

Bangladesh
Dhaka Water Supply and Sewerage Authority (DWASA)
98, Kazi Nazrul Islam Avenue
Kawranbazar, Dhaka.

Memo No.: 46.113.605.00.00.002.2017-18/144

Date: 18/10/2017

REQUEST FOR EXPRESSIONS OF INTEREST (REOI)
COSULTING SERVICES-FIRMS SELECTION (INTERNATIONAL).

Country: Bangladesh

Name of Project: Technical Assistance Project for the Preparatory Activities of the proposed Dhaka Sanitation Improvement Project (DSIP) (Phase-I).

Assignment Title: Consultancy Services from a Project Management Consultant under Technical Assistance Project for the Preparatory Activities of Dhaka Sanitation Improvement Project (DSIP) (Phase-I).

Reference No: S-1

1. The Government of the People's Republic of Bangladesh (GoB) is in the process of receiving a credit from the International Development Association (IDA) towards the cost of 'Dhaka Sanitation Improvement Project (DSIP) (Phase-I), to be implemented by Dhaka Water Supply and Sewerage Authority (DWASA) and intends to apply a part of the proceeds of this credit to pay for the Consultancy Services for Project Management Consultant under Technical Assistance Project for the Preparatory Activities of Dhaka Sanitation Improvement Project (DSIP)(Phase-I) (Package No.: S-1).

2. The main objective of the consulting services under this assignment: Providing advisory services to DWASA to manage the preparation of the proposed World Bank supported project through the Technical Assistance which is financed under the Project Preparation Advance (PPA). The main goal is to enable DWASA to complete the detailed project design, preparation of related documents, disclosure and manage the agreed procurement and procedures for readiness of the proposed project to be taken to the World Bank Board approval successfully, on time, and within budget.

3. DWASA will appoint an independent engineering consulting (EC) firm to achieve the above objectives considering the nature of services as well as availability of resources.

The consultant will render the following, but not limited to, services:

- Project administration and control
- Overall planning of the project
- Procurement Assistance
- Engineering support
- Assist with other contracts management
- Assisting DWASA on Project Reporting
- Monitoring and Evaluation
- Assist with financial administration and control etc.

The present assignment will require close co-ordination with DWASA and excellent co-ordination with other consultants hired under the project, as well as with the Dhaka North and Dhaka South cities and local authorities, the World Bank and local communities.

The Consultant shall support DWASA with the review of any technical and financial documents, including proposals for variations presented to DWASA.

4. DWASA now invites eligible consulting firms ("Consultants") to indicate their interest in providing the services. Interested Consultants should provide information demonstrating that they

have the required qualifications and relevant experience to perform the Services. The short-listing criteria are:

- (a) General experience of the Firm(s);
- (b) Experience in similar projects of compatible size, complexity and technical specialty in the required area;
- (c) Financial soundness of the firm; and
- (d) Staffing and logistics of the firm.

Consultants are requested to submit the following supporting documents in support of the above-mentioned criteria:

- (a) Registration paper of the firm (s); (b) JV agreement/letter of intent (if applicable); (c) Firm's brochure; (d) Audited financial reports for last three years; (e) service experience record (including nature, total cost, total input in terms of man month, employer, location of service etc.)

5. The attention of interested Consultants is drawn to Section III, paragraphs, 3.14, 3.16, and 3.17 of the World Bank's "Procurement Regulations for IPF Borrowers" July 2016 ("Procurement Regulations"), setting forth the World Bank's policy on conflict of interest.

6. Consultants may associate to enhance their qualification, but should mention whether the association is in the form of a "joint-venture" or of "sub-consultancy". In the case of an association, all members of such "association" should have real and well-defined inputs to the assignment and in such "association" it is preferable to limit the total number of firms including the associates to a maximum of four.

7. The consultant will be selected in accordance with the Fixed Budget Selection (FBS) method set out in the Procurement Regulations.

8. It is expected that the services will be commenced tentatively in January, 2018 and shall be completed in March, 2019. Terms of Reference (ToR) will be available at the office of the undersigned and also in the DWASA's website (www.dwasa.org.bd). Interested consultant may obtain further information from the office of the undersigned from 09:00 to 17:00 hours (Except holidays).

9. Expression of Interest (both hard and soft copy) must be delivered to the address below (in person or by mail) by 17:00 hours (GMT+ 6 hours) on or before November 20, 2017. EOIs received after the last date of submission will not be considered for short listing. DWASA will not be responsible for any delay in submission including delay due to postal or any other reason. The authority reserves the right to accept or reject any or all EOI proposals without assigning any reason, whatsoever.

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Terms of References
for
Consultancy Services from a Project Management Consultant
under “Technical Assistance Project for the Preparatory
Activities of Dhaka Sanitation Improvement Project
(DSIP)(Phase-I) (Package No.: S-1)”.

Abbreviations

CAPEX	Capital Expenditure
DB	Design, Build
DBO	Design, Build & Operate
DCC	Dhaka City Corporation (DCC North, DCC South)
DOE	Department of Environment
DSIP	Dhaka Sanitation Improvement Project
DWASA	Dhaka Water Supply & Sewerage Authority
DWSSP	Dhaka Water Supply and Sanitation Project
EIA	Environmental Impact Assessment
FS	Feasibility Study
HSET	Health, Safety, Environment and Traffic
IBRD	International Bank for Reconstruction and Development
ICB	International Competitive Bidding
IDA	International Development Association
IT	Information Technology
MLGRD&C	Ministry of Local Government, Rural Development & Cooperatives
O&M	Operation and Maintenance
OPEX	Operational Expenditure
PPF	Project Preparation Fund
QCBS	Quality and Cost-Based Selection
RAJUK	Rajdhani Unnayan Karttripakhya (Capital Development Authority)
STP	Sewage Treatment Plant
ToR	Terms of Reference
USD	United States Dollar
WB	World Bank
BTCL	Bangladesh Telecommunication Company Ltd.
DPDC	Dhaka Power Distribution Company Ltd.
DESCO	Dhaka Electric Supply Company Ltd.
TGTDCL	Titas Gas Transmission and Distribution Company Ltd.
IUFR	Interim Unaudited Financial Report
SoE	Statement of Expenditure.
FMS	Financial Management Specialist.
GoB	Government of Bangladesh
MTRR	Mid Term Review Report

1. Background

1.1 General

Dhaka city, the capital of Bangladesh is one of the fastest growing mega cities in the world. Dhaka's population has been increasing continuously and at a very high rate since Bangladesh's independence. The city has also expanded tremendously in an unplanned manner. Today the city is home to an estimated 15 million people. The rapid and haphazard urbanization is exerting immense pressure on Dhaka's urban environment, and city authorities (who often do not have sufficient expertise and resources to deal with the rapid growth) are struggling to deal with pressing environmental issues such as solid waste management, wastewater management and drainage. As a result, the overall environmental situation is deteriorating rapidly to the extent that Dhaka is now considered one of the most polluted cities in the world.

1.2 Existing Wastewater Management Situation in Dhaka City

The administrative authority for wastewater management in Dhaka City is vested with Dhaka Water Supply and Sewerage Authority (DWASA). DWASA was established in 1963 as an autonomous entity under the Ministry of Local Government, Rural Development and Cooperatives (LGRD&C). Currently DWASA provides three services to the city dwellers i.e. potable water supply, collection and safe disposal of sewage and storm water drainage.

The first piped sewer system for Dhaka City was constructed in 1923. Since then, the sewerage system in Dhaka has been developed slowly due to various limitations. At present, almost after a century, only about 20% of the city is served by a piped sewer network. Sanitation in the remaining areas is based on septic tanks and pits, many of which are provided with an overflow to the nearest drain or combined sewers constructed and maintained by other public organizations. Dhaka has no organized system for septic sludge management. Most of the septic sludge is handled by individuals or private contractors who often dispose the sludge in an unhygienic manner. This unhygienic disposal of septic sludge and indiscriminate disposal of untreated sewage is another major source of pollution in Dhaka City.

In terms of infrastructure, the city has only 881 km of sewer network (of varying pipe materials, status and sizes from Ø100mm to Ø1350mm¹) and 64,059 sewer connections (compared to 3036 km of water network and 311,064 water connections). More than 80% of the city is not covered by any formal piped sewer network, although many areas are served by local combined sewers² that discharge untreated sewage to local drains and storm water canals. The Dhaka central sewer network consists of networks of relatively small diameter sewers that are connected via branch lines to the main transmission mains known as 'trunk sewers'. Within the city, there are 30 sewage 'lift/pump' stations and one central pumping station at Narinda that are designed to raise the hydraulic level of the sewage so that it can flow by gravity via the trunk sewers to the treatment plant at Pagla. Manholes have been provided on the route of the mains but most are now inaccessible and in a very poor state of repair, with many being used as receptacles for household waste.

DWASA has adopted two different technologies in its sewage management system i.e. conventional sewerage system and the small-bore sewer system. The small-bore sewer system was constructed in the Mirpur area (North West part) of the city with ADB funding. However, it was never operated properly, and is no longer functional. Properties in central Mirpur are connected to local combined sewers constructed by Dhaka City Corporation. The rest of the DWASA sewers in the city are conventional sewers. The salient information about the existing sewerage infrastructures is provided below:

- Total length of sewer network: 881 km

¹The larger pipe size is an equivalent diameter to a circular pipe as the larger trunk sewers are of a semi-circular type, usually described as brick-arch or horseshoe

²Many constructed by the Dhaka City Corporation

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- Numbers of Pumping/Lifting Stations: 30 nos
 - Sewage Treatment Plant: 1 no. at Pagla, extreme south of the city with a treatment capacity of 120 MLD and the treatment technology is primary settlement followed by facultative waste stabilization ponds.
 - Sewer construction materials: Bricks sewer, vitrified clay pipes, reinforced concrete pipes, ductile cast iron pipes and PVC pipes.

At present, nearly all of the sewer pipelines have fallen into disuse and disrepair either through sediment build-up, damage or collapse, external construction impacts or overloading. During the condition survey and site visits it was noted that sewage flows collected in the northeast (Gulshan/Tejgaon) and old/central (Narinda) in addition to the Bashaboo and Swamibagh areas are not being conveyed to Pagla STP and are simply by-passed by necessity to local drainage water courses. These are immediate problems which DWASA are prioritizing.

In terms of coverage, the existing sewer network is concentrated mainly in the Southern part (old town and the central part) of the city. Most of the Northern part of the city, in which rapid population growth is taking place, has no formal sewer network. On the other hand, existing sewerage facilities of Dhaka City have deteriorated and are now inadequate to serve even the small section of the city. The result is that most of the sewage and/or wastewater generated in the city is directly discharged into storm water drainage canals without treatment and ultimately flows to the nearby open canals or surrounding rivers, contaminating all the surface water bodies in and around the city and creating health hazards, offensive odour and unhygienic environment.

1.3 Previous Studies

DWASA has conducted a number of studies on the wastewater management system in Dhaka. The studies that are relevant to this assignment are outlined below:

- In response to a request of the Government of the People's Republic of Bangladesh, Japan International Cooperation Agency (JICA) conducted a study, "Basic Design Study Report on the Sewerage Construction and Rehabilitation Project for Dhaka City" in 1988. DWASA rehabilitated the Pagla Sewerage Treatment Plant (PSTP) as well as some Sewage Lift Stations (SLS) and Sewer Lines in the light of the recommendation of this study.
- Later on, the Government of the People's Republic of Bangladesh requested the Government of Japan to conduct a study on the Sewerage System in North Dhaka and Japanese Government assigned M/S Nippon Jagesui do Sekkei Co., Ltd through JICA to conduct the study in 1997. The consultant submitted a comprehensive report named The Study on The Sewerage System in North Dhaka in the People's Republic of Bangladesh covering all probable aspects in 1998. But DWASA could not implement the recommendation of that study due to resources constraints.
- In 2004, Institute of Water Modelling, Bangladesh (IWM) was requested to prepare a concept paper on the Sewerage Master Plan for Dhaka City and they submitted a Map over "Dhaka WASA Sewerage System Master Plan", based on the above Study and other considerations.
- In 2006, SWECO International AB submitted a report on "Saidabad Raw Water Quality and Pollution Control Study" financed by Sida INEC, Swedish International Development and Co-operation Agency.
- In 2007, DWASA has conducted a "Waste Water Management Study in Dhaka City (Package DS-2)" under "Project Preparation Facilities (PPF)" financed by the IDA..
- Recently (2011-2012) an Updated Sewerage Master Plan has been developed by DWASA with the financial assistance of the World Bank under Dhaka Water Supply and Sanitation Project (DWSSP).

- DWASA reviewed its organogram and assessed organizational changes that could help improve overall operational efficiency. This report was prepared with WSP support and the final draft was submitted for DWASA’s consideration in 2016.

1.4 Components and cost of the proposed DSIP, phase I

The DSIP is planned to be implemented in phases, which are defined according to project readiness. The components, which are currently envisaged under phase I, can be summarized as follows.

Table: Components of the DSIP, phase I

No.	Component	Remarks	Approximate cost
1	Institutional Strengthening for Sanitation Service Delivery	<ul style="list-style-type: none"> • Sanitation Wing • Improved Commercial management • PMU support • Incremental Operating Cost • Public awareness campaign • Training 	350 million USD
2	Wastewater Management	<ul style="list-style-type: none"> • Renovation of existing Pagla STP • Expansion of Pagla STP (DBO) • Trunk Main: Madhubagh – Pagla (14 km, DB) • Trunk Main: Hazaribagh to Narinda SPS (DB) • Pagla Catchment sewerage networks (except Trunk Mains) (new: 147 km; rehabilitation/reconstruction: 700 km). 	
3	Non-Network Sanitation	<ul style="list-style-type: none"> • Technical assistance to develop service delivery models • Demonstration pilots in selected areas. 	
4	Project Implementation and Management Support	<ul style="list-style-type: none"> • Support to project management activities • Support to relevant consultancies, and trainings. • Financial management support • Social and environmental safeguard support 	

2. Updated Dhaka Sewerage Master Plan

The Master Plan covers the entire area of the Dhaka Metropolitan Development Plan (DMDP) of RAJUK (which is about 1500 km²). The planning horizon is 2035. Key features of the master plan include: (i) separate sewerage systems would be adopted (including on-site sanitation) for different parts of the city; (ii) the total city area has been divided into 12 command areas, and infrastructure requirements for each area have been identified; and (iii) the master plan identifies US\$1.7 billion worth of investments in wastewater collection and treatment infrastructure in Dhaka city over the next 20 years – to be implemented in a phased manner. The shortlisted consultants can obtain the executive summary of the master plan report from the DWASA office.

3. Description of relevant DSIP

Component 1. Institutional Support for Sanitation Service Delivery

The component will provide technical support for DWASA's organizational strengthening for improving capacities in sanitation, and improving coordination amongst the key agencies operating in Dhaka that have roles and responsibilities with a bearing on sanitation outcomes. The component will also focus on strengthening of DWASA's capacity in managing sanitation in an integrated way and lay out the road-map for future institutional development. There will be two sub-components. It will support strengthening of DWASA to manage sanitation services, both institutionally and financially. It will support consultants, studies, software, workshops and training activities to enhance DWASA's operational and financial capacity as follows:

- a. ***Institutional/Operational Strengthening:*** The aim will be to strengthen DWASA's sanitation directorate/wing and build capacity for operating wastewater and on-site sanitation systems. Activities will include detailing of structure, roles and responsibilities, operating procedures; and training and capacity building to manage and operate new assets, upgrading of monitoring and evaluation systems, strengthening citizen engagement to improve overall governance and services delivery, implementing a house connection policy that will developed and agreed during preparation.
- b. ***Financial Management Strengthening:*** As sanitation services are expanded, DWASA's financial sustainability needs attention. It is expected that DWASA's operating costs will increase with the operations and maintenance (O&M) of new sewers and wastewater treatment plants. The capital investments are very high compared to DWASA's current revenues. Thus, a financing plan for investments needs to be in place. DWASA will also need a sound financial operating plan to account for the operations and maintenance (O&M) of new assets and services. Activities will include supporting financial analysis and modeling for DWASA's tariff roadmap for water and sanitation services, and financial operating plans incorporating sanitation services. In addition, training to improve accounting, and billing and collections, and customer services will also be supported.

Component 2 (Wastewater Management)

Pagla Catchment sewerage network

The Dhaka South - Pagla Sewerage Catchment encompasses *approx.* 73km², including nine thanas, namely Ramna, Khilgaon, Sabujbagh, Motijheel, Lalbagh, Kotwali, Sutrapur, Demra and Shyampur Thanas. The river Buriganga borders along the south-western side and the river Balu borders along the eastern side of the Catchment.

The Catchment is characterised as being predominantly urbanized with a well-functioning and planned road network. The south-east, namely Shyampur and Demra areas, are emerging.

Old Dhaka, the historic urban core of the city which runs along the eastern bank of the Buriganga River, comprises the thanas Lalbagh, Kotwali, and Sutrapur. Old Dhaka consists of a complex mixture of commercial and residential establishments. The physical infrastructure is overloaded and inadequately maintained. Roads are narrow and congested, and generally flanked by old multi-storied low to medium rise apartment buildings. Old Dhaka has developed freely with mixed land use showing little regard to any urban planning. The

drainage network of Old Dhaka is characterized by the presence of both covered and open drains. Unfortunately most of these remain in poor state of repair and are clogged due to careless disposal of solid waste and other refuse items. The piped water-borne sewerage system covers the majority of the built-up areas of Old Dhaka.

Beyond Old Dhaka, the other urbanized areas within the Catchment area, except the Khilgaon Rehabilitation Area, have been largely developed in an unplanned manner, without sufficient regard to respecting the norms of formal planning institutions. The unplanned development of the area has resulted in congestion and compact inhabitation and settlement. In addition, insufficient development of internal road networks is rampant across the area.

A considerable part of the population are served via the existing piped water-borne sewerage system of DWASA, but the dwellers of slum, squatter and fringe settlements have no access to the existing sewerage system and instead are reliant on the use of septic tanks and pit latrines. Except Khilgaon, Shahjahanpur, Malibagh and Bashaboo, most of the areas have no sewerage line.

Drainage facilities are nearly non-existent in the area, and the majority of the existing surface drains are shallow open drains. Being a low-lying area, most of the area is flooded and remains submerged during the monsoon season. Construction of storm sewers in the area to carry off wastewater and stormwater has been started.

The Catchment is presently high density and is expected to reach very high densities within the planning horizon of the project. The present (2011) population of *est.* 3.4 million has been projected to increase to 6.0 million by 2035.

The basic elements of the proposed sewerage system and network information (Tentative) are as follows:

1. Area of the catchment: 72.55 km²
2. No. of population within service coverage area: 5.1 million
3. Percentage (%) of population connected in sewerage network: 65%
4. Total sewage production: 380,000 m³/day
5. Type of sewerage system: separate
6. Network Information:
 - a) Total Length of different pipes: 147 km + 700 km (Existing)
 - b) No. of sewage pump stations: 6 + 24 (Existing)
7. Area of Sewage Treatment Plant: 51 ha
8. Location of sewage treatment plant: Pagla
9. Receiving water body: Buriganga River

Trunk Main Madhubagh – Pagla

Sewer of 14km in length and diameter ranging from 450mm to 1360mm routed from Madhubagh to Pagla STP through the lift stations of Bashaboo and Swamibagh. The pumping stations are used for collection & transportation of sewage towards the Pagla sewage treatment plant.

The Trunk Sewer from Gulshan to Pagla STP is in poor operational condition and only a fraction of the sewage collected along this route is actually transported to Pagla STP. In view of the proposed construction of the Dasherikandi STP, sewage from Gulshan and Banani will be diverted to the new Treatment Plant via the Hatirjheel Lake pipe interceptors which are currently under construction. The remaining length of the trunk sewer to Pagla will have to be rehabilitated to allow for sewage from all areas, south of Hatirjheel, along its line to be transported to Pagla STP. This section includes the trunk sewer from Madhubagh to Pagla

STP, following the DWASA easement, as well as the two existing Pumping Stations at Bashaboo and Swamibag, the latter of which will be relocated to Golapbag.

The existing trunk sewer was constructed as a 36"-54" equivalent brick arch sewer in 1971. The type, shape, size and condition of the pipeline does not allow for relining or other form of repair, so a full replacement has been recommended. The new trunk sewer has been designed to cater for the needs of the service area up to the design horizon of 2035 as described in the relevant reports. The existing alignment will be generally followed with the exception of the section between Golapbag and Jurain where a number of constrictions dictate the use of an alternate route. Similar levels to the existing trunk sewer have been used for some sections. In those sections the original trunk sewer will be demolished and replaced by the new trunk sewer. In other sections, the inefficient slope of the original trunk sewer and/or the subsequent infill of the land which resulted in the trunk sewer being at depths of up to 7m from current road level, dictate the redesign of the original grades and levels. Force mains will be used in some cases where as in other cases the replacement trunk sewer will be constructed at shallower depths in order to minimize construction risks and reduce construction costs. In order to guarantee the continuity of the trunk sewer and to allow for connection of the existing deep laterals in those cases, additional local trunk sewers gravitating to existing pumping stations or additional pumping stations have been proposed.

The pumping stations at Bashaboo and Swamibag are currently in dire condition and require full reconstruction. Swamibag Pumping Station's location however would require very complicated and costly construction methods to construct both the new Pumping Station as well as the inlet and outlet pipelines. It has therefore been recommended to relocate this pumping station to a much more suitable location at Golapbag.

Pagla STP

DWASA operates a sewage treatment plant at Pagla (PSTP) located on an 110.5 ha site approximately 8km from the city centre in the south-east of Dhaka City and approximately 1km north of the Buriganga River. The Pagla STP was originally constructed in 1978 and provides treatment of the wastewater collected by the central sewerage system and is currently the only treatment facility in the city, although another is proposed for construction to service the Hartijheel scheme located at Dasherbandi. The current design capacity is 96MLD (average flowrate) and 120MLD (peak flowrate) while the current sewage generated within the catchment served by the centralized sewerage system is approximately 250-300MLD, and is expected to exceed 500MLD at the Master Plan design horizon. Due to damage of the trunk mains and sewerage system, the actual flowrate entering the Pagla STP is approximately 30-40MLD, *i.e.* the treatment plant is significantly under-loaded and should provide a high level of treatment.

Pagla has undergone a number of refurbishments, the last of which was in 1991-92, financed by JICA. A condition assessment was undertaken on the treatment plant and which was the subject of Design Memorandum No. 1. Prepared by Grontmij A/S.

There is limited unused area remaining on the existing site hence the existing treatment process of facultative ponds cannot be utilized to meet the long-term requirements of the Pagla catchment. Further, the existing treatment plant suffers from a number of operations and maintenance problems which decreases the quality of the effluent, *incl.:*

- Primary sedimentation tank scrapers do not efficiently cover the tank floor hence sludge is not collected and removed. It is recommended to de-rate the capacity of the primary sedimentation tanks to 100MLD.
- The facultative ponds have accumulated sludge which should be emptied; the disinfection system is not operational.

Component 3 – Non-Network Sanitation

As the project aims to bring in sanitation improvements in the catchment areas, there are locations where sewerage system may not be feasible and non-network systems will be required. This component will look at ways to systematically and scientifically collect, transport, treat and safely dispose fecal matter. The final model/s for services delivery will be decided in discussion with DWASA and other relevant government authorities, and selected one/s will be demonstrated under the proposed project with an aim to ultimately scale up and improve the overall sanitation condition in the city.

Component 4 – Project Implementation and Management and Support

This component supports project management activities and capacity building of the DWASA to coordinate and execute project activities. It will also: (i) focus on strengthening the PMU's capacity to implement project activities; (ii) finance selected individual consultants, training, and consulting firms to ensure efficient project implementation; (iii) finance for audits of project internal processes; (iv) support sound environmental and social management of the project, including gender focus and social inclusion, the preparation of safeguard documents and their monitoring, as well as financing of compensation, if required.

3.1 The DWASA and other competent authorities

Dhaka Water Supply and Sewerage Authority is the Client and the implementing agency for the proposed DSIP, it will be supervised by and has to report to its line ministry:

- Ministry of Local Government, Rural Development & Cooperatives (MLGRD&C);

Authorities with whom the DWASA will cooperate for the benefit of the project, including:

- Dhaka City Corporation- North (DCC North);
- Dhaka City Corporation- South (DCC South);
- Department of Environment (DoE)
- Rajdhani Unnayan Kartripakhya (RAJUK);
- Bangladesh Water Development Board.

At the request of DWASA, the Consultant shall attend meetings with these authorities and/or prepare special reports on project related issues that are subject of coordination between DWASA and one or more of such authorities.

3.2 Special communication issues requiring attention

While conducting the assignment, the Consultant shall coordinate, communicate and coordinate with other agencies and management units of projects, including:

- Dhaka City Corporation- North (DCC North);
- Dhaka City Corporation- South (DCC South);
- Department of Environment (DoE)
- Rajdhani Unnayan Kartripakhya (RAJUK);
- Bangladesh Water Development Board.
- BTCL
- DESCO,
- DPDC,
- TGTDCCL etc.

4. CONTRACT OBJECTIVES

The main objective of the consulting services under this assignment:
 Providing advisory services to DWASA to manage the preparation of the proposed World Bank supported project through the Technical Assistance which is financed by the Project Preparation Advance (PPA). The main goal is to enable DWASA to complete the detailed project design, related documents, disclosure and manage the agreed procurement and procedures for readiness of the proposed project to be taken to the World Bank Board approval successfully, on time, and within budget.

5. SCOPE OF WORKS

5.1 General requirements

Under this contract, the Consultant shall assist DWASA in every possible way, including with:

- Project administration and control
- Overall planning for timely preparation of the proposed project
- Procurement Assistance
- Engineering support
- Assist with other contracts management
- Assisting DWASA on Project Reporting and meeting readiness criteria
- Assist with financial administration and control
- Provide assistance with IT (Information Technology)
- Assist with legal issues
- Assist in setting up the Monitoring and Evaluation
- Assist in developing the Capacity Building/Training Strategy and Plans
- Assist with Stakeholder Consultation
- Assist in preparing the Project Communication Strategy and citizens engagement plan
- Assist in preparing the Project Operating Manual
- Submission of Project Completion Reports and / or Implementation Completion Report (if any) for the TA Project

The activities of the Consultant are grouped into several main tasks, as summarized in the following table, and subsequently described in the detailed task description:

Table: Overview of tasks:

PROJECT MANAGEMENT:	
Mobilization and Inception Period	Task A
Technical and Contract Management Support to DWASA	Task B
Assist DWASA in coordinating all activities of the detailed project design	Task C
Provision of Overall Planning and Coordination for completion of project preparation and approval	Task D
Assist DWASA with Project Reporting	Task E

The present assignment will require close co-ordination with DWASA, other relevant stakeholders as part of the project scope and excellent co-ordination with other consultants hired under the project. Coordination and facilitation with the Dhaka North and Dhaka South City Corporations and other authorities, the World Bank and local communities will be an essential task.

As part of the project design, contractors and consultants will produce a large stream of documents that need to be reviewed and approved by DWASA. As part of the duties, the Consultant shall coordinate the document flow and ensure that systems that record these documents and their status are up to date at all times.

The Consultant shall prepare overall planning schedules in completing the design phase of the proposed project, that cover all components and activities needed for the proposed project. The Consultant shall also track progress made. Any delays, planning changes, as well as any technical and financial issues that develop during the course of the project design period that significantly depart from the defined project requirements, shall be brought immediately to the attention of DWASA, together with proposals on remedial actions. Prior approval from DWASA will be required before proceeding to provide final decisions on any such issues.

The Consultant shall support DWASA with the review of any technical and financial documents, including proposals for variations presented to DWASA.

5.2 Detailed task description

TASK A: MOBILIZATION AND INCEPTION PERIOD

During the inception period the project team shall carry out a number of initial activities, as follows:

1. Subject to the prior approval by DWASA, the Team Leader and other staff as necessary shall mobilize and establish a project office within the DWASA building.
2. Study all project documents to obtain a good impression of all details impacting on the proposed project;
3. Review DWASA's organization and delegation of responsibilities regarding execution and finalization of project components and make recommendations for improvements on the organization chart, lines of authority and means of communication and coordination procedures necessary to ensure orderly and unimpeded progress of the work;
4. Review DWASA's financial administration and control systems and make recommendations for improvements;
5. Bring to the attention of DWASA -any potential contractual issues that warrant early attention (such as land acquisition, resettlement issues, etc);
6. Identify all necessary approvals required and certificates to be signed to enable contracts to become effective in accordance with regulations of the Government of Bangladesh;
7. Organize a kick-off meeting to be attended by all contracted consultants and contractors to explain the position of the Consultant and to establish lines of communication;
8. Initiate separate meetings with all contracted consultants and contractors and discuss difficulties (if any) they face in the carrying out of their duties. Identify any bottlenecks for the project and bring these to the attention of DWASA, together with recommended solutions;
9. Propose efficient procedures for verifying consultants and contractors' performance and reporting progress and problems in a timely manner, including critical path program management and tracking system (such as MS Project or Primavera), quality control reports, quantity survey records, requests for variation or change orders, submittals and claims and invoices, etc. Prepare an initial overall planning schedule that also shows all critical path activities;
10. Prepare an Inception Report which shall include information regarding all of the above aspects and, as Appendices, stand-alone sub-reports/plans, as follows:
 - Project Charter;
 - Project Execution Plan;
 - Review of DWASA's project organization;
 - Quality Management Plan;

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- Communication Plan;
 - Initial overall planning schedule, including timelines and the review of the consultant work (staffing) plan against the proposed work (staffing) plan in the technical proposal, and advice of any change in advanced.

TASK B: TECHNICAL AND CONTRACT MANAGEMENT SUPPORT TO DWASA

Sub-task B.1: Provide Technical Support to DWASA

The Consultant will provide technical support to protect DWASA's interest, in assessing recommendations made by other consultants/contractors, especially if such recommendations are related to any conflict resolution between the consultant concerned and the contractor. The Consultant is expected to assist DWASA with decision making on all issues including (but not limited to) the following:

1. The Consultant shall assist DWASA where and when possible in solving problems of any kind between different parties/stake holders in the project, or with unexpected occurrences and accidents;
2. The Consultant shall assist DWASA in evaluating, commenting and finalizing the Bidding Documents that shall be elaborated by a consultant for DBO (Design-Build-Operate) of Pagla STP, Bidding Documents for Rehabilitation of existing Pagla STP, and the Bidding Documents for Design-Build (DB) of the Trunk Main: Madhubagh – Pagla, Rehabilitation of Bashabo lifting PS and a new lifting PS at Golapbag, and New Market to Narinda and Rehabilitation of NilKhet and Narinda lifting PS; (The name of lifting PS are tentative, actual requirements will be decided after the condition assessment done by the DBO/DB consultant.
3. The Consultant shall assist DWASA in evaluating, commenting and finalizing the Bidding Documents that shall be elaborated by a consultant for DB (Design-Build) of Pagla sewer system, which will have a component for new constructions, and a component for sewer rehabilitation;
4. The Consultant shall assist DWASA in evaluating, commenting and finalizing the Bidding Documents for the construction other sewerage networks that will be constructed/rehabilitated/reconstructed under DSIP(Phase-I);
5. The consultant shall assist DWASA in assessing the existing sewerage connections and the available GIS data on location.
6. In consultation with DWASA's IT/GIS division, digitize collected/available data on connections
7. Hold stakeholder consultations to understand roadblocks to people connecting to the network
8. Conduct connection strategy analysis to finalize the connection policy, review and finalize the tariff policy to support new investment, and recommend alternate non-network sanitation.
9. Support DWASA in the preparation of procurement package and selection of the Project Management Consultant for the implementation phase (if any).

Sub-task B.2: Assisting DWASA with contract management

The Consultant shall support DWASA with managing all contracts by consultants/contractors, which will include screening of the reviews of proposals by others and advising DWASA whether or not such proposals can be approved, shall be declined, or need improvement, etc. The Consultant, in close consultation and coordination with DWASA, is expected to perform all necessary sub-tasks, including (but not limited to) the followings:

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1. Verify, report, follow-up the provision and their timely mobilization of human resources, equipment, materials, etc. by Firms/ Contractors/ Consultants, if any;
 2. Assist DWASA to check, supervise, manage other Firms/ Contractors/ Consultants participating in the Project implementation to ensure the progress, quality, safety, environmental hygiene and fire, explosion protection and fighting, if any;
 3. Assist DWASA to verify, govern the progress and quality of designs by contractors in accordance with the provisions of the signed contracts;
 4. Evaluate the quality status of the project;
 5. Assist DWASA to manage risks related to the Project;
 6. On behalf of DWASA, review, verify and record works diaries, periodic reports (daily, weekly, monthly) and other reports by Firms/Contractors/ Consultants, summarize findings and report any problems to DWASA;
 7. Review lines of communication with all parties important for the project and plan any contacts needed with any of the parties in the future;
 8. At the request of DWASA, attend meetings between DWASA and any other parties and prepare any necessary information for such meetings. Prepare information required and agree with DWASA on the best method of communicating the information to the meeting (e.g. through handouts, power point presentations, guest experts, etc.) and follow up on further actions for which DWASA is deemed to be responsible;
 9. Prepare draft communications on coordination issues from DWASA to respective consultant firms hired under the project;
 10. Attend internal DWASA meetings on project progress, prepare minutes of meetings and action lists, including timeline of actions to be taken. The Consultant shall play an active and participatory role in these meetings, review planning schedules in the meetings and bring any actions to be taken by DWASA or others to the attention of the meeting;
 11. Review, verify documentations of Firms/ Contractors, Consultants according to the Contracts signed with DWASA

TASK C: ASSIST DWASA IN COORDINATING ALL ACTIVITIES OF THE PROJECT DESIGN AND COMPLETION OF PROJECT PREPARATION

The Client has hired, or will hire, various consultants that will be in charge of managing specific components of the project. However, overall project administration and control will be with DWASA) supported by the Consultant. The consultants in all contracts will prepare reports and other project documents, or, after a review will pass on documents prepared by the contractor(s)/other consultants that they supervise, including as-built drawings, that must be administered and responded to by DWASA, with strong support by the Consultant. The Consultant is expected to perform all necessary sub-tasks, including (but not limited to) the following:

1. Maintain and oversee timelines and schedule for DSIP preparation activities.
2. Provide DWASA with a structured project management organization and establish regulations for internal cooperation between parties within DWASA, as well as between DWASA and other stake-holders to the project;
3. Prepare a stakeholder coordination strategy to support project implementation.
4. Define project roles and responsibilities and propose suitable project management, implementation and reporting arrangements
5. Coordinate with other consultants working on project preparation activities (including but not limited to consultants on social and environmental impact assessments) and ensure that all relevant inputs are incorporated
6. Prepare a detailed project operation manual and support DWASA in preparation of

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- Development Project Proposal (DPP).
7. Advise DWASA on the procurement and use of management information software, and digitization of the existing sewer drawings in Pagla catchment area and assist DWASA with the implementation thereof;
 8. Support other scientific studies carried under the auspices of the project and assist DWASA in reviewing the results of such studies.
 9. Prepare a Project Communications Strategy that includes information, education and communication strategy and Action Plan for implementation
 10. Prepare a Citizens Engagement Plan which focuses on the approach, methodology and tools for citizens involvement
 11. Prepare reports, briefs, presentations and other documents as needed;
 12. Provide inputs into reports, briefs, presentations, and other documentation as needed;
 13. Undertake field visits as necessary;
 14. Provide support as needed by DWASA;

Task D: Assist DWASA in Strengthening Capacity to Implement the Project.

1. Assess DWASA's capacity to implement project activities.
2. Identify shortcomings in the performance of DWASA staff members, of DWASA as a project management organization and of DWASA's organization structure and make recommendations for remedial action;
3. Develop and draft a capacity building strategy (including training plans) to ensure successful project implementation
4. Develop training schedules and provide details of required resources and stakeholders
5. Train DWASA staff on all aspects of project administration, conduct special workshops, if necessary, for DWASA personnel;
6. Support DWASA in organizing stakeholder workshop/s as needed for project preparation

TASK E: PROVISION OF OVERALL PLANNING AND COORDINATION OF PROJECT PREPARATION AND RELATED ASSISTANCE

Sub-task D.1: Overall project planning and monitoring of progress

Under the consultancy and construction contracts, Firms/ Contractors/ Consultants will be required to provide detailed planning schedules. Using these separate planning schedules, the Consultant shall prepare a detailed overall project planning schedule, coordinate, monitor and track performance of all project preparation related parties.. Both national and World Bank requirements for appraising the project and project implementation scheduling should be considered. The Consultant is expected to perform all necessary sub-tasks, including (but not limited to) the following:

1. Based on the preliminary planning schedule prepared for the Consultant's Inception Report and comments received, prepare a detailed overall project planning schedule including critical path program management and progress tracking system (such as MS Project), and keep it up to date by monitoring project progress throughout the assignment period;
2. Review the existing Monitoring and Evaluation system and prepare/ update the M&E framework and system for the project. Support DWASA in finalizing the Results Framework and related indicators to capture progress on project results.

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3. Monitor, check and review the progress reported by Firms/Contractors/ consultants and insert actual progress in the overall planning schedule. Report on the consequences of any delays and make recommendations on how to overcome the effects of any such delays.
 4. Monitor bidding processes, track critical dates of bidding process and inform DWASA by which times Client's (and others') actions are needed to avoid delays.
 5. Prepare Project Reporting formats to be used during Project implementation.

Sub-task D.2: Provide Project Management training and coaching for DWASA staff

Under this Sub-task, the Consultant shall identify the training needs. The consultant shall also provide training of 30 participants (selected as per discretion of DWASA) on use of any monitoring and evaluation, project management and contract management tools that may be useful for DWASA for project preparation and management of such nature for a duration of minimum 2 days.

TASK E: ASSIST DWASA WITH PROJECT REPORTING

As part of this assignment, the Consultant shall prepare quarterly progress reports and submit to the World Bank on progress made and on issues that need attention. The Consultant shall prepare these quarterly reports, on behalf of and in close coordination with DWASA, as well as any incidental reports requested by the World Bank on special issues and any other reports that DWASA needs to prepare. The Consultant is expected to perform all necessary sub-tasks, including (but not limited to) the following:

1. Set up a framework for the semi-annual reporting to the World Bank that is acceptable to DWASA and to the World Bank, including relevant sections on each consultancy, on special issues requiring attention, on planning and progress and on the project finance, which are essential to meet the appraisal requirement of the World Bank and domestic approval of GoB for loan negotiation;
2. Together with DWASA, set up frameworks for reports to DWASA's supervising agency, the MLGRD&C;
3. Together with DWASA, prepare/coordinate all reports, including Project Implementation Manual, project implementation plan, procurement Project Procurement Plan in an orderly and timely fashion;
4. Review the Environmental and Social Management Framework and provide recommendations for improvement in a timely manner, as needed by DWASA.
5. At the request of DWASA, prepare special reports on issues related to the project, including but not limited to Development Project Proposal (DPP);
6. Develop, based on consultations with DWASA, a draft results framework for the project.
7. Collect baseline information for the draft results framework
8. Support DWASA with its response to any queries/questions by project stakeholders, such as World Bank, DCCs, the MLGRD&C, or others.
9. Assist DWASA in preparing all necessary procurement documents to hire a PMC for the project implementation period.
10. Any other work as directed by the PMU
11. Help in finalizing the Organogram of the Sewerage Wing / Directorate and will help in preparing job descriptions of the positions for recruitment.

TASK E.1: REVIEW OF THE DOCUMENTS SUBMITTED UNDER –

- (i) Consulting Services for Feasibility Studies and Preparation of Conceptual Designs and Bidding Documents for DBO/DB Contracts (Package No.: S-2).
The following documents will be submitted:

Report	Description	Remarks
Inception Report	<p>Inception Report shall cover the following aspects but not limited to:</p> <ul style="list-style-type: none">• Revised work plan• Revised methodology (if any)• Description on logistics and office facility as per contract etc.	
Monthly Progress Reports	-	
Interim Report-1	<p>This report consists of</p> <ul style="list-style-type: none">- Detailed survey of Dhaka South (Pagla) catchment; preliminary assessment of technical options for sewage collection and treatment, including also decentralized collection and treatment of wastewater as well as faecal sludge/septage management.- Assessment of Sewerage Systems of Pagla Catchment: Identifications of the sewerage systems which needs for replacement/reconstruction/rehabilitation/new construction.- Guidelines (including methodology, simplified evaluation criteria, templates etc) for selection of construction methods and technologies for sewer rehabilitation / replacement or construction/reconstruction in Pagla Catchment Area.- Design Criteria Report for the rehabilitation/reconstruction/ construction of sewerage system in Pagla Catchment Area separately.	
Interim Report-2	<p>This report (no. of packages must be agreed upon with DWASA) consists of:</p> <ul style="list-style-type: none">-Conceptual Design Report for	

Report	Description	Remarks
	<p>different packages of sewerage systems of Pagla Catchment, -PQ Documents for different packages of sewerage systems of Pagla Catchment. -Sewer Pipe Assessment Report</p>	
Interim Report-3	<p>This report (no. of packages must be agreed upon with DWASA) consists of: - Bidding Documents (DB) for different packages of sewerage networks in Pagla Catchment. - Bidding Documents (DBO) for Rehabilitation and Expansion of Pagla STP.</p>	
Feasibility Study Report of proposed DSIP (Phase-I).	<p>The report consists of -</p> <ul style="list-style-type: none"> i. Identify and quantify annual financial costs and revenues from the project; ii. Identify, quantify and value annual economic costs of the project, based on life-cycle financial costs; iii. Identify, quantify and value annual economic benefits of the project in monetary terms; iv. Determine net benefits; economic net present value (ENPV); economic internal rate of return (EIRR), financial net present value (FNPV); and financial internal rate of return (FIRR) for the project; v. Evaluate the financial sustainability of the project based on the net flow of cash during both the implementation and operating periods; and vi. Conduct sensitivity analysis and test the effects of variations in selected cost and benefit variables on the project's F/EIRR or F/ENPV. 	
Completion Report	Completion report consolidating all above deliverables and providing a narrative of the main	

Report	Description	Remarks
	achievements and lessons from the consultancy, including training carried out.	

- (ii) Consultancy Services for Preparation of EIA and Environmental Management Framework (Package No.: S-3). The following documents will be submitted:

Report	Remarks
Inception Report	
Draft EMF	
Draft EIA	
Final EMF and EIA Report	
Translated EMF and EIA Report	

- (iii) Consultancy Services for Preparation of Social Impact Assessment and Updating/Preparation of Resettlement Policy Framework (RPF) (Package No.: S-4). The following documents will be submitted:

Report	Remarks
Final Inception Report	
Draft SIA Report	
Updating /Preparation of Resettlement Policy Framework	
Final SIA Report	
Translated Copy (in Bangla) of Social Management Framework Report/ Updated Resettlement Policy Framework (RPF) Report	
Final Completion Report	

The Consultant shall also check if the other consultants are following/incorporating DWASA's comments/observations along with the Project Management Consultant's comments in the concerned reports.

Task E.2: The consultant will have to prepare the followings, but not limited to:

- (i) Prepare a ToR and Cost Estimate of “Consultancy Services from a Project Management Consultant during the implementation of proposed Dhaka Sanitation Improvement Project (DSIP) (Phase-I)”.
- (ii) Prepare a ToRand Cost Estimate of “Consultancy Services for Environmental Study under the proposed DSIP (Phase-I)”.
- (iii) Prepare a ToRand Cost Estimate of “Consultancy Services for preparation of Resettlement Action Plan and Implementation of Resettlement Activities under DSIP (Phase-I)”.
- (iv) Prepare a Development Project Proforma / Proposal (DPP) for the proposed DSIP (Phase-I) following the guidelines of GoB.

6. LOGISTICS AND TIMING

6.1 Location

DWASA will try to make office space on rental basis available in its head offices at 98 Kazi Nazrul Islam Avenue, Kawranbazar, Dhaka-1215. If not possible, the consultant will arrange an office at his own cost within a stone's throw from DWASA's Head Office, and the Consultant shall start this assignment from that office within 2 weeks after having signed the contract. It shall be noted that the Consultant shall carry out all/most work in Dhaka, in order to consult and coordinate with personnel of DWASA, other Government agencies and Consultants involved in related projects as much as possible into the day-to-day work and to facilitate a maximum transfer of knowledge and experience to DWASA's staff.

6.2 Commencement date, duration, and critical milestones of this assignment

It is expected that the Consultancy Services will be started from January, 2018. The total duration of this consultancy services will be 15 (fifteen) months.

7. Team Composition and Estimated Time Input:

DWASA intends to engage a consultancy firm with experience in feasibility studies, engineering design of large urban sewerage infrastructure of similar nature and complexity, including experience in managing projects that utilize a variety of construction technologies and methods for sewer construction, rehabilitation and replacement. The engineering firm also needs to hold expertise in design and management of decentralised collection and treatment of sewage as well as in collection and treatment of faecal sludge/septage.

The consultant shall ensure that a team of experts and professional staff with necessary education, skill and experience would be deployed for all tasks in the field of design of large scale sewerage projects. Furthermore, the consultant must provide specific professionals on wastewater treatment, collection, disposal technology, decentralized collection and treatment of sewage, collection and treatment of faecal sludge/septage, as well as on deep sewer construction for a large urban sewerage projects.

An indicative list of the positions of the key professional staff /experts who will be evaluated for this assignment is given in Tables below. The estimated staff-months are indicative but minimum for field input. The consultant is free to propose their own estimate of professional input required to deliver the services in line with the Terms of Reference.

A. Key Staff		
Sl. No.	Position	Man-month(MM)
<i>International Key Staff</i>		
1	Team Leader	10
2	Wastewater Treatment Process Engineer	5
3	Wastewater Treatment Plant Designer	5
4	Electrical Engineer	5
5	Mechanical Engineer	5
6	Sewer Design Specialist	5
7	Monitoring and Evaluation Specialist	5
8	Institutional Development Specialist	5
Sub-total		45

<i>National Key Staff</i>		
1.	Deputy Team Leader	10
2.	Fecal Sludge Management Specialist	10
3.	Electrical Engineer	5
4.	Mechanical Engineer	5
5.	Procurement Specialist	10
6.	Environmental Specialist	5
7.	Social Development Specialist	5
8.	Economic and Financial Analyst	5
9.	Communications Specialist	5
10.	Financial Management Specialist	15
Sub-total		75

N.B.: Apart from the above-mentioned input, the consultant shall take into account the following aspects:

1. A cautious planning of staffing schedule for providing such services is expected.
2. The estimated person-months are indicative and the consultant may propose their own estimate of professional input in order to deliver the services in conformity with the scope of services. Professional input may be staggered over the contract period, considering the project tenure as 18 calendar months.

In addition to above listed positions of key professionals; the consultant should make arrangements for other experts and support professionals with adequate experience in relevant fields. Indicative list of other staffs / experts / support professionals who may be required for the assignment are given in Table below. During technical evaluation process, these staffs will not be evaluated individually. However, they will be considered collectively along with other support staffs, if any, under “Organization and Staffing” criteria of evaluation.

Estimated Input of Support Staff:

	Key Professional Staff Position	Man-Months (Indicative)
1	Geologist/Geotechnical Specialist	5
2	CAD Operator	5
3	GIS Technician	5
4	Surveyors	5
5	Office Manager-cum- Accountant	10
	Total	30

The qualification, experience and competency of the key staffs, whose CV's will be considered for evaluation to be required for the proposed services are as follow:

B. Required Qualification & Experiences of the Key Staffs					
Sl. No.	Type of staff	Minimum Educational qualification	Back ground	Overall Experience	Specific Experience & responsibilities.
<i>International Key Staffs</i>					
1.	Team Leader	Graduate	Civil/Sanitary Engineering	Working experience about 20 yrs	<p>The Team Leader should have about 12 yrs international managerial experience and sufficient experience in the field of design of wastewater treatment design infrastructures. He/she should have working experience as Team Leader in minimum 5 projects among which at least 2 assignments of similar Sewerage Project. Team Leader (TL) shall be responsible for overall activities of the consulting team for the following but not limited to</p> <ul style="list-style-type: none"> • Full responsibility for overall activities of the team including all relevant aspects e.g. technical, financial, legal/statuary, health/social etc. • Provide advice and direction to the multi-disciplinary team of the Consultant to perform the duties of the team in a comprehensive manner to deliver the duties of the team in an efficient manner to meet the requirement of the employer. • Orient the work plan and necessary training program in consultation with Project Director so as to ensure maximum technology transfer and develop usable capacity in DWASA. • Preparation of different procurement documents following the procurement guidelines of the development partner and/or PPA-2006/PPR-2008. • Maintaining liaison with the client to achieve the ultimate goal of the assignment • Reviewing of previous relevant studies and data. • Taking part to all relevant meetings with concerned stakeholders

					and feedback the PIU on pertinent issues. • Reporting.
2.	Wastewater Treatment Process Engineer	Graduate	Civil/ Sanitary Engineering/Water Treatment Process Engineering.	Working experience about 15 yrs	<p>This professional staff should have sufficient international experience in wastewater/water treatment process selection and design with modern technologies. He/she must be experienced in designing at least 2 sewage/water treatment plants out of which at least 1 treatment plants are of 75 MLD capacities. This key staff shall be responsible for but not limited to:</p> <ul style="list-style-type: none"> ❖ Collect relevant studies reports and data's. ❖ Reviewing the relevant reports ❖ Assisting the employer in selection of treatment process to optimize the benefit of DWASA in terms of quality of treatment and best practice, ease of least cost operation and maintenance etc. ❖ Conducting training programs on selecting of water treatment process and design to scale-up the technical knowledge of the project supervising team ❖ Assisting the TL and the team ❖ Any other relevant duties to be required for the team.
3.	Wastewater Treatment Plant Designer	Graduate	Civil/ Sanitary Engineering/Water Treatment Process Engineering.	Working experience about 15 yrs	<p>This professional staff should have sufficient international experience in designing of sewage/wastewater treatment plant. He/she must be experienced in designing at least 2 wastewater/water treatment plants out of which at least 1 wastewater treatment plants are of 75 mld capacities. This key staff shall be responsible for but not limited to:</p> <ul style="list-style-type: none"> ❖ Hydraulic Design of the sewage/wastewater treatment plants including the assessment of sewage/wastewater into the particular catchment and prepare relevant specifications. ❖ Collect and review the relevant documents, reports and data's. ❖ Conducting training programs on designing the relevant infrastructures to scale-up the technical knowledge of DWASA engineers.

					<ul style="list-style-type: none"> ❖ Assisting the TL and the team ❖ Any other relevant duties to be required for the team
4.	Electrical Engineer	Graduate	Electrical Engineering	Working experience about 15 yrs	<p>This professional staff should have sufficient international experience in designing of relevant electrical components of such infrastructure (similar wastewater/water treatment plant). He/she must be experienced in designing of electrical component in at least 2 water/waste water treatment plants out of which at least 1 treatment plants are of 75 MLD capacities. This key staff shall be responsible for but not limited to:</p> <ul style="list-style-type: none"> ❖ Collect and review the relevant documents, reports and data . ❖ Preparation of Designs and drawings of electrical components of STP and Sewage Lift/Pump Stations (SLS) and prepare relevant specifications. ❖ Conducting training programs on designing the relevant infrastructures to scale-up the technical knowledge of DWASA engineers. ❖ Assisting the TL and the team ❖ Any other relevant duties to be required for the team
5.	Mechanical Engineer	Graduate	Mechanical Engineering	Working experience about 15 yrs	<p>This professional staff should have sufficient international experience in designing of relevant mechanical components of such infrastructure (similar wastewater/water treatment plant). He/she must be experienced in designing of mechanical component in at least 2 wastewater/water treatment plants out of which at least 1 treatment plants are of 75 MLD capacities. This key staff shall be responsible for but not limited to:</p> <ul style="list-style-type: none"> ❖ Collect and review the relevant documents, reports and data's. ❖ Designing and drawing of mechanical components of STP and Sewage Lift/Pump Stations (SLS) and prepare relevant specifications. ❖ Conducting training programs on designing the relevant infrastructures to scale-up the technical knowledge of DWASA engineers.

					<ul style="list-style-type: none"> ❖ Assisting the TL and the team ❖ Any other relevant duties to be required for the team
6.	Sewer Design Specialist	Graduate	Civil/ Sanitary Engineering	Working experience about 15 yrs	<p>This professional staff should have sufficient international experience in designing of sewer networks. He/she must be experienced in designing of sewer networks at least 2 projects out of which at least 1 large projects in the mega city. This key staff shall be responsible for but not limited to:</p> <ul style="list-style-type: none"> ❖ Collect and review the relevant documents, reports and data's. ❖ Designing and Drawings of sewer networks and select the pipe/conduit material including specifications. ❖ Conducting training programs on designing the relevant infrastructures to scale-up the technical knowledge of DWASA engineers. ❖ Assisting the TL and the team. ❖ Any other relevant duties to be required for the team.
7.	Monitoring and Evaluation Specialist	Master	Masters' degree in social sciences, economics or equivalent	Work Experience of about 10 years	<p>The expert should also have knowledge of and experience in monitoring and evaluating programs—including indicator development, study design, and data analysis.</p> <ul style="list-style-type: none"> ❖ Professional experience in a performance monitoring and/or evaluation role. ❖ Proven ability for data analysis, project design, monitoring, and evaluation of development activities, and experience of working in developing results frameworks, logical frameworks, or similar tools.
8.	Institutional Development Specialist	Master	Masters' degree in social sciences, management, or related field	Work experience of about 10 years	<ul style="list-style-type: none"> ❖ Experience of working issues related to utility management ❖ Past experience in the field of sanitation/health/environment or any other relevant stream will be preferred.
<i>National Key Staff</i>					
1.	Deputy Team	Graduate	Civil/ Sanitary	Working experience about	This professional staff should have sufficient experience in designing

	Leader		Engineering.	15 yrs	<p>of wastewater/water treatment plant. He/she must be experienced in designing at least 2 wastewater/water treatment plants out of which at least 1(one) treatment plants are of 20 MLD capacities. This key staff shall be responsible for but not limited to:</p> <ul style="list-style-type: none"> ❖ Collect and review the relevant documents, reports and data's. ❖ Assisting the relevant international staff in designing and drawing of STP and SLS and preparation of specifications. ❖ Assisting the relevant international staff in conducting training programs on designing the relevant infrastructures to scale-up the technical knowledge of DWASA staffs. ❖ Assisting the TL and the team. ❖ Any other relevant duties to be required for the team.
2.	Fecal Sludge Management Specialist	Graduate	Civil/ Sanitary Engineering or equivalent.	Working experience about 15 yrs	<p>This professional staff should have sufficient experience in designing faecal sludge/septage management systems from collection to treatment and final endues/disposal relevant for the Bangladeshi context, including institutional, organisational and management aspects of the systems. This key staff shall be responsible for, but not limited to:</p> <ul style="list-style-type: none"> • Contribute to the team with deep knowledge of service delivery to customers outside centralised sewerage collection systems. • In cooperation with the sewage team, the decentralised wastewater specialist and DWASA prepare the strategic plan outlining the limitations of each type of technical system within each catchment area. • In cooperation with the full team obtain a deep understanding for the current situation in Mirpur and Uttara. • In cooperation with the WWTP designer and DWASA assess different faecal sludge/septage treatment options for the Mirpur and Uttara WWTPs on catchment level. • In cooperation with DWASA, relevant stakeholders plus the customer interaction specialist design the technical,

					<p>institutional, O&M, and business components of the business model for faecal sludge/septage management as well as the spin-off products from work with the business model.</p> <ul style="list-style-type: none"> • In cooperation with DWASA and the on-site team develop and implement the customer interaction strategy. • Training of DWASA staff.
3.	Electrical Engineer	Graduate	Electrical Engineering	Working experience about 15 yrs	<p>This professional staff should have sufficient experience in designing of relevant electrical components of such infrastructure (wastewater/water treatment plant). He/she must be experienced in designing of electrical component in at least 2 water/wastewater treatment plants/Sewage Treatment Plant/Power Station. This key staff shall be responsible for but not limited to:</p> <ul style="list-style-type: none"> ❖ Collect and review the relevant documents, reports and data's. ❖ Assisting the international relevant staff in designing and drawing of electrical components of the STP/SLS. ❖ Preparation of Schedule of Prices and Specifications. ❖ Conducting training programs on designing the relevant infrastructures to scale-up the technical knowledge of DWASA staffs. ❖ Assisting the TL and the team ❖ Any other relevant duties to be required for the team
4.	Mechanical Engineer	Graduate	Mechanical Engineering	Working experience about 15 yrs	<p>This professional staff should have sufficient experience in designing of relevant mechanical components of such infrastructure (wastewater/water treatment plant). He/she must be experienced in designing of mechanical component in at least 2 water treatment plants/Sewage Treatment Plant/Power Station. This key staff shall be responsible for but not limited to:</p> <ul style="list-style-type: none"> ❖ Collect and review the relevant documents, reports and data's. ❖ Assisting the international relevant staff in designing and drawing of mechanical components of the STP/SLS. ❖ Preparation of Schedule of Prices and Specifications. ❖ Conducting training programs on designing the relevant

					<p>infrastructures to scale-up the technical knowledge of DWASA staffs.</p> <ul style="list-style-type: none"> ❖ Assisting the TL and the team ❖ Any other relevant duties to be required for the team
5.	Procurement Specialist	Graduate	B. Sc (Engineering) / Masters in Procurement.	Working experience about 15 yrs	<ul style="list-style-type: none"> ❖ Preparation of prequalification and PQ evaluation documents; ❖ Preparation of bidding plans and packaging schedules; ❖ Preparation of general parts of all bid documents; ❖ Supervise others who prepare technical specifications and bills of quantities; ❖ Responsible for production of complete final bidding documents, including bills of quantities and cost estimates; ❖ Prepare procedures and guidelines for evaluation of contractors' bids;
6.	Environmental Specialist	Master	Environmental Science or Engineering/Geography/ Civil Engineering	Working experience about 15 yrs.	<p>This professional staff should have sufficient working experience in preparation of LEA/EIA/EMP for similar project and shall have adequate knowledge on the Environmental laws of Bangladesh. He/She should be experienced in preparing environmental management framework. This key staff shall be responsible for but not limited to:</p> <ul style="list-style-type: none"> ❖ Collect and review the relevant reports on the environment, health and safety. ❖ Preparation of EIA reports for both the catchments including the intervention of infrastructures for the development works (specially the STP's) to be executed on the environment. ❖ Preparation of EMP for the upcoming works. ❖ Assisting the TL and the team. ❖ Any other relevant duties to be required for the team.
7.	Social Development Specialist	Master	Social Sciences	Working Experience of about 15 years	<ul style="list-style-type: none"> ❖ Past experience in the field of sanitation/health/environment or any other relevant stream will be preferred. ❖ Experience of working issues related to community participation.

8.	Economic and Financial Analyst	Graduate	Economics or Finance	Working experience of 8 years	At least 8 yrs of experience in financial and economic analysis of infrastructure projects Should be permanent employee of the firm or have an extended and stable working relationship with the firm.
9.	Communications Specialist	Masters	Mass Communications	Working experience of 10-15 years	At least 10 years of experience in the field of mass communications, development of strategic communications packages.
10.	Financial Management Specialist	Masters or equivalent	FCMA/CPA/ACCA/M.Com in Accounting/MBA or equivalent.	Working experience of 10-15 years	At least 10 years of experience as a Financial Management Specialist in any international organizational. Experiences in World Bank and ADB funded project will get preference.

9. Project Management:

The Consultant will work under the overall supervision of the Project Director, who will also act as the day-to-day contact person for the assignment. All reports will have to be submitted in both softcopy and hard copy. The hard copy of draft reports are to be submitted in 5 copies and the final report in 10 copies if nothing is mentioned otherwise.

Upon receipt of the draft reports from the consultants, the reports will be reviewed by DWASA. The consultants will be asked to give a presentation on the report. DWASA may also obtain comments from the World Bank on the consultants' reports. The comments of DWASA and the WB will also be incorporated by the consultant.

10. FACILITIES

1.1 Facilities to be provided by the Consultant

The Consultant will be responsible for:

- (i) Providing accommodation, international and local transport and freight expenditures of the Consultant's staff;
- (ii) Providing local office support services for report production and international and national communication for the full assignment period;
- (iii) The Consultant will be responsible for all other arrangements and cover in its budget for the assignment all expenses for all kinds of logistics as required to successfully complete the assignment.

1.2 Data, services and facilities to be provided by DWASA

DWASA will provide, free of charge, to the Consultant the following assistances:

- (i) Suitably qualified, English speaking counterpart personnel to co-ordinate with the Consultant;
- (ii) Studies, reports, plans etc. as available, preferably in electronic format;
- (iii) Assistance in the preparation and implementation of the surveys;
- (iv) Coordination assistance with respect to introduction to relevant authorities, professionals etc.;
- (v) Assistance in obtaining other relevant information and materials from government institutions and state authorities;
- (vi) Assistance in obtaining all staff permits, authorizations and licenses required for the performance of the Consultant's services in Bangladesh.

Notwithstanding this assistance, the final responsibility of all those activities stays exclusively with the Consultant.

11. REPORTS

a. Reporting requirements

Paper copies of all reports, in the numbers shown in the table below, have to be submitted by the Consultant to DWASA in Bangladesh. A CD-ROM or flash drive containing the electronic version of the report (including MS Word, PDF etc.) must be submitted with every paper copy of all required reports. Electronic versions must also be made available via restricted access on the internet.

Reports shall be prepared using commonly used software. All reports shall be prepared in DIN A4 format. Separate volumes in DIN A3 format may be used to contain plans, drawings, schedules, photographs, etc.

The title of the project and the identification of the specific volume shall be printed on the front cover of every volume of all Draft & Final Documents.

b. Submission of reports

The Consultant shall prepare at least, but not limited to, the following reports, which are specified separately for the project management activities. All reports shall be submitted in English in the numbers and at the times defined in the table below.

Table: Reporting requirements for project management activities

Report	No. of reports	Remarks
Draft Inception Report	5	15 days after contract signing.
Final Inception Report: also includes review/comments of the Inception Reports submitted by other consultants under S-2, S-3 & S-4.	10	1 week after receiving Client's comments.
Monthly /Quarterly Progress Reports: Comprises of Progress data of the project and IUFR and/or SoE and Reconciliation of the project account, keeping liaison with DWASA's Accounts Division, keeping and maintaining record of Financial transactions, bill register etc.	5	Within one week after the end of each month/Quarter as applicable.
Interim Report-1: Includes consolidated Review / Comments on Interim Report-1 submitted under S-2, EIA report submitted under S-3 and SIA report submitted under S-4.	10	
Interim Report-2: Includes consolidated Review / Comments on Interim Report-2 submitted under S-2, EMF report submitted under S-3 and Updating/Preparation of Resettlement Policy Framework report submitted under S-4	10	
Interim Report-3: Includes consolidated Review / Comments on Interim Report-3 submitted under S-2, Translated EMF & EIA reports submitted under S-3 and Translated Social Management Framework Report/ Resettlement Policy Framework report submitted under S-4.	10	
Interim Report-4: Includes consolidated Review / Comments	10	

Report	No. of reports	Remarks
on Feasibility Studies Report of Proposed DSIP submitted under S-2 and Completion Reports submitted under S-2, S-3& S-4.		
Interim Report-5: Includes the activities under Task- E.2. The DPP will be in a separate volume.	20	The Interim Report -5 will be in 10 copies and the DPP will be in 20 copies.
Special Reports such as MTRR and other reports if required.	5	As and when required basis.
Final Report: Lessons learned and Project Completion Report /Implementation Completion Report (if any) of this Technical Assistance Project as per the guidelines of the GoB and the World Bank.	10	Within seven days prior to the end of contract period.

Payment Schedule:

- (a) **1st Payment: 20%** of contract amount shall be paid as Advance Payment upon submission of an equivalent Bank Guarantee (BG).The validity of the BG will be finalized during the time of contract negotiation.
- (b) **2nd Payment: 15%**of contract amount shall be paid upon submission and acceptance of the **Final Inception Report** by the client.
- (c) **3rdPayment: 10%**of contract amount shall be paid upon submission and acceptance of the **Interim Report-1**by the client.
- (d) **4th Payment: 10%**of contract amount shall be paid upon submission and acceptance of the **Interim Report-2**by the client.
- (e) **5th Payment: 10%**of contract amount shall be paid upon submission and acceptance of the **Interim Report-3**by the client.
- (f) **6th Payment: 10%**of contract amount shall be paid upon submission and acceptance of the **Interim Report-4**by the client.
- (g) **7th Payment: 10%** of contract amount shall be paid upon the submission and acceptance of **Interim Report -5** by the client.
- (h) **8th and Final Payment: 15%** of contract amount shall be paid upon submission and acceptance of the **Final Report** by the client.