Government of the People's Republic of Bangladesh

Local Government Division

Department of Public Health Engineering

Terms of Reference

For

Consultancy Services for Supervision and Technical support

Under

Inclusive and Integrated Sanitation and Hygiene Project in 10 Priority Towns in Bangladesh (GoB-IsDB)

Package No.: SER-01

(ICB-MC, QCBS)

October 2022

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Consultancy ServicesforSupervision and Technical Support

1. Project Background

Bangladesh experienced faster urbanization than most countries in South Asia between 2000 and 2010. As of 2019, about 37.4% of thetotal population are urban, out of which about 55% are slum population (World Bank , 2020)living in extremely poor conditions. Urban poor populations, particularly women and children, are at higher riskof water-borne diseases attributed to unsafe drinking water and poor sanitation and hygiene conditions in slums and informal settlements. The unsafe disposal of feacal sludge, solid waste, and wastewater has been causing environmental pollution and exacerbating the health problems in the slums and informal settlements. Considering these facts, the Government of Bangladesh has prioritized urban sanitation, including FSM interventions, as one of the key development priorities and approved the Institutional and Regulatory Framework (IRF) for Fecal Sludge Management (FSM) in 2017. A "National Action Plan" for implementation of the IRF-FSM has been developed that specifies the roles and responsibilities of stakeholders at different levels (e.g., national/local) with an objective of rapid implementation of IRF for effective implementation of FSM by 2030. Under this directive, "Citywide Inclusive Sanitation (CWIS)-FSM Support Cell" has been recently set up within the Department of Public Health Engineering (DPHE), to support and facilitate the overall planning, development, implementation, practice, and monitoring and evaluation of FSM and Solid Waste Management adopting the CWIS approach.

The Government of Bangladesh with technical and financial support from The Bill and Melinda Gates Foundation (BMGF),has recently initiated a Technical Project Proposal (TPP) named "Feasibility for Implementation of Solid Waste and Faecal Sludge Management System in 53 district Paurashavas and 8 City Corporations". The Department of Public Health Engineering (DPHE) is the implementing agency of the TPP and had engaged several consultants& experts to carry out a feasibility study for establishing IT & GIS Based Smart Solid Waste and Faecal Sludge Management Systems and solutions in 53 District Level Paurashavas and 8 City Corporations. The study results have provided strong basis and relevant information for preparing investment projects by the Government and Development Partners.

The ten towns for the project are selected based on the preliminary survey result through the TPP mentioned earlier. The ten cities have been selected based on some criteria such as high percentage of the urban poor population, availability of land from the municipalities, low baseline coverage of sanitation services, no potential investments from other MDB and IFI

funded projects, and special vulnerabilities of the areas – flooding, cyclone, river erosion, drought and representation of towns from every geographical area.

The project has been designed to support the Government of Bangladesh in scaling up the implementation of FSM and solid waste management guided by the CWIS approach in Urban Poor communities and to promote hygiene behaviors in preventing water-borne diseases.The objectives of the project are:

Overall objective of the Project:

The project's overall objective is to ensure good quality lives and livelihoods through safe, adequate, equitable, sustainable sanitation, hygiene facilities, and services, with a special focus on the urban poor women and children, guided by City-wide Inclusive Sanitation (CWIS) approach.

Specific Objectives:

- To improve the public and environmental health by reducing water and land pollution as well as water borne diseases through risk-informed sanitation infrastructure and services, occupational safety, community engagement and climate change mitigation.
- To ensure universal access to sanitation services, especially for the poor & marginalized communities by promoting safe, innovative, inclusive, efficient and climate & disaster- resilient sanitation, hygiene infrastructures and services at the city level.
- To institutionalize the livelihoodopportunities for the informal sanitation workers and private sector through viable business models and capacity development including gender equity, and economic and social inclusion.

The specific project outputs include:

i. Protect soil and groundwater from microbiological contamination through proper FSM and SWM by improving 77,077 household containments and by establishing 10 FSTP and 10 SWM facilities;
ii. Contribute to the reduction of incidence of water-borne diseases including a 50% reduction of Cholera cases;
iii. Create sanitation-related jobs and businesses for at least 1,000 people, particularly for women and youth; and
iv. Develop and demonstrate the CWIS approach to provide safe, inclusive and sustainable sanitation services in ten towns.

The project includes the following key components 1) Installation of community-based drinking water points 2) Provision of Community-based Sanitation Facilities including bathing and handwashing facilities 3) Establish Solid Waste Management Facilities 4) Establish Faecal Sludge Management Facilities 5) Rehabilitation or upgrading existing household containments 6) Formulation of CWIS policy and guidelines at the targeted pourashavas 7) Capacity Building & Awareness Raising8) Consultancy Services and 8) Implementation Support.

2. Objectiveof the Assignment

According to the Agreements signed between GoB and IsDB for Project No. BGD: 1066, Department of Public Health Engineering (DPHE), the Executing Agency of the Project shall deploy a design and supervision consultants firm for the smooth implementation of the project.

The primary objectives of the consulting services are to assist the DPHE, PMU and the Pourashavas in implementing the water supply, sanitation, and waste management and capacity building components in 10 participating Pourashavas under the GOB-IsDB project. Overall, the Consultant will be required to prepare complete sets of engineering drawings and related documents for 122 works, goods, and service contracts for the 10 Pourashavas. Besides providing the engineering drawing, the firm would support PMU for the full quality control of the implementation work following the IsDB's guidelines. The scope of services and key deliverables of this consultancy services are presented in the following sections. The location of the projects is as follows:

SL	Division	Paurashava/ City Corporation	SL	Division	Paurashava
1	Dhaka	Narsingdi	6	Rajshahi	Pabna
2		Shariatpur	7		Naatore
3	Mymensingh	Jamalpur	8		Sirajganj
4	Cumilla	Cumilla City Corporation	9	Khulna	Bagerhat
5		Lashmipur	10	Barisal	Patuakhali

3. Scope of Services, Tasks and Expected Deliverables

The scope of the consulting services is to review the existing feasibility reports and relevant documents, conduct baseline surveys, detail designing, and prepare the various reports, bidding documents, etc., under the project. The Consultant will be required to prepare complete sets of engineering plans and related documents for 122 contracts.

Review of the existing Feasibility Studies and relevant documents:

The detailed feasibility study reports prepared during TPP, the FSM cell supported survey reports and the enhanced feasibility study reports prepared by CWIS TA Hub with support from BMGF and IsDB are two main documents available for review. These reports include existing status and needs of sanitation (FSM and SWM) in ten selected municipalities, and key recommendations for providing sustainable sanitation services in those municipalities.

The consult shall thoroughly review thesefeasibility studies and relevant documents to assess the viability of investments in terms of technical, financial, and social aspects for effective implementation of the project. In addition, the consultant shall perform an online literature review to consolidate necessary information, data, and resources related to project components. DPHE and IsDB will provide the available documents, reports, and information related to this project. The review willalso include engineering surveys & investigations, including hydro-geological, cost estimates, and financial and economic analyses.

Detail Engineering Design includes detailed engineering designs, drawings, specifications, rate schedules, and contract packaging for the establishment of new Faecal Sludge Management Systems, Solid Waste Management Systems, Community-based small-scale drinking water supply system, Community-based sanitation facilities, improvement of on-site sanitation containments including system expansion, operation and maintenance procedures and manuals. Specifically, the task willconsist of the following activities but are not limited to:

- Based on the information from the feasibility studies, laboratory and field tests, and surveys, the consultant will perform detailed engineering design considering following key factors and design criteria:

A. For the construction of Solid Waste and Faecal Sludge Management Systems:

i. Estimation of the volume of Solid Waste and Faecal Sludge (current and after 10-15 years)
ii. Characterization of Waste (Solid Waste &Faecal Sludge) including waste quality;
iii. Determine treatment objectives to select the appropriate treatment modules
iv. National Discharge Standards and regulations including National ISO standards & guidelines for sanitation technologies
v. Availability of land
vi. Social aspects including community consultation and participation
vii. Private Sector Engagement
viii. Operation and Maintenance requirements and the capacity of technicians/operators to operate and maintain the systems
ix. Climate and disaster resilient infrastructures

B. For the construction of community-based water points and sanitation facilities:

i. Estimates of drinking water consumption in the targeted communities,;

ii. Drinking water sources (existing and alternatives) and water quality of those sources
iii. Sustainable yield of all the proposed sources taking into account existing and potential uses over the design period.
iv. Volume of waste (solid and Faecal Sludge) generated from the communities;
v. Characterization/composition of waste
vi. Community consultation, participation, and contributions;
vii. Sustainable operation and maintenance of facilities;
viii. Gender and Social Inclusion (GESI)

- Prepare detailed engineering design, specification, schedule of rates, and technical and financial requirements for capital and operating costs for water supply, sanitation, waste, and faecal sludge management in 10 Paurasavas.
- Prepare the hydraulic and functional designs of the proposed project facilities like wells, pump house, pumping machineries, treatment plant, pipe network, house connections, electrical works including the need of transformer, stand by generator, drainage facilities, etc., considering all aspects.
- Prepare detailed engineering design and construction drawings, including field visits but not limited to tube well, pipeline networks, solid waste and faecal sludge treatment plants, community toilets, and drainage system for each pourashava which will cover details of on-site preparatory tasks, layout facilities, simple architectural and landscape designs for treatment plants, mechanical works, installation of different equipment and electrical works including instrumentation and control system. (Consultant shall have to submit the design calculation sheets of every component such as production well design, network analysis, treatment plant, drainage works, E&M machineries etc. in the form of soft and hard copy);
- Prepare a detailed service improvement plan for O&M of estlished facilities and systems at ten pourashavas.
- The consultant should perform a literature review and in-depth review of the feasibility study report on the implementation of innovative & transformative sanitation technologies. Based on these reviews, the consultant shall recommend the viability of establishing innovative and transformative sanitation technologies in the selected pourashavas.
- The consultant should review, make cost estimates, and implement and recommendations on the mitigation activities as per ESMP and Gender Action plans for inclusion in engineering designs and capacity building under the project.

Preparation of Report:

- Prepare Inception, Monthly, Quarterly, Project Completion Reports,
- Prepare and submit Environmental, social and gender monitoring reports as per action plans.

Preparation of final design report:

- Prepare a draft design report for presenting the results of all the design tasks described above.
- Prepare a final design report for each Pourashava presenting the results of all the above design tasks. Prepare a detailed management plan for the construction of each water, sanitation, and waste management systems.

Preparation of Bid Documents:

- Prepare BOQ and cost estimates; analysis of the rate in the form of hard copy and soft copy.
- Prepare bid documents for each contract package, including general specifications and detailed technical specifications for materials, equipment, instruments, methods of construction of civil works (Treatment Plant, Production Tube Well, Pipeline Network, Solid waste and Faecal Sludge Treatment Plant, Community Toilet and drainage system) and methods of installation and fabrication for mechanical and electrical works in 10 paurasavas. All these bidding documents should be prepared considering procurement guidelines of the Government of Bangladesh and IsDB.

Construction Supervision:

All physical works appropriateness of all materials, equipment and civil works include in the specifications and contracts. This includes construction supervision during the project period and covers the following activities:

- Prepare and recommend agency estimates and assist in the evaluation of submitted bids;
- Assist the PMU/local DPHE in the inspection of materials and equipment and witness tests of materials and equipment to be incorporated into the works;
- Modify design and construction drawings as necessary after the bidding and during construction;
- Supervise, inspect, measure, and control the quality of the construction works and installation of equipment to ensure compliance with drawings and specifications;
- Assists in site selection for construction work.
- Inspect and approve all completed and check contractor's completed/as-built schedule of quantities.
- Assist in laboratory testing of material supplied by the contractor and conduct in-situ testing of materials as per requirement.
- Compare actual progress with the work plan and advise local DPHE and PMU to address the issue that could delay completion and recommend actions to be taken to facilitate timely completion.
- Observe any change or previously unknown conditions that may require modifications to the design and/or specifications of the works and advice and recommend appropriate action to local DPHE under intimation to PMU and prepare variation order for the approval of the PMU.

- Provide advice and suggestions to PMU and local DPHE on the overall construction works.
- Provide technical supervision for quality control in the construction of all civil works and recommendations for payment in the prescribed bill form.
- Assist in cross-checking a bill of physical works claimed by contractors by REs.
- Supervise & monitor relevant activities implemented under the project period.
- Prepare and recommend agency estimates and assist in the evaluation of submitted bids;
- Review drawings prepared by the contractors and equipment manufacturers/ suppliers;
- Prepare O&M manual for treatment plants pipeline, provide advice and suggestions to PMU and LPACs on the overall construction works.

Certification of Billing:

All the bills of quantities under any works or goods packages would be initiated or certified by a field resident Engineer or by the concerned authority of the consultant firm. The certification for each package would include but is not limited to:

- Prepare the monthly construction progress report.
- Assist DPHE and contractors in preparing a bill of quantities with necessary measurements.
- Bill of quantities for every package to be certified by TL/DTL before the submission to PMU.

Arrange local and international training and Exposure visit:

- Develop details terms of reference for training activities.
- Prepare training manuals/modules or adopt existing training manuals regarding designing Faecal and Solid waste management systems.
- Prepare Operation and Maintenance (O&M) Safety manual for Faecal and Solid waste management system.
- Conduct training to municipalitiesand DPHE's personnel on designing Faecal and Solid waste management systems, Occupational health & safety, O&M. The consultant can collaborate with the specialized local training institutions or individual resource persons to organize such trainings.
- Prepare Training manual and Business model for sustainable waste management System- faecal and solid waste management including treatment plant incorporating water safety plan.
- Arrange exposure and learning visits locally and internationally for municipalities and DPHE personnel on CWIS, FSM and Integrated Solid Waste Management.

- Arrange online international short-course/training on integrated and sustainable waste and wastewater management, sanitation policy-making or related topics.

Conduct Research Activities:

- Conduct research activities in aspect of new technology and social and economic aspect.
- Assist in piloting new technologies.
- Preform research activities as per the deriction of PMU.
- Collection of observation data.
- Preparation of research report.

Implementation of ESMP and Stakeholder Engagement, Gender Action plans:
The consultant firm will have to provide reports on the Environmental Safety Health and Social Safeguard (ESHS), gender-based violence (GBV), sexual exploitation or abuse (SEA), and CWIS compliance as per IsDB guidelines. For ESHS, the scope of services of the consultant for civil works supervision should be based on the following:

The ESHS-related services include but are not limited to:

- review and approve the Contractor's Environment and Social Management Plan (C-ESMP), including all updates and revisions (not less than once every six months);
- review and approve ESHS provisions of method statements, implementation plans, GBV/SEA prevention and response action plan, drawings, proposals, schedules, and all relevant Contractor's documents;
- review and consider the ESHS risks and impacts of any design change proposals and advise if there are implications for compliance with ESIA, ESMP, consent/permits, and other relevant project requirements;
- undertake audits, supervisions and/or inspections of any sites where the Contractor is undertaking activities related to the Works to verify the Contractor's compliance with ESHS requirements, including its GBV/SEA obligations, with and without Contractor and/or client relevant representatives, as necessary, but not less than once per month.
- undertake audits and inspections of Contractor's accident logs, community liaison records, monitoring findings, and other ESHS-related documentation, as necessary, to confirm the Contractor's compliance with ESHS requirements;
- agree remedial action/s and their timeframe for implementation in the event of a noncompliance with the Contractor's ESHS obligations;
- ensure appropriate representation at relevant meetings, including site meetings and progress meetings, to discuss and agree on appropriate actions to ensure compliance with ESHS obligations;
- check that the Contractor's actual reporting (content and timeliness) is following the Contractor's contractual obligations;

- review and critique, in a timely manner, the Contractor's ESHS documentation (including regular reports and incident reports) regarding the accuracy and efficacy of the documentation;
- undertake liaison, from time to time and as necessary, with project stakeholders to identify and discuss any actual or potential ESHS issues;
- establish and maintain a grievance redress mechanism including types of grievances to be recorded and how to protect confidentiality e.g of those reporting allegations of GBV/SEA.
- ensure any GBV/SEA instances and complaints that come to the attention of the consultant are registered in the grievance redress mechanism.
- review stakeholder engagement action plan with particular attention to appropriate community mobilization/management approaches in line with the CWIS framework.

CWIS policy, MIS and Digital financing:

- Support in the development of (i) CWIS policy and guidelines, (ii) IMIS, (iii) Digital financing including preparation of ToR for recruitment of support consultants.
- Develop and implement effective communication strategy and relevant IEC / SBCC material including Risk Communication and Community Engagement (RCCE) materials for sensitizing communities and promoting safe practices.

Deliverables:

The following reports consultants shall submit to DPHE in English and Bangla(If necessary) with soft copies:

1. Detail Engineering design and drawing with necessary BoQs, specifications, detailed calculations, and design reports(draft and final)for all project structures, including a digitized GIS map(if required).
2. Provide action planfor implementation of the findingsbased on the updated feasibility report reviewing the existing reports regarding source identification, recommendations and assessment reports.
3. Provide inception, monthly, quarterly, and annual work progress report with necessary recommendations.
4. Provide Initial Environment Impact Assessment Report(IEE) and Environment Impact Assessment report(EIA) for all Faecal and Solid waste treatment plants with necessary mitigation plans.
5. Provide the reports on policies and monitoring indicators for social safeguard, environmental protection, occupational and community health and safety, gender, equality, child protection, vulnerable people (including those with disabilities), sexual harassment, gender-based violence (GBV), sexual exploitation and abuse (SEA).

6. Recommend the proper solid and faecal sludge handling and treatment technologies with appropriate justification.
7. Provide capacity building/training needs assessment and training performance report to be conducted under the project.
8. Provide operation and maintenance manual with proper training to the stakeholders with appropriate operation business models for waste business.
9. Provide Water/Solid and Faecal source assessment/ Survey, Baseline report(where applicable) and mid-term assessment report.
10. Viable options for operation and management of Fecal sludge and solid waste management systems (end-to-end) including the possibility of private sector participation.
11. SBCC and Risk Communication and Community Engagement (RCCE) materials for sensitizing communities and promoting safe practices
12. Provide the Project Completion report (PCR).
13. Apart from all others, the consultant may assist the PMU by providing relevant special reports when felt necessary by the top management.

Ownership of Documents

· DPHE shall be the owner of all the software, design, reports, modules, manuals, and other documents prepared and procured under the project.

· After completion of the project, all documents/results/tools & equipment and all necessary software should be handed over to DPHE before final payment.

· The consulting firm shall accommodate the latest version of all the computer software/programs and shall provide the latest version while transferring database/tools/ software to DPHE.

4. Team Composition &Qualification Requirements for the Key Experts

The project is planned to implement for 60 months, and the project will essentially require input from a team of international and national consultants (refer to Table below). International consultants' input will primarily be concentrated in the first one and half years, which will mostly be intermittent. Inputs from the national consultants will mainly spread over the entire project period depending on the lengths of individual inputs. The team shall have to consist of professionals with expertise in the management of water supply, sanitation, and waste management projects. Local consultants will be engaged under the same package to support the international consultants and to encourage on–the–job training and technology transfer from the international consultants. An estimated total of about 473person-months of local professionals will be required. These professionals (consultants) must have experience in project management, development of urban water supply, sanitation drainage and waste

management systems, faecal sludge management, operations, and training. Knowledge and experiences on CWIS will be an advantage.

4.1 Description of the main terms and conditions of appointment

[I] International Consultants

i. Project Team Leader (1X24=24 person-months)

TheConsultants for Design & Supervision (CDS) team of consultants will have an overarching Project Team Leader (TL) who shall be heading the multi-disciplinary team. For the position, he/she is required to have a bachelor's degree in Engg (civil/Sanitation) plus a Master's Degree or equivalent in Civil/ Sanitation with a minimum of 20 years total experience, including 12 years of specific experience in planning, design, and implementation of large-scale waste management projects and in relevant field. The consultant must have specific experience inthe successful implementation of at least one donor-fundedCWIS project in another country.

The TL will have to lead a multi-disciplinary team of consultants; hence work experience in different countries and multi-cultural and multi-disciplinary environments will be a pre-requisite for selection for the position. He/she will have to be fast-acclimatize with the project situation, requirements, and environment and be very closely familiar with all aspects of the undertaking and act as the counterpart of the Project Director (PD).

Broad tasks/activities/works (not exhaustive) shall be to - ensure close cooperation and assistance to the PD for effective and efficient implementation of the project - help prepare pragmatic and achievable annual work plan - ensure execution of all activities defined in the overall scope of works –lead the team to ensure proper execution of planned activities and assignments - support timely preparation of Inception Report - fine-tune the methodology and approach - organize and distribute assignments - keep up/maintain a dynamic work environment - conduct constant supervision of the consultants - prepare contract documents and help evaluate contracts and prepare a statement of arrangements for IDB's approval - advise on issues pertaining to implementation and supervision of civil works and to review, confirm quantity and quality of works as and when any dispute arises at any timer point followed by certification/ authentication of bills for works under the project.
He/she shall also collect and maintain relevant data in an organized manner for execution of present work, analyses of project performance, reflect on the outcome and issues of the project in specific reports - prepare and transmit monthly, quarterly, annual reports and also a Project Completion Report (PCR)- assist the PD in liquidating/reimbursing bills/payment - assist/facilitate in supervision of works regularly through the REs and periodically through the PMU consultants - assist the PMU in the procurement of services and goods through ICB/NCB, inclusive of the preparation of relevant bid documents, bid evaluation and award

of contract - assist PMU in the preparation and implementation of Sanitation, Faecal Sludge Management, Solid Waste Management and drainage facilities improvement areas of the project - assist the PMU in the set up procedures for management and monitoring of the project programs - assist PMU/LPACs in carrying out survey and determine the current status as well as future alignments for laying of services and construction of features namely, STP, SWCS etc - conduct initial and final benchmark information survey for the Pourashava services, prepare regular evaluation reports showing project performance - assist PMU with required areas of project management and preparation of "as rehabilitated/rectified" and "as built" drawings of the project features; and - undertake other tasks as may be requested by the EA.

[II] National/International Consultants

ii. Faecal Sludge Management Expert (1X24=24 person-months)

The Faecal Sludge Management Expert would have a minimumof Bachelor's Degree in Engg(civil/ Environmental/ SanitationEngg) plus a Masters in Engg (civil/ Sanitary/ Environmental Engg. He/she shall have at least 10 years of working experience in the relevant discipline. The incumbent may be a national or expatriate consultant but should have a proven track record of international experience, especially in IsDB member countries in relevant fields.He/she is also required to have a strong familiarity with the GoB's Sludge/waste management, environmental conservation Rules and regulations and IsDB's current guidelines.The consultant must have specific experience inthe successful implementation of at least one donor-funded fecal sludge management project in another country.

Within the stipulated time-period, he/she shall, prepare the framework for execution of the assignment conforming to the scope of works of Faecal Sludge Management in 10Pourashavas of this project and carryout the following broad tasks that shall be to - update the database and/or conduct a basic study of implementing Faecal Sludge treatment plant and other relevant works linked with total management of septage sludge. - conduct Focused Group Discussion with different stakeholder groups, including women and vulnerable groups, to assess their needs and absorptive capacity.

He/she shall design the best feasible faecal sludge treatment plant visiting the provided land by the Pourashavas, method of pit/emptying, sludge collection and handling, mode of transportation, method of desludging, co-composting, effluent treatment, management and emptying, necessary machineries and equipments and precautions need to be taken for the workers. He/She will follow the Institutional Regulatory Framework (IRF) for FSM in Bangladesh while designing and implementing the STP and FSM- provide technical support to the implementation agency/agencies in all matters concerning implementation, monitoring and management of the FSM program – Set FSM monitoring indicators and report the status of FSM status of the Pourashavas to EA., - assist the TL/DTL in the preparation of the FSM report, other specific reports and carry outother responsibilities assigned from time to time. He/She should advise on the viability of implementation of innovative and transformative

sanitation technologies through in-depth technical, financial assessment, and expert consultation. The consultant must coordinate inputs with technical and non-technical experts under this project.

[III] National

iii. Environmental/CWIS specialist [National] (1X30= 30 person-months)

The position would require a Bachelor's Degree in Engg (civil/ Environmental Engg Sanitation Engg), plus a Masters or equivalent in Engg (civil/ Environmental/Sanitation Engg). He/she shall have at least 15 years of working experience, especiallyat least 10 years in planning, design, and implementation of santation or CWISbased projects.

The position would act as deputy team leader (DTL) and would as act as full team leader upon the departure of theinternational team leader to continue as the project lead. He/She must have adequate experience in computer-aided analysis and design. The age of the Environmental/CWIS specialistconsultants shall not be more than 60 years. The expert must have at least 5 years of experience the in management donor-fundednded projects.

His/Her Specific tasks shall be to: - Advice and provide environment and CWIS technical support, engineering design, and detailing to EA, PMU and Pourashavas, -- examine the existing study reports of implementing CWIS systems in the respective Pourashavas- Prepare a set of project monitoring systems for implementing Pourashavas, including information on the composition and volume of waste generated from domestic and commercial sources, as required for the preparation of a solid waste management plan, Designing the solid-waste composting system and sorting shed, including collection a system, handling, sorting, dumping, temperature controlling, seeding, mixing and preparing fertilizer- Provide technical guidelines and manual training to support PMU and the Pourashavas in the collection and transportation program, including vehicle routing, based on detailed and updated pourashava maps; confirm equipment requirements; and preparation and specifications for tenders;- Ensure protective measures while collecting, transporting, handling, sorting, composting, and dumping solid waste following standard guidelines, -emphasize the alternative and effective use of waste, recycling, and energy generation, - prepare a business plan, O & M plan, and analysis of the gaps and challenges- provide necessary data/info/recommendations to the PMU/LPAC (Soft and hard copy) in the project Pourashavas – and assist the TL/DTL/REs on any other matters of project interest.The consultant must coordinate inputs with technical and non-technical experts under this project.

iv. Solid Waste Management/ Composting Specialist (1X24= 24 person-months)

The position would require a Bachelor's Degree in Engg (civil/ Environmental Engg /Sanitation Engg), plus a Masters or equivalent in Engg (civil/ Environmental/Sanitation Engg), He/she shall have at least 10 years of work experience in planning, design, and

implementation of solid waste management projects and must have adequate experience in computer-aided analysis and design.

His/Her Specific tasks shall be to: - Advise and provide technical support, engineering design and detailing to EA and PMU, -- examine the existing study reports of implementing solid waste management system in the respective Pourashavas- Prepare a set of SWM monitoring systems for implementing Pourashavas, including information on the composition and volume of waste generated from domestic and commercial sources, as required for the preparation of a solid waste management plan, - Designing the solid-waste composting system and sorting shed, including collection a system, handling, sorting, dumping, temperature controlling, seeding, mixing and preparing fertilizer- Provide technical guidelines and manual training to support PMU and the Pourashavas in the collection and transportation program, including vehicle routing, based on detailed and updated pourashava maps; confirm equipment requirements; and preparation and specifications for tenders;- Ensure protective measures while collecting, transporting, handling, sorting, composting, and dumping solid waste following standard guidelines, -emphasize the alternative and effective use of waste, recycling, and energy generation, - prepare a business plan, O & M plan, and analysis the gaps and challenges- provide necessary data/info/recommendations to the PMU/LPAC (Soft and hard copy) in the project Pourashavas – and assist the TL/DTL/REs on any other matters of project interest.The consultant must coordinate inputs with technical and non-technical experts under this project.

v. Civil/Structural Engineer (1X18=18 person-months)

The position will require a recognized Bachelor's Degree in Structural/Civil Engg, preferably Masters's in the same discipline. The person should have 10 years of practical experience in computer-aided design and preferably construction of hydraulic structures, treatment plants, steel structures, and related structures.

He/she shall have to work closely with the DTL, Feacal Sludge Management Expert, Solid Waste Management/ Composting Specialist, Sanitation/ Environmental expert, and the REs. His/her broad tasks shall be to: collect sub-soil/geotechnical data of the building sites of Water Supply, Sludge treatment and Solid waste composting structures, and analyze them for ascertaining bearing capacity and construction of appropriate foundation - assimilate appropriate design criteria for the structural design of WS components - design the specific structures using the standard structural design practices - prepare/assist in preparing relevant structural drawings, specifications, BoQ, design reports, etc for the WS components, preferably conforming to specific site requirements - prepare the relevant construction manual incorporating the required construction/building practices and specifications conforming to standard requirements - assist the DTL/WS Specialists prepare the standard bidding documents for the stated constructions - closely liaise with the WS Specialists and coordinate the site selection and investigation activities – and carry out any other tasks

assigned by the TL/DTL. The consultant must coordinate inputs with technical and non-technical experts under this project.

vi. Mechanical/Electrical Engineer (1X8= 8 person-months)

The position will require a recognized Bachelor's Degree in Mechanical Engineering Engg, coupled with a Masters's in the same discipline. The person should have a minimum of 10 years of experience in the design, selection & installation of mechanical/electromechanical devices, of which at least 5 years of specific experience in the WASH sector.

He/she shall have to work closely with the DTL, Water Supply Experts, WQ /Treatment Specialist, Structural Engineer, and the REs. His/her broad tasks shall be to examine the requirements for the electromechanical installations, power facilities to match the need for the smooth operation of the installed devices - prepare specifications for the mechanical/electromechanical components required to be installed, which shall include among others, submersible pumps, motors for running pumps at different points of treatment plants, pumping to OHTs and booster pumps (if any) in the WS system - visit installation sites to see/supervise the works in progress and final commissioning - prepare an operational manual for the system - closely liaise with the WS Specialist, Structural Engineer, and Electrical Engineer at all times to be able to provide the best possible services from the proposed installations – and carry out any other works assigned by the TL/DTL;The consultant must coordinate inputs with technical and non-technical experts under this project.

vii. GIS/IMIS Expert (1X12= 12 person-months)

The GIS Expert will have a Bachelor's Degree in Engg (civil/ Urban planning Engg, preferably a Masters or equivalent in Engg, having specialization on GIS and will have a Minimum 10years experience in GIS/ Remote sensing and/or related field.. Experience in IMIS will be an added advantage.

His/Her Specific tasks shall be to - develop IMIS including Updating the GIS database by recording all existing facilities and facilities developed under the project, - Review the existing surveyed digitized database relating to the project Pourashavas, - Assist Pourashavas in maintaining the GIS database, in establishing municipal level IMIS and providing hands-on training to utilize, maintain, and update it, - Establish a workflow to regularly update the database even after the Project completion, -Handing over all drawing & data collected and developed, including as-built drawings under the project, in electronic and printed drawings to PMU and LPAC for future use, -Assist PMU staff to generate infrastructure, facilities, and relevant micro-level land use information and integrate it into a system-wide GIS map, - Obtain, update and verify, in the field, data on water supply, drainage system, water supply schemes and convert this data to digital form. Compile data into a comprehensive digital database - provide necessary data/info/recommendations/reports to the PMU/LPAC (Soft and

hard copy) in the project Pourashavas – and assist the TL/DTL/REs on any other matters of project interest.The consultant must coordinate inputs with technical and non-technical experts under this project.

viii. Junior Engineer (2X24= 48 person-months)

The Junior Engineer will have a Bachelor's in Civil Engineeringcouple with a Masters in Development related Studies:, with a minimum of 5 years of experience in planning, design, and implementation of large-scale water supply projects and/or relevant fields.

They shall have to work in close conjunction with the TL/DTL and other Specialists/Experts - Conduct day to day works relating to the project components according to the direction of the TL/DTL and assist EA,- fully understand the working drawings of the structural features provided by the consultants and prepare necessary drafting and detailing, - Prepare progress reports/statements of the project – and carryout any other tasks that may be assigned by the TL/DTL at any time.The consultant must coordinate inputs and provide support to the technical and non-technical experts under this project.

x. Social Developmet Officer (3x24= 72 person-months)

The position for the Social development specialist will require a Bachelor's in relevant social science discipline (sociology, development studies, anthropology, gender and development, or a related discipline).-At least 5 years of professional experience of working in related field of rural development programme/WASH related projects/community based projects of Govt. or Non-government organization- Fluency in Bengali and English and workable knowledge of local dialects . - Experience of working in rural areas and willingness to travel in field level. - Working knowledge of computer.

The position will have to work closly with PMU ,TL and DTL and the incumbent will have a strong familiarity with the National Strategy for Water Supply and. Sanitation 2014, National Policy for Safe Water Supply & Sanitation 1998, The Institutional and Regulatory Framework for Faecal Sludge Management (FSM), NWSSP and other sanitation related policies including the guidelines of IsDB. -primarily responsible for developing vision and strategy to ensure that the project is achieving social development (SD) objective i.e. equity, inclusiveness and transparency by institutionalizing participatory process and accountable institutions.

The consultant will guide, mentor, monitor and evaluate the functioning and performance of social mobilization work, establishing systems to achieve the objectives of the project and work closely with training and monitoring and evaluation coordinators at HQ level to mainstream SD issues and also evaluate field level operations as per the ESMF of the project at the Directorate level. - Establish regular field contact and rapport building with the community, and motivators, facilitators and coordinators. - Guide the facilitators and coordinators to collate the social, cultural and economic information of the micro watershed plans with the field observations. - Help in development of participatory mechanisms and

framework for establishing and strengthening field level institutions. - Help in increasing participation of women in livelihood generating activities. - Identify training needs and develop plans for facilitators, coordinators, field staff, Community, and work with Training coordinator to address training needs on social issues. - Collate and document the participatory processes as process documentation for lessons learnt. -Liaison with institutions, government agencies and NGOs. - Develop participatory monitoring and evaluation parameters for measuring process and progress. Work with M&E coordinator to establish participatory and monitoring and learning systems. - Collate the internal monitoring reports for M&E of the project. - Organize regular meetings with the various levels of social mobilizers and the village people for feedback on the approaches and processes followed. - Prepare, design and conduct workshop/seminar for the project staff and other stakeholders to enhance the participation, commitment and perception of the various aspect of the project. - Prepare and publish quarterly report for disseminating information with community, PMU and Developing Partner.

ix. Resident Engineer (7X27= 189person-months)

Resident Engineers (REs) shall be Bachelor's in Civil Engineering with at least a Minimum 7years of experience in supervising the construction of urban water supply/waste management systems and controlling construction activities, quality monitoring, preferably water supply/waste management related, at home or abroad. The working location will be at the field level, the working areas of 10 Pourashavas.

Specific tasks to be performed shall be to conduct on-site supervision of all water supply, sanitation, sludge treatment, solid waste composting, and sorting related works implemented in the respective Pourashavas - fully understand the working drawings of the structural features provided by the consultants/experts/specialists and see to their adherence/conformity in the field – ensure that the materials used conform to the specifications of the contract document - ensure that the physical works and workmanship are in conformity with the technical requirements set out in the specific contract documents - ensure total quality control - ensure the contractor's adherence to the given time schedule - send monthly progress reports/statements to the PMU – and carry out any other tasks that assigned by the TL/DTL/EA at any time.The consultant must coordinate inputs and provide support to the technical and non-technical experts under this project.

4.2 Qualification of the consultants

About 48 person-months of international consultants and 425person-months for local/international consultants are required for 42 Months consisting of professionals with expertise in management, planning, design, rehabilitation, and development of water supply and waste management projects.

The matrix below reiterates the length of the input, qualification, and specific experience against individual consultants (also spelled out in the subsequent section along with job requirements).

Consultancy Professional Staff, Person Months and Qualifications

Sl. No.	Position	Nos.	Person month	Minimum qualification	Experiences
1	Team Leader (TL-I)	1	24	Bachelor's Degree in Engg (civil/ water resource / Sanitation/Environmental) plus a Master's Degree or equivalent in Civil/ W. Supply/ Sanitation/water resource	20 years total experience, including 12 years of specific experience in managing WASH-related project.
2	Environmental/ CWISSpecialist Deputy Team Leader (DTL-NL)	1	30	Bachelor's Degree in Engg (civil/ Environemntal / Sanitation) plus a Master's Degree or equivalent in Civil/ W. Supply/ Sanitation/water resource	15 years total experience, including 10 years of specific experience in managing environment-related areas of development projects. Should have carried out IEE and EIA-related works of urban development. Candidates with adequate modeling and analysis experience to support environmental assessment would be an added advantage.
3	Faecal Sludge Management Expert	1	24	Bachelors' Degree in Engg (civil/ Environmental/ SanitationEngg) plus a Masters or equivalent in Engg (civil/ Sanitary/ Environmental Engg)	Minimum 10 years of professional experience in planning, design, and implementation of faecal waste management projects. Must have adequate experience in computer-aided analysis and design.
4	Solid Waste Management/ Composting Specialist	1	24	Bachelors' Degree in Engg (civil/ Environmental Engg/ Sanitation Engg) plus a Masters or equivalent in Engg (civil/ Sanitary/ Environmental Engg.)	Minimum 10 years of professional experience in planning, design, and implementation of solid waste management projects. Must have adequate experience in computer-aided analysis and design

Sl. No.	Position	Nos.	Person month	Minimum qualification	Experiences
5	Structural Engineer	1	18	Bachelor's Degree in Structural/Civil Engg, preferably a Masters in the same discipline	Minimum 10 years of practical experience in computer-aided design and preferably construction of hydraulic structures, treatment plants, steel structures, and related structures.
6	Electrical/ Mechanical Engineer	1	8	Bachelor's Degree in Electrical or Mechanical Engineering, coupled with Masters in the same discipline	Minimum 10 years' experience in the design, selection & installation of mechanical/electro-mechanical devices, of which at least 5 years specific experience in the expanse of water Supply.
7	GIS/IMIS Expert	1	12	Bachelor Degree in Engg (civil/ Urban planning Engg /) preferable a Masters or equivalent in Engg, having specialization on GIS	Minimum 10 years' experience in GIS/ Remote sensing and/or related field
8	CAD and Illustrator Operator	1	24	Minimum diploma in Civil Engineering, having expert in Auto CAD and Adobe Illustrator	Minimum 5 years of experience in AutoCAD and Illustrator drawing.
9	Junior Engineer	2	48	Bachelor's Degree in Civil Engineering, couple with a Masters in Development related Studies is preferable.	Minimum 5years' experience in planning, design, and implementation of large-scale water supply, waste projects. And/or relevant field.
Works / capacity building Supervision					
10	Social Development Offer	3	72	Bachelor's in relevant social science discipline (sociology, development studies, anthropology, gender and development, or a related discipline).-	At least 5 years of professional experience of working in related field of rural development programme/WASH related projects/community based projects of Govt. or Non-government organization-
11	Resident consultant	7	189	Bachelor's Degree in Civil Engineering	Minimum 7 years' experience in supervising construction of urban water supply/waste system.

The Client envisages professional staff inputs as per the table above, which are indicative and the consultants are free to propose their own staffing plan and inputs based on their own assessment of the needs of the assignment as described in the TOR.

5. Reporting Requirements and Time Schedule for Deliverables

The total duration of the Consultancy services will be 42 months. The tentative schedule for the Consultant's assignment is given below:

SL No	Name of Report	Schedule of delivery
Design Phase:		
1	**Inception report**including detailed work plan (4 hard copies + MS Word +PDF soft copies)	At the end of 2 weeks from the date of commencement of service.
2	**Monthly progress report** including a financial statement (3 Hard copies + MS Word +PDF soft copies)	End of every month from the date of commencement of service for the supervision phase and design phase.
3	**Quarterly/ Half yearly progress** reports to be submitted, including financial statements, Environmental impact assessment, Safeguard, gender-based violence (GBV), sexual exploitation or abuse (SEA), and CWIS compliance as per IsDB guideline and shall be prepared within two weeks of the end of each quarter; (3 Hard copies + MS Word +PDF soft copies)	End of every quarter from the date of commencement of service for the supervision phase and design phase
4	**Annual progress report,** an interim report on the progress on implementation of the physical works at the end of each year of the Project Implementation; (3 Hard copies + MS Word +PDF soft copies)	End of every year from the date of commencement of service for the supervision phase and design phase
5	Reports on **Water/Solid and Faecal source assessment/ Survey, Baseline report(where applicable)** including treatment process as per requirement (3 copies + soft copies in MS Word) for 10Paurasavas (3 Hard copies + MS Word +PDF soft copies)	Within 24 weeks from the date of commencement of the service
6	**IEE and EIA report:** Monitoring indicator of FSM, Solid Waste Composting System, Operation, Maintenance, and Safety Manual, IEE and EIA report regarding Pourashava-wise FSM, Solid Waste Composting System implementation, a Business model for sustaining SWCS, (3 Hard copies + MS Word +PDF soft copies)	Within 24 weeks from the date of commencement of the service.
7	Update Feasibility Draft report including detailed engineering drawing of treatment plant, faecal and solid waste management, other relevant works etc. (3 copies + soft copies in MS word format) for 10 Paurasavas. (2 Hard copies + MS Word +PDF soft copies)	Within 36 weeks from the date of commencement of the service.

SL No	Name of Report	Schedule of delivery
8	**Update Feasibility final report** including detailed engineering drawing of treatment plant, faecal and solid waste management, other relevant works, etc. (4 copies + soft copies in MS word format) for 10 Paurasavas.	Within 48 weeks from the date of commencement of the service.
9	**Draft Design calculation** in Excel format, GIS shape files, AutoCAD files in .dwg format, Structural design soft files, in .wtg/.inp/.net format	Within 9 months weeks from the date of commencement of service
10	**Draft Final Design Report** including detail engineering drawing of all the project structures not limited to Faecal sludge and solid water treatment plant, other relevant works etcincluding digitized GIS map (2 copies + soft copies) for 10 Paurasavas	Within 3-12 months from the date of commencement of service
11	**Final Design calculation** in Excel format, GIS shape files, AutoCAD files in .dwg format, Structural design soft files, Pipeline network design in .wtg/.inp/.net format	At the end of 10 months from the date of commencement of service
12	**Final Design Report** including detailed engineering drawing of all the project structures not limited to Faecal sludge and solid water treatment plant, other relevant works, etc including digitized GIS map (4 copies + soft copies) for 10 Paurasavas.	Within 3-12 months from the date of commencement of service.
13	Tender document for each of the component for every pourashava (3 copies + soft copies)	Within 3-12months from the date of commencement of service.
14	**Training manual** for capacity building and O & M, Safety Manual and Business model for sustainable waste management System- faecal and solid waste management including treatment plant incorporating water safety plan. (3 Hard copies + MS Word +PDF soft copies)	Within 12 months from the date of commencement of service.
15	**Conduct / Arrange** various types of training, and exposure visits nationally/Internationally, including international/ national online short courses on sustainable waste management	Within 36 months from the date of commencement of service.
16	SBCC and Risk Communication and Community Engagement (RCCE) materials for sensitizing communities and promoting safe practices	6 months from date of commence ment

SL No	Name of Report	Schedule of delivery
Implementation phase:		
17	Submit mid-term review report as per IsDB guidelines.	24 months from commencement
18	**Draft Project completion report** at the end of assignment (3 copies + soft copy)	At the end of 40 months from the date of commencement of service
19	**Final Project completion report** at the end of assignment (4 copies + soft copy)	At the end of 42 months from the date of commencement of service

Note: The Project Director can change the time schedule for deliverables.Apart from all others, the consultants shall help the PD office by preparing special reports that may be felt necessary by the management.

6. Duties and responsibilities

a. Responsibilities of DPHE and counterpart personal:

DPHE shall provide support and facilities as described below.

- Providing office space in DPHE Dhaka Office. If DPHE can't provide an office at the DPHE head office, then the consultant firm would arrange an office in their interest.
- At pauroshava or municipality level, DPHE shall ensure provision of office space for the consultants within the pauroshava or municipalities offices or PIU.
- Providing all data, if available, and access to the project information that may be necessary for the Consultants to carry out their assignments, and facilitate field visits, access to beneficiaries, contractors, consultants, and Government line department ministries;
- Facilities in the collection of all associated data and information in possession with various GoB offices both in the field and in Dhaka;
- Providing all support in connection with field activities such as field survey, primary/secondary data collection, setting up field offices, etc., to the consultants;
- Depute DPHE personnel who would work in close support with the consultant team to facilitate the completion of the Project; DPHE would depute five personnel, including PD and DPD, from its establishments. Besides, six personnel, including Assistant Engineers and Sub-Assistant Engineers, would be outsourced. 2 Individual consultants for financial and procurement and one firm or NGO for capacity and awareness building would work closely with PMU.
- Providing all support to the consultants to hold seminar/interaction meetings with the stakeholders in the field so that the Project could be a participatory one;
- Providing support in identifying the "Right of Way" for the Consultants for survey purposes;

- For collecting secondary data from different departments or agencies, DPHE will assist in seeking permission or requesting through an application. Besides, during the survey and investigation period, the staff Consultant may need ID cards or any form of legal document from DPHE to visit various sites. DPHE will arrange to provide such ID cards/legal documents as and when required;
- DPHE will make available the following counterpart staff at the field level for the entire duration of the Project.

District Executive Engineer on 25% time allocation	: 10
DPHE Assistant Engineer (Field)on 50% time allocation	: 10
Sub-Assistant Engineers (Field) on 50% time allocation	: 10

- DPHE will also make all relevant reports, documents, maps, photography, and survey information available to the consultants on an 'at cost basis'.

b. Responsibilities of the Consultants

Responsibilities of the Consultants include the followings, but not limited to;

- The consultants shall have regular meetings with the DPHE staff to discuss technical and project management issues. Any unresolved technical issues or otherwise should be taken up with Project Director of the project for his intervention and support.
- The consultants shall carry out the services as detailed in the "Scope of Work" in the best interest of DPHE for the successful realization of the project with reasonable care, skill, and diligence with sound technical, administrative, and financial practices. They shall be responsible to the DPHE for discharging responsibilities.
- The consultant shall keep in contact with the local municipality in liaison with DPHE to know their projects and plans in the WASH sector to avoid duplications and disorder in the study and development plan.
- Computers, printers, or other major equipment & data, if purchased under the contract and used by the Consultants, shall be delivered to the office of the project Director, DPHE, at the end of the project.
- The consultants shall indicate in their financial proposal the number and person-month requirement of additional counterpart personnel and the detailed requirement of office space, machinery, equipment, and supplies. The consultant will be attached to the Project Management Unit (PMU) according to a schedule and arrangements to be decided at the time of consultancy contract negotiations.

7. **Assignment duration and required man-month**

The duration of service will be 42 months or the completion of the project, which will be happened later. The proposed study will be for 473person-months of international and local professional inputs. The study time is divided into 03 phases. The first phase is the design phase of 12 months, the second phase is the implementation phase of 18 months, and the third phase is the operation and maintenance of 12 months. The estimated staffing requirements are as shown below:

S/N	Consultants	No. of professionals	Person-Month				Gantt Chart
			Design Phase	Implementation Phase	O&M Phase	Total	Design Phase / Implementation Phase / Operation Phase
1	Project Team Leader(Intl)	1	9	12	3	24	
2	Sanitation/ Environmental Specialist (DTL) (Natl)	1	8	15	7	30	
3	Solid Waste management specialist (Intl)	1	10	8	6	24	
4	FaecalSludge Treatment Plant Engineer(Intl)	1	10	8	6	24	
5	Structural Engineer	1	8	10		18	
6	Electro-Mechanical Engineer	1	3	5		8	
7	GIS Expert	1	9	3		12	
8	CAD operator/ Illustrator Expert	1	10	14		24	
9	Junior Engineer	2	18	18	12	48	
10	Social Development Officer	3	24	36	12	72	
11	Resident Engineer	7	21	126	42	189	
	Total	**20**	**130**	**255**	**88**	**473**	

Note: Gray color indicates the tentative working man month. Consultant firm will give prior letter to PD before engaging any consultants.

8. Schedule of payment

Payment shall be made to the firm(s) following the provision hereto.

- All payments shall be made from the office of the Project Director, DPHE.
- No payment for disproportionate progress/achievement of the target.
- A proportionate penalty shall be imposed for delay of service delivery.
- Payment shall be output based in case of (like design, supervision, etc.) as follows ;

i)	Upon completion of the preliminary survey and submission of the inception report.	5% of the contract amount, excluding provitional sum amount will be paid to the consultant.
ii)	After up-gradation and submission of the existing feasibility report.	5% of the contract amount, excluding provitional sum amountwill be paid to the consultant.
iii)	Upon submission of the final design for Water supply, tube-wells,, Solid waste, Faecal Sludge Treatment Plant and others related structure's including complete as built, design calculation drawing and tender documents with BOQ.	25% of the contract amount, excluding provitional sum amountwill be paid to the consultant.
iv)	Supervision works.	25% of the contract amountwill be paid to the consultant in proportionate with the progress of physical works.
v)	After submission of the training manuals for O& M for all components	15 % of the contract amount, excluding provitional sum amountwill be paid to the consultant.
	After completion/Conduct/Arrange of training and exposure visit.	10 % of the contract amount, excluding provitional sum amountwill be paid to the consultant.
vi)	After submission project completion report (PCR) with as built Drawing.	15% of the contract amount, excluding provitional sum amountwill be paid to the consultant.

Income Tax and VAT will be deducted at source from the payment as per the rules of the Government of Bangladesh.

23/10/2012

ফাহিম হাসান সিরাজী
উপ-প্রকল্প পরিচালক
বাংলাদেশের ১০টি অগ্রাধিকার ভিত্তিক
শহরে সমন্বিত স্যানিটেশন ও হাইজিন প্রকল্প

23/10/2012

এস এম শামীম আহমেদ
প্রকল্প পরিচালক
বাংলাদেশের ১০টি(দশ)অগ্রাধিকার ভিত্তিক শহ
সমন্বিত স্যানিটেশন ও হাইজিন(সিডবি-আইএসটি
প্রকল্প, জনস্বাস্থ্য প্রকৌশল অধিদপ্তর, ঢাব