TERMS OF REFERENCE

Assignment/Project Title: Preparation of comprehensive strategy and action plan for revival of defunct schemes under Public Health Engineering Department

1) BACKGROUND AND OBJECTIVES

The PHED in Assam has been implementing three major GoI sponsored programmes in RWSS sector. These are (i) Minimum Need Programme (MNP), (ii) Accelerated Rural Water Supply Programme (ARWSP), and (iii) National Rural Drinking Water Programme. In 2009, the Accelerated Rural Water Supply Programme was modified as the National Rural Drinking Water Programme (NRDWP) with major emphasis on ensuring sustainability of water availability in terms of potability, adequacy, convenience, affordability and equity, on a sustainable basis, while also adopting decentralized approach involving PRIs and community organizations. Assam PHED has also been implementing sanitation programmes. This includes the Centrally Sponsored Swachh Bharat Mission under which over 18 lakh individual toilets have been built.

There are approx. 9000 small and medium piped water supply schemes functioning in Assam as in 2018. However due to lack of proper operation and maintenance activity around 2000 water supply schemes are in defunct status. These schemes need immediate attention in terms of the functionality of the schemes for its revival. The present service level of the PHED water supply is around 40-55 LPCD with intermittent supply hours. PHED also has a plan to enhance the service level to 70 LPCD on 24X7 basis in line with the **Goal number 6 of SDG: Ensure availability and sustainable management of water and sanitation for all.**

2) NEED FOR PREPARING A REVIVAL STRATEGY AND ACTION PLAN FOR THE DEFUNCT SCHEMES

Approximately 2287 schemes across 33 districts have been identified which are in defunct status. These schemes are mostly single village /single habitation schemes based on ground water source. However multi habitation/multi village schemes are also identified having surface water source. These schemes are in defunct stage mainly because of the operation & maintenance failure. Lack of house connection, absence of cost recovery, lack of budgetary support from the department for O&M also contributed to the present status of these schemes. The District wise numbers of defunct schemes are provided below –

Sl no	Name of the District	Number of Defunct Scheme
1	Dhemaji	48
2	Nalbari	66
3	Barpeta	59
4	Nagaon	98
5	Lakhimpur	56
6	Dhubri	92
7	Kamrup (Metro)	84
8	Kamrup (Rural)	191
9	Jorhat	33
10	Sivsagar	60
11	Baksa	47
12	Biswanath	27
13	Bongaigaon	47

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Sl no	Name of the District	Number of Defunct Scheme
14	Cachar	46
15	Charaideo	35
16	Chirang	97
17	Darrang	34
18	Dibrugarh	82
19	Dima Hasao	114
20	Goalpara	57
21	Golaghat	136
22	Hailakandi	44
23	Hojai	49
24	Karbi Anglong	112
25	Karimganj	134
26	Kokrajhar	88
27	Majuli	9
28	Morigaon	76
29	South Salmara	16
30	Sonitpur	73
31	Tinsukia	45
32	Udalguri	84
33	West Karbi Anglong	48
	Total	**2287**

PHE department has now keen to revive the schemes to enhance the water supply coverage in the rural areas of Assam utilizing the infrastructure already available with them. In view of this a comprehensive revival strategy for the defunct schemes as well as a well defined action plan needs to be prepared for PHED for taking up the schemes phase wise.

3) OBJECTIVE OF THE ASSIGNMENT

The objective of this assignment is to provide Technical Assistance to Public Health Engineering Department for preparation of strategy and action plan for revival of 500 identified defunct schemes in various districts in Phase – I.

4) SCOPE OF WORK

The consultant will make a visit to each and every selected defunct scheme (Total 500) in each of the districts to make an assessment of the current situation and condition of the scheme. The Scope of work for the consultant is illustrated below

i) **Situation Assessment:** The consultant will make reconnaissance visit to each and every identified defunct schemes of PHE and carry out detailed condition assessment and Geotag all the assets physically seen. The following activities should primarily be covered during the situation assessment stage

   a) Assessment of the distribution pipes/clear water pumping main/raw water mains laid and their residual life

   b) Assessment of civil and electro mechanical components of the water supply system including the Water treatment plant and other pumps and motors. The consultant will assess the residual life of the civil and electrical components of the system

   c) Water Quality report

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d) The consultant will also collect data on the area of jurisdiction of the project, number of house service connection, length of distribution network, population served, designed LPCD, supply hours, water quality information, year of first operation of the scheme, revenue information (demand collection balance statement of user charge), information on yearly/monthly O&M cost incurred, information on existing liability of the scheme etc.

ii) **Mapping of Existing Distribution Network:** The consultant will make best possible effort to prepare a map showing existing distribution network within the scheme. The map should depict the material of pipes used along with diameter of the pipes.

iii) **Preparation of Option Study:** Based on the detailed condition assessment, the consultant will prepare option study for the scheme based on the following three options. However while preparing the plan detailed feasibility for all the three options should be carried out.

a) **Option A:** Detailed plan to be prepared for revival of the scheme as per designed service level.

b) **Option B:** Detailed plan to be prepared for revival of the scheme for enhanced service level (Upto 70 LPCD)

c) **Option C:** Detailed plan to be prepared for revival of the scheme for converting the scheme to 24X7 supply scheme @70 LPCPD

Preferably option C should be aimed for. However depending on the situation option B and Option A can be explored.

iv) **Prepare Detailed Plan:** While preparing the detailed plan all civil, electrical mechanical component of the scheme to be assessed in details for its adequacy for revival and any addition of equipments /civil works has to be incorporated in the detailed plan for each of the scheme. Source adequacy to be checked including the water quality as per IS 10500:1991.

v) **Prepare service improvement plan:** The consultant will prepare detailed service improvement plan based on Option B and Option C.

vi) **Preparation of drawings:** The consultant will prepare engineering drawings(GA Drawings) for any additional components (Civil/Electrical/Mechanical) for the Detailed Plan

vii) **Preparation of Detailed Cost Estimate:** The consultant will prepare detailed cost estimates for each scheme and each of the evaluated options. Cost estimates shall be based on the bill of quantities derived from the construction drawings resulting from detailed engineering design. The rates shall be adopted from Schedule of Rates of the State, as may be applicable. For the non SR items the detailed rate analysis shall be attached. For the standard designs items, the unit rate shall be devised from the cost estimate of one unit. The bought out non SR items shall be based on the market rates substantiated by the quotations. The detailed specification for procurement of such items shall be given.House connections with meters will be provided in the project cost.

viii) **Preparation of O&M cost:** O&M cost, inclusive of manpower, maintenance and replacement of machinery and material, etc., should be made for a period of 5 years and 10 years.

ix) **Preparation of Road Map and Action plan:** The consultant will prepare detailed road map and action plan for the department for the implementation of the revival plans. This road map will primarily include a time frame for implementation, a work plan and a resource mobilization strategy.

5) SCHEDULE OF DELIVERABLES

S. No.	Particulars	Activity	Time Period
1.	Inception Report	• Inception activity • Meeting with client • Finalization of approach and methodology • Work Plan	• At the end of 2nd weeks
2.	Detailed Condition assessment Report	• Detailed condition assessment of the schemes • Feasibility Study of the project. • Source sustainability and dependability. • Critical issues in maintenance of existing WS scheme	• At the end of 2.5 months
3.	Preparation of Detailed revival plan	• Prepare scheme wise detailed revival plan • Preliminary design report for revival • Preparation of detailed cost estimate • Preparation of O&M cost	• At the end of the 3.5 month
4.	Preparation of Service Improvement Plan	• Prepare service improvement plan based on the feasibility on the option study • Prepare cost estimate for service improvement plan	• At the End of 4 Month
5.	Submission of road Map and action Plan	• Prepare work Plan for implementation of the revival plans • Resource mobilization strategy	• At the End of 4.5 Month
6.	Submission of Final Report	• Recommendation from the Study • Executive Summary • Compilation of Reports	• At the end of 5 Month

6) DURATION OF THE CONTRACT

Contract will be for 5 months (including mobilization and waiting periods for approval and comments from the Client)

7) TEAM COMPOSITION

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Sr No	Position	Nos	Duration (months)
Key Professionals			
1	Team Leader cum Water Supply Expert	1	5
2	Water Supply Engineer	2	5 Each
3	Institutional Specialist	1	2
4	Financial Management & Tariff Specialist	1	1
5	Civil Engineer	2	5
6	Quantity Surveyor	2	4
Non Key professionals			
6	Support Engineer	10	4 each
7	CAD Draftsman	2	4 each

Personnel Qualifications

Complete CV with details of education, experience and language skills must be shared for the following personnel. The agency may propose additional positions and/or deploy additional staff in the proposed positions. The key positions are as follows:

Sl no	Position	Qualifications and Experience	Task Assigned
1	Team Leader cum Water Supply Expert	• Masters in Civil Engineering or relevant field • 15 years in project planning, design, implementation/ supervision, monitoring of water supply systems including water treatment plants, policy and regulation in water supply system, O&M. • Experience in rural water projects preferable • Strong focus on policy advocacy in water supply/waste water sector • Proficiency in Hindi and English	• Overall team lead • Provide strategic input to the team for the option study, selection of technology etc • Review and submit all outputs to the client
2	Water Supply Engineer	• Degree in Civil Engineering or relevant field • 7 years in water Supply projects mainly in Water Treatment Plant, New technology in water supply, Distribution Management, SCADA, house connection etc • Experience in rural water projects preferable • Proficiency in Hindi and English	• Condition assessment of the defunct schemes and prepare reports • Prepare revival plan based on option study • Prepare engineering design
3	Institutional Specialist	• Post Graduate Degree in Management, Planning etc • At least 10 years of experience with demonstrated ability to understand development program management, advocacy and client management. • Experience with institutional development, O&M, legal and regulatory framework in water supply/waste water sector, program planning and management. • Understanding of management information systems	• Review existing institutional structure of the O&M of the defunct schemes • Suggest if any alternate institutional model is required and prepare reports in this aspect

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Sl no	Position	Qualifications and Experience	Task Assigned
		• Experience of working in water supply, waste water sector is desired • Proficiency in Hindi and English	
4	Financial Management and Tariff Specialist	• Post Degree in Finance/Economics or related field • 10 years of experience in preparing financial and economic analysis of water supply projects, undertaking financial performance assessment, designing tariff system • Proficiency in Hindi and English	• Review existing tariff system in the defunct schemes • Carry out financial sustainability analysis for O&M • Suggest if any tariff revision required • Prepare tariff model etc
5	Civil Engineer	• Degree in Civil Engineering or relevant field • Experience in preparing civil design of water retaining structures etc	• Support Water supply engineer in preparing the revival plan • Prepare engineering design etc
6	Quantity surveyor	• Bachelor in Engineering in Civil • 7 years in cost estimate, preparation of BOQs related to water supply and related projects • Proficiency in Hindi and English	• Prepare cost estimate for the revival plan

8) REPORTNG REQUIREMENT AND PAYMENT SCHEDULE

Sl no	Deliverables	Timeline	No of copies	Payment Schedule
1	Inception Report	At the end of 2nd weeks	3 Copies	20%
2	Detailed Condition assessment Report	At the end of 2.5 Months	3 Copies	30%
3	Preparation of Detailed revival plan	At the end of the 3.5 Months	3 Copies	20%
4	Preparation of Service Improvement Plan	At the End of 4 Months	3 Copies	10%
5	Submission of road Map and action Plan	At the End of 4.5 Months	3 Copies	10%
6	Submission of Final Report	At the end of 5 Months	5 Copies	10%

9) INPUTS TO BE PROVIDED BY THE CLIENT

The PHED will provide necessary support in successful completion of the project. PHED will support the consultant in coordinating with other stakeholders.

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Firm Qualifications

1. Demonstrable track record of at least 10 years in infrastructure consultancy preferably in water supply, waste water, urban development, rural development sector.
2. Average annual turnover of INR 10 Crores over the last three financial years from consultancy service (FY-2015-16, 2016-17, 2017-18)
3. Experience of preparing minimum 5 Detailed Project Report for rural / urban water supply system in the last five years.
4. Demonstrate in-depth understanding of the rural water supply sector in Indian context