

Term of Reference (ToR)

For the detailed design of three water supply systems in Vientiane, Xayabury, and Luan Prabang Provinces

I. Introduction

East Meets West (EMW) is an international NGO headquartered in the United States and has offices in Africa and Southeast Asia including Laos. EMW began working in Laos from 2014 to 2017 with Water Sanitation Hygiene Program called WASHOBA with support from the Australian Department of Foreign Affairs and Trade.

Since 2018-2022, EMW has been extension working on Water Sanitation Hygiene Program called Engaging Public, Private, and Civil Society Groups in WASH Through Women-Led Output Based Aid (WOBA) with support from Charity: water. And EMW will start work on Water Sanitation Hygiene Program called WOBA 4 in Laos from 2024 until 2026.

Currently, EMW is looking for a firm to conduct the feasibility study and detail design for 2 medium water systems in Vientiane and Luang Prabang provinces and improve the water treatment plant for one water system in Xayabury Province, the list of the target site is below:

1. Medium site water system at Muen district town, Vientiane province (3 villages with 2,430 households)
2. Medium site water system at Pakxueng village cluster, Pakou district, Luang Prabang province (5 villages with 801 households)
3. Improve water treatment plant for Thongmixay water system at Thongmixay district, Xayabury province (7 villages with 1,201 households).

II. Socio-economic survey

A. Survey preparation

- Data collection Preparation of the list of poor and gender and social inclusion households (Identify how projects can effectively address the needs of gender and social inclusion and ethnic community households)
- Definition of financial support mechanism
- Data collection
- Results analysis

B. Financial analysis

- Least cost analyses
- Calculation of investment subsidy
- Estimate of water tariffs

III. Topographic survey

- Collect the necessary topographic data for the design:
- Coordinate
- Elevation
- Profile
- Cross section
- Soil investigation for the structural design.
- Alignment of the transmission pipe from intake to the water treatment plant (WTP) and distribution pipes network with obstruct remark.

IV. General descriptions of the survey

- Service area
- Existing Water consumption data and daily water consumption per capita to design the water demand
- Water source survey and water quality testing
- Identify the suitable intake location
- Alignment of the transmission pipe from intake to the WTP
- Identify the suitable place to locate the WTP
- Alignment of the distribution pipes
- Basic soil investigation
- Initial environmental impact assessment (IEIA)

V. Design works

- Conduct the general layout, profile, and crosssection of the pipe network.
- Identify the service area
- Calculate the water demand for sizing of the WTP and service period
- Sizing the pipe network
- Design the other water supply facilities
- Intake design
 - Design the structure of the intake
 - Design the pumping system with accessories
- Water TreatmentPlant Design
 - Mixing tank
 - Flocculation tank
 - Sedimentation tank
 - Filtration tank with backwash system
 - Design chemical injection system
 - Underground water tank and water tower
 - Sizing the transmission pipe from intake to WTP
 - Sizing the distribution pipes and fittings
 - Electrical system

➤ Reporting

- Attach the drawings with the report
- Detailed design report
- Technical Specification for the construction
- Bill of quantity (BoQ)
- Bidding document if required by the project owner

VI. Design validation

After completion of the feasibility study, the firm will report the outputs to the Project Streeting Committee for approval.

VII. Submission of the design

After validation of the design, the designer shall submit the document as detailed below:

- 2 full sets of drawing on paper A3
- 2 full sets of the report and technical specifications in A4
- 2 full sets of electronic data in CD/USB

VIII. Project timing

- The proposal submitted to the EMW office before 14 March 2023
- Completed feasibility study report and final submission to EMW on 28 April 2023
- Completed detailed design work and final submission to EMW on 28 July 2023

Contract person:

1. Mr. Touy PHOMMALIN, WOBA project coordinator, Tel: 020 294 00 925.
Email: touy.phommalin@eastmeetswest.org
2. Miss. Phonesavanh PANTHALA, Admin and finance officer, Tel 020 282 66 386.
Email: phonesavanh.panthala@eastmeetswest.org