Model Terms of Reference: Assessment of Waste Stabilization Pond (WSP)

Location….. India

Issued on: Date….

TECHNICAL SUPPORT UNIT:

iihs™
INDIAN INSTITUTE FOR HUMAN SETTLEMENTS

IN ASSOCIATION WITH:

Gramalaya | Keystone | Consortium for DEWATS Dissemination Society

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1. Introduction

Include relevant information which is necessary.

The [MENTION ULB NAME], invites technical and financial proposals from organisations and/ or individuals as follows:

No.	Name of work	Time Period for work completion (weeks)	Last date and time for submission of proposal
1	"Sewage and Faecal Sludge Treatment in [MENTION LOCATION]: Current Status, Proposed Plans and Recommendations for Improvement"		

Eligibility: The following are necessary conditions for participation in this Request for Proposal (RFP):

a. At least five years of experience in consulting, advisory and research services in the areas of environmental assessment and engineering with specific focus on wastewater treatment, AND
b. Have successfully completed at least three assignments on performance assessment of sewage treatment plants (STP) of capacity not less than 10 MLD.
c. Organisations/ Individual with experience in network design or implementation management of sewerage systems is desirable.

2. Background

Include relevant information which is necessary.

The rationale for the proposed assessment study are:

List out the rationale for carrying out the proposed assessment.

3. Objectives of the proposed work

The objectives of the proposed assessment are:

1. Assess the coverage and effectiveness of the existing WSP for safe treatment and disposal of sewage and fecal sludge for existing and future loads with a view to identify the critical areas of concern
2. Preparation of an action plan, outlining clear prioritization, based on analysis of benefits and costs

4. Scope of work

The proposed scope of work is:

1. Assessment of the WSP design and performance;
2. Assessment of the present management arrangements, operation & maintenance practices on WSP performance;
3. Analyze the implications of the proposed DPR (for extension of the sewer system [MENTION ULB NAME]), specifically in respect of the sewage treatment options proposed for the new connections and an increase in coverage.
4. Project and estimate the volume of sewage and fecal sludge that can be treated for different scenarios.
5. Recommend and Prepare implementation action plan for changes or improvements – prioritizing actions, benefits, indicative costs.
6. Estimated the sludge removal frequency from the primary pond and recommend way of treatment and reuse.

The expected output of the proposed assessment is provided in Section 5.

5. Expected outputs

The expected outputs are listed below:

1. Documentation of WSP design details, layout etc. with a review summarizing key features, adequacy and issues with design if any
2. Input and Output analysis (Operational), in two parts:
    a. Based on secondary data available with [MENTION ULB NAME] collected over xx-year time period, accounting for all flows at WSP and including FS flows at the pumping stations (from decanting station records) shall be analyzed. An estimate of contribution from each ward to the wastewater flow using data from pumping station records or such similar data sources is to be prepared.
    The analysis shall cover each Unit Process within WSP such as equalization or storage, screening, grit removal, pond-1, etc. and including energy use. The flows and waste characteristics (BOD, COD, Solids at each unit processes and all the parameters prescribed by CPCB at WSP inlet and final treated water outlet) shall be covered in the analysis. Pathogen load in and outlet of the pond also to be considered.
    b. Based on Primary data: Design and collect primary data for suitable period – with flow measurement and waste characterization as per the above requirement (2a). Primary measurement is suggested to address the gaps in the secondary data and for data quality assurance.
        i. Spatial contribution of incoming sewage to WSP with reference to zone wise or ward wise as catered by [MENTION ULB NAME]
        ii. Seasonal variation of the flow to WSP during dry and wet spells with reference to [MENTION ULB NAME]
    c. Comparison of the above analysis against design requirements

3. Report of infrastructure adequacy with details including capacities, current conditions both at the WSP and FS disposal stations, flow measurement devices and laboratory
4. Documentation and analysis of O&M practices and issues:
    a. WSP and FS disposal stations – O&M practices and issues, troubleshooting, performance monitoring, data collection and analysis
    b. Sludge management at WSP: Covering the sludge generated from various ponds and fecal sludge brought in externally
    c. Institutional arrangements and protocols for O&M – if outsourced scope of contract and how it is managed
    d. O&M expenditure and management
5. Proposed DPR review and analysis:
    a. Review of proposed rejuvenation of WSP in Phase -II DPR
    b. Coverage aspects such as new connections and increase in flows, implementation timelines and available capacities at WSP
    c. Assessment of proposed treatment plants – design and technology of the Phase -III DPR
6. Review and recommendation of national and international best practices for [MENTION ULB NAME]:
    a. WSP O & M
    b. FS emptying and loading on WSP, and Co-disposal of FS in WSP
    c. WSP sludge withdrawal and reuse
7. Preparation of action plan and recommendations covering:
    a. Based on current inflow and O&M practices, national and international best practices suggest changes as needed for loading and O&M practices resulting improvement of performance of WSP; this should also cover any changes to FS emptying procedures
    b. Repairs, renovation of WSP infrastructure and FS receiving and pumping station infrastructure for performance improvement
    c. Proposed DPR: any changes to revamping plan of WSP
    d. Suggestions on treated wastewater reuse/ disposal sludge management including plans to reuse WSP sludge
    e. Institutional reforms for better O&M, performance monitoring improvements such as flow measurements, sampling and analysis, data collection and reporting
    f. An action plan, outlining clear prioritization, based on analysis of benefits and costs.

6. Qualification of Key Professional Staff

The organisations and/ or individuals shall provide a competent and qualified team to work closely with the [MENTION ULB NAME] to accomplish the assessment in time-bound and professional manner. The organisations and/ or individuals shall be free to suggest the mix of competencies and personnel to be deployed over the 8-week

period, with adequate justification on how the mix achieves the assessment objectives. An indicative mix of the team composition is provided in Table 2 for guidance only, and organisations and/ or individuals shall be free to suggest their own teams. Deployment must be indicated for each position proposed. Details of Team members, roles, and deployment proposed is to be provided as per the format in Annexure III.

Table 2: Suggested Competencies and Roles in Team for the Assessment			
No.	**Position**	**Role**	**Minimum Qualification**
1	Senior Sewage/ Wastewater Treatment Expert (Task Manager)	Overall task management, interface with [MENTION ULB NAME], Design of Assessment and Reporting	Post-graduation in relevant discipline with specialization in wastewater treatment and 15 years of relevant experience; Experience managing wastewater and sludge treatment design and feasibility studies; Experience in wastewater treatment systems performance assessment will be an advantage.
2	Sewage/Wastewater Treatment Specialist	Design and analysis of WSP performance characteristics	Post-graduation in relevant discipline with specialization in wastewater treatment and 12 years of relevant experience; Experience managing wastewater and sludge treatment design and feasibility studies;
3	Sewage/Wastewater Treatment Specialist	Design and analysis of WSP performance characteristics	Post-graduation in relevant discipline with specialization in wastewater treatment and 12 years of relevant experience; Experience in wastewater treatment systems performance assessment.
3	Senior Hydraulics Specialist	Design and analysis of sewage network performance characteristics	Post-graduation in relevant discipline with at least 10 years of experience in network design; and hydraulic diagnostics of operational sewer network

The team shall comprise of experts/specialists and include the necessary supporting staff for data collection and analysis.

7. Deliverables

The deliverables and timelines are provided in the Table 3.

Table 3: Schedule of deliverables		
No.	**Deliverables**	**Timeline (from the date of award of work) in weeks**
1	Inception Report containing all secondary information compiled, methodology, work plan and field visit sample and field visit schedule	
2	Interim report containing items 2-6 of expected outputs	
3	Draft final report with action plan	
4	Final report	

8. Terms of Payment

The terms of payment provided below:

- xx% of the contract value on acceptance of the inception report
- xx% of the contract value on acceptance of the interim report
- xx% of the contract value on acceptance of the draft final report
- xx% of the contract value on acceptance of the final report

9. Guidelines for submitting proposal

1. The proposals shall be submitted in two parts, viz., Technical and Financial and should follow the forms given in Annexure 2 and 3 of the ToR. The "Technical" and "Financial" proposals must be submitted digitally (in MS-Word) in two separate documents to the email [INSERT EMAIL ID]. The first document suffixed "TECHNICAL PROPOSAL" shall include the profile of the firm/organization or Individual, the Offeror's general experience in the field of assignment, the qualification and competency of the personnel proposed for the assignment and the proposed approach and methodology for the scope of work, work plan and expected outputs as mentioned in the ToR. The second document suffixed 'FINANCIAL PROPOSAL' shall contain the detailed price offer for the work. The price should be inclusive of all taxes.
2. Technical Proposal shall contain:
    a. A brief description of organisations and/ or individuals and details of assignments of a similar nature carried out in the last 5 years and a 2-page CVs of the staff proposed, duration of the assignment, and their previous experience. Format for providing details on assignments of similar nature successfully completed during last 5 years is provided in Annexure I.
    b. Study approach, methodology (describing secondary and primary data collection including flow measurements and wastewater sampling etc.), an implementation schedule and detail of outputs.

3. Financial proposal to be presented separately. This should include details of remuneration and time of personnel, detailed expenses based on activity, and expected schedule of payments. Format for financial proposal is provided in Annexure III.
4. Any comments, suggestions that improves the quality of proposal, and clarifications are to be addressed to [INSERT NAME AND EMAIL ID] before [INSERT TIME AND DATE].
5. Organisations and/ or individuals submitting proposal may request for a site visit. All visits shall be coordinated by the [MENTION ULB NAME]. Any expenses in terms of travel to Tiruchirapalli, etc. will be borne by the Organisations and/ or individuals making the proposal.
6. All samples will have to be tested in in NABL accredited labs or labs of international repute. The proposal needs to indicate the names of the selected labs.
7. The work has to be carried out in co-ordination with the [MENTION ULB NAME]. It will be necessary to make periodic presentations and attend meetings as required with the [MENTION ULB NAME]. The proposal has to detail out requirements from [MENTION ULB NAME]and the approach to involve [MENTION ULB NAME] officials for data collection, review and sign-off on key findings.

10. Selection procedure

The proposals will be evaluated by the Selection Committee of [MENTION ULB NAME]. The weightage for the Technical proposal is 70% and the Financials 30%.
The criteria for evaluation of the technical proposal will be:

a. Experience in similar such projects (STP performance assessment, sewer network, project management or implementation experience)
b. Understanding of the scope of work and expected outputs
c. Approach and methodology proposed
d. Resources/ plan for measurement and testing (wastewater flow, quality)
e. Data collection and management plan
f. Qualification and experience of staff and deployment plan
g. Activity schedule and timelines

Annexure I: Format for assignments of similar nature successfully completed during last five years

No.	Name and brief description of the assignment	Client	Duration and Year of completion	Amount (equivalent Indian Rupees)
1				
2				
3				

Use additional rows if needed. Please provide scanned completion certificates of atleast 3 recent similar assignments.

Annexure II: Format for Details of team members, roles, and deployment proposed

No.	Name	Position with-in the firm/ organization	Role in the proposed assignment	Estimated mandays of involvement
1				
2				
3				

Annexure III: Format for Financial Proposal

No.	Item	Units (Specify)	Rate (Rs.)	Amount (Rs.)
A	**Professional Fee**			
1	Team Member 1	Days		
2	Team Member 2			
3	Team Member 3			
4	Team Member 4			
5	Team Member 5			
	Fee Total			

B	Expenses	Units (Specify)	Mode	Unit Rate	Amount (Rs.)
1	Travel				
a	Out-Station Travel	Number of Round Trips			
b	Local Travel	Days			
	Travel Total				
2	Food & Boarding				
	Stay	Person-days			
	Food & Subsistence/Per Diems	Person-days			
	Food & Boarding Total				
C	Wastewater sampling and analysis charges				
	Test 1 (Specify)	Number of Samples			
	Test 2 (Specify)				
	Add more rows as needed				
D	Other Expenses (specify)				
	Add more rows as needed				
E	Taxes and other Statutory (Specify)				
	Service Tax				
	Total				