identification on the elements of safely managed drinking water services; accessibility, availability and quality
- GIS Mapping of water supply network of existing system with recommendations of improvements and future expansion of the system.
- Schematics drawing of structures in Autocad within NWSC Lahan premises with necessary technical detailings
- Location of marginalized groups/ethnicity and the unserved/unreached groups at NWSC Lahan service area

## 6. SCOPE OF THE ASSIGNMENT

Scope of assignment will be to identify, locate and functionality status of structures, fittings, pipe networks and unserved/unreached area of NWSC Lahan and existing/underconstruction/planned piped water supply system coverage area in Lahan municipality in the following areas:

- Mapping of existing system detailing with all its components in GIS Platforms and pipe networks modeled in computer software EPANET including functional status and location of fittings in mains and branches of NWSC Lahan
- Produce site schematics drawing to the scale in Autocad platform of structures, pipenetworks, boreholes, meters, filters, pumps, valves including functional status, and flow direction and information about current status and dead storage level of Sedimentation tank and Overhead tank by using standard survey equipments inside boundary of NWSC Lahan
- Mapping of communities/ clusters those are not yet reached by NWSC coverage in Lahan municipality and locating/recommending the areas for potential production points, treatment facility and other required components
- Mapping of existing/underconstruction/planned piped water supply system coverage area and their components in GIS Platforms and pipe networks modeled in computer software EPANET in Lahan municipality (ward no 1 to 24).

## **7. Methodology**

Information will be collected and analyzed through, but not limited to, detail survey and primary observations but also walking the network, document review, interview, field observations, focus group discussions and workshops.

## **8. RESPONSIBILITIES OF PARTNERS**

### **7.1. RESPONSIBILITIES OF CONSULTANT**

- Reviews of relevant documents
- Finalize methodology and work plan in consultation with WAN to undertake the aforementioned tasks and assignments
- Prepare, submit and present inception report
- Manage the field visit and community consultation as proposed
- Prepare draft report based on agreed topics with and conduct debriefing
- Provide three copies final report and e-copy of drawings and six copies of colour print in A1 of each size drawings to WAN within the agreed time frame after incorporating comments

### **7.2. RESPONSIBILITIES OF WATERAID NEPAL**

- Provide technical and facilitation support on finalization of the methodology as for undertaking the tasks and assignments
- Establish linkage between NWSC and consultant for field movement and support
- Provide timely inputs and comments on reports
- Necessary coordination with the relevant stakeholders

## **9. KEY DELIVERABLES**

- An inception report and presentation after a week from signing of the contract that explains; understanding of the assignment, detail methodology and timeline for commencing and finalization of the assignment.

- A draft report of the findings by 10 February 2017 and presentation on it before WAN team
- A final report to WaterAid Nepal from one week after receiving comments from WaterAid Nepal

#### **10. REPORTING LINE**

The consultant shall report to the Project Manager, Water Industry Partnership Project, WaterAid Nepal Country Office.

#### **11. TIME FRAME**

The consultant will undertake the assignment within a period of 2 months (1 month for preparation, data collection and mapping, 1 month for analyzing and report generation) from the date of signing the contract.

#### **12. REQUIRED QUALIFICATIONS**

WAN will recruit a consulting firm represented by technical expertise on GIS, Water Engineer, Survey specialist, and Sociologist at minimum for conducting this study. WAN will guide the consulting firm for ensuring the quality of the study. The consulting firm interested in this work is required to have the following qualifications:

- Experience in GIS and EPANET platform with sound knowledge on water quality principles and standards
- Minimum of postgraduate degree in respective disciplines
- Good working experience in detail survey and working in AUTOCAD platform
- Good data analysis skill and report writing skill

#### **13. TERMS AND CONDITIONS**

- WaterAid reserves the right to accept or reject any proposal without providing any verbal and /or written rationale
- This assignment shall be undertaken in full consultation with WAN

- The consultant shall submit time sheet involved in the assignment

#### 14. SELECTION CRITERIA

The applicant is required to submit a proposal outlining methodology, detailed budget and CV of proposed resource persons that clearly highlights previous similar work experience. The proposal should demonstrate sound knowledge, technical skills and capability as required by the nature of the work of the assignment and understanding the requisite tasks set forth in the scope of work. The necessary documents such as – renewed registration, tax clearance, PAN/VAT, latest audit report, tax exemption (if relevant), and related experiences etc. are also required to be submitted.

The deadline for submission of EOI is 2<sup>nd</sup> January, 2018.

The proposal shall be submitted in a sealed envelope with the subject line mentioning “**EOI for Package 1: Preparation of maps of structures and pipe network of NWSC and water supply schemes at Lahan Municipality**” to the following address:

G.P.O. Box 20214  
WaterAid Nepal  
Nakhipot 14, Lalitpur, Kathmandu, Nepal.  
Email: [wateraidnepal@wateraid.org](mailto:wateraidnepal@wateraid.org)

*Please note that WaterAid Nepal will not entertain telephone calls regarding the proposal.*