

Project Administration Manual

Project Number: 47254-003
Loan Number: LXXXX
June 2016

People's Republic of Bangladesh: Dhaka Water
Supply Network Improvement Project

ABBREVIATIONS

ADB	=	Asian Development Bank
APFS	=	audited project financial statement
CBS	=	capacity building for sustainability
DMA	=	district metered area
DMF	=	design and monitoring framework
DMS	=	design, management, and supervision
DWASA	=	Dhaka Water Supply and Sewerage Authority
DWSSDP	=	Dhaka Water Supply Sector Development Program
DWSNIP	=	Dhaka Water Supply Network Improvement Project
ECR	=	Environmental Conservation Rules
EIA	=	environmental impact assessment
EMP	=	environmental management plan
GAP	=	gender action plan
IEE	=	initial environmental examination
LIC	=	low-income community
NGO	=	nongovernment organization
NRW	=	nonrevenue water
PAM	=	project administration manual
PCU	=	project coordination unit
PMU	=	project management unit
PPMS	=	project performance management system
SIU	=	safeguard implementation unit
SOE	=	statement of expenditure
SPS	=	Safeguard Policy Statement
SDR	=	special drawing right

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Project Administration Manual Purpose and Process

The project administration manual (PAM) describes the essential administrative and management requirements to implement the project on time, within budget, and in accordance with the policies and procedures of the government and Asian Development Bank (ADB). The PAM should include references to all available templates and instructions either through linkages to relevant URLs or directly incorporated in the PAM.

The Dhaka Water Supply and Sewerage Authority (DWASA) is wholly responsible for the implementation of ADB-financed projects, as agreed jointly between People's Republic of Bangladesh (the borrower) and ADB, and in accordance with the policies and procedures of the borrower and ADB. ADB staff is responsible for supporting implementation including compliance by DWASA of its obligations and responsibilities for project implementation in accordance with ADB's policies and procedures.

At loan negotiations, the borrower, DWASA, and ADB shall agree to the PAM and ensure consistency with the loan agreement. Such agreement shall be reflected in the minutes of the loan negotiations. In the event of any discrepancy or contradiction between the PAM and the loan agreement, the provisions of the loan agreement shall prevail.

After ADB Board approval of the project's report and recommendations of the President (RRP), changes in implementation arrangements are subject to agreement and approval pursuant to relevant government and ADB administrative procedures (including the Project Administration Instructions) and upon such approval, they will be subsequently incorporated in the PAM.

I. PROJECT DESCRIPTION

1. The proposed project will improve the water supply system in the country's capital, Dhaka, by making it more reliable, sustainable, and climate-resilient. It will consolidate and enhance the gains made in the efficiency of the water distribution network achieved under two ongoing Asian Development Bank (ADB) projects, and improve the service delivery and the capacity of the Dhaka Water Supply and Sewerage Authority (DWASA).¹

2. **Output 1: Distribution network strengthened.** Building on the ongoing work of two ADB-financed projects, the project will help improve the distribution network in Dhaka City.² It will finance the improvements (i) in new district metered areas (DMAs) not financed by the ongoing loans,³ and (ii) in DMAs under the 2007 program through additional financing to meet cost overruns and complete civil works under ongoing contracts.⁴ The project will extend new or regularized water connections to low-income communities (LICs) where people are relying on illegal water lines or private water vendors and paying higher charges than they will when they use the expanded systems.

3. **Output 2: Sustainable managerial capacity of district metered areas enhanced.** DWASA's managerial and technical capacity will be strengthened to keep nonrevenue water at a low level. The project will assist DWASA in (i) preparing and implementing a sustainable nonrevenue water reduction plan;⁵ (ii) strengthening monitoring capacity at the zone level with renewed standard operating procedures,⁶ upgraded training modules and supervisory control and data acquisition system, and the piloting of automated meter reading; and (iii) enhancing in-house design capacity for sustainable DMA management.

4. **Output 3: Capacity for quality service delivery enhanced.** The project will help DWASA (i) prepare and implement an operational and financial improvement plan by enhancing the existing 5-year corporate business plan;⁷ (ii) build capacity for planning, design, construction supervision, and project management; (iii) prepare and implement a plan to make the public

¹ (i) ADB. 2007. *Report and Recommendation of the President to the Board of Directors: Proposed Loans and Technical Assistance Grant to the People's Republic of Bangladesh for the Dhaka Water Supply Sector Development Program*. Manila (Loans 2382-BAN [project loan] and 2383-BAN [program loan]); and (ii) ADB. 2013. *Report and Recommendation of the President to the Board of Directors: Proposed Loan and Administration of Loan to the People's Republic of Bangladesh for the Dhaka Environmentally Sustainable Water Supply Project*. Manila (Loan 3051-BAN).

² Under the two ADB-financed projects, DWASA has been strengthening the existing water supply network by establishing DMAs in 3 of its 10 zones (5, 6, and 8) and parts of 4 zones (3, 4, 9, and 10) that serve 7 million people.

³ The project will cover the new DMAs of 3 zones (1, 2, and 7) and the remaining parts of 4 zones (3, 4, 9, and 10) that serve 6.5 million people. It will rehabilitate 1,500 kilometers of distribution network pipe; and rehabilitate, build, or regularize 234,000 connections.

⁴ DMA improvement under the 2007 program includes rehabilitation of 1,536 kilometers of distribution network pipe and 157,000 service connections. The additional funds are required to cover the cost overruns resulting from (i) changes in the SDR-\$ exchange rate, (ii) an increase after detailed designs and physical verification of the existing distribution networks in the quantity of works and goods required, and (iii) price escalation. More details are provided in the Summary of Additional Financing Part (accessible from the list of linked documents in Appendix 2).

⁵ The sustainable nonrevenue water reduction plan will include the targets for nonrevenue water reduction; optimal DMA-based organizational structure; an incentive mechanism to improve operations; and an asset management plan, budget requirements, and a training plan.

⁶ Standard operating procedures will include water loss assessment, water balance calculation, leak management, asset management, and smart water management technologies.

⁷ The existing 5-year corporate business plan comprises subplans. These include an investment plan, a financial plan, a tariff plan, and a human resource development plan. In addition, the project will prepare a sustainable nonrevenue water reduction plan, a water quality monitoring plan, and a demand management plan.

more aware of demand control, water conservation, and health and hygiene; (iv) make the quality of the service delivery to LICs better; (v) prepare and implement a water quality monitoring system; (vi) implement a gender action plan; and (vii) enhance project readiness for future investment.⁸

II. IMPLEMENTATION PLANS

A. Project Readiness Activities

Table 1: Project Readiness Activities

Indicative Activities	2016								Responsible
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	
Advance contracting actions									
(i) Recruitment of design, management, and supervision consultants (notice to EOI)	X								DWASA
(ii) Recruitment of NGO for resettlement work (notice to EOI)			X						DWASA
(iii) Procurement of ICB 2.11 (issuing bid)						X			DWASA
(iv) Procurement of ICB 2.8 (issuing bid)						X			DWASA
(v) Recruitment of consultants for capacity building for sustainability (notice to EOI)						X			DWASA
(vi) Recruitment of NGO for demand control and public awareness campaign (notice to EOI)						X			DWASA
(vii) Procurement of ICB 2.9 and 2.10 (issuing bid)						X			DWASA
Establish project implementation arrangements	X								DWASA
Loan Fact Finding	X								ADB
Loan Negotiation				X					ADB/Government
ADB Board approval						X			ADB
Loan signing						X			ADB/Government
Government legal opinion provided						X			Government
Government budget inclusion					X				Government
Loan effectiveness						X			ADB

ADB= Asian Development Bank, DWASA= Dhaka Water Supply and Sewerage Authority, EOI= expression of interest, NGO= nongovernment organization.

Source: Asian Development Bank.

⁸ DWASA will engage consultants to prepare future projects, mainly involving sewerage management.

Activities	2015 (Mth/Qtr)				2016 (Mth/Qtr)				2017 (Mth/Qtr)				2018 (Mth/Qtr)				2019 (Mth/Qtr)				2020 (Mth/Qtr)				2021 (Mth/Qtr)			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Procurement								■	■	■	■	■																
Supply and installation													■	■	■	■												
Supply and Installation of SCADA (DMAs of DWSNIP)																												
Procurement																■	■	■	■	■								
Supply and installation																	■	■	■	■								
Supply and installation of AMR for 3 DMAs																												
Procurement								■	■	■	■	■																
Supply and installation													■	■	■	■												
Consultant selection procedures																												
DMS (Design, Management, and Supervision) consultants																												
Recruitment					■	■	■	■																				
Contract negotiation								■																				
Contract award								■																				
Services									■	■	■	■	■	■	■	■	■	■	■	■								
CBS (Capacity Building for Sustainability) consultants																												
Recruitment					■	■	■	■																				
Contract negotiation								■																				
Contract award								■																				
Services									■	■	■	■	■	■	■	■	■	■	■	■								
NGO for resettlement																												
Recruitment					■	■	■	■																				
Contract negotiation								■																				
Contract award								■																				
Services									■	■	■	■	■	■	■	■	■	■	■	■								

Activities	2015 (Mth/Qtr)				2016 (Mth/Qtr)				2017 (Mth/Qtr)				2018 (Mth/Qtr)				2019 (Mth/Qtr)				2020 (Mth/Qtr)				2021 (Mth/Qtr)			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
NGO for public awareness campaign and demand control																												
Recruitment																												
Contract negotiation																												
Contract award																												
Services																												
PDF (Project Development Facility) consultants																												
Recruitment																												
Contract negotiation																												
Contract award																												
Services																												
Environment management plan key activities																												
Gender action plan key activities																												
Communication strategy key activities																												
Annual and/or midterm review																												
Project completion report																												

ADB= Asian Development Bank, AMR= automated meter reading, CBO= community-based organization, DMA= district metered area, DMF= design and monitoring framework, DNI= distribution network improvement, DWSNIP= Dhaka Water Supply Network Improvement Project, DWSSDP= Dhaka Water Supply Sector Development Program, DESWSP= Dhaka Environmentally Sustainable Water Supply Project, mth = month, NGO= nongovernment organization, qtr = quarter, SOP= standard operating procedure.

Source: Asian Development Bank.

^a Operation and maintenance of DNI includes the post-monitoring of the system, reorganization of staffing on technical and revenue officers, and follow-up activities at each DMA.

III. PROJECT MANAGEMENT ARRANGEMENTS

A. Project Implementation Organizations: Roles and Responsibilities

Table 3: Project Implementation Organizations and its Roles and Responsibilities

Project Implementation Organizations	Management Roles and Responsibilities
<ul style="list-style-type: none"> • Executing agency: Dhaka Water Supply and Sewerage Authority (DWASA) 	<ul style="list-style-type: none"> ➤ Executes the project. ➤ Makes timely decisions on all matters relating to project implementation. ➤ Ensures minimum staff turnover of project management unit. ➤ Takes full responsibility for operation and maintenance of project facilities.
<ul style="list-style-type: none"> • Ministry of Local Government, Rural Development and Cooperatives 	<ul style="list-style-type: none"> ➤ Provides overall guidance and supervision to the project implementation. ➤ Chairs the Inter-ministerial Project Steering Committee meeting (Secretary, Local Government Division). ➤ Coordinates with other ministries and agencies at the central level. ➤ Allocates adequate government budget for project implementation. ➤ Takes the lead in establishing a transparent, predictable, and independent tariff-setting mechanism.
<ul style="list-style-type: none"> • Project Management Unit, DWASA 	<ul style="list-style-type: none"> ➤ Supervises and manages the project implementation to ensure timely completion of the project. ➤ Monitors and ensures the compliance of loan covenants. ➤ Updates and implements the procurement plan and implements the procurement in accordance with the plan. ➤ Serves as point of contact with Asian development Bank (ADB), maintains project documents, and submits reports (quarterly progress reports and project completion report). ➤ Consolidates accounts and submits withdrawal applications to ADB. ➤ Opens and manages imprest account. ➤ Submits all audited project accounts and financial statements pertaining to the project within 6 months of the end of each fiscal year.
<ul style="list-style-type: none"> • Project Coordination Unit, DWASA 	<ul style="list-style-type: none"> ➤ Supports the contract execution at the zonal level. ➤ Ensures smooth and efficient operation and maintenance.

Project Implementation Organizations

Management Roles and Responsibilities

-
- | | |
|--|---|
| <ul style="list-style-type: none"> • Inter-ministerial Project Steering Committee | <ul style="list-style-type: none"> ➤ Provides policy guidance based on performance reviews of project ➤ Ensures collaboration among central level agencies. |
| <ul style="list-style-type: none"> • Project Implementation Committee | <ul style="list-style-type: none"> ➤ Monitors the progress and addresses relevant issues for smooth implementation of the undertaking ➤ Facilitates collaboration among relevant agencies. |
| <ul style="list-style-type: none"> • ADB | <ul style="list-style-type: none"> ➤ Supervises overall project implementation. ➤ Takes the lead in coordinating with other agencies at the central level. ➤ Fields review missions, midterm review mission, and project completion review mission to assess project implementation progress and compliance with loan covenants. ➤ Reviews project management unit's submissions for procurement of goods, civil works, and services. |
-

B. Key Persons Involved in Implementation

Executing Agency

DWASA

Officer's Name: Mr. A.K.M Shahid Uddin
 Position: Project Director
 Telephone: +88-029116033
 Email address: pddwssdp@gmail.com
 Office Address: WASA Bhaban, 98 Kazi Nazrul Islam Avenue, Kawran Bazar, Dhaka-1215

ADB

Urban Development and Water Division (SAUW)

Staff Name: Mr. Sekhar Bonu
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Mission Leader

Staff Name: Mr. Akira Matsunaga
 Position: Economist, SAUW
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C. Project Organization Structure

5. DWASA will be responsible for the overall management, supervision and execution of the Project. Project management unit (PMU) has been established and a full-time project director in the rank of additional chief engineer has been appointed. Two dedicated deputy project directors in the rank of superintending engineers, responsible for civil works and electro-mechanical works will also be appointed exclusively for the project. At least four executive engineers will assist the deputy project directors in managing the works under them.

6. Project coordination unit (PCU) in seven zones, headed by an executive engineer, will be responsible for liaising and coordinating with the contractors, design, management, and supervision (DMS) consultants, capacity building for sustainability (CBS) consultants, nongovernment organization, and other stakeholders on day-to-day implementation of distribution network improvement (DNI) work under the project. To strengthen the PCU in conducting these activities and addressing their day-to-day operation and maintenance issues, DWASA will assign additional staff for the project period.

7. An inter-ministerial project steering committee, chaired by secretary of Local Government Division, will be established to provide policy guidance and overall coordination of project implementation. Its members will include Managing Director, DWASA; project director of PMU; Dhaka North City Corporation; Dhaka South City Corporation; Economic Relations Division and the Finance Division of Ministry of Finance, Planning Commission; Ministry of Home; Ministry of public works; the Implementation Monitoring and Evaluation Division; RAJUK (the capital development authority); Department of Environment; Local Government Division; Local Government Engineering Department; The Project Steering Committee will hold its first meeting within 3 months of loan effectiveness, and will meet at least twice annually thereafter, to coordinate and resolve any issues in project implementation. Minutes of its meetings will be forwarded to Asian Development Bank (ADB) for information.

8. A project implementation committee, chaired by Managing Director of DWASA, will be established to discuss key project implementation issues and provide guidance for smooth implementation. Its members will include representatives from the same agencies mentioned above, utility services, and Deputy Managing Director (Research, Planning, and Development) of DWASA. The project implementation committee will meet at least quarterly, and more often as needed. Minutes of its meetings will be forwarded to ADB for information.

IV. COSTS AND FINANCING

9. The project is estimated to cost \$408 million. The government has requested a loan of \$275 million from ADB's Ordinary Capital Resources to help finance the project. The loan will have a 25-year term, including a grace period of 5 years, and following the straight-line repayment option. Based on this, the average loan maturity is 15.25 years and the maturity premium payable to ADB is 0.10% per annum. The loan from ADB will finance (i) part of civil works, (ii) equipment, (iii) consulting services, (iv) incremental administrative costs, (v) part of contingencies, and (v) financing charges during construction. The government will provide \$133 million equivalent to cover (i) taxes and duties, (ii) part of civil works, (iii) land acquisition and resettlement, and (iv) part of contingencies.

Table 4: Investment Plan (\$ million)

Item	Amount ^a
A. Base Cost ^b	
1. Distribution network strengthened ^c	294.59
2. Sustainable district metered area management	21.99
3. Capacity enhancement of Dhaka Water Supply and Sewerage Authority for quality service delivery	26.66
Subtotal (A)	343.24
B. Contingencies ^d	
1. Physical contingencies	31.38
2. Price contingencies	18.13
Subtotal (B)	49.51
C. Financing Charges ^e	
1. Interest during construction	14.52
2. Commitment charges	0.73
Subtotal (C)	15.25
Total Project Cost	408.00

^a In mid-2016 prices; Exchange rate of US\$ 1 = Tk78 is used.

^b Includes taxes and duties of \$92.9 million to be financed from government sources by cash contribution/exemptions. ADB may finance local transportation and insurance costs and bank charges.

^c Comprises (i) \$242.14 million for new district metered areas, and (ii) \$52.45 million for the additional financing part.

^d Physical contingencies are computed at 10% for civil works and equipment. Price contingencies are computed at 1.4%-1.5% on foreign exchange costs and 6%-6.2% on local currency in line with escalation rates published by ADB at <https://lnadbg1.adb.org/erd0004p.nsf/>; includes provision for potential exchange rate fluctuation under the assumption of a purchasing power parity exchange rate.

^e Includes interest and commitment charges. Interest during construction for the ADB loan has been computed at the 5-year fixed USD swap rate plus a spread of 50 bps as of 12 January 2016. Commitment charges for the ADB OCR loan are 0.15% per year to be charged on the undisbursed loan amount.

Source: Asian Development Bank estimates.

Table 5: Financing Plan

Source	Amount (\$ million)	Share of Total (%)
Asian Development Bank		
Ordinary capital resources (loan) ^a	275.00	67.4
Government of Bangladesh	133.00	32.6
Total	408.00	100.0

^a Includes \$36.89 million of Asian Development Bank's additional financing part. Climate finance is tracked as \$148.40 million, with (i) \$143.37 million for civil works of new district metered areas; (ii) \$4.10 million for consultants for capacity building for sustainability; and (iii) \$0.93 million for a nongovernmental organization for demand control and public awareness (More details in Table 7).

Source: Asian Development Bank estimates.

A. Cost Estimates Preparation and Revisions

10. The cost estimates have been prepared by ADB consultants and staff, based on information provided by the PMU. The cost estimates shall be further revised during the implementation by the PMU with the support of DMS consultants.

B. Key Assumptions

11. The following key assumptions underpin the cost estimates and financing plan:
- (i) Exchange rate: Tk 78.00 = \$ 1.00 (as of February, 2016)
 - (ii) Price contingencies based on expected cumulative inflation over the implementation period are as follows:

Table 6: Escalation Rates for Price Contingency Calculation (in %)

Item	2016	2017	2018	2019	2020	Average
Foreign rate of price inflation	1.5%	1.4%	1.5%	1.5%	1.5%	1.5%
Domestic rate of price inflation	6.2%	6.0%	6.0%	6.0%	6.0%	6.0%

Source: Asian Development Bank estimates.

- (iii) In-kind contributions cannot be easily measured and have not been quantified.

C. Climate Financing Tracking

12. Climate Finance of this project is tracked at \$148.40 million in Table 7, which is calculated in accordance with the methodology of multilateral development bank's climate finance.⁹ The amount of climate finance is captured for the project activities directly linked with climate vulnerability in Dhaka, based on a climate risk assessment through Project Climate Risk assessment and Management Reporting.¹⁰

⁹ Multilateral Development Banks. 2014. *Joint Report on Multilateral Development Banks' Climate Finance*. <http://www.worldbank.org/content/dam/Worldbank/document/Climate/mdb-climate-finance-2014-joint-report-061615.pdf>

¹⁰ The report is accessible from the list of linked documents in Appendix 2 of RRP.

Table 7: Climate Financing Tracking: Dhaka Water Supply Network Improvement Project

Item	Project Subcomponent	Link to Climate Risks Identified in the Project Climate Risk Assessment and Management Reporting	ADB's finance (\$m)	Non-Qualifying Costs	Qualifying Costs
1a	Civil works for new DMAs	Climate risk assessment suggests a strong likelihood that the supply of water for Dhaka will be reduced by altered precipitation patterns and increased temperature. This subcomponent will enhance climate-resilient capacity for water shortage in Dhaka by reducing physical water losses from 40% to less than 10%. It will establish DMAs which will increase efficiency gains through effective management of water leakage, water pressure, and water balance. In addition, this subcomponent will extend new or regularized connections for LICs. It will reduce the vulnerability of the poor who have less adaptive capacity against climate hazards. This is therefore a qualifying cost.	143.37		143.37
1b	Additional Financing	Additional financing will be utilized to complete remaining work of prior project (DWSSDP). DWSSDP does not set out a statement of purpose, lay out the vulnerability context and explicitly link project activities to the vulnerability context, as required by the MDB's guidance; it is therefore a non-qualifying cost.	36.89	36.89	
2	Equipment	SCADA system and AMR contributes to the majority of the costs for this subcomponent. It aims to increase operational and management efficiency in DWASA, which is not specifically linked to the context of climate risks in Dhaka; it is therefore a non-qualifying cost.	15.35	15.35	
3	Resettlement	Not applicable.	0		
4a	DMS consultants	The DMS consultant will assist the PMU in managing and implementing the Project including procuring goods and works, and supervising all works under packages of DNI. This is not directly linked activities to address the climate vulnerabilities; it is therefore a non-qualifying cost.	8.02	8.02	
4b	CBS	CBS consultant will support DWASA to implement: (i) sustainable DMA management to maintain the low level of water loss for the medium- and long-term; and (ii) improved 5-year corporate business plan including water quality monitoring plan and demand management plan. These two activities will address the climate change risks such as water shortage and increased pollution, as identified in vulnerability assessment of Dhaka. CBS consultant will increase the climate resilience through enhancing institutional capacity including comprehensive management plan, standard operating procedures, and staff training. These will help DWASA increase their climate-resilience at an entity-level to adapt to changing conditions. It is therefore a qualifying-cost.	4.10		4.10
4c	Project Design Facility	The PDF consultant will assist DWASA in enhancing readiness of future portfolio of projects through preparing outline designs and bid documents; it is therefore a non-qualifying cost.	3.43	3.43	
4d	Nongovernment organization for	This NGO will undertake (i) awareness program to change people's behavior on water conservation and hygiene education, which will lead to increasing resilience on water	0.93		0.93

Item	Project Subcomponent	Link to Climate Risks Identified in the Project Climate Risk Assessment and Management Reporting	ADB's finance (\$m)	Non-Qualifying Costs	Qualifying Costs
	Demand Management and Public Awareness Campaign	shortage and pollution in Dhaka; and (ii) the support for improved access to LICs where the poor have less adaptive capacity but bear the brunt of climate change hazards. This is therefore a qualifying-cost.			
4e	Nongovernment organization for Resettlement	Nongovernment organization for resettlement will assist DWASA to prepare and implement final resettlement plans, which are not specifically linked to vulnerability context of Dhaka; this is a non-qualifying cost.	0.70	0.70	
	Subtotal		212.79	64.39	148.40
	TOTAL Loan		275		

ADB= Asian Development Bank, AMR= automated meter reading, CBS= Capacity Building for sustainability, DMA= district metered areas, DMS= Design Management Supervision, DWASA= Dhaka Water Supply and Sewerage Authority, DWSSDP = Dhaka Water Supply Sector Development Program, LIC= low-income communities, PDF= Project Development Facility, PMU=project management unit, SCADA= supervisory control and data acquisition.

Note: Only base costs have been considered in the calculation. Total loan is \$275 million, which makes 54% of the total loan volume qualify as climate finance.

D. Detailed Cost Estimates by Expenditure Category

Table 8: Cost Estimates by Expenditure Category
(\$ million)

Item	Foreign Exchange	Local Currency	Total Gross Cost	Total Net Cost	Tax	% of Total Base Cost
A. Investment Costs						
1. Civil Works	87.18	149.17	236.35	211.54	24.82	68.9%
1.1 New DMAs	73.02	119.41	192.43	172.23	20.21	56.1%
1.2 Additional financing	14.15	29.77	43.92	39.31	4.61	12.8%
2. Equipment	15.35	0.81	16.16	15.35	0.81	4.7%
3. Resettlement	-	0.10	0.10	0.10	-	0.1%
4. Project management and capacity development	4.67	18.24	22.91	17.18	5.73	6.7%
4.1 Project management	4.67	17.66	22.33	16.75	5.58	6.5%
4.2 Training and workshops	-	0.58	0.58	0.44	0.15	0.2%
5. Duties and taxes (tax exemption)	-	61.24	61.24	-	61.24	17.8%
Subtotal (A)	107.19	229.57	336.76	244.17	92.60	98.1%
B. Recurrent Costs						
1. Incremental administrative costs	-	6.29	6.29	6.13	0.15	1.8%
2. Taxes and duties (tax exemption)	-	0.19	0.19	-	0.19	0.1%
Subtotal (B)	-	6.48	6.48	6.13	0.35	1.9%
Total Base Cost	107.19	236.05	343.24	250.30	92.94	100.00%
C. Contingencies						
1. Physical	9.80	21.58	31.38	31.38	-	9.1%
2. Price	6.75	11.38	18.13	18.13	-	5.3%
Subtotal (C)	16.55	32.96	49.51	49.51	-	14.4%
D. Financial Charges During Implementation						
1. Interest during construction	-	14.52	14.53	14.53	-	4.2%
2. Commitment charges	-	0.73	0.73	0.73	-	0.2%
Subtotal (D)	-	15.25	15.25	15.25	-	4.4%
Total Project Cost (A+B+C+D)	123.74	284.26	408.00	315.06	92.94	118.9%

DMAs = district metered areas.

Notes: Numbers may not sum precisely because of rounding.

Source: Asian Development Bank estimates.

E. Allocation and Withdrawal of Loan Proceeds

Table 9: Allocation and Withdrawal of Loan Proceeds

ALLOCATION AND WITHDRAWAL OF LOAN PROCEEDS (Dhaka Water Supply Network Improvement Project)				
CATEGORY				ADB FINANCING
Number	Item	Total Amount Allocated for ADB Financing (\$)		Percentage and Basis for Withdrawal from the Loan Account
		Category	Subcategory	
1	Civil Works	180,260,000		
1A	New DMAs		143,366,000	74.5% of total expenditure claimed
1B	Additional Financing		36,894,000	84.0% of total expenditure claimed
2	Equipment	15,347,000		95.0% of total expenditure claimed
3	Project Management and Capacity Development	17,183,000		75.0% of total expenditure claimed
4	Incremental Administrative Costs	6,134,000		97.6% of total expenditure claimed
5	Interest and Commitment Charges	15,254,000		100% of amounts due
6	Unallocated	40,822,000		
	Total	275,000,000		

ADB= Asian Development Bank, DMA= district metered area.

F. Detailed Cost Estimates by Financier

Table 10: Cost Estimates by Financier
(\$ million)

Item	ADB			Government			Total Cost	
	Amount	% of Cost Category	ADB's Climate Finance	Tax	Non-Tax	Amount		% of Cost Category
A. Investment Costs								
1 Civil works	180.26	76.3%	143.37	24.82	31.28	56.09	23.7%	236.35
1a - New DMAs	143.37	74.5%	143.37	20.21	28.86	49.07	25.5%	192.43
1b - Additional financing	36.89	84.0%	-	4.61	2.42	7.03	16.0%	43.92
2 Equipment	15.35	95.0%	-	0.81	-	0.81	5.0%	16.16
3 Resettlement	-	-	-	-	0.10	0.10	100.0%	0.10
4 Project management and capacity Development	17.18	75.0%	4.10	5.73	-	5.73	25.0%	22.91
4a – DMS consultant	8.02	75.0%	-	2.69	-	2.69	25.0%	10.71
4b – CBS consultant	4.10	75.0%	4.10	1.36	-	1.36	25.0%	5.46
4c – PDF consultant	3.43	75.0%	-	1.14	-	1.14	25.0%	4.57
4d – NGO for demand management and public awareness campaign	0.93	75.0%	0.93	0.31	-	0.31	25.0%	1.24
4e – NGO for resettlement	0.70	75.0%	-	0.23	-	0.23	25.0%	0.93
5 Taxes and duties (tax exemption)	-	-	-	61.24	-	61.24	100.0%	61.24
Subtotal (A)	212.79	63.2%	148.40	92.60	31.38	123.97	36.8%	336.76
B. Recurrent Costs								
1 Incremental administrative costs	6.13	97.6%	-	0.15	-	0.15	2.4%	6.29
2 Taxes and duties (tax exemption)	-	-	-	0.19	-	0.19	100.0%	0.19
Subtotal (B)	6.13	94.7%	-	0.35	-	0.35	5.3%	6.48
Total Base Cost	218.92	63.8%	148.40	92.94	31.38	124.32	36.2%	343.24
C. Contingencies								
1 Physical contingencies	25.88	82.5%	-	-	5.49	5.49	17.5%	31.38
2 Price contingencies	14.94	82.4%	-	-	3.19	3.19	17.6%	18.13
Subtotal (C)	40.82	82.5%	-	-	8.68	8.68	17.5%	49.51
D. Financing Charges During Implementation								
1 Interest during construction	14.53	100.0%	-	-	-	-	-	14.53
2 Commitment charges	0.73	100.0%	-	-	-	-	-	0.73
Subtotal (D)	15.25	100.0%	-	-	-	-	-	15.25
Total Project Cost (A+B+C+D)	275.00	67.4%	148.40	92.94	40.06	133.00	32.6%	408.00
% Total Project Cost		67.4%					32.6%	100.0%

ADB= Asian Development Bank, CBS= Capacity Building for Sustainability, DMAs = district metered areas, DMS= Design, Management, and Supervision, NGO= nongovernment organization, PDF= Project Design Facility.

¹ Taxes and duties will be financed from government resources by cash contribution/exemption.

² ADB's climate finance is included in \$275 million of ADB's total financing amount.

³ Costs associated with assisting implementation of the gender action plan are included in A.4.

⁴ The additional financing will be utilized for part of existing civil works packages under DWSSDP (L2382). The funds of Category 1 (civil works) of DWSSDP will be first disbursed up to the allocated amount, and then the additional funds under Category 1B (Civil Works – Additional Financing) will be disbursed.

⁵ The annual audits of the project will be conducted by the government of Bangladesh.

Notes: Numbers may not sum precisely because of rounding.

Source: Asian Development Bank estimates.

G. Detailed Cost Estimates by Outputs and/or Components

Table 11: Cost Estimates By Outputs/Components

Item	Total Cost	Output 1 (Distribution Network)		Output 2 (DMA Management)		Output 3 (Capacity Development)	
		Amount	% of Cost Category	Amount	% of Cost Category	Amount	% of Cost Category
A. Investment Costs							
1 Civil works	236.35	236.35	100.0%	-	-	-	-
1a - New DMAs	192.43	192.43	100.0%	-	-	-	-
1b - Additional financing	43.92	43.92	100.0%	-	-	-	-
2 Equipment	16.16	3.78	23.4%	12.38	76.6%	-	-
3 Resettlement	0.10	0.10	100.0%	-	-	-	-
4 Project management and capacity development	22.91	-	-	2.73	11.9%	20.18	88.1%
4a - Project management and design supervision	22.33	-	-	2.66	11.9%	19.67	88.1%
4b - Training and workshops	0.58	-	-	0.07	11.9%	0.51	88.1%
5 Taxes and duties (tax exemption)	61.24	54.35	88.8%	6.89	11.2%	-	-
Subtotal (A)	336.76	294.59	87.5%	21.99	6.5%	20.18	6.0%
B. Recurrent Costs							
1 Incremental administrative costs	6.29	-	-	-	-	6.29	100.0%
2 Taxes and duties (tax exemption)	0.19	-	-	-	-	0.19	100.0%
Subtotal (B)	6.48	-	-	-	-	6.48	100.0%
Total Base Cost	343.24	294.59	85.8%	21.99	6.4%	26.66	7.8%
C. Contingencies							
1 Physical contingencies	31.38	29.45	93.9%	1.93	6.1%	-	-
2 Price contingencies	18.13	17.02	93.9%	1.11	6.1%	-	-
Subtotal (C)	49.51	46.47	93.9%	3.04	6.1%	-	-
D. Financing Charges During Implementation							
1 Interest during construction	14.53	12.83	88.3%	0.94	6.5%	0.76	5.2%
2 Commitment charges	0.73	0.63	86.9%	0.05	6.4%	0.05	6.7%
Subtotal (D)	15.25	13.46	88.2%	0.99	6.5%	0.81	5.3%
Total Project Cost (A+B+C+D)	408.00	354.51	86.9%	26.02	6.4%	27.47	6.7%

DMAs = district metered areas.

¹ Costs associated with assisting implementation of the gender action plan are included in A. 4. (a) and (b).

Notes: Numbers may not sum precisely because of rounding.

Source: Asian Development Bank estimates.

H. Detailed Cost Estimates by Year

Table 12: Cost Estimates by Year
(\$ million)

Item	Total Cost	2016	2017	2018	2019	2020
A. Investment Costs						
1 Civil works	236.35	43.92	47.44	103.41	33.60	7.98
1a - New DMAs	192.43	-	47.44	103.41	33.60	7.98
1b - Additional financing	43.92	43.92	-	-	-	-
2 Equipment	16.16	-	4.70	4.70	4.76	2.00
3 Resettlement	0.10	-	0.04	0.04	0.02	-
4 Project management and capacity development	22.91	-	5.45	8.94	5.12	3.40
4a - Project management and design supervision	22.33	-	5.32	8.72	4.99	3.31
4b - Training and workshops	0.58	-	0.14	0.23	0.13	0.09
5 Taxes and duties (tax exemption)	61.24	8.53	13.17	26.55	9.97	3.02
Subtotal (A)	336.76	52.45	70.80	143.64	53.47	16.40
B. Recurrent Costs						
1 Incremental administrative costs	6.29	1.57	1.61	1.13	1.13	0.85
2 Taxes and duties (tax exemption)	0.19	0.05	0.05	0.04	0.04	0.03
Subtotal (B)	6.48	1.61	1.66	1.16	1.17	0.87
Total Base Cost	343.24	54.06	72.46	144.81	54.63	17.28
C. Contingencies						
1 Physical contingencies	31.38	5.25	6.55	13.42	4.86	1.29
2 Price contingencies	18.13	1.53	2.89	8.10	4.03	1.58
Subtotal (C)	49.51	6.78	9.44	21.52	8.89	2.87
D. Financing Charges During Implementation						
1 Interest during construction	14.53	0.41	1.38	3.04	4.57	5.12
2 Commitment charges	0.73	-	0.34	0.22	0.11	0.07
Subtotal (D)	15.25	0.41	1.72	3.26	4.68	5.19
Total Project Cost (A+B+C+D)	408.00	61.25	83.62	169.59	68.20	25.33
% Total Project Cost	100%	15.0%	20.5%	41.6%	16.7%	6.2%

DMAs = district metered areas.

¹ Costs associated with assisting implementation of the gender action plan are included in A. 4 (a) and (b).

Notes: Numbers may not sum precisely because of rounding.

Source: Asian Development Bank estimates.

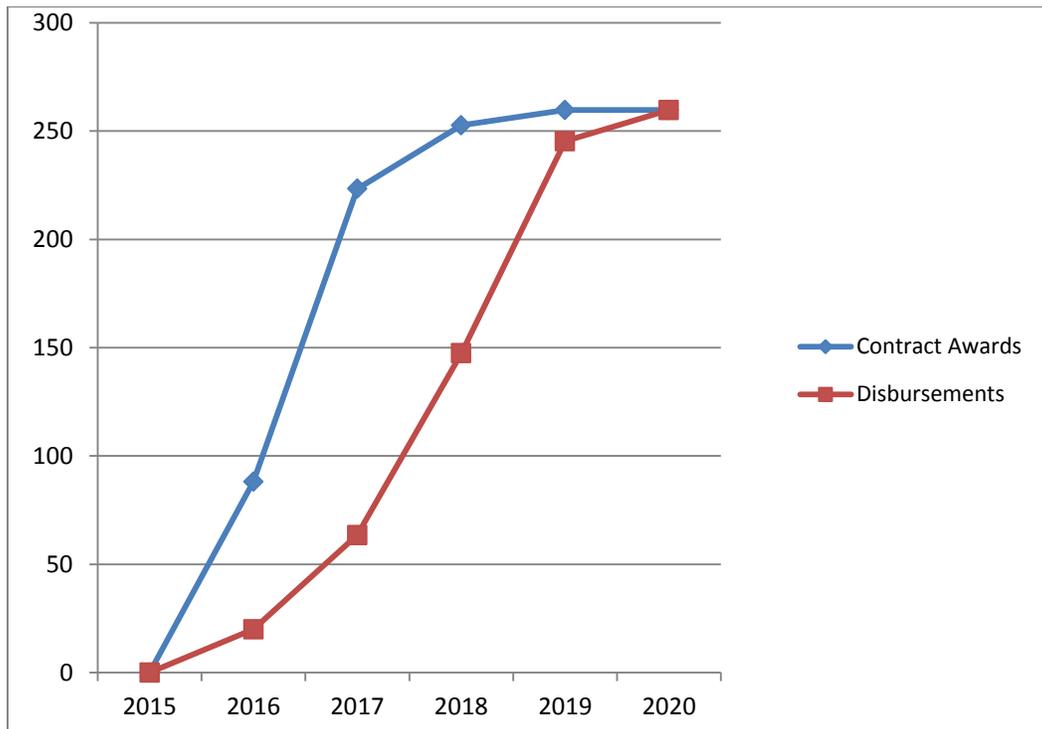
I. Contract and Disbursement S-Curve

13. Contract awards and disbursement for the ADB portion are projected to be as follows:

Table 12: Contract Awards and Disbursement (\$ million)

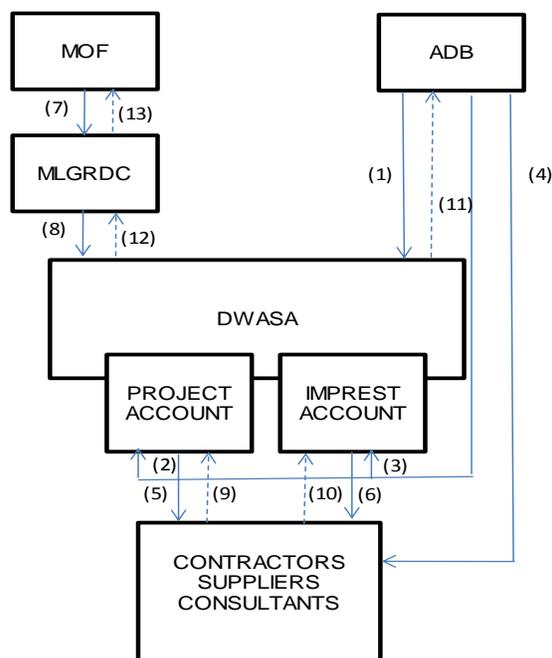
	2015	2016	2017	2018	2019	2020	Total
Contract Awards	0	88	135	29	7	0	260
Disbursements	0	20	43	84	98	14	260

Figure 2: Contract and Disbursement S-curve



J. Fund Flow Diagram

Figure 3: Fund Flow Diagram



ADB= Asian Development Bank, DWASA= Dhaka Water Supply and Sewerage Authority, MLGRDC= Ministry of Local Government, Rural Development and Cooperatives, MOF= Ministry of Finance.

Document Flow ----->
Fund Flow —————>

Fund Flow

- (1) Budget allocation
- (2) Disbursement Procedure: Reimbursement
- (3) Disbursement Procedure: Advance/Replenishment of Imprest Account
- (4) Disbursement Procedure: Direct Payment
- (5) Payment from Project Account to Contractors/Suppliers/Consultants
- (6) Payment from Imprest Account to Contractors/Suppliers/Consultants
- (7) Budget allocation
- (8) Budget allocation

Document Flow

- (9) Invoice
- (10) Invoice
- (11) Withdrawal Application
- (12) Budget request
- (13) Budget request

V. FINANCIAL MANAGEMENT

14. The financial management for implementing agency was assessed with focus on funds flow, staffing, accounting policies and procedures, segregation of duties, budgeting system, payments, policies and procedures, cash and bank, safeguard over assets, contract management and accounting, internal controls, financial reporting and monitoring, internal and external audit, reporting and monitoring, and information systems in relation to administering the proposed project.

A. Financial Management Assessment (FMA)

15. The FMA has reviewed two types of risks; (i) inherent risks; i.e., risks outside the direct control of the financial management of implementing agency, and (ii) control risks; i.e., risks concerning the internal functioning and control of the Finance and Accounting division of implementing agency.

16. Audited Project Financial Statement (APFS) under Dhaka Environmentally Sustainable Water Supply Project (DESWSP) for the FY 2015 was received on time, for which the auditor issued an unqualified audit opinion. APFS under Dhaka Water Supply Sector Development Program (DWSSDP) for the FY 2014 was also unqualified and received with one month delay. APFS for DWSSDP for FY 2015 was submitted in January 2016 with unqualified audit opinion. Entity level financial statements of DWASA are prepared and audited regularly, and submitted to ADB on a timely basis.

17. DWASA need to address the following risk factors:

- (i) The present tariff does not meet the water supply cost. DWASA is not allowed to increase tariff beyond 5% per annum under the WASA Act.
- (ii) Though PMU structure was approved and the Project Director was appointed, the main positions including the Financial Management Specialist have not been filled up; and
- (iii) Due to the existing unclear role assignments in the Internal Audit Unit and staff inadequacy with insufficient infrastructure support, the reporting of the monthly performance reports and submission of audit related deliverables to ADB have been delayed.

18. Despite the highlighted risks, the financial management arrangements are satisfactory, taking the ongoing actions of DWASA into consideration. The action plan for mitigating the foreseen risks includes the following measures:

- (i) The government should ensure that DWASA maintains its financial sustainability through necessary tariff adjustments or other means to allow DWASA to have sufficient funds for its debt service obligations and O&M costs and to move towards full cost recovery. ADB will provide continued policy advice and capacity development support to facilitate DWASA's financial sustainability. The progress of tariff adjustment will be closely monitored through continuous dialogue with the government and DWASA;
- (ii) DWASA should fill up the major positions of PMU including the Financial Management Specialist before the loan effective date of the proposed project; and
- (iii) DWASA should fix up the unclear role assignments and staff inadequacy, and assure the dedicated supporting arrangement to the proposed project in the Internal Audit Unit. DWASA also should speed up the on-going initiative of

institutional restructure. ADB will support DWASA through the proposed project by mobilizing CBS consultants who will help in identifying specific bottlenecks and providing recommendations to resolve the issues. Provision of trainings for the relevant staffs is needed.

Table 13: Risks Identified and Proposed Risk Mitigation Measures

Risk	Risk Assessment	Risk- Mitigation Measures
A. Inherent Risks		
1. Country-Specific Risks	<p style="text-align: center;">MODERATE</p> <p>Increasing political unstable future situation through election related issues, frequent strikes and hartals may result in hampering of economic development and smooth implementation in water supply and sanitation projects.</p>	The government of Bangladesh and ADB should continue the policy dialogues through various occasions including the country partnership strategy and the country operations business plan.
2. Entity-Specific Risks	<p style="text-align: center;">SUBSTANTIAL</p> <p>The present low tariff does not meet the water supply cost and may hamper the medium and long-term financial sustainability of DWASA.</p>	The government should ensure that DWASA maintains its financial sustainability through necessary tariff adjustments or other means to allow DWASA to have sufficient funds for its debt service obligations and O&M costs and to move towards full cost recovery. ADB will provide continued policy advice and capacity development support to facilitate DWASA's financial sustainability. The progress of tariff adjustment will be closely monitored through continuous dialogue with the government and DWASA.
3. Project-Specific Risks	<p style="text-align: center;">LOW</p> <p>The project aims to reduce non-revenue water mainly by rehabilitating existing pipes. The specific risks do not exist in financial management.</p>	Not required.
4. Overall Inherent Risk	<p style="text-align: center;">MODERATE</p> <p>While country-specific risks and entity-specific risks exist, these risks might be mitigated through cordial efforts of the government of Bangladesh and DWASA with support of ADB. There is a considerable entity specific level risk in tariff. The government should support DWASA in increasing the tariff to the required level for the financial sustainability of DWASA.</p>	
B. Control Risks		
1. Executing Entity	<p style="text-align: center;">MODERATE</p> <p>DWASA lacks the interdepartmental coordination within the organization. Each department and/or unit is executing its own tasks with little attention to others.</p>	DWASA should change the corporate culture and institutional structure in order to facilitate the interdepartmental coordination with required infrastructure support.
2. Staffing	<p style="text-align: center;">MODERATE</p> <p>Main positions in PMU including the Financial Management Specialist are not filled up.</p>	DWASA should fill up the main positions of PMU including the Financial Management Specialist before the loan effective date.
3. Internal audit	<p style="text-align: center;">SUBSTANTIAL</p> <p>Internal audit reports are submitted to the Board of Directors of DWASA behind the schedule mainly due to the unclear role assignments and inadequate staff in the Internal Audit Unit.</p>	DWASA should fix up the role assignments and staff inadequacy, and assure the dedicated supporting arrangement to the proposed project in the Internal Audit Unit.

B. Control Risks		
4. External Audit	LOW External audits are conducted annually by a qualified auditing company, with clear and adequate assignment. The proposed project is also subject to annual statutory auditing conducted by FAPAD under the OCAG of Bangladesh. Not much delay was observed in project based audit reports.	Not required.
5. Reporting & Monitoring	SUBSTANTIAL Reporting of the monthly performances is submitted in 4-5 months after the due.	DWASA should speed up the initiated efforts for improving the institutional structure.
6. Overall Control Risk	MODERATE Some financial management risks are recognized, but all of them are not high. Delayed submission of internal audit and MIS reports are found with substantial risks, but these can be tackled with adequate experienced additional staffs along with speeding up the on-going computerization efforts.	

ADB= Asian Development Bank, DWASA= Dhaka Water Supply and Sewerage Authority, PMU= project management unit

B. Disbursement

1. Disbursement Arrangements for ADB Funds

19. The Loan proceeds will be disbursed in accordance with ADB's *Loan Disbursement Handbook* (2015, as amended from time to time),¹¹ and detailed arrangements agreed upon between the Government and ADB. Online training for project staff on disbursement policies and procedures is available at: http://wpqr4.adb.org/disbursement_elearning. Project staff are encouraged to avail of this training to help ensure efficient disbursement and fiduciary control.

20. DWASA will be responsible for (i) preparing disbursement projections, (ii) requesting budgetary allocations for counterpart funds, (iii) collecting supporting documents, and (iv) preparing and sending withdrawal applications to ADB.

21. **Imprest fund procedure.** Separate imprest account should be established and maintained by DWASA. The currency of the imprest account is in U.S. dollar. The imprest account is to be used exclusively for ADB's share of eligible expenditures. DWASA who established the imprest account in its name is accountable and responsible for proper use of advances to the imprest account. The total outstanding advance to the imprest account should not exceed the estimate of ADB's share of expenditures to be paid through the imprest account for the forthcoming 6 months. DWASA may request initial and additional advance to the imprest account based on an Estimate of Expenditure Sheet¹² setting out the estimated expenditures to be financed through the account for the forthcoming 6 months. Supporting documents should be submitted to ADB or retained by DWASA in accordance with ADB's *Loan Disbursement Handbook* (2015, as amended from time to time) when liquidating or replenishing the imprest account.

¹¹ Available at: <http://www.adb.org/Documents/loan-disbursement-handbook>

¹² ADB. 2015. *Loan Disbursement Handbook*. 10B.

22. **Statement of expenditure procedure**¹³ Statement of Expenditure (SOE) procedures will be used for the reimbursement of eligible expenditures or liquidation of the advances to the imprest account. Supporting documents and records for expenditures claimed under the SOE should be maintained and made available for review by ADB's disbursement and review missions, upon ADB's request for the submission of supporting documents on a sampling basis, and for independent audit.

23. Before the submission of the first withdrawal application, the borrower should submit to ADB sufficient evidence of the authority of the person(s) who will sign the withdrawal applications on its behalf, together with the authenticated specimen signatures of each authorized person. The minimum value per withdrawal application is set in accordance with ADB's *Loan Disbursement Handbook* (2015, as amended from time to time). Individual payments below this amount should be paid by DWASA and subsequently claimed from ADB (i) through reimbursement; or (ii) from the imprest account.

2. Disbursement Arrangements for Counterpart Fund

24. **Disbursement Practice.** To expedite disbursement, ADB's Loan Disbursement Handbook has dedicated sections in Chapter 4 and Chapter 5 on: (i) actions to be taken by the borrower, (ii) basic requirements for disbursement, and (iii) the withdrawal application.

C. Accounting

25. DWASA will maintain separate project accounts and records by funding source for all expenditures incurred on the Project. Project accounts will follow international accounting principles and practices and those prescribed by the Government's accounting laws and regulations.

D. Auditing and Public Disclosure

26. The audited entity financial statements, together with the auditor's report and management letter, will be submitted in the English language to ADB within 1 month after their approval by the relevant authority.

27. The audit report for the project financial statements will include a management letter and auditor's opinions, which cover (i) whether the project financial statements present an accurate and fair view or are presented fairly, in all material respects, in accordance with the applicable financial reporting standards; (ii) whether the proceeds of the loan were used only for the purpose(s) of the project; and (iii) whether the borrower or executing agency was in compliance with the financial covenants contained in the legal agreements (where applicable).

28. Compliance with financial reporting and auditing requirements will be monitored by review missions and during normal program supervision, and followed up regularly with all concerned, including the external auditor.

29. The government and DWASA have been made aware of ADB's approach to delayed submission, and the requirements for satisfactory and acceptable quality of the audited project

¹³ SOE forms are available in appendix 9B of ADB's Loan Disbursement Handbook (2015, as amended from time to time).

financial statements.¹⁴ ADB reserves the right to require a change in the auditor (in a manner consistent with the constitution of the borrower), or for additional support to be provided to the auditor, if the audits required are not conducted in a manner satisfactory to ADB, or if the audits are substantially delayed. ADB reserves the right to verify the project's financial accounts to confirm that the share of ADB's financing is used in accordance with ADB's policies and procedures.

30. Public disclosure of the audited project financial statements, including the auditor's opinion on the project financial statements, will be guided by ADB's Public Communications Policy 2011.¹⁵ After the review, ADB will disclose the audited project financial statements and the opinion of the auditors on the project financial statements no later than 14 days of ADB's confirmation of their acceptability by posting them on ADB's website. The management letter, additional auditor's opinions, and audited entity financial statements will not be disclosed.¹⁶

VI. PROCUREMENT AND CONSULTING SERVICES

A. Procurement Risk Assessment

31. The procurement risk assessment for the project was conducted for the project scope (9 ICB, 2 NCB, 5 consulting firms and 2 shopping contracts; and the relevant contract packages under the additional financing portion) to assess staff capacity of DWASA, information, management, procurement practices, effectiveness and accountability measures, to ensure timely procurement processing and efficient project implementation.

32. Based on assessment, the risk factor of processing several packages almost at the same time will be mitigated by the support of consultants during project processing to help DWASA to prepare bid documents for 2 packages to expedite advance action, and those documents shall be used as master bidding documents for the similar remaining packages. Design, management supervision (DMS) consulting firm should assist DWASA in the bid document preparation, bid evaluation and supervision.

B. Advance Contracting and Retroactive Financing

33. All advance contracting and retroactive financing will be undertaken in conformity with ADB's Procurement Guidelines (2015, as amended from time to time) (ADB's Procurement Guidelines)¹⁷ and ADB's Guidelines on the Use of Consultants (2013, as amended from time to time) (ADB's Guidelines on the Use of Consultants).¹⁸ The issuance of invitations to bid under

¹⁴ ADB's approach and procedures regarding delayed submission of audited project financial statements: (i) when audited project financial statements are not received by the due date, ADB will write to the executing agency advising that (a) the audit documents are overdue; and (b) if they are not received within the next 6 months, requests for new contract awards and disbursement such as new replenishment of imprest accounts, processing of new reimbursement, and issuance of new commitment letters will not be processed; (ii) when audited project financial statements are not received within 6 months after the due date, ADB will withhold processing of requests for new contract awards and disbursement such as new replenishment of imprest accounts, processing of new reimbursement, and issuance of new commitment letters. ADB will (a) inform the executing agency of ADB's actions; and (b) advise that the loan may be suspended if the audit documents are not received within the next 6 months; and (ii) when audited project financial statements are not received within 12 months after the due date, ADB may suspend the loan.

¹⁵ Public Communications Policy: <http://www.adb.org/documents/pcp-2011?ref=site/disclosure/publications>

¹⁶ This type of information would generally fall under public communications policy exceptions to disclosure. ADB. 2011. *Public Communications Policy*. Paragraph 97(iv) and/or 97(v).

¹⁷ Available at: <http://www.adb.org/Documents/Guidelines/Procurement/Guidelines-Procurement.pdf>

¹⁸ Available at: <http://www.adb.org/Documents/Guidelines/Consulting/Guidelines-Consultants.pdf>

advance contracting and retroactive financing will be subject to ADB approval. The government and DWASA have been advised that approval of advance contracting and retroactive financing does not commit ADB to finance the Project.

34. **Advance contracting.** Advance contracting was approved by ADB for (i) recruitment of DMS consultants; (ii) recruitment of nongovernment organization for resettlement work; and (iii) procurement of two civil works packages for distribution network improvement. It is also sought for (i) recruitment of consultants for capacity building for sustainability (CBS); (ii) recruitment of nongovernment organization for demand management and public awareness campaign; and (iii) procurement of two civil works packages for distribution network improvement.

35. **Retroactive financing.** Retroactive financing will be up to 20% of the ADB loan amount for eligible expenditures incurred before loan effectiveness, but no earlier than 12 months before signing of the loan agreement in connection with civil works including those under DWSSDP and project management and capacity development.

C. Procurement of Goods, Works, and Consulting Services

36. All procurement of goods and works will be undertaken in accordance with ADB's Procurement Guidelines (2015, as amended from time to time).

37. International competitive bidding (ICB) procedures will be used for civil works contracts estimated to cost \$15 million or higher, and any goods contracts valued at \$2 million or higher. National competitive bidding (NCB) procedures will be used for civil works contract estimated to cost less than \$15 million and goods contract estimated to cost less than \$2 million. Shopping will be used for procurement of works and goods worth less than \$100,000.

38. Before the start of any procurement ADB and the Government will review the public procurement laws of the government to ensure consistency with ADB's Procurement Guidelines (2015, as amended from time to time).

39. A comprehensive procurement plan, covering the entire project duration, indicating threshold, packages for goods, works and services, review procedures, method of procurement, type of bidding procedures, type of bidding documents is in Appendix B.

40. The additional financing (\$36.9 million) will be utilized for a part of the six existing civil works contracts through contract modifications of DWSSDP (L2382). Contract modifications will be reviewed in accordance with ADB's Project Administration Instructions No. 3.11. The detailed information of existing civil works contracts with estimated modified amounts is described in Section C of Procurement Plan in Appendix B.

41. All consultants, including NGOs will be recruited according to ADB's Guidelines on the Use of Consultants.¹⁹ The terms of reference for all consulting services are detailed in Section D.

42. An estimated 3,284 person-months (163 international, 3,121 national) of consulting services inputs to: (i) assist the PMU and Project Coordination Unit (PCU) in supervising all works under distribution network improvement (DNI) packages; (ii) assist DWASA in enhancing

¹⁹ Checklists for actions required to contract consultants by method available in e-Handbook on Project Implementation at: <http://www.adb.org/documents/handbooks/project-implementation/>

its managerial and technical capacity to prepare and implement sustainable DMA management plan and upgrade the 5-year corporate business plan; and (iii) assist DWASA in enhancing readiness of future portfolio of projects through preparing bidding documents. An estimated 1,288 person months of NGOs, comprising two teams, will be engaged to (i) assist DWASA in undertaking awareness campaign programs on water conservation and hygiene education and improving access to low income communities in the areas to be covered by the proposed project; and (ii) assist DWASA in updating and implementing Resettlement Plan through consultations and stakeholder participation. Consulting firms and NGOs will be engaged using the quality- and cost-based selection method, and will use a standard quality:cost ratio of 90:10.

D. Procurement Plan

43. DWASA has proven experience in procuring goods, works, and recruiting consulting services in accordance with ADB procedures and requirements under the on-going projects. ADB will review documents and submissions related to procurement at all major milestones prior to proceeding with the procurement process. PMU will be supported by procurement specialist from design, management, and supervision in bid document preparation and evaluation. This will be supplemented by regular training on procurement for PMU staff.

E. Consultant's Terms of Reference

44. The outline terms of reference of DMS, Capacity Building for Sustainability (CBS), Project Development Facility (PDF) Consultants, NGO for Resettlement, NGO Services for Demand Management and Public Awareness Campaign are in Appendix C-1, C-2, C-3, C-4, and C-5 respectively.

VII. SAFEGUARDS

45. The PMU will have a Safeguard Implementation Unit (SIU) staffed with three officers - 1 Environmental Officer, 1 Social Officer, and 1 Gender Officer - at assistant engineer level. The SIU will be assisted by relevant safeguard specialists in the DMS teams to implement safeguards. This section outlines the key roles and responsibilities for implementing ADB and government safeguard requirements under the project.

46. **Environmental Safeguards.** Five draft initial environmental examinations (IEEs) with environmental management plans (EMPs) – one for each DNI packages (ICB 2.8, 2.9, 2.10, 2.11 and 2.12) – have already been prepared. The following are the roles and responsibilities to implement the EMPs:

47. **Project Management Unit.** The Environmental Officer in the SIU, assisted by the environmental specialist on the DMS team, will oversee implementation of environmental safeguards work under the project, including the following activities: (i) update draft IEEs/EMPs prepared during detailed designs in accordance with ADB's Safeguards Policy Statement (*SPS, 2009*) and *Environmental Conservation Rules (ECR 1997)* and submit to ADB for review, final approval, and disclosure prior to commencement of works (note: a single document will be finalized to fulfill ADB and government environmental impact assessment [EIA] requirements);²⁰ (ii) facilitate and confirm overall compliance with Government of Bangladesh rules (e.g., *ECR*

²⁰ The contractor of civil works packages will update the draft IEE in the process of preparing the government EIA based on detailed designs, and the DMS will then review the documents. Note: a single document will be finalized to fulfill ADB and government EIA requirements under the project. For ADB purposes, the document is called an IEE, and for government purposes, it is called an EIA.

1997), oversee timely preparation and finalization of EIA by contractors, and obtaining all required clearances and environmental permits in timely manner prior to construction; (iii) monitor EMP implementation by the contractors during construction including all mitigation measures and environmental parameters (air and water quality, noise, etc.) and taking corrective actions where necessary; (iv) address and record grievances through the Grievance Redress Mechanism in a timely manner, and taking quick corrective actions where necessary; and (v) review monthly environmental monitoring reports submitted to DWASA by contractors and consultants, and submitting semi-annual environmental monitoring reports to ADB. All semi-annual monitoring reports submitted to ADB will be disclosed on ADB's website, as per ADB safeguards and communication policies.

48. **Contractors:** Contractors play a critical role in implementing environmental safeguards including the following activities: (i) prepare and finalize government EIA report, where necessary, based on existing draft IEEs/EMPs prepared during detailed designs and fulfill ADB's SPS 2009 and ECR 1997 (note: a single document will be finalized to fulfill ADB and government EIA requirements); (ii) carry out all environmental mitigation measures outlined in the EMPs during construction including regular testing and monitoring of environmental parameters outlined in each package-wise EMP; and (iii) address public grievances by taking quick corrective actions and reporting status of grievances and redress to PMU.

49. **Social Safeguards (Involuntary Resettlement).**²¹ The project will have limited resettlement impacts during the civil work activities. Five draft Resettlement Plans for output 1 were prepared in accordance with ADB's Safeguards Policy Statement (SPS, 2009) and the government's *Acquisition and Requisition of Immovable Property Ordinance 1982 (ARIPO)*. Resettlement impacts of this component will be mainly on temporary impacts on road side vendors and hawkers during construction. All costs related to land acquisition and resettlement/rehabilitation will be borne by the Government. The PMU is to ensure that any physically or economically displaced persons are compensated at full replacement cost prior to displacement (i.e., commencement of civil works) for project components or sections ready for construction, and ensure other entitlements listed in the resettlement plan are provided to displaced persons. The draft resettlement plans will be updated by NGO for resettlement works upon the completion of detailed design during project implementation. Qualified NGOs will be engaged to facilitate resettlement plans' finalization, implementation, and livelihood income and restoration to the affected households.

50. **Project Management Unit.** The Social Officer in the safeguard implementation unit (SIU), assisted by the resettlement specialists on the DMS team, will oversee implementation of involuntary resettlement safeguards work under the project, with support of qualified NGOs to implement the resettlement plans. The SIU will oversee the following activities: (i) update plans in accordance with ADB's Safeguards Policy Statement (SPS, 2009) based on detailed designs and submitting to ADB for review, final approval, and disclosure prior to commencement of works; (ii) monitor plan implementation and rehabilitation of displaced persons prior to and during construction; (iii) conduct internal and external monitoring of the resettlement process to ensure smooth implementation; (iv) monitor work of NGO;²² (v) ensure timely payments of compensation and other entitlements as per the plan are made before displacement occurs; (vi) consolidate quarterly resettlement monitoring reports prepared by NGOs into semi-annual

²¹ The project will have no impacts on indigenous peoples and ADB's Indigenous People's requirements are not applicable.

²² NGO will be engaged to implement the RPs including carrying out surveys of affected persons based on detailed designs, ensuring all APs are compensated and relocated prior to construction in relevant sections, leading the ongoing consultation and rehabilitation process.

monitoring reports to be submitted to ADB; (vii) address and record grievances through the Grievance Redress Mechanism in a timely manner, and taking quick corrective actions where necessary to facilitate the redressal of grievances in coordination with contractors, NGO, and displaced persons; and (viii) engage in ongoing meaningful consultations with stakeholders and affected persons. The terms of reference (TORs) of NGO who will facilitate plan implementation are in the Appendix C and Appendix D, E, and F provide samples of draft project leaflet, grievance redress form and semiannual safeguards monitoring template.

51. **Contractors:** The Government and DWASA will ensure that contractors comply with all applicable labor laws and core labor standards on: (i) prohibition of child labor as defined in national legislation for construction and maintenance activities, (ii) equal pay for women and men for work of equal value, (iii) elimination of forced labor, and (iv) the requirement to disseminate information on sexually transmitted diseases including HIV/AIDS to employees and local communities surrounding the Project sites. In addition, the contractor shall make best efforts to provide displaced persons construction related jobs or other employment during implementation depending on the skill sets.

52. **Prohibited investment activities.** Pursuant to ADB's Safeguard Policy Statement (2009), ADB funds may not be applied to the activities described on the ADB Prohibited Investment Activities List set forth at Appendix 5 of the Safeguard Policy Statement (2009).²³

VIII. GENDER AND SOCIAL DIMENSIONS

53. **Gender.** The project is classified by ADB as an effective gender mainstreaming project with its high potential to increase women's agency in water use and management both at the household levels and in the communities. A gender action plan (GAP) will be implemented under the project. The project will contribute to enhancing women's decision making capacity within the community, reduce the time spent by women on water collection, as well as reduce the security concerns for women in collecting water from dangerous areas in the community. The project along with enhancing women's opportunities for productive employment, more leisure time and efficient use of their time on labour, will also provide new water connections to poor households including female headed households. Women's participation in design and maintenance of water points will be ensured through 50% women membership in Community Based Organizations (CBOs) with and in the leadership positions. Women will have equal opportunity to participate in training programs to be supported under the project. Efforts to ensure 20% employment opportunities for unskilled labor in construction will be in place. Community awareness raising and training activities will include women and will focus on economic use of water, water quality, cost sharing, and operation and maintenance of water points.

54. Through the project, women will be encouraged to play a major role in the CBOs and the low-income community committees and to become actively involved in the decision making on water use and management through the project activities. Core labor standards, including equal wage for women and men for work of equal value, will be ensured. Resources have been allocated for the implementation of the GAP and its monitoring. Sex disaggregated database will be developed and progress of GAP implementation will be reported to ADB through quarterly progress reports. The evaluation of GAP implementation will be carried out as part of any benefit monitoring, including at project completion.

²³ Available at: <http://www.adb.org/Documents/Policies/Safeguards/Safeguard-Policy-Statement-June2009.pdf>

55. **Social Development and Participation.** The Summary Poverty Reduction and Social Strategy details the social aspects of the project. Improved water supply service is a priority for general citizens in Dhaka, as the current level of service is not adequate. Low income households pay high cost and get intermittent supply with poor water quality. The project will strengthen the distribution network and improve the access to water supply for LICs. LICs will participate in consultation, planning for resettlement work, site selection of community water points, construction and maintenance work, training, and bill collection. Thirty-five CBOs will be established and/or strengthened in LICs to enhance regularization of existing illegal connections and the installment of new ones, maintain the facility of community water points, and have the responsibility to pay water tariffs. NGOs will be engaged in implementation of the awareness raising and community mobilization activities in LICs. Besides water issues, awareness raising activities will include the types of employment opportunities available; timeframes; and the modality of applying for the work.

Table 14: Gender Action Plan Dhaka Water Supply Network Improvement Project

Activities	Indicators and Targets	Responsibilities	Time Frame
Output 1. Distribution network strengthened			
<p>1a. Ensure women's equitable participation in and benefit from the strengthening of the distribution network.</p> <p>(i) Ensure uninterrupted 24-hour piped water supply to women through:</p> <p>(a) rehabilitated connections to households and communities.</p> <p>(b) new or legalized connections of households and communities.</p> <p>(c) new or legalized connections of low-income communities.</p> <p>(ii) Arrange community consultations in the targeted areas to raise awareness.</p> <p>(iii) Ensure women's participation as unskilled labor for civil works.</p> <p>(iv) Include clause in the bidding documents on core labor standards (civil work) and equal pay for work of equal value for men and women.</p> <p>(v) Orient contractors on core labor standards and clauses related to social and gender issues in the bid documents.</p> <p>(vi) Ensure women-friendly amenities are provided at construction sites.</p>	<ul style="list-style-type: none"> The targeted number of women directly benefited from the improved services are (a) 2.4 million, (b) 550,000, and (c) 150,000. Consultations during design and implementation organized in each community have at least 50% women participants that include landowners, heads of households, and other affected women. At least 20% of unskilled laborers are local destitute women, who receive equal pay with men for work of equal value. All job advertisements for civil works follow the guidance as mentioned in DWASA Gender Strategy. All contractors are informed of gender-related applications of core labor standards. The implementation is submitted in progress reports regularly. Water and sanitation facilities and occupational health and safety measures for women workers are available at all construction sites. 	DWASA, contractors, consultants/nongovernment organizations	Year 1 onwards
<p>1b. Set up mechanisms for the organized participation of households, especially women, in the strengthening of the distribution network.</p> <p>(i) Arrange community consultations in the targeted areas to identify households that need rehabilitation distribution network and to organize CBOs for O&M.</p> <p>(ii) Establish or strengthen 35 CBOs or committees for the management, O&M of water supply services in LICs.</p> <p>(iii) Conduct trainings for CBO on O&M of community water supply.</p> <p>(iv) Arrange community consultations to identify female headed households and women in other households that will be connected to new legalized connections.</p>	<ul style="list-style-type: none"> At least 50% women participation in community consultations to identify households for rehabilitation is ensured. CBOs is formed/strengthened in LICs with at least 50% women members and 50% women in leadership positions in all CBOs. At least 30% of trainees are women users of community connections. At least 30% female headed households directly benefit from 24 hours of continuous safe water supply in low-income communities. 	DWASA, contractors, consultants/nongovernment organizations	Year 1 onwards
Output 2. Sustainable managerial capacity of DMA enhanced			
<p>2a. Ensure women staff of DWASA participate in development of SNRWRP.</p> <p>2b. Capacity building (both managerial and technical) of DWASA PMU and relevant staff for sustainable DMA management.</p> <p>2c. Develop MIS with sex disaggregated to strengthen capacity at zone levels for training for sustainable DMA management.</p>	<ul style="list-style-type: none"> At least 30% women participation in development and implementation of SNRWRP is ensured. At least 30% of PMU members are women. At least 30% women participation in training for DMA management is ensured. Sex disaggregated MIS is developed. 	DWASA, consultants	Year 1 onward

Activities	Indicators and Targets	Responsibilities	Time Frame
Output 3. Capacity for quality service delivery enhanced			
3a. Identify GFP from DPD rank from PMU and recruit a gender specialist following the DWASA Gender Strategy. 3b. Assess the training needs of relevant staffs on gender mainstreaming; and train them based on the identified training needs. 3c. Ensure participation of women in the development of the operation and financial improvement plan in line with DWASA Gender Strategy. 3d. Select a partner nongovernment organization and a consulting firm (the partner firms) with gender expertise to carry out all social mobilization and awareness activities. 3e. Conduct awareness campaigns with women's participation, and ensure gender perspective is integrated in the campaigns. 3f. Ensure participation of women in training for laboratory equipment. 3g. Ensure implementation, monitoring and periodical reporting of GAP.	<ul style="list-style-type: none"> • GFP is identified and nominated; and the gender specialist is appointed. • All staffs of the project including the partner firms receive training on gender mainstreaming. • At least 30% women participation in development of operation and financial improvement plan is ensured. • The partner firms are selected with appropriate gender and social mobilization expertise. • At least 30% women participation in awareness raising programs is ensured, and gender perspectives are integrated in all awareness campaigns. • At least 30 % women participation in training for operation of laboratory equipment is ensured. • GAP is implemented and regular QPR is submitted. 	DWASA, consultants/nongovernment organizations	Year 1 onward

CBOs=community-based organizations, DMA=district metered area, DPD=deputy project director, DWASA=Dhaka Water Supply and Sewerage Authority, GAP= gender action plan, GFP=gender focal point, LICs=low income communities, MIS=management information system, NGO=nongovernment organization, O&M=operations and maintenance, PMU=project management unit, QPR= Quarterly Progress Report, SNRWRP= sustainable nonrevenue water reduction plan.

Source: Asian Development Bank.

IX. PERFORMANCE MONITORING, EVALUATION, REPORTING, AND COMMUNICATION

A. Project Design and Monitoring Framework

56. The design and monitoring framework (DMF) of the project is in Appendix A.

B. Monitoring

57. **Project performance monitoring.** Within 12 months of loan effectiveness, the PMU will establish a project performance management system (PPMS) using the targets, indicators, assumptions, and risks in the DMF. The PPMS will take into account the important monitoring parameters in addition to those included in the DMF. The baseline data corresponding to indicators and targets set out in the DMF and PPMS will be gathered during detailed design stage, within 6 months of commencement of design work, disaggregated by income levels and sex. Disaggregated baseline data for output and outcome indicators gathered will be updated and reported quarterly through the quarterly progress reports and after each ADB review mission. These quarterly reports will provide information necessary to update ADB's project performance reporting system.²⁴ Results of a comprehensive completion survey will be included in the project completion report.

58. **Compliance monitoring.** PMU will monitor the compliance of loan covenants—policy, legal, financial, economic, environmental, and others and ensure the compliance. All non-compliance issues, if any, will be updated in quarterly progress reports together with remedial actions. Each ADB review mission (at least two times a year) will also monitor the status of compliance with loan assurances and raises the non-compliance issues with the government and agrees on remedial actions.

59. **Safeguards monitoring.** The PMU will submit separate semi-annual environmental and resettlement monitoring reports to ADB, which will be disclosed on ADB's website. The monitoring reports will be prepared by the DMS safeguards specialists, with inputs from the contractors and NGOs, where relevant. The status of safeguard implementation, issues, and corrective actions are to be clearly reported to ADB. The status of safeguards implementation will also be discussed at each ADB review mission and with necessary issues and agreed actions recorded in Aide Memoires.

60. **Gender and social dimensions monitoring.** The progress of GAP implementation will be reviewed at each review mission and incorporated in the quarterly and other progress reports as well as evaluation reports and sent to ADB. Sex-disaggregated data will be regularly be updated.

C. Evaluation

61. The government and ADB will jointly review the project at least twice a year. This includes (i) the performance of the PMU, PCU, consultants, contractors, and NGOs; (ii) physical progress of the project, effectiveness of safeguards, and implementation of the GAP; (iii) compliance with loan assurances; and (iv) assessment of operational sustainability in technical and financial terms, including tariff adjustments. In addition to the regular loan reviews, the

²⁴ ADB's project performance reporting system is available at:
<http://www.adb.org/Documents/Slideshows/PPMS/default.asp?p=evaltool>

government and ADB will undertake a comprehensive midterm review in the third year of project implementation to identify problems and constraints encountered and suggest measures to address them. Specific items to be reviewed will include: (i) appropriateness of scope, design, implementation arrangements, and schedule of activities; (ii) assessment of implementation progress against project indicators; (iii) capacity development of relevant sections of DWASA for ensuring sustainability; (iv) compliance with safeguard measures; (v) extent to which the GAP is being implemented; (vi) lessons learned, good practices, and corrective actions; and (vii) changes recommended. Within 6 months of physical completion of the Project PMU will submit a project completion report to ADB.²⁵

D. Reporting

62. DWASA will provide ADB with (i) quarterly progress reports in a format consistent with ADB's project performance reporting system; (ii) consolidated annual reports including (a) progress achieved by output as measured through the indicator's performance targets, (b) key implementation issues and solutions; (c) updated procurement plan and (d) updated implementation plan for next 12 months; and (iii) a project completion report within 6 months of physical completion of the Project. To ensure projects continue to be both viable and sustainable, project accounts and DWASA audited financial statements, together with the associated auditor's report, should be adequately reviewed.

E. Stakeholder Communication Strategy

63. The stakeholder communication strategy will include different methodologies. The basic information of the project will be uploaded in the websites of ADB and DWASA. All procurement notices will also be uploaded in the websites. Progress will be reported to the Inter-ministerial Steering Committee and guidance will be sought. The Local Government Division, Implementation Monitoring and Evaluation Division, and other relevant ministries will receive periodic reports to review progress. The project affected persons including women will be informed by the NGOs about the proposed project intervention, necessary resettlement, as well as compensation and grievance redress mechanism through motivational sessions, meetings, and other forums in the project areas. The NGOs will also inform about construction work, available employment, timeframes, wage rate, and the opportunities for women. Contractors will be briefed about the specific clauses on core labor standards (equal pay for work of equal value, occupational health and safety, water supply, sanitation, segregated shelter and facilities). Consultations and awareness raising programs will be organized in each community focusing on economic use of water, water quality, cost sharing, operation and maintenance of water points ensuring 30% of women representation. Leaflets, flyers and other printed and electronic media will be used to disseminate information from time to time. The project review missions will also be used for communication with different stakeholders including project beneficiaries and for receiving feedback.

X. ANTICORRUPTION POLICY

64. ADB reserves the right to investigate, directly or through its agents, any violations of the Anticorruption Policy relating to the project.²⁶ All contracts financed by ADB shall include provisions specifying the right of ADB to audit and examine the records and accounts of the

²⁵ Project completion report format is available at: <http://www.adb.org/Consulting/consultants-toolkits/PCR-Public-Sector-Landscape.rar>

²⁶ Anticorruption Policy: <http://www.adb.org/Documents/Policies/Anticorruption-Integrity/Policies-Strategies.pdf>

executing agency and all project contractors, suppliers, consultants, and other service providers. Individuals and/or entities on ADB's anticorruption debarment list are ineligible to participate in ADB-financed activity and may not be awarded any contracts under the project.²⁷

65. To support these efforts, relevant provisions are included in the loan agreement, project agreement, and the bidding documents for the Project. In particular, all contracts financed by ADB in connection with the project will include provisions specifying the right of ADB to audit and examine the records and accounts of the executing agency and all contractors, suppliers, consultants, and other service providers as they relate to the project. ADB will disseminate ADB's anticorruption policy to Ministry of Local Government and DWASA.

66. The Anti-Corruption Commission, as the constitutional anticorruption agency, has powers to investigate any irregularities in the Project. This includes financial irregularities, as well as corruption of government officials and officers and employees of autonomous organizations.

67. Project-specific measures to enhance governance and prevent corruption, designed with the stages of project implementation and the disbursement chain in mind, include (i) the requirement for PMU to follow government rules and procedures for all expenses and revenue items including cash and the proper and accurate maintenance of financial records; and (ii) establishing a project website at DWASA to provide transparency on project details including procurement. DWASA will announce the Project and business opportunities associated with the Project, as relevant, on their website. Such announcements, when dealing with contracts awarded, will at least disclose: (a) the list of participating bidders, (b) the name of the winning bidder, (c) the amount of the contracts awarded, and (d) the services procured. In addition, DWASA will establish a system of handling complaints, acceptable to ADB, to deal with any complaints received in relation to the contracts, their awards and their administration.

68. For civil works, the major risks are of collusion to overprice designs and approve low volume and quality built works. PMU will hire technical auditors to carry technical audit of the project on random basis. The technical auditor will share the report with Ministry of Local Government and ADB on confidential basis. Contractors will be made to disclose basic information of contracts in each construction site through display board. Full information disclosure and participatory monitoring are expected to be effective in reducing the risk of corruption and improving governance at central and local levels.

69. Within 6 months of project effectiveness, DWASA will prepare a grievance redress mechanism, acceptable to ADB, and establish a grievance redress committee to receive and resolve complaints/grievances or act upon reports from stakeholders on misuse of funds and other irregularities relating to the project, including but not limited to grievances due to safeguard issues. The grievance redress committee will: (i) be independent of and has no conflict of interest with DWASA; (ii) make public of the existence of the grievance redress mechanism; (iii) review and address grievances of stakeholders of the project, in relation to either the project, any of the service providers, or any person responsible for carrying out any aspect of the project; and (iv) proactively and constructively responding to them.

XI. ACCOUNTABILITY MECHANISM

70. People who are, or may in the future be, adversely affected by the project may submit

²⁷ ADB's Integrity Office web site: <http://www.adb.org/integrity/unit.asp>

complaints to ADB's Accountability Mechanism. The Accountability Mechanism provides an independent forum and process whereby people adversely affected by ADB-assisted projects can voice, and seek a resolution of their problems, as well as report alleged violations of ADB's operational policies and procedures. Before submitting a complaint to the Accountability Mechanism, affected people should make an effort in good faith to solve their problems by working with the concerned ADB operations department. Only after doing that, and if they are still dissatisfied, should they approach the Accountability Mechanism.²⁸

XII. RECORD OF CHANGES TO THE PROJECT ADMINISTRATION MANUAL

71. Draft PAM was discussed during the loan fact-finding mission in January 2016.

²⁸ Accountability Mechanism. <http://www.adb.org/Accountability-Mechanism/default.asp>.

APPENDIX A: DESIGN AND MONITORING FRAMEWORK

Impacts the Project is Aligned with			
(i) Safe drinking water made available for all urban populations (Seventh Five-Year Plan, 2016–2020) ^a (ii) Adaptive capacity of water sector enhanced for reducing climate change vulnerability (National Strategy for Water Supply and Sanitation) ^b			
Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting Mechanisms	Risks
Outcome Sustainable provision of a more reliable, improved, and climate-resilient supply of water ensured in Dhaka City	By year 2022, in new DMAs covered by the project: <ul style="list-style-type: none"> a. Uninterrupted, 24-hour supply of piped water delivered to 6.5 million people (2015 baseline: intermittent and insufficient supply, 8–10 hours average per day) b. Water supply pressure of at least 1 bar (10 meters) at consumer end achieved (2015 baseline: 0.1–0.5 bar) c. Nonrevenue water reduced to below 10 % (2013–2014 baseline: 26%) d. 98% of water quality test results within DWASA distribution systems meet country standards (2013 baseline: 90%) 	For all indicators: DWASA's annual monitoring surveys QPRs and PCR	Water tariffs may remain too low for DWASA to fully fund its loan repayment and/or the cost of operation and maintenance.
Outputs 1. Distribution network strengthened ^c	1a. By year 2021, in new DMAs covered by the project: <ul style="list-style-type: none"> (i) 1,500 kilometers of water distribution network rehabilitated (ii) 187,000 connections to households and communities rehabilitated, from which at least 2.4 million women will benefit (iii) 42,000 new or legalized connections of households and communities, from which at least 550,000 women will benefit (iv) 5,000 new or legalized connections of LICs, from which at least 150,000 women will benefit 	For all indicators: DWASA's annual monitoring surveys QPRs and PCR	Project cost may increase due to volume increase of required works and equipment and delayed implementation.

Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting Mechanisms	Risks
<p>2. Sustainable managerial capacity of DMA enhanced</p> <p>3.Capacity for quality service delivery enhanced</p>	<p>1b. By end of 2017, output e1 of the design and monitoring framework for the Dhaka Water Supply Sector Development Program accomplished^d</p> <p>2a. Sustainable nonrevenue water reduction plan implemented in 2018</p> <p>2b.700 DWASA staff (seven zones) trained in DMA management by 2020, with women staff making up at least 30% of training participants</p> <p>2c. SOP upgraded and implemented in 2018</p> <p>2d. SCADA system implemented in all DMAs and AMR implemented in three model DMAs in 2020</p> <p>3a. Five-year corporate business plan improved and implemented in 2018</p> <p>3b. Awareness campaign program implemented in seven zones by 2020, with women making up at least 30% of participants</p> <p>3c. 35 CBOs organized in LICs by Q1 2020, with women making up at least 50% of all members and filling 50% of leadership positions</p> <p>3d. Water quality monitoring system upgraded and implemented by 2018</p> <p>3e. 50 DWASA staff, at least 30% of them women, trained for operationalizing laboratory equipment by 2020</p> <p>3f. Gender action plan implemented by 2020</p> <p>3g. Bidding documents for two future investment projects ready by 2018</p>	<p>For all indicators: DWASA's annual monitoring surveys</p> <p>QPRs and PCR</p> <p>For all indicators: DWASA's annual monitoring surveys</p> <p>QPRs and PCR</p>	

Key Activities with Milestones
<p>1. Distribution network strengthened</p> <p>1.1 Mobilize contractors by Q3 2017 1.2 Complete construction works by Q3 2019 1.3 Commission all DMAs by Q3 2019</p> <p>2. Sustainable managerial capacity of DMA enhanced</p> <p>2.1 Complete and approve sustainable nonrevenue water reduction plan by Q4 2017 2.2 Complete and approve the training module for DMA by Q4 2017 2.3 Complete and approve SOP by Q4 2017 2.4 Install the SCADA system in all DMAs by Q1 2020 2.5 Install AMR in three piloted DMAs by Q2 2018</p> <p>3. Capacity for quality service delivery enhanced</p> <p>3.1 Established project management unit with full staff (30% women) in Q1 2016 3.2 Conduct primary data collection activities by Q3 2016 3.3 Recruit all consultants including nongovernment organizations by Q2 2017 3.4 Complete and approve 5-year corporate business plan by Q4 2017 3.5 Support the formation of CBO and their activities in LICs by Q1 2020 3.6 Establish at least 300 chlorination units by Q2 2019 3.7 Complete and approve the training module for operationalizing laboratory equipment by Q4 2017</p>
<p>Inputs</p> <p>Asian Development Bank: \$275.0 million (ordinary capital resources loan) Government: \$133.0 million</p>
<p>Assumptions for Partner Financing</p> <p>Outputs necessary to reach the design and monitoring framework outcome that are not administered by the Asian Development Bank includes the Saidabad Water Treatment Plant III to be financed by the Agence Française de Développement (French Development Agency) (€115 million), the Danish International Development Assistance (\$200 million), and the European Investment Bank (€40 million).^e</p>

AMR = automated meter reading, CBO = community-based organization, DMA = district metered area, DWASA = Dhaka Water Supply and Sewerage Authority, LIC = low-income community, PCR = project completion report, Q = quarter, QPR = quarterly progress report, SCADA = supervisory control and data acquisition, SOP = standard operating procedure.

^a Government of Bangladesh, Ministry of Planning, Planning Commission. 2015. *Seventh Five-Year Plan: FY2016–FY2020*. Dhaka.

^b Government of Bangladesh, Ministry of Local Government, Rural Development, and Cooperative. 2014. *National Strategy for Water Supply and Sanitation*. Dhaka.

^c All project outputs are incremental with baseline = 0 or not applicable.

^d This pertains to the additional financing part, which includes the rehabilitation of 1,536 kilometers of the distribution network and 157,000 service connections (More details in the Summary of Additional Financing Part [accessible from the list of linked documents in Appendix 2]). The outcome resulting from the additional financing part will be reported in the project completion report of the Dhaka Water Supply Sector Development Program.

^e All figures are indicative.

Source: Asian Development Bank.

APPENDIX B: Procurement Plan

Basic Data

Project Name: Dhaka Water Supply Network Improvement Project (DWSNIP)	
Project Number: 47254-003	Approval Number: -----
Country: Bangladesh	Executing Agency: Dhaka Water Supply and Sewerage Authority (Dhaka WASA)
Project Procurement Classification: B	Implementing Agency: Dhaka Water Supply and Sewerage Authority(Dhaka WASA)
Procurement Risk: Moderate	
Project Financing Amount: \$408.0Million ADB Financing: \$275.0Million Co-financing (ADB Administered): None Non-ADB Financing: Government: \$133.0 Million	Project Completion Date: June 2021
Date of First Procurement Plan: 28 April 2016	Date of this Procurement Plan: 28 April 2016

A. Methods, Thresholds, Review and 18-Month Procurement Plan

1. Procurement and Consulting Methods and Thresholds

Except as the Asian Development Bank (ADB) may otherwise agree, the following process thresholds shall apply to procurement of goods and works.

Procurement of Goods and Works		
Method	Threshold	Comments
International Competitive Bidding (ICB) for Works	\$15,000,000	
International Competitive Bidding for Goods	\$2,000,000	
National Competitive Bidding (NCB) for Works	Beneath that stated for ICB, Works	
National Competitive Bidding for Goods	Beneath that stated for ICB, Goods	
Shopping for Works	Below \$100,000	
Shopping for Goods	Below \$100,000	

Consulting Services	
Method	Comments
Quality and Cost Based Selection (QCBS)	

2. Goods and Works Contracts Estimated to Cost \$1 Million or More

The following table lists goods and works contracts for which the procurement activity is either ongoing or expected to commence within the next 18 months.

Package Number ⁵	General Description	Estimated Value (excluding CD-VAT and including IT-VAT)	Procurement Method	Review [Prior / Post/Post (Sample)]	Bidding Procedure	Advertisement Date (quarter/year)	Comments
ICB2.8 (Zone-9)	Rehabilitation of Distribution Network for nonrevenue water reduction (including procurement of equipment/pla	\$55.584 Million	ICB	Prior	1S2E	Q2/2016	Prequalification is not applicable Domestic preference is applicable. SBD Plant

Package Number ⁵	General Description	Estimated Value (excluding CD-VAT and including IT-VAT)	Procurement Method	Review [Prior / Post/Post (Sample)]	Bidding Procedure	Advertisement Date (quarter/year)	Comments
	nt, and construction of DTW pump station) with O&M support (457Km)						
ICB-2.9 (Zone-2)	Rehabilitation of Distribution Network for nonrevenue water reduction (including procurement of equipment/plant, and construction of DTW pump station) with O&M support (180 Km)	\$21.900 Million	ICB	Prior	1S2E	Q2/2016	Prequalification is not applicable Domestic preference is applicable. SBD Plant
ICB-2.10 (Zone-1)	Rehabilitation of Distribution Network for NRW reduction (including procurement of equipment/plant, and construction of DTW pump station) with O&M support (300Km)	\$36.492 Million	ICB	Prior	1S2E	Q2/2016	Prequalification is not applicable Domestic preference is applicable. SBD Plant
ICB2.11 (Zone-3,4 &10)	Rehabilitation of Distribution Network for nonrevenue water reduction (including procurement of equipment/plant, and construction of DTW pump station) with O&M support (453Km)	\$55.097 Million	ICB	Prior	1S2E	Q2/2016	Prequalification is not applicable Domestic preference is applicable. SBD Plant
ICB2.12 (Zone 7)	Rehabilitation of Distribution Network for	\$23.359 Million	ICB	Prior	1S2E	Q3/2016	Prequalification is not applicable

Package Number ⁵	General Description	Estimated Value (excluding CD-VAT and including IT-VAT)	Procurement Method	Review [Prior / Post/Post (Sample)]	Bidding Procedure	Advertisement Date (quarter/year)	Comments
	nonrevenue water reduction (including procurement of equipment/plant, and construction of DTW pump station) with O&M support (192 Km)						Domestic preference is applicable. SBD Plant
ICB-01.1	Chlorination Equipment(300 Sets)	\$3.78 Million	ICB	Prior	1S2E	Q2/2016	Domestic preference is applicable. Goods
ICB-01.2	Supply and Installation of SCADA	\$6.0 Million	ICB	Prior	1S2E	Q4/2016	Domestic preference is applicable. Goods
ICB-01.4	Supply and Installation of AMR	\$0.376 Million	ICB	Prior	1S2E	Q4/2016	Domestic preference is applicable. Goods

Total= \$202.588 Million

3. Consulting Services Contracts Estimated to Cost \$100,000 or More

The following table lists consulting services contracts for which the recruitment activity is either ongoing or expected to commence within the next 18 months.

Package Number	General Description	Estimated Value	Recruitment Method	Review (Prior / Post)	Advertisement Date (quarter/year)	Type of Proposal	Comments
DMS	Design, Management & Supervision Consultant	\$10.710 Million	QCBS(90:10)	Prior	Q1/2016	Full	International/National
CBS	Capacity Building for Sustainability	\$5.457 Million	QCBS(90:10)	Prior	Q2/2016	Full	International/National
PDF	Project Development Facility	\$4.575 Million	QCBS(90:10)	Prior	Q3/2016	Full	International/National
DC&PAC (for ICB-2.8 to 2.12 package)	NGO for Demand Management and Public Awareness	\$1.243 Million	QCBS(90:10)	Prior	Q2/2016	Full	National

Package Number	General Description	Estimated Value	Recruitment Method	Review (Prior / Post)	Advertisement Date (quarter/year)	Type of Proposal	Comments
	Campaign						
Resettlement (for ICB-2.8 to 2.12)	NGO for Resettlement	\$0.926 Million	QCBS(90:10)	Prior	Q1/2016	Full	National

Total = \$22.911Million

4. Goods and Works Contracts Estimated to Cost Less than \$1 Million and Consulting Services Contracts Less than \$100,000 (Smaller Value Contracts)

The following table groups smaller-value goods, works and consulting services contracts for which the activity is either ongoing or expected to commence within the next 18 months.

Goods and Works								
Package Number ⁵	General Description	Estimated Value	Number of Contracts	Procurement Method	Review [Prior / Post/Post (Sample)]	Bidding Procedure	Advertisement Date (quarter/year)	Comments
RFQ-6.1	Computer & waterGems Software for Network Modeling	\$0.10 Million	1	Shopping	Prior		Q2/2016	
RFQ-6.2	Photocopier	\$0.02 Million	1	Shopping	Prior		Q2/2016	
NCB-1.1	Vehicles (4WD-Jeep, Double Cabin Pick up (4W))	\$1.22 Million	1	NCB	Prior	1S2E	Q2/2016	
NCB-1.2	Motor Cycle	\$0.10 Million	1	NCB	Prior	1S2E	Q2/2016	

Total = \$1.44 Million

Consulting Services								
Package Number	General Description	Estimated Value	Number of Contracts	Recruitment Method	Review (Prior / Post)	Advertisement Date (quarter/year)	Type of Proposal	Comments

B. Indicative List of Packages Required Under the Project

The following table provides an indicative list of goods, works and consulting services contracts over the life of the project, other than those mentioned in previous sections (i.e., those expected beyond the current period).

Goods and Works							
Package Number ⁵	General Description	Estimated Value (cumulative)	Estimated Number of Contracts	Procurement Method	Review [Prior / Post/Post (Sample)]	Bidding Procedure	Comments
ICB-01.3	Supply and Installation of SCADA	\$6.0 Million	ICB	Prior	1S2E	Q3/2018	Domestic preference is applicable.

							Goods

Total= \$6.0 Million

Consulting Services							
Package Number	General Description	Estimated Value (cumulative)	Estimated Number of Contracts	Recruitment Method	Review (Prior / Post)	Type of Proposal	Comments

C. List of Awarded and On-going, and Completed Contracts

The following tables list of the awarded and on-going contracts, and completed contracts.

1. Awarded and On-going Contracts

Goods and Works							
Package Number	General Description	Original contract value	Estimated contract value after contract variation	Procurement Method (Original)	Advertisement Date (quarter/ year)	Date of ADB Approval of Contract Award	Comments
ICB-02.1	Rehabilitation of Distribution Networks in 7 District Meter Areas	\$9.8 Million	\$14.9 Million	ICB	(contract modification)	Q2/2016	USD3.3 Million to be financed by additional financing portion
ICB-02.2	Rehabilitation of Distribution Networks in 8 District Meter Areas	\$16.1 Million	\$25.7 Million	ICB	(contract modification)	Q2/2016	USD5.2 Million to be financed by additional financing portion
ICB-02.3	Rehabilitation of Distribution Networks in 8 District Meter Areas	\$15.2 Million	\$24.9 Million	ICB	(contract modification)	Q2/2016	USD5.2 Million to be financed by additional financing portion
ICB-02.4	Rehabilitation of Distribution Networks in 7 District Meter Areas	\$30.6 Million	\$32.9 Million	ICB	(contract modification)	Q2/2016	USD7.9 Million to be financed by additional financing portion
ICB-02.5	Rehabilitation of Distribution Networks in 6 District Meter Areas	\$24.1 Million	\$26.6 Million	ICB	(contract modification)	Q2/2016	USD8.6 Million to be financed by additional financing portion

Goods and Works							
ICB-02.6	Rehabilitation of Distribution Networks in 10 District Meter Areas	\$28.7 Million	\$24.8 Million	ICB	(contract modification)	Q2/2016	USD6.8 Million to be financed by additional financing portion

Consulting Services							
Package Number	General Description	Estimated Value	Awarded Contract Value	Recruitment Method	Advertisement Date (quarter/year)	Date of ADB Approval of Contract Award	Comments

2. Completed Contracts-N/A

Goods and Works								
Package Number	General Description	Estimated Value	Contract Value	Procurement Method	Advertisement Date (quarter/year)	Date of ADB Approval of Contract Award	Date of Completion	Comments

Consulting Services								
Package Number	General Description	Estimated Value	Contract Value	Recruitment Method	Advertisement Date (quarter/year)	Date of ADB Approval of Contract Award	Date of Completion	Comments

D. Non-ADB Financing- N/A

The following table lists goods, works and consulting services contracts over the life of the project, financed by Non-ADB sources.

Goods and Works				
General Description	Estimated Value (cumulative)	Estimated Number of Contracts	Procurement Method	Comments

Consulting Services				
General Description	Estimated Value (cumulative)	Estimated Number of Contracts	Recruitment Method	Comments

National Competitive Bidding

A. Regulation and Reference Documents

1. The procedures to be followed for national competitive bidding shall be those set forth for the National Open Tendering Method in *The Public Procurement Rules, 2008* (as updated and pursuant to *The Public Procurement Act, 2006* issued by the Government of Bangladesh) with the clarifications and modifications described in the following paragraphs required for compliance with the provisions of the Procurement Guidelines.

B. Procurement Procedures

1. Eligibility

2. The eligibility of bidders shall be as defined under section I of the Procurement Guidelines; accordingly, no bidder or potential bidder should be declared ineligible for reasons other than those provided in section I of the Guidelines, as amended from time to time.

2. Advertising

3. The posting of NCB specific notices for contracts valued at less than \$1 million on ADB's website is not required but is highly recommended.

3. Location of Bid Submission

4. Submission of bids to 'primary' and 'secondary' locations, or 'multiple droppings' of bids, shall not be required or allowed. Advertisements and bidding documents shall specify only one location for delivery of bids.

4. Bid Price as Percentage of Estimate

5. Bids shall not be invited on the basis of percentage above or below the estimated cost, and contract award shall be based on the lowest evaluated bid price of responsive bid from eligible and qualified bidder.

5. Lottery

6. A lottery system shall not be used to determine a successful bidder, including for the purpose of resolving deadlocks.

6. Rejection of All Bids and Rebidding

7. Bids shall not be rejected and new bids solicited without ADB's prior concurrence.

C. Bidding Documents

7. Anti-Corruption

8. Definitions of corrupt, fraudulent, collusive and coercive practices shall reflect the latest ADB Board-approved Anti-Corruption Policy definitions of these terms and related additional provisions (such as conflict of interest, etc.).

8. Qualification Requirements

9. Qualification criteria and specific requirements must be explicitly stated in the bidding documents and applied consistently during bid evaluation.

9. Rejection of Bids

10. A bid shall not be rejected on the grounds that its bid price is not within a percentage range above or below the contract estimate.

10. ADB Policy Clauses

11. A provision shall be included in all (national competitive bidding) (NCB) works and goods contracts financed by ADB requiring suppliers and contractors to permit ADB to inspect their accounts and records and other documents relating to the bid submission and the performance of the contract, and to have them audited by auditors appointed by ADB.

12. A provision shall be included in all bidding documents for NCB works and goods contracts financed by ADB stating that the Borrower shall reject a proposal for award if it determines that the bidder recommended for award has, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive or obstructive practices in competing for the contract in question.

13. A provision shall be included in all bidding documents for NCB works and goods contracts financed by ADB stating that ADB will declare a firm or individual ineligible, either indefinitely or for a stated period, to be awarded a contract financed by ADB, if it at any time determines that the firm or individual has, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive or obstructive practices or any integrity violation in competing for, or in executing, ADB-financed contract.

APPENDIX C: DRAFT TERMS OF REFERENCE

Appendix C-1: Design, Management, and Supervision (DMS) Consultants

A. Project Description

1. The project will improve the water supply system in the country's capital, Dhaka, by making it more reliable, sustainable, and climate-resilient. It will consolidate and enhance the gains made in the efficiency of the water distribution network achieved under two previous Asian Development Bank (ADB) projects (Dhaka Water Supply Sector Development Program [DWSSDP] and Dhaka Environmentally Sustainable Water Supply Project [DESWSP]), and improve the service delivery and the capacity of the Dhaka Water Supply and Sewerage Authority (DWASA).

2. The impacts will be (i) safe drinking water made available for all of Bangladesh's urban populations, aligned with the government's five-year plan for FY2016–FY2020;¹ and (ii) adaptive capacity of water sector enhanced for reducing climate change vulnerability, aligned with the national strategy for water supply and sanitation.² The outcome will be sustainable provision of a more reliable, improved, and climate-resilient water supply in Dhaka City.

3. The outputs will be DWASA's (i) distribution network strengthened, (ii) sustainable managerial capacity of DMA enhanced, and (iii) capacity for quality service delivery enhanced.

4. Output 1: Distribution network strengthened. Building on the ongoing work of two ADB-financed projects, the project will help improve the distribution network in Dhaka City.³ It will finance the improvements (i) in new DMAs not financed by the ongoing loans,⁴ and (ii) in DMAs under the 2007 program through additional financing to meet cost overruns and complete civil works under ongoing contracts.⁵ The project will extend new or regularized water connections to LICs where people are relying on illegal water lines or private water vendors and paying higher charges than they will when they use the expanded systems.

5. Output 2: Sustainable managerial capacity of district metered areas enhanced. DWASA's managerial and technical capacity will be strengthened to keep nonrevenue water at a low level. The project will assist DWASA in (i) preparing and implementing a sustainable nonrevenue water reduction plan;⁶ (ii) strengthening monitoring capacity at the zone level with

¹ Government of Bangladesh, Ministry of Planning, Planning Commission. 2015. *Seventh Five-Year Plan: FY2016–FY2020*. Dhaka.

² Government of Bangladesh, Ministry of Local Government, Rural Development, and Cooperatives. 2014. *National Strategy for Water Supply and Sanitation*. Dhaka.

³ Under the two ADB-financed projects, DWASA has been strengthening the existing water supply network by establishing DMAs in 3 of its 10 zones (5, 6, and 8) and parts of 4 zones (3, 4, 9, and 10) that serve 7 million people.

⁴ The project will cover the new DMAs of 3 zones (1, 2, and 7) and the remaining parts of 4 zones (3, 4, 9, and 10) that serve 6.5 million people. It will rehabilitate 1,500 kilometers of distribution network pipe; and rehabilitate, build, or regularize 234,000 connections.

⁵ DMA improvement under the 2007 program includes the rehabilitation of 1,536 kilometers of distribution network pipe and 157,000 service connections. The additional funds are required to cover the cost overruns resulting from (i) changes in the SDR–\$ exchange rate, (ii) an increase after detailed designs and physical verification of the existing distribution networks in the quantity of works and goods required, and (iii) price escalation. More details are provided in the Summary of Additional Financing Part (accessible from the list of linked documents in Appendix 2).

⁶ The sustainable nonrevenue water reduction plan will include the targets for nonrevenue water reduction; optimal DMA-based organizational structure; an incentive mechanism to improve operations; and an asset management plan, budget requirements, and a training plan.

renewed standard operating procedures,⁷ upgraded training modules and SCADA system, and the piloting of automated meter reading; and (iii) enhancing in-house design capacity for sustainable DMA management.

6. Output 3: Capacity for quality service delivery enhanced. The project will help DWASA (i) prepare and implement an operational and financial improvement plan by enhancing the existing 5-year corporate business plan;⁸ (ii) build capacity for planning, design, construction supervision, and project management; (iii) prepare and implement a plan to make the public more aware of demand control, water conservation, and health and hygiene; (iv) make the quality of the service delivery to LICs better; (v) prepare and implement a water quality monitoring system; (vi) implement a gender action plan; and (vii) enhance project readiness for future investment.⁹

B. Scope of Services

1. Overview

7. The DMS consultant will assist the PMU in managing and implementing the Project, assisting the PMU and Project Coordination Unit (PCU) in supervising all works under packages of distribution network improvement (DNI) liaising with ADB, procuring goods and works under the Project, reviewing detailed design carried out by contractors, handling financial management of the Project, and monitoring safeguards compliance of the Project. Project management activities of the consultant also include:

- (i) Strengthening the PMU's capacity to manage and implement the Project;
- (ii) Assisting PMU by delineating its method of working, procedures, and reporting;
- (iii) Supervising the work under all five packages of DNI of the contractors in full time;
- (iv) Assisting PMU in procuring goods, works and services in accordance with ADB Procurement (2015, as amended from time to time);
- (v) Establishing criteria for supervision, coordination, and management, and assisting the PCUs and PMU in inspecting and monitoring;
- (vi) Strengthening PMU/PCUs capacity for improved financial, institutional, and operational management of services;
- (vii) Assisting PMU to establish sustainable DMA management through supervising O&M of the DMAs;
- (viii) Ensuring and assisting the PMU for carrying out all project works in accordance with ADB's environmental and social safeguards policies (including the governance and anticorruption measures) with respect to DNI work including supervising the NGO in Resettlement Plan implementation and monitoring of Environmental Management Plan by contractors;
- (ix) Preparing reports for ADB, including monthly and quarterly progress report and project completion report and semi-annual safeguard monitoring reports; and
- (x) Supplementing and providing all other project-related works, as requested by PMU.

⁷ Standard operating procedures will include water loss assessment, water balance calculation, leak management, asset management, and smart water management technologies.

⁸ The existing 5-year corporate business plan comprises subplans. These include an investment plan, a financial plan, a tariff plan, and a human resource development plan. In addition, the project will prepare a sustainable nonrevenue water reduction plan, a water quality monitoring plan, and a demand management plan.

⁹ DWASA will engage consultants to prepare future projects, mainly involving sewerage management.

2. Activities

8. Main activities of the DMS consultants are described below. The description may not be exhaustive and the activities shall not necessarily be limited to those described.

1. Tender Assistance

9. The Consultants will assist PMU in procuring goods, works and services in accordance with ADB's Procurement Guidelines (2015, as amended from time to time). As PMU has a plan to commence advance contracting of civil works of DNI package, some of procurement activities may be completed before commencement of services of DMS consultants.

10. The scope of services of DMS consultants varies as below among five civil work packages of DNI (ICB 2-8 to ICB 2-12), and may be changed subject to the progress of procurement of each package.

- (i) ICB 2-8 and ICB 2-11 (bid Invitation scheduled in Q2, 2016 for ICB 2-8 and ICB 2-11): DMS consultants will assist PMU in negotiating contract and preparing final contract documents.
- (ii) ICB 2-9 and ICB 2-10 (bid Invitation scheduled in Q2, 2016): DMS consultants will assist PMU in preparing evaluation reports, negotiating contract, and preparing final contract documents.
- (iii) ICB 2-12 (bid Invitation scheduled in Q3, 2016): DMS consultants will assist PMU in preparing bid invitation and evaluation reports, negotiating contract, and preparing final contract documents.

2. Supervision and Management Assistance:

11. The supervision and management assistance will continue for the entire contract implementation period.

- (i) Checking Contractors Network Design and Recommending for Approval by PMU. The consultant will review the detail design (particularly network analysis) carried out by the contractor and give comments. The contractor shall modify the design as per consultant's requirements. The consultant, after receiving revised design and drawing from the contractor, will seek approval from PD (Project Director), DWASA. The contractor will commence the work after the approval of PD/ Project Manager.
- (ii) Assistance with general and detailed supervision of all construction and maintenance works.
 - (a) The consultant will have its own supervision team for the duration of the contract
 - (b) Agree on sub areas for implementation with contractor
 - (c) Supervise work on daily basis, ensuring quality control
 - (d) Encourage involvement of DWASA Zonal officers/staffs
 - (e) Interacting with environmental, social and resettlement experts
 - (f) Meet contractors on a weekly basis to discuss progress of work
 - (g) Highlight O&M specific issues during implementation

- (iii) Assistance with pressure system testing of all laid, relined and burst water mains suitable segments of relined mains with new service connections. For testing of completed works, specific standards apply with respect to allowable pressure loss. The process is best carried out during periods of low demand, with less chance of householders opening the closed connection valves. This will involve:
 - (a) Notifying consumers of intension to test
 - (b) Isolating specific segment for testing
 - (c) Having temporary supply facility available
 - (d) Closing all house connections at property boundary
 - (e) Carrying out test, documenting and analyzing results
 - (f) Making repairs, if necessary, or reactivating segment and opening connections (to be carried out by the contractor).

- (iv) Assistance for measurement and certification of works completed after commissioning. With the contractor on a sub zonal basis, the work will also be completed and commissioned in stages. After commissioning, the contractor will provide complete as built information, test results and specific operational / maintenance requirements. The work will be jointly inspected, to ensure in particular that the as built information in relation to valves, valve and meter chambers, can be matched in the field. In the case where performance indicators are set for contractors, these indicators should be measured and will be submitted by the nominated personnel of PCU for necessary approval and action from DWASA.

- (v) Assistance with training of DWASA personnel based on operation and maintenance routines to be worked out by the contractor. With the upgraded and rehabilitated system maintaining full pressure on the network, the DWASA zonal staff being charged with the continued O&M, will need to be familiar with the implications of such pressurized DMA system. They will need to know the standards of workmanship for adding new lines and house connections such that no leakage can occur. Therefore, the Consultant will:
 - (a) Vet training programs and material developed by the contractors for instructing the DWASA zonal staff on the operation and maintenance of the network, maintaining operational pressures, identifying sources of wastage, flushing lines, maintaining bulk and consumer meters, etc.
 - (b) Assist in conducting training session on service connection procedure, jointing of Tee, pipe, fittings, etc.
 - (c) Monitoring training impact and resulting performance improvements.

- (vi) Construction supervision phase deliverable include, but not limited to, the following
 - (a) Inception report to be submitted (after one months of commencement of work)
 - (b) Contract management manual
 - (c) Quality assurance manual
 - (d) Brief monthly progress report
 - (e) Memorandums with proposed action to be undertaken to address any issues arising during the implementation of contract
 - (f) Certificates on quality of work
 - (g) Cash flow projections versus actual disbursements

- (h) Memorandums of the contractor's interim certificated payments and claims
 - (i) Detailed annual reports
 - (j) Project completion reports
 - (k) O&M manuals (finalization of manuals prepared by contractors)
1. GIS and Database
 - a. Updating the GIS database by recording all existing facilities and facilities developed under the Project in collaboration with PMU
 - b. Assisting DWASA to maintain the GIS database and providing hands-on training to utilize, maintain, and update it
 - c. Establish a work flow to regularly update the database even after the Project Completion
 - d. Handing over all drawing & data collected and developed, including as-built drawing under the project, in electronic and printed form to DWASA for future use.
 3. Safeguards
12. The key activities of DMS with regard to safeguards are grouped into two categories: (i) environment, and (ii) resettlement.
- (i) The main task for the Environmental Specialist is to assist PMU and PCUs (if necessary) to comply with ADB Safeguard Policy Statement (SPS), 2009 and Government of Bangladesh environmental requirements and ensure contractors (including their sub-contractors) plan, design, construct and operate the facilities in compliance with ADB SPS and government regulations
 - (ii) The main task for the Resettlement Specialist is to assist PMU and PCUs (if necessary) with NGO or consulting firm in updating, preparing and implementing the Resettlement Plan(s) after detail design in accordance with the entitlement matrix prepared by the Project Preparatory Consultants.
4. Social strategy and gender issue
13. The main activities of DMS consultants in social strategy and gender issue are described below, while it may not be exhaustive.
- (i) To review existing gender action plan (GAP) of the project in respect of the following:
 - (a) Objectives of the gender action plan
 - (b) Water and associated gender issues
 - (c) Women's participation in operation and maintenance of water supply
 - (d) Women's involvement in construction related works
 - (ii) Make necessary improvements in the following project components
 - (a) Operationalization of DWASA gender Strategy
 - (b) Building capacity of DWASA officials on gender perspective. Promote gender awareness in the institutional or capacity development component of the project.
 - (c) Increase number of women employees; ensure women's employment and participation; and reduce sex-ratio imbalance in staffing.

- (d) Address gender issues at project level
 - i. District metered area formation. Integrate gender perspective in the delivery of water supply intervention and in the technical capacity building of women.
 - ii. Minimization of nonrevenue water/ Improvement of water supply situation. Integrate gender responsibilities in the usage level.
- (e) Project implementation and monitoring. Ensure mainstreaming of gender issue in the project implementation.
- (iii) Based on a detailed plan, implement gender action plan (GAP) of the project based on review and consultation of DWASA officials
- (iv) Support to capacity development of PMU
 - (a) Training needs assessment (organizational diagnostics) and training on sectorial gender issues and gender mainstreaming for implementing agencies.
 - (b) Gender sensitization training of relevant staff of partner NGOs and contractors, NGOs specially targets for staffing
 - (c) Gather baseline sex-disaggregated data and gender analytical information as part of any preparatory surveys, feasibility studies, assessments and reports and provide inputs for policy changes if needed
 - (d) Sex-disaggregated monitoring system.

C. Consultants Requirement

14. The engagement period of the consultant services is 46 months (1 November 2016 to 31 August, 2020). A total of 2,423 person months including 52 person-months of the International key experts, 470 person-months for the National key experts and 1,901 Non key experts would be required. The estimated staffing and expertise person-months requirements per component are summarized below:

Table-1: Summary of Consulting Services Requirements

Positions	Person Month Required		
	No of Person	Person month	Total
International Key Experts:			
1.Project Management Specialist / Team Leader	1	36	36
2.Procurement Specialist / Expert	1	4	4
3.Network Modelling Specialist	1	12	12
Total International Key Experts			52
National Key Experts:			
5.Water Supply Engineer / Deputy Team Leader	1	37	37
6. Procurement Specialist	1	22	22
7. Network Modelling Experts	1	30	30
8.Water Supply Expert and DMA Commissioning Expert	2	34	68

Positions	Person Month Required		
	No of Person	Person month	Total
9.Contract Management Expert	ICB 2-8: 1 ICB 2-9: 1 ICB 2-10: 1 ICB 2-11: 1 ICB 2-12: 1	ICB 2-8: 34 ICB 2-9: 17 ICB 2-10: 25 ICB 2-11: 33 ICB 2-12: 18	127
10. Materials/Quality Control Engineer	1	27	27
11.Environment Specialist	1	28	28
12.Resettlement Expert	1	28	28
13.Social Development / Gender Expert	1	24	24
14. GIS/CAD Expert	1	18	18
15. SCADA/Instrument Expert	1	24	24
16. Project Financial Management Expert	1	37	37
Total National Key Experts			470
National (Non-Key Experts)			
1.Assistant Resident Engineer	ICB 2-8: 4 ICB 2-9: 4 ICB 2-10: 4 ICB 2-11: 4 ICB 2-12: 4	ICB 2-8: 37 ICB 2-9: 18 ICB 2-10: 26.5 ICB 2-11: 35 ICB 2-12: 20	546
2.Sub-Assistant Resident Engineer	ICB 2-8: 8 ICB 2-9: 8 ICB 2-10: 8 ICB 2-11: 8 ICB 2-12: 8	ICB 2-8: 37 ICB 2-9: 18 ICB 2-10: 26.5 ICB 2-11: 35 ICB 2-12: 20	1,092
3.Network Modeller	ICB 2-8: 1 ICB 2-9: 1 ICB 2-10: 1 ICB 2-11: 1 ICB 2-12: 1	ICB 2-8: 37 ICB 2-9: 18 ICB 2-10: 26.5 ICB 2-11: 35 ICB 2-12: 20	136.5
4.IT Manager	1	34	34
5.Environmental Inspector	1	24	24
6.GIS/CAD Expert	2	34	68
Total National Non-Key Experts			1,901
Total National key and Non-key expert			2,371
Total International key, National (key and non-key) experts			2,423

D. Terms of Reference for Individual Experts

International Experts:

15. Project Management Specialist / Team Leader (1 International, 36 Person Months)

Tasks & Responsibilities

16. The project management specialist/team leader will be responsible for overall management and implementation of DMAs, including capacity development of PMU, Community Program, and Consumer relation Division of DWASA on gender mainstreaming and social inclusiveness.

17. The team leader will be in charge of all other consultants including timing of their inputs, quality of their inputs, liaise with DWASA PMU on a day-to-day basis and with ADB. With each consultant, he/she will prepare and supervise a work plan. Once a week the team leader will hold a project progress meeting with other consultants and the DWASA to review progress on all fronts and resolve constraints. He/She will also be responsible for updating the project schedule as per the critical path method of construction management. The team leader will also prepare semiannual safeguards monitoring report for ADB submission and disclosure and will prepare quarterly progress reports on GAP implementation and LIC programs. The team leader will be responsible for all reporting requirements in a timely manner.

18. In the first four months of the project he/she will set up the management system and train other consultants and the DWASA staff in their management responsibilities. He/She will be present full time to ensure that the system is running smoothly. The management system must among other things show:

- (i) The interrelationship of activities with one another with time as per critical path method of construction management.
- (ii) Responsibilities of key stakeholders and a monthly assessment of performance.
- (iii) Coordination of activities with various implementing agencies & stakeholders including communities and NGOs. NGO or consulting firm will assist the implementation of resettlement plan and undertake awareness program on water conservation and hygiene education through workshop, focus group discussion, community consultation and dissemination of posters and leaflets and support to improving access to low income communities in all civil packages area).
- (iv) Project cost commitments, procurement plan and disbursements as against budget.
- (v) Constraints encountered and progress with resolution.
- (vi) Monthly reporting on project progress against project implementation schedule.
- (vii) Minutes of monthly project management meetings.
- (viii) Summary details on all contracts.
- (ix) Compliance with loan covenants and assurance, including safeguards.
- (x) Set up for quality assurance in construction supervision.
- (xi) Supervise O&M of established DMAs for sustainable management.

Qualifications and Experiences

19. The Project Management specialist/Team leader should have a degree in B.Sc. Engineering (civil) plus at least a M. Sc. or equivalent in water supply engineering /environmental/ hydraulics/ project management /development management. He/she should have at least 20 years experience in planning, design and implementation of large-scale water supply projects, preferably rehabilitation of water transmission and distribution mains and establishment of DMA concept in big cities. He/she should have experiences for pressurized water supply system with nonrevenue water reduction strategies under DMA concept. Among the stated 20 years, he/she should have at least 8 years' experience as Team Leader/Deputy Team Leader/similar position, and a minimum 10 years' experience in developing countries,

preferably in South or South East Asia. He/she should have demonstrated skills in human resource management. He/she should have experience on donor funded project so that he is familiar with donor Guidelines. Preference will be given to experiences in ADB/Foreign funded project and also experience in rehabilitation of pipe line project with trenchless technology. He/she should give references for at least three of his recent clients.

20. Procurement Specialist (1 International, 4 months)

Tasks & Responsibilities

21. The Procurement specialist will be responsible for preparing draft bidding documents, draft bid evaluation report, and negotiating and finalizing contract agreements. He/she will be responsible for overseeing quantities to verify as well as the contractors claims and will participate in certifying the contractor's monthly statements for payment. He/she will also oversee that ADB and Government of Bangladesh procurement rules and regulations are respected during the implementation of the project. He/she will make a schedule and follow-up the progress of the procurement process and ensure the quality of procurement. He/she will supervise the national procurement expert in developing and implementing training program in procurement and contract management. The procurement specialist will ensure the quality of work as envisaged can be implemented for the price tendered and that the material and work procured are according to specifications / requirements in close coordination with other experts.

Qualifications and Experiences

22. The procurement specialist should have a Masteral Degree or equivalent in any engineering discipline/quantity surveying and simultaneously have proven track record of exposure/involvement in the International procurement related aspects of development projects and a good familiarity with ADB's procurement guidelines. In totality, he/she should have at least 15 years of professional experience and have at least 5 years' experience of relevant work in water supply sector projects or equivalent in developing countries. He /she will have demonstrated ability to work in a multidisciplinary team and excellent communication (written and oral) skills.

23. Network Modelling Specialist (1 International Expert, 12 Person Months)

Tasks & Responsibilities

24. The network modelling specialist will analyze the existing and future demand / supply and assess distribution networks of Dhaka with a network model. He/she shall identify pipes and other facilities for replacement / rehabilitation in collaboration with water supply engineer and other experts. He/she will ensure that DWASA maintains proper record of pipes and other facilities in digital form, including all works to be developed under the project. He/she will train and handover the model to DWASA staff to enable them to utilize and do updates on the model.

Qualifications and Experiences

25. The network modelling specialist should have a degree in B.Sc. Engg. (civil) plus a masteral degree in water supply / environmental/ hydraulic engineering or relevant subject which include network modelling, planning & design water supply systems and a thorough knowledge on the use of popular software, namely EPANET, Water Gems. He/she should also have at least 5years' experience in network modelling and DMA formation studies of urban

water supplies. International Expert should have experience of working in developing countries. The work experiences with international organizations will be an added advantage.

National Experts:

26. Water Supply Engineer / Deputy Team Leader (1 National Expert, 37 Person Months)

Tasks & Responsibilities

- (i) Assist the Team Leader in all aspects including strengthening communication with counterpart staff to the government.
- (ii) Ensure sufficient and meaningful involvement of the counterpart staff of DWASA in the successful implementation of distribution network improvement packages.
- (iii) Manage the local consultants team
- (iv) Support PMU with contract management and recommendation for payment
- (v) Establish contract-tracking system, including implementation schedule and milestone of distribution network improvement package. Arrange a training program for construction supervision, O&M staff and
- (vi) Conduct the training for contractors in respect of ADBs procedure and guidelines
- (vi) Develop manuals pertaining to program quality assurance and quality control
- (vii) Check that the contractor's proposal are in agreement with all environmental and social safeguard requirement
- (viii) Review methodology, designs and organization proposal of the contractor for distribution network improvement packages
- (ix) Assist PMU staff supervising the site activities of the contractor for distribution network improvement packages
- (x) Coordinate with local authorities and other institutions as required for the program delivery
- (xi) Assist PMU staff to supervise construction of all transmission networks & distribution networks, storage structures
- (xii) Conduct training program for O&M staff during commissioning of the schemes
- (xiii) Preparation of O&M manuals
- (xiv) Assist TL in supervising activities of NGO or consulting firm who will undertake Resettlement
Plan, Awareness Campaign & Support least income communities (LICs)
- (xv) Assist TL in respect of IEE & EMP of distribution network improvement Packages
- (xvi) Supervise O&M of established DMAs for sustainable management.

Qualification and Experiences

27. The water supply engineer/deputy team leader should have a degree in B.Sc. Engineering (civil), and preference will be given for Master of Science degree or equivalent degree in sanitary engineering/ water supply engineering / project management/development management. He/she should also have 15 years' experience in water supply engineering with overall 20 years' experience, which should include at least 3 years' experience in rehabilitation of pipe line project including trenchless technology method and system test preferably under DMA (District Metered Area) concept. Preference will be given to experiences in ADB funded project and also experienced in rehabilitation of pipe line project with trenchless technology

method, establishment of DMA concept, and nonrevenue water reduction strategies. Experiences of working with international organizations or donor funded project is required .

28. Procurement Expert (1 National Expert, 22 Person Months)

Task and Responsibilities

29. The national procurement expert will provide support to the Team Leader and International Procurement Specialists to:

- assist the PMU in preparing bidding documents, negotiating and finalizing contract agreements for procurements;
- develop, and organize procurement and contract management capacity building and training covering ADB procurement guidelines and procedures for the project implementation staff of the PMU
- advise Team Leader/team on the progress reporting, quality control and inspection systems to be followed during execution of rehabilitation of distribution network contracts; and
- advice PMU in resolving contractual issues.

Qualifications and Experiences

30. The national procurement expert should have a B.Sc in Engineering or other related field with preferably 7 years' experience in procurement of works and goods, recruitment of consultants, preparation of tender and contract documents, evaluation of bids, and contract management. Working experiences with ADB funded projects or any donor funded project will be added advantages. Master degree in any discipline of business administration, law, or civil engineering or related fields and/or certification of completion of training program on procurement will be an additional preference. He/she should have a good knowledge on updated ADB procurement guideline. He /she will have demonstrated ability to work in a multidisciplinary team and has excellent communication (written and oral) skills.

31. Network Modelling Experts (1 National Expert, 30 Person months)

Tasks & Responsibilities

32. The network modelling expert will assist the international specialist in: (i) analyzing the existing and future water demand / supply and assess distribution networks of Dhaka with a network model; (ii) identifying pipes and other facilities for replacement / rehabilitation in collaboration with water supply engineer and other experts; (iii) ensuring that DWASA maintains proper record of pipes and other facilities in digital form, including all works to be developed under the project; and (iv) training and handing over the model to DWASA staff to enable them update and utilize it by themselves.

Qualifications and Experiences

33. The network modelling expert should have a degree in B.Sc. Engg. (civil) with preferably a masteral degree (Preference) in water supply / environmental/ hydraulic engineering or relevant subject which include network modelling, planning & design water supply systems and a thorough knowledge on the use of popular software, namely EPANET, Water Gems. He/she should also have at least 5years' experience in network modelling and

DMA formation studies of urban water supplies. The work experiences with international organizations should be an added advantage.

34. Water Supply and DMA Commissioning Expert (2 National Experts, 34 Person months each)

Tasks & Responsibilities

35. The water supply expert will assist the Deputy Team Leader with the overall planning, design and implementation of the project. He/she will liaise with DWASA and contractors on implementation aspects of some activities like monitoring of existing DWASA Production Tube Well / upgrading of PTW head works, pre-commissioning / pressure testing of all laid, relined and burst water mains with service connections, commissioning of the water network. He/she should check as-built drawings, etc. He/she will train the project/contractor's staff on conducting / checking pre-commissioning and commissioning of the DMAs including system loss as well as nonrevenue water calculation.

Qualifications and Experiences

36. The water supply engineer should have a degree in B.Sc. Engg (civil) preferably a masteral degree in sanitary engg. / water supply engineering or equivalent degree. He/she will also have 10 years' experience in water supply engineering, which must include 3 years experience in pre-commissioning and commissioning of piped water supply system under DMA (District Metered Area) Concept including system loss as well as nonrevenue water calculation methods and 3 years experience with Trenchless technology method. Preference will be given to those having experience in ADB/Foreign funded project, water supply and pipeline commissioning experience in rehabilitation of pipe line project with trenchless technology method, and also experiences with international organizations.

37. Contract Management Expert (5 National Experts, total 127 Person Months)

Tasks & Responsibilities

38. The tasks of contract management experts are as follows
- (i) Review and approve the construction methodology and schedule submitted by the contractor
 - (ii) Implement a construction management system for the works
 - (iii) Supervise and monitor the contractors activity to ensure satisfactory standards, quality assurance, control of workmen ship and progress
 - (iv) Approve the materials and equipment brought by the contractor
 - (v) Prepare and implement any minor adjustment required to the drawings and plans with the consultation of PMU (Project Management Unit)
 - (vi) Monitor the environmental impact during construction and coordinate with the environmental management expert in the PMU
 - (vii) Check monthly measurement of work and certify payment
 - (viii) Coordinate with other specialists such as environment, community development, resettlement, public awareness and training
 - (ix) Implement other programs such as on site sanitation and drainage program as reported by PMU
 - (x) Ensure that any dispute arising with day to day work is resolved at site level
 - (xi) Advise PMU on claims, dispute and completion and defect correction certification

- (xii) Report progress of work, which are likely outcome of contracts and other related information required to the Team/ Deputy Team Leader.
- (xiii) Assist PMU with handling legal matters with contractors regarding the implementation of contract
- (xiv) Participate in site meetings and will handle all variation orders
- (xv) Handle all claims from the contractors and will support the supervision engineers (ARE and SARE) in all contractual matters
- (xvi) Participate in commissioning and will keep track of outstanding works to be carry out.
- (xvii) check all safety measures both in works and labors

Qualifications and Experiences

39. The contract management experts should have a B.Sc. Engineering degree (Civil) and preferably a Masteral or Post Graduation degree in Civil / Water supply Engineering. He/she should have at least 12 years of experience including supervision of piped water supply facilities of which at least 1 year should be in trenchless technology method and DMA concept. Experiences with international organizations will be an added advantage.

40. **Materials/Quality Control Engineer (1 National Expert, 27 person months)**

Tasks & Responsibilities

41. The task will be to ensure the quality of construction is as per the design specifications. He/She will carry out on site quality tests as well as review the laboratory tests of the materials submitted by the contractors. He/she should review the contractor's reports and facilitate to meet the required standards. He/she will visit various location of DTW, bore hole at project sites, and check the collection of soil samples at various depths using specialized drilling equipment and analyse the soil samples to verify their composition and overall ability to support the type of design proposed by the Contractor. He/she should work closely with the contractor's laboratory personnel and technicians to evaluate the various components of the soil and research information, writing reports and making proposals based on data collected.

Qualifications and Experiences

42. The experts should have a Bachelor's degree in Engineering with preferably 10 years' experience in quality control of construction projects preferably Sanitary and water supply pipe line fixtures and hydraulic structures with an International/Multinational consultancy/construction firm.

43. **Environment Specialist (1 National Expert, 28 person months)**

Tasks & Responsibilities: Stage-wise tasks include, but not limited to, the following:

During Detailed Design Engineering Period

- (i) Provide capacity development trainings to PMU, PCUs, contractors (including its subcontractors) and members of the Grievance Redress Committee on ADB SPS and government environmental requirements to be complied during detailed design, construction and operation phase;
- (ii) Finalize initial environmental examination (IEE) reports as per detailed design prepared during preliminary design stage;

- (iii) Prepare IEE/s for new package/s not assessed during preliminary design stage;
- (iv) Provide to contractors (including its subcontractors) all approved IEEs and assist them in ensuring detailed designs include environmental considerations to avoid, minimize, and mitigate potential impacts;
- (v) Ensure contractors integrate in detailed design appropriate measures to comply with conditions stipulated in government-issued clearances/permits/consents;
- (vi) Provide guidance to contractors (including its subcontractors) in preparing site-specific EMP including traffic management plan, waste management plan, and any other environmental plans as required in the EMP and by government-issued consents/permits;
- (vii) Provide guidance to contractors (including its subcontractors) in developing subproject-specific environmental monitoring program consistent with the site-specific EMP;
- (viii) Lead and assist PMU, PCUs and contractors (including its subcontractors) in conducting and documenting public consultations, ensuring any feedback received will be communicated to PMU, and coordinating with contractors to address participants' issues/concerns;
- (ix) Assist PMU, PCUs and contractors (including its subcontractors) in ensuring relevant information on environmental safeguards is disclosed to stakeholders, community, and affected people in form and language they understand;
- (x) Disclose IEE summary in local language at PMU and PCUs offices and to the stakeholders; and
- (xi) Assist PIU in establishing grievance redress mechanism (GRM).

During Construction Period

- (i) Ensure that all necessary clearances/permits/consents are in place prior to start of construction and valid throughout construction period;
- (ii) Ensure contractors (including its subcontractors) comply with the measures set forth in the site-specific EMP and government-issued clearances/permits/consents;
- (iii) Lead and assist PMU, PCUs and contractors (including its subcontractors) in conducting and documenting information dissemination, ensuring any feedback received will be communicated to PMU, and coordinating with contractors to address participants' issues/concerns;
- (iv) Ensure contractors (including its subcontractors) conduct regular environmental monitoring as per approved site-specific EMP;
- (v) Assist PMU and PCUs in implementation of GRM, and advise contractors (including its subcontractors) on appropriate actions to redress the complaints;
- (vi) Ensure that complaints/grievances are addressed in a timely manner and resolutions are properly documented;
- (vii) Inform PMU and PCUs promptly in case any significant impacts not identified in the IEEs arise during construction period and immediately develop corrective actions to be implemented by the contractors;
- (viii) In case of non-compliance by contractors (including its subcontractors), prepare corrective action plan including budget requirements and ensure timely implementation;

- (ix) Review monthly monitoring reports to be submitted by contractors
- (x) Prepare quarterly Environmental Monitoring Report (EMR) on performance of contractors on EMP implementation;
- (xi) Assist PMU in preparation of semi-annual monitoring report to be submitted to ADB;
- (xii) Assist PMU in disclosure of safeguard documents;
- (xiii) Provide reminders to contractors on required statutory clearances/permits/consents prior to commissioning of subproject facilities; and
- (xiv) Ensure contractors (including its contractors) implement clean-up of worksites and areas used/disturbed during construction period prior to commissioning of subproject facilities.

Qualifications and Experiences

44. He/she should have B.Sc in Civil/Environmental Engineering and at least 10 years relevant experience. His/her qualifications should include working experience on environmental assessment, and should demonstrate good background on supervision and management of civil works and compliance with environmental laws and health and safety regulations. Experience with international organizations will be an added advantage.

45. **Resettlement Expert (1 National Expert, 28 person months)**

46. The resettlement expert will be responsible for ensuring compliance with ADB Safeguard policy and relevant rules of GOB.

During Pre-construction period

- (i) Provide necessary guidance to the DWASA PMU in monitoring and reporting on social safeguards to ADB
- (ii) Upgrade the Resettlement draft Plans (RPs) based on detailed design and submit to DWASA PMU and ADB for review and clearance prior to starts of construction.
- (iii) With the support of the Resettlement NGO or consulting firm, conduct census survey, assets inventory, business/income survey, ID cards issuance to the Affected people for RP preparation, compensation and livelihood rehabilitation.
- (iv) Responsible for APs surveys to determine receipt of entitlements and satisfaction level.
- (v) Conduct consultations, FGD's and public meetings with affected people for RP/preparation/updating the RP(s)
- (vi) Organise an orientation workshop for the DWASA, PMU and PCU officials involved in project implementation on ADB Safeguards Policy Statement 2009, Government of Bangladesh laws and policies (Acquisition and Requisition of immovable Property Ordinance 1982{ARIPO}).
- (vii) Guide the PMU for the establishment and effective operation and quality control of implementing RPs for DMA.
- (viii) Supervise and monitor the work of appointed resettlement NGO or consulting firm for RP implementation. Including compensation payment to the entitled APs in each DMA.

- (ix) Conduct Public consultations through focus group discussion together with appointed NGO to discuss & plan construction works with individual communities to reduce disturbance and other impacts;
- (x) Undertake internal monitoring of RP implementation; review monthly progress reports on social safeguards by contractors.
- (xi) Organize an induction course for the training of contractors on ADB policy requirements, Grievance Redress Mechanism (GRM) and on immediate actions to remedy unexpected negative social impacts or ineffective mitigation measures, if any during construction.
- (xii) Assist the PMU to establish project's GRM and with GRC members;
- (xiii) Ensure no starts of civil works in any DMAs prior to the completion of final RP and /or compensation payment.
- (xiv) Submit monthly social safeguards monitoring reports to the PMU and prepare semi-annual safeguard monitoring report for PMU to be submitted to ADB for review and disclosure;
- (xv) Carry out any other relevant responsibilities assigned by the TL/DTL.

During Construction period

- (i) Assist the DWASA PMU in ensuring that the project complies with Government and ADB social safeguards policies ;
- (ii) Provide necessary guidance to the DWASA PMU in monitoring and reporting on social safeguards to ADB;
- (iii) Ensure the completion of compensation payment and other assistance as in the approved final RP prior to starts of the Civil works;
- (iv) Support the DWASA PMU in addressing any grievances brought about through the GRM in timely manner as per the RP;
- (v) For any safeguard policy incompliance identify during project implementation, prepare corrective Action Plan (CAP) and guide the implementation of it;
- (vi) Responsible and ensure up to date flow of information to the community immediately affected by the work;
- (vii) Conduct workshops, focus group discussions , community consultations and dissemination of posters and leaflets,
- (viii) Implementation program including technical aspects related to consumers connections and pressurization of the network.
- (ix) Submit monthly Social safeguards monitoring reports to the PMU and prepare semi annual safeguard monitoring report for PMU to be submitted to ADB for review and disclosure;
- (x) Carry out other relevant responsibilities assigned by the TL

Qualifications and Experiences

47. The resettlement specialist should have master degree in sociology /economics/related field with minimum 7 years' experiences. Past experience related to social safeguards/resettlement planning in extremely funded project is preferable.

48. **Social Development / Gender Expert (1 National Expert, 24 person months)**

Tasks & Responsibilities

49. The Social development/ Gender Expert will implement the gender action plan. He / She will work with PMU as well as the Community Programme and Consumer Relation Division (the Division) of DWASA, and support the Division in strengthening the capacity in overall implementation and monitoring of the social development aspects and the Gender Action Plan (GAP). The expert will collaborate with other consultants and NGOs. The scope of work of the expert will include but will not be limited to the following:

- (i) Implement the Gender Action Plan of the Project and provide periodical reporting as per requirements
- (ii) Conduct the small survey to conduct the quantitative before and after analysis of measuring the time use improvement for female due to the project.
- (iii) Provide support to operationalize and implement DWASA Gender Strategy
- (iv) Assess the training needs of the PMU and the Division
- (v) Develop method and tools for mainstreaming gender equality, including socio-economic analysis and gender impact assessment
- (vi) Prepare/revise training materials, as necessary to train staff
- (vii) Organize/facilitate training and orientation for Community Programme and Consumer Relation Division, PMU and NGO staff or other consultants on GAP and their responsibilities to implement the GAP and monitor the progress
- (viii) Review MIS and data collection mechanism to suggest incorporation of appropriate indicators in monitoring of GAP
- (ix) Collect and collate sex- disaggregated data and prepare gender based reporting
- (x) Oversee that NGO teams or consulting firms include women and ensure women's participation in community consultation, identify their needs and ensure women's participation in CBOs
- (xi) Support the NGO or consulting firm in organizing the consultation meetings
- (xii) Support the NGO of consulting firm in implementing the participation plan
- (xiii) Review the existing community training and awareness raising materials and methodologies to integrate information/topics and suggest methodologies as necessary to implement the GAP and raise voice of community women
- (xiv) Oversee that the bid documents include appropriate labor related provisions
- (xv) Support/participate in community orientation program, where necessary
- (xvi) Oversee that NGOs or consulting firms facilitate women's employment opportunities in construction maintaining core labor standard by contractors and ensure reporting as per GAP

Qualifications and Experiences

50. The social development/ gender expert should have a Master degree in social sciences (including sociology; anthropology/social welfare/social work/ urban and regional planning or other related fields). He/she shall also have at least 10 years of professional experience. He/ She must have knowledge gender mainstreaming in water and sanitation sector.

51. GIS/CAD Expert (1 National Expert, 18 person months)

Tasks & Responsibilities

52. GIS/CAD expert will be responsible for updating the GIS database to record all existing facilities and facilities developed under the Project. He/she will assist DWASA with taking over the GIS database and providing hands-on training to utilize, maintain, and update it. He/she will propose and establish a work flow to regularly update the database, so that the database can be actively utilized even after the Project completion.

Qualifications and Experiences

53. GIS/CAD expert should have a degree in science/ any engineering discipline preferably with a master in GIS. In addition, he/she should have at least 10 years' experience in GIS development in water network/urban planning, among which at least 2 years should be in developing countries. He/she will have experiences in using GSM data logging / other similar methods, downloading/uploading all data recording and calculation of production, export/import etc. recording in field level and any countermeasures required in the event of system interferences.

54. SCADA/Instrument Expert (1 National Expert 24 Person month)

Tasks & Responsibilities

55. The expert will assist DWASA in:
- (i) designing the specification of on-line instrumentation and communication system of SCADA and Automated Meter reading (AMR)
 - (ii) preparing and implementing the procurement process, and negotiating and finalizing contract agreement for SCADA system and AMR, with procurement specialist expert
 - (iii) establishing, operating, and maintaining SCADA system and AMR
 - (iv) preparing operation and maintenance manual for SCADA system and AMR with suppliers

Qualification and Experiences

56. SCADA expert should have B.Sc. Engg. in Electronics/Electrical/Instrumentation Engineering having at least 10 years of experience out of which 3 years in SCADA and AMR implementation projects will be preferred.

57. Project Financial Management Expert (1 National Position, 37 person months)

Tasks & Responsibilities

58. The project financial management expert will be responsible for financial management of the project, including budgeting, accounting and reporting. He/she will establish rules and procedures in PMU for fund flow and internal control and train DWASA staff to utilize them. He/she will be assisting the PMU in negotiating the contracts regarding financial matters and also checking contractor's bills.

Qualifications and Experiences

59. The project financial management expert should have a master degree in accounting or equivalent, along with at least 15 years' experience in accounting of water supply project or equivalent and experiences with international organizations including ADB and WB.

Non-Key experts

60. Assistant Resident Engineer (Total 546 person-months)

Tasks & Responsibilities

61. The national Assistant Resident Engineer (ARE) will assist the DTL/CME to (i) coordinate and supervise construction and installation of water supply Pipe line network works in the field ii) monitor schedule and construction progress, and construction progress, (iii) supervise quality of construction work, (iv) prepare monthly certificates, (v) review and approve shop drawings and as-built-drawings, and (vi) prepare reports.

Qualifications and Experiences

62. ARE should have a Bachelor degree in civil engineering with a preferably of 3 years' experience in Water Sanitary and Supply Networking construction, installation and is proficient in both written and spoken English. Work experience in similar internationally-funded projects will be an advantage.

63. Sub Assistant Resident Engineer (total 1092 person-months each)

Tasks & Responsibilities

64. Tasks of Sub Assistant Resident Engineer (Sub ARE) include: (i) reporting to the ARE (ii) supervise and monitor the construction of works, prepare measurements for works completed and in progress; (iii) certify contractors' bills; (iv) Check the construction schedule submitted by contractor, and assist contractor's site manager to make detailed construction plan; (v) report weekly and monthly construction progress and issues to the ARE (vi) report field variations to the ARE or Construction Management Engineer and regularly monitor physical and financial progress against the milestones, according to the contracts to ensure the completion of the contracts on time; (vii) examine contractors' claims for time extension, variations, and additional compensation, etc., and recommend appropriate decisions to the ARE or Construction Management Engineer; (ix) Assist PMU in resolving contractual issues and overall contract management; and (x) ensure quality of construction as per design specifications.

Qualifications and Experiences

65. Sub ARE should be a qualified engineer, with diploma in Civil Engineering and preferably 5 years of experience in site supervision of construction works, out of which 2 years as a Quantity and cost Engineer. He/ she should have demonstrated ability to work in a multidisciplinary team and excellent communication skills in spoken and written English.

66. Network Modeler (Total 137 Person Months)

Tasks & Responsibilities

67. The network modeler will assist the international specialist and national expert in: (i) analyzing the existing and future demand / supply and assess distribution networks of Dhaka with a network model for assisting network-modeling specialist/expert; (ii) identifying pipes and other facilities for replacement / rehabilitation in collaboration with water supply engineer and other experts; (iii) ensuring that DWASA maintains proper record of pipes and other facilities in digital form, including all works to be developed under the project; and (iv) training and handing over the model to DWASA staff to enable them update and utilize it by them.

Qualifications and Experiences

68. The network modeler should have a degree in B.Sc. Engineering. or relevant subject which include network modeling, planning & design water supply systems and a thorough knowledge on the use of popular software, namely EPANET, Water Gems. He/she should also have at least 3 years' experience in network modeling and preferably DMA formation studies of urban water supplies. The modeler should have experience of working in developing countries.

69. IT Specialist: (Total 34 person-months)

Tasks & Responsibilities

70. The IT specialist will be responsible for the followings

- (i) Oversees the administration and maintenances of computer stations and software for training programs and provides additional support if necessary
- (ii) Oversees troubleshooting, system backups, archiving, and disaster recovery and provides expert support when necessary
- (iii) Works with project teams to help implement internal systems
- (iv) Builds and maintains vendor relationships and manage the purchase of hardware and software products
- (v) Ensures that assets are maintained responsibly
- (vi) Initiates and implements improvement in all areas of IT responsibility
- (vii) Serves main point of contact on all IT related matters for the project
- (viii) Identifies and provides standards for gathering information for use in trend and reports information

Qualifications and Experiences

71. He /she should have Bachelor Degree in information technology, or masters in Computer applications (MCA) or related field. Total Professional required 5 years out of which 2 years in IT related assignment. Experience in working with International organization is not required. He/ she should have the track record of experience in the field of SCADA, Automatic Meter Reading (AMR) implementation & supervision.

72. **Environmental Inspector-(Total 24 person-months)**

Tasks & Responsibilities

73. The environmental Inspector will assist the DTL/ Environmental Management Expert to implement the Environmental Management Plan (EMP) and regular monitor of regulatory measures during the implementation. He/she will submit day to day report regarding enforcement of environmental management plan to Environment Specialist. He/she will also responsible for following tasks:

- (i) Inspect and investigate the pollution sources
- (ii) Undertake regular monitoring of water quality parameters and sludge disposal
- (iii) Regular checking of contractor's vehicles, equipment to minimize exhaust, smoke emission
- (iv) Evaluate level for accuracy and conformance to regulation

Qualifications and Experiences

74. He/she should have Bachelor Degree in Environmental Engineering, or Environmental Science or Civil Engineering or related field. Total Professional experiences should be 5 years out of which 2 years in Environmental safeguard related assignment. Experience in working with International organization is preferred.

75. **GIS/CAD Expert (2 National Experts, 34 person months each)**

Tasks & Responsibilities

76. GIS/CAD experts will assist national GIS/ CAD expert in: (i) updating the GIS database to record all existing facilities and facilities developed under the Project; (ii) taking over the GIS database and providing hands-on training to utilize, maintain, and update it; and (iii) proposing and establishing a work flow to regularly update and record the database, so that the database can be actively utilized even after the Project completion.

Qualifications and Experiences

77. He/she should have Degree in Science/any engineering discipline preferable in GIS. In addition, he/she should have at least 5 years' experience in GIS development preferably in water network/urban planning. He/she will have experiences in using GSM data logging / other similar methods, downloading/uploading all data recording and calculation of water production, export/import etc. recording in field level and any countermeasures required in the event of system interferences.

Reporting Requirements Time Schedule and Deliverables

78. **The Expected Time Schedule.** The estimated total duration of consulting services will be 46 months from November 2016 to August 2020. The implementation schedule expected is as shown below:

Table 2: Expected Time Schedule

Key Activities	Date
Commencement of Consulting Services	November 2016
Tender assistance (*)	November 2016- June 2017
Rehabilitation of distribution network (**)	1. First batch (i) ICB 2-8: Feb 2017- Aug 2019 (ii) ICB 2-11: Jan 2017- Jun 2019 2. Second batch (i) ICB 2-9: Apr. 2017- Jun 2018 (ii) ICB 2-10: Apr. 2017- Jan. 2019 3. Third batch (i) ICB 2-12: Jul 2017- Oct 2018
End of construction in civil works (**)	Aug. 2019

(*)PMU has a plan to commence advance contracting of rehabilitation of distribution network package. Some of procurement activities will be completed before commencement of services of DMS consultants.

(**)All packages of rehabilitation of distribution network will include components of support for operation and maintenance for one year after completion of construction. Therefore, the consulting services will last until August 2020.

The Reports and Documents Deliverables

79. Within the scope of consulting services, the Consultant shall prepare and submit reports and documents to Project Director of DWASA as shown in Table 3.

The Consultant shall provide electronic copy of each of these reports.

Table 3: Reports and Documents Deliverables

Category	Type of Report	Timing	No. of Copies	No of CD's
Consultancy Services	Inception Report	Within 1 month after commencement of the services	5	2
	Monthly Progress	Every month	5	2
	Quarterly Progress	Report Every quarter (including GAP report)	5	2
	Project Completion Report(PCR) (for submission to ADB)	At the end of the services	5	2
	Bidding Document Report	At appropriate timing	5	2
	Technical Evaluation	At appropriate timing	5	2
	Tender Evaluation Report	At appropriate timing	5	2

Category	Type of Report	Timing	No. of Copies	No of CD's
Assistance in Environment and Resettlement Monitoring	Annual Environmental and Social Performance Report	Every year	5	2
	Environmental Monitoring Plan	Every quarter	5	2
Construction Supervision	Operation and Maintenance Manual	At appropriate timing (12 months after Commencement)	5	2
	Construction Completion Report (and As-built Drawings, if any)	Within 3 months after completion of construction	5	2
Development of SCADA, GIS and MIS	Development plan	At appropriate timing or within 24 months after Commencement	5	2
	Completion report	Within 3 months after completion of installation	5	2
Training of DWASA Personnel's	Training Guideline and Plan	At appropriate timing in accordance with the Inception Report	5	2
	Training Execution and Evaluation Report	Within 1 month after training	5	2
Gender Action Plan Implementation	Attached to QPR	Quarterly	-	-
	Attached to PCR	At the end of the services	-	-
Other Report	Technical Report Safety Report	As required or upon request	As required	

Contents to be included in each report are as follows:

- (i) For Consultancy Services
 - (a) Inception Report: Present the methodologies, schedule, organization, etc. To be submitted within 1 month after the commencement of the services.
- (ii) For Monthly and Quarterly Progress Report
 - (a) Monthly Progress Report: Describe briefly and concisely all activities and progress for the previous month by the 10th day of each month. Problems encountered or anticipated will be clearly stated, together with actions to be taken or recommendations on remedial measures for correction. Also indicates the work to be performed during the coming month.
 - (b) Quarterly Progress Report: Present the progress status of the Project. To be submitted at every three (3) months during the contract period.

- (iii) For Tender Assistance
 - (a) Bidding Document Report: Present the bidding documents and bid evaluation criteria.
 - (b) Technical Evaluation Report: Present the results of technical evaluation and to recommend the qualified applicants.
 - (c) Tender Evaluation Report: Present the results of the tenders to select the most responsible contractors.
- (iv) For Assistance in Environment and Resettlement Monitoring
 - (a) Annual Environmental and Social Performance Report, to be submitted at every year.
 - (b) Environmental Monitoring Plan, to be submitted at every quarter along with quarterly progress report.
 - (c) Monthly Social Safeguards monitoring reports
- (v) For Construction Supervision
 - (a) Operation and Maintenance Manual containing technical procedures for the appropriate operation and maintenance of all project facilities.
 - (b) Borrower's Project Completion Report: to be submitted within three (3) month after completion of construction, which comprises a full size of as-built drawings for all the structures and facilities completed, and the final details of the construction completed together with all data, records, material tests results, field books.
- (vi) For GAP Implementation:
 - (a) Quarterly GAP Implementation Report (attached to Project QPR): Present the activities and achievements for each indicator/target of the GAP that are under the responsibility of the DMS Consultant to implement and/or achieve; and provide an analysis of facilitating factors and challenges during the quarter and actions undertaken.
 - (b) GAP Completion Report (attached to PCR): Present a summation of activities and achievements for all indicators/targets of the GAP that are under the responsibility of the DMS Consultant to implement and achieve; overall facilitating factors and challenges; and lessons learned.

Client's input and Counterpart services and Facilities

80. DWASA will provide to the Consultant assistance include counterpart staff, office space, communication facilities (telephone, access to internet Services), computers, survey equipment and relevant documents to be ensured by the consultant. Necessary office equipment, such as computers; computer peripheral equipment, desks CAD etc should be procured under the Consulting services budget.

81. DWASA will also help provide necessary assistance so that the Consultant can obtain work permit, visa and other similar documents as well as exemption and privileges, if any.

Appendix C-2: Capacity Building for Sustainability (CBS) Consultants

I. PROJECT DESCRIPTION

A. Project

1. The project will improve the water supply system in the country's capital, Dhaka, by making it more reliable, sustainable, and climate-resilient. It will consolidate and enhance the gains made in the efficiency of the water distribution network achieved under two previous Asian Development Bank (ADB) projects (Dhaka Water Supply Sector Development Program [DWSSDP] and Dhaka Environmentally Sustainable Water Supply Project [DESWSP]), and improve the service delivery and the capacity of the Dhaka Water Supply and Sewerage Authority (DWASA).

2. The impacts will be (i) safe drinking water made available for all of Bangladesh's urban populations, aligned with the government's five-year plan for FY2016–FY2020;¹ and (ii) adaptive capacity of water sector enhanced for reducing climate change vulnerability, aligned with the national strategy for water supply and sanitation.² The outcome will be sustainable provision of a more reliable, improved, and climate-resilient water supply in Dhaka City.

3. The outputs will be DWASA's (i) distribution network strengthened, (ii) sustainable managerial capacity of DMA enhanced, and (iii) capacity for quality service delivery enhanced.

4. Output 1: Distribution network strengthened. Building on the ongoing work of two ADB-financed projects, the project will help improve the distribution network in Dhaka City.³ It will finance the improvements (i) in new DMAs not financed by the ongoing loans,⁴ and (ii) in DMAs under the 2007 program through additional financing to meet cost overruns and complete civil works under ongoing contracts.⁵ The project will extend new or regularized water connections to LICs where people are relying on illegal water lines or private water vendors and paying higher charges than they will when they use the expanded systems.

5. Output 2: Sustainable managerial capacity of district metered areas enhanced. DWASA's managerial and technical capacity will be strengthened to keep nonrevenue water at a low level. The project will assist DWASA in (i) preparing and implementing a sustainable nonrevenue water reduction plan;⁶ (ii) strengthening monitoring capacity at the zone level with

¹ Government of Bangladesh, Ministry of Planning, Planning Commission. 2015. *Seventh Five-Year Plan: FY2016–FY2020*. Dhaka.

² Government of Bangladesh, Ministry of Local Government, Rural Development, and Cooperatives. 2014. *National Strategy for Water Supply and Sanitation*. Dhaka.

³ Under the two ADB-financed projects, DWASA has been strengthening the existing water supply network by establishing DMAs in 3 of its 10 zones (5, 6, and 8) and parts of 4 zones (3, 4, 9, and 10) that serve 7 million people.

⁴ The project will cover the new DMAs of 3 zones (1, 2, and 7) and the remaining parts of 4 zones (3, 4, 9, and 10) that serve 6.5 million people. It will rehabilitate 1,500 kilometers of distribution network pipe; and rehabilitate, build, or regularize 234,000 connections.

⁵ DMA improvement under the 2007 program includes the rehabilitation of 1,536 kilometers of distribution network pipe and 157,000 service connections. The additional funds are required to cover the cost overruns resulting from (i) changes in the SDR–\$ exchange rate, (ii) an increase after detailed designs and physical verification of the existing distribution networks in the quantity of works and goods required, and (iii) price escalation. More details are provided in the Summary of Additional Financing Part (accessible from the list of linked documents in Appendix 2).

⁶ The sustainable nonrevenue water reduction plan will include the targets for nonrevenue water reduction; optimal DMA-based organizational structure; an incentive mechanism to improve operations; and an asset management plan, budget requirements, and a training plan.

renewed standard operating procedures,⁷ upgraded training modules and SCADA system, and the piloting of automated meter reading; and (iii) enhancing in-house design capacity for sustainable DMA management.

6. Output 3: Capacity for quality service delivery enhanced. The project will help DWASA (i) prepare and implement an operational and financial improvement plan by enhancing the existing 5-year corporate business plan;⁸ (ii) build capacity for planning, design, construction supervision, and project management; (iii) prepare and implement a plan to make the public more aware of demand control, water conservation, and health and hygiene; (iv) make the quality of the service delivery to LICs better; (v) prepare and implement a water quality monitoring system; (vi) implement a gender action plan; and (vii) enhance project readiness for future investment.⁹

B. Consulting Services

7. There will be 5 (five) consultancy packages. They are: Design Management and Supervision (DMS) consultants; Capacity Building for Sustainability (CBS) consultants; Project Development Facility (PDF) consultants; a firm for Demand Management and Public Awareness Campaign, and a firm for supporting resettlement works.

1. DMS

8. The DMS consultant will assist DWASA in managing and implementing the Project as described in (ii) and (vi) of Output 3, assisting the PMU and Project Coordination Unit (PCU) in supervising all works under packages of distribution network improvement (DNI) liaising with ADB, procuring goods and works under the Project, reviewing detailed design carried out by contractors, handling financial management of the Project, and monitoring safeguards compliance of the Project.

2. CBS

9. The CBS consultants will assist DWASA in enhancing the managerial and technical capacity to prepare and implement sustainable DMA management plan described in Output 2; and upgraded 5-year corporate business plan described in (i), (iii), (iv) and (v) of Output 3.

3. PDF

10. The PDF consultants will assist DWASA in enhancing readiness of future portfolio of projects through preparing bidding documents as described in (vii) of Output 3.

- Demand control and awareness campaign

11. The firm will assist DWASA in undertaking awareness campaign programs on water conservation and hygiene education as described in (iii) of Output 3; and improving access to

⁷ Standard operating procedures will include water loss assessment, water balance calculation, leak management, asset management, and smart water management technologies.

⁸ The existing 5-year corporate business plan comprises subplans. These include an investment plan, a financial plan, a tariff plan, and a human resource development plan. In addition, the project will prepare a sustainable nonrevenue water reduction plan, a water quality monitoring plan, and a demand management plan.

⁹ DWASA will engage consultants to prepare future projects, mainly involving sewerage management.

low income communities in the areas to be covered by the proposed project as described in (iv) of Output 3.

- Support for resettlement work

12. The firm will assist DWASA in updating and implementing Resettlement Plan through consultations and stakeholder participation. They will support various activities of DWASA such as public information campaign, identification of entitled persons and issuance of ID cards, payment of resettlement benefits, income rehabilitation of family livelihood, grievances redress procedure.

II. Scope of Services

A. Overview

13. The CBS consultants will assist DWASA in enhancing the managerial and technical capacity to prepare and implement (i) sustainable DMA management plan and (ii) upgraded 5-year corporate business plan.

Sustainable DMA management

14. Under on-going projects L2382 (DWSSDP), and L3051 (DESWSP), distribution network improvement works have been implemented in seven out of ten zones of Dhaka city. A total 62 DMA's (47 under DWSSDP and 15 under DESWSP) are being established in Dhaka city. The outcome of establishing these DMAs is significant reduction in nonrevenue water levels in such DMA's. Commissioned DMAs show good progress, which record uninterrupted 24/7 water supply and reduced physical water losses (varying from 1.59% to 14.06%, below the original target of 15%).

15. Managing DMAs professionally and sustaining the low level of nonrevenue water is a new challenge for DWASA. This is critical for meeting growing water demand in Dhaka. While DWASA has a plan to enhance the production capacity mainly by developing surface water sources, this will not suffice unless water losses are substantially reduced. In the longer term, water supply deficits are expected, for which efficiency gains need to be secured.

16. For securing efficiency gains, capacity enhancement in post-commissioning O&M of DMAs will be highly important, as an increasing number of DMAs will be handed over to operational staff under the on-going projects. Therefore, the scope of services should be to prepare, implement, and institutionalize (i) Sustainable Nonrevenue Water Reduction Plan (SNRWRP), (ii) the renewed/ revised standard operating procedures (SOP), and (iii) upgraded relevant staff training.

Upgraded 5-year corporate business plan

17 DWASA has commitment to managerial reforms to ensure sustainable service delivery. Under the partnership framework with development partners supported by DWSSDP and DESWSP, DWASA has increased its tariff by 5% annually since 2007; implemented a 5-year capacity building program in the various areas including financial management and O&M; rationalized staff evidenced by the reduction in the ratio of staff per 1,000 connections from 17 in 2007 to 12 in 2012; and developed a 5-year Corporate Business Plan in 2010 and updated thereafter.

18. DWASA also has initiated the Turnaround Program since 2010 to enhance capacity building, promote transparency, improve operational efficiency, and foster customer service excellence. These activities have led to recovering full O&M costs and meeting debt services liability.

19. DWASA has the vision to be the best water utility provider in the public sector of Asia with commitment towards people and environment. To ensure the high quality service delivery, the scope of services should be to i) upgrade their existing 5-year Corporate Business Plan (the Plan), and (ii) institutionalize and implement the Plan. While the existing 5-year Corporate Business Plan comprises of several sub-plan such as tariff adjustment plan, investment plan, financial plan, and human resources development plan, the upgraded plan also should include the sub-plans to address next challenges for DWASA which are sustainable non-revenue water reduction plan (SNRWRP), water quality monitoring plan, and demand management plan.

B. Activities

20. Main activities of the CBS consultants are described below. The description may not be exhaustive and the activities shall not necessarily be limited to those described.

B-1. Sustainable DMA management

21. Sustainable Nonrevenue Water Reduction Plan (SNRWRP)

- Conduct diagnostic work of current DMA management of DWASA through:
 - (i) Conducting a brief review of previous studies/ reports and understanding the current practices of nonrevenue water assessment and management in each DMA in consultation with several stakeholders including DWASA, other consultants, donor agencies, and foreign water utility.
 - (ii) DMA wise baseline report should be prepared to describe the water distribution system including water sources, storage, distribution pipe network, valves, flow meters etc. The report also should include the following assessment:
 - (a) Performing DMA wise assessment of commercial losses as a baseline study, including theft, underpayment, and nonpayment; attitudes of men and women toward paying for water services.. Prepare a profile of cities water service customers (sex-disaggregated as appropriate) as well as procedures for according water connections, metering, and billing and collection systems. Describe the basic procedure for (i) service connection (ii) preparing, issuing, and collecting a bill for water service (iii) estimating water consumption for un-metered customers (iv) procedure for dealing with under-payment or non-payment. Ascertain the efficiency of billing collection system identify gaps and suggest steps for improvement with financial projections. Prepare a statement and analysis (of the reasons / nature) for demand- collection- arrears.
 - (b) Performing DMA wise assessment of physical (technical) losses as a baseline study. The main components of physical losses include Leakage from transmission and distribution mains and Leakage and overflows from the utility's reservoirs and storage tanks. Assess such types of leakage to find out / confirm volume of physical losses. Adopt an efficient field work approach by with DWASA officials by deploying few additional flows measuring / leak detection devices,

- (iii) Providing recommendation to improve the current DMA management of DWASA based on standard approach in all DMA's to assess nonrevenue water. Water balance assessment should be done on International Water Association (IWA) format. A Water Balance is based on measurement or estimation of system input, water produced, imported, exported, used and lost etc to quantify the revenue and nonrevenue water in the water network.
 - (a) Analyse the current constrains of DWASA in terms of organization structure, incentive mechanism, capacity, and budget to orient DWASA management and staff to sustainable DMA's operation.
 - (b) Examine good practices and lessons of sustainability of DMA management in other countries, and contextualize them into DWASA particularly related to water loss assessment; leakage management including pressure management, repairs, and active leakage control.
 - (c) Based on the above analytical work, prepare draft SNRWRP which comprises of findings of diagnostic works of current DMA management and recommendation; clear long-term and annual targets of nonrevenue water; optimal DMA based organizational structure; incentive mechanisms, asset management plan, budget requirement, and training plan.
 - (d) Assist DWASA in institutionalizing and implementing SNRWRP. The CBS consultants should monitor the implementation with DWASA management.

22. Capacity Improvement

SOP:

- (i) Review existing operation and maintenance (O&M) manuals in the ongoing projects (DWSSDP), and assist contractors in developing new O&M manuals as needed.
- (ii) Prepare draft SOPs for DWASA staff who engages in operating and maintenance in DMAs.
 - (a) SOP assumes mandatory procedures that relevant staff should follow in their regular works.
 - (b) SOP should be prepared not only for engineering staff but also for revenue officers and any other relevant staff in zone level and headquarters of DWASA. SOP should cover water loss assessment; water balance calculation (water audit); leakage management including pressure management, repairs, and active leakage control; asset management; and smart water management including SCADA and AMR.
 - (c) SOP should incorporate O&M manual prepared by contractors, but could also include daily check manual and list, and trouble-shooting manual.
 - (d) Assist DWASA in institutionalizing and implementing SOP. The CBS consultants should monitor the implementation with DWASA management.

Training:

- (i) Review existing training modules, on-the-job training for DMA management, and assist contractors in implementing on-the-job training with other consultants under DWSNIP.
- (ii) Develop concrete training modules.
 - (a) Training modules should at least cover the subjects such as water loss assessment; water balance calculation (water audit); leakage management including pressure management, repairs, and active

leakage control; asset management; smart water management including SCADA and AMR and on information system improvement / documentation and record keeping.

- (b) In addition, the training module should include development of in-house design capacity for preparing future DMAs within DWASA.
- (c) Syllabuses and training materials for DMA management should be prepared for each training module.
- (iii) Assist DWASA in implementing trainings in close coordination with DWASA Training Centre
- (iv) Monitor the implementation and feedback lessons of trainings to DWASA for future improvement of training module
- (v) Assist DWASA in institutionalizing and internalizing to plan and implement the training without external assistance.

B-2. Upgraded 5-year corporate business plan

23. Upgraded 5-year corporate business plan

- (i) Review the existing 5-year corporate business plan of DWASA and corporate business plan of other water utility.
- (ii) Analyze the performance of DWASA through metric bench marking method by comparing with the performance indicators of water utilities in other countries.
- (iii) Identify the current and potential challenges and bottlenecks of DWASA to deliver the quality service delivery.
- (iv) Prepare draft upgraded 5-year corporate business plan (The Business Plan) of DWASA
 - (a) The Business Plan should be consistent with Performance Agreement between DWASA and Government of Bangladesh.
 - (b) The Business Plan should set the performance targets and cover the existing sub-plans (tariff adjustment plan, investment plan, financial plan, and human resources development plan). In addition, the Business Plan also should include the sub-plan on the SNRWRP, water quality monitoring plan, and demand management plan.
 - i. Tariff adjustment plan should be such that DWASA is financially sustainable, and each class of customers can afford the tariff. Introduction of life line tariff and increasing block tariff may be considered.
 - ii. Investment plan should include not only new project but also regular replacement of aging fixtures as preventive measures, based on asset management plan prepared in SNRWRP.
 - iii. Financial plan should be complementary with planned investment, human resources, customer base, tariff adjustment, and debt services. It should be based on long-term and mid-term financial projection.
 - iv. -Human resources development plan should include training modules for sustainable DMA management assisted under DWSNIP

- v. Water quality monitoring plan should be prepared based on the existing plan of DWASA and in line with WHO guideline of Water Safety Plan.
 - vi. SNRWRP prepared under this project should be incorporated as one of sub-plans.
 - vii. Demand management plan should be prepared in close coordination with the firm who will be engaged in demand control and awareness campaign under DWSNIP.
- (v) Assist DWASA in institutionalizing and implementing the Business Plan and also monitor the implementation with DWASA management.

24. Capacity Improvement

- (i) Under DWSSDP project around 70 training modules have already been prepared by DWASA related to following areas (a) Human resource development Plan (b) Corporate business plan (c) Financial Management (d) Public Awareness Campaign (e) Gender Action Plan.
- (ii) Consultant should review and update these documents and update these in line with the upgraded business plan. In addition to these areas consultant shall also prepare training modules for new sub plans to be added in updated corporate business plan such as (a) tariff adjustment plan (b) SNRWRP (c) water quality monitoring plan and (d) demand management plan.

C. Consultants Requirement

25. The engagement period of the consultant services is 42 months (March 2017 to August, 2020). A total of 354 person months include (i) 60 person-months of the International key experts, and (ii) 294 person-months for the National key experts. The estimated staffing and expertise person-months requirements per component are summarized below:

Table-1: Summary of Consulting Services Requirements

Sl. No	Positions	Person Month Required		
		No of Person	Person month	Total
	International key Experts:			
1	Team Leader/ DMA management specialist	1	24	24
2	Water supply expert (A) (Water Audit Specialist)	1	12	12
3	Water supply expert (B) (Leakage Management Specialist)	1	12	12
4	Smart Water Management Specialist	1	12	12
	Total International Key Experts			60
	National Key Experts:			
5	Deputy Team Leader (Water Utility Management Expert)	1	42	42
6	Corporate Business Management Expert	1	42	42
7	Water Quality Monitoring Expert	1	24	24
8	Demand Management Expert	1	24	24
9	Tariff Expert / Economist	1	12	12
10	Financial Management expert	1	18	18
11	Awareness campaign expert	1	24	24
12	Training Management Expert	1	24	24
13	Financial Training Expert National	1	18	18

Sl. No	Positions	Person Month Required		
		No of Person	Person month	Total
14	Technical Training Expert (Water Supply)	1	18	18
15	IT Expert	1	24	24
16	Project Monitoring and Evaluation Expert	1	24	24
	Total National expert			294
	Total International and National experts			354

D. Terms of Reference for Individual Experts

International Experts:

1. Team Leader / DMA Management Specialist (International, 24 person months)

Tasks & Responsibilities

26. The Team Leader will manage and supervise the overall services of CBS, and provide support to the Project Management Unit (PMU) for preparing, institutionalizing, and implementing Sustainable DMA management and upgraded 5-year corporate business plan. He/she will also take leading role for capacity building program. He/she will provide advice and assistance to DWASA management for its institutional development. He/she will also be responsible for aggregating the required data from the other experts for finalizing the SNRWRP and 5-year corporate business Plan.

27. Duties and tasks as the Team Leader will include the following:

- (i) Manage, coordinate and supervise all services for the assignment to ensure that (a) inputs and activities of both the international and national consultants are of high quality and effective; and (b) all consulting components and project components are fully integrated and properly coordinated;
- (ii) Responsible for all reporting on the project in a timely manner, and updating the project schedule.
- (iii) Liaise with the DWASA on a day to day basis and liaise with ADB.
- (iv) Responsible for coordinating all activities pertaining to this assignment including facilitating preparation of all reports and documents,
- (v) Provide guidance and valuable inputs for finalizing SNRWRP and Upgraded 5 year Corporate business plan including sub-plans.
- (vi) Facilitate PMU/ADB for the mid-term and project completion reviews, as well as all intermediate loan reviews; and
- (vii) Coordinate with the PMU Gender Officer and the Social Development/Gender Expert of the DMS Consultant to ensure the gender responsiveness of all activities and services carried out.

28. Duties and tasks as the DMA Management Specialist will include the following:

- (i) Plan, supervise and review the diagnostic work of current DMA management of DWASA through consultation with several stakeholders and field study for the preparation of SNRWRP.
- (ii) Provide valuable inputs in preparing and finalizing SNRWRP. Responsible for coordinating and managing all activities pertaining to SNRWRP with water audit specialist, leakage management specialist, and training experts. Monitor the institutionalization and implementation of SNRWRP.

- (iii) Facilitate project orientation/awareness workshops, and the introduction of the concepts such as nonrevenue water management and water audits for capacity development;
- (iv) Facilitate PMU in organizing workshops as a forum for discussion of policy development and implementation, particularly on issue pertaining to sustainable DMA management plan,, SNRWRP and Corporate business plan and related to different sub plans;
- (v) Guide for field activities for carrying out flow and pressure monitoring and data analysis within DMA boundaries etc related to task assigned under the assignment.
- (vi) Provide inputs in preparation of SOPs for DWASA staff who engage in operation and maintenance of DMAs and monitor the institutionalization and implementation of SOP.
- (vii) Coordinate with the PMU Gender Officer and the Social Development/Gender Expert of the DMS Consultant to ensure the gender responsiveness of all activities and services carried out.
- (viii) Any other work, as may deem necessary during the course of the assignment.

Qualifications and Experiences

29. The Team Leader should have a Master degree in civil/water supply engineering or similar and be a chartered/professional engineer with broad experience in the management of water sector projects, including sector reform and infrastructure. S/he should have a 20 years' experience in water supply development, including at least ten years experiences in planning, developing and managing DMAs. She/he should have a five years working experience of projects funded by ADB, the World Bank and other donors.

2. **Water supply expert (A) Water Audit Specialist (International, 12 person months)**

Tasks & Responsibilities

30. The water audit specialist will work with team leader to assist DWASA in developing, institutionalizing, and implementing the management system in DWASA to carry out nonrevenue water assessment based on water balance (water audit) calculation as per International Water Association (IWA) standards. The Specialist will be responsible for coordinating, preparing and periodic monitoring of DMA wise water balance as per IWA standards.

31. The duties and task of the Water Audit Specialist includes, but not limited to;
- (i) Review DMA wise existing system of water audit/ water balance calculation, being practiced for nonrevenue water assessment. Ascertain that the practice being followed are in line with IWA format of water balance calculation.
 - (ii) Correlate and collect data with help of DMA/ Zone staff for preparing the water balance as per IWA standard format. Where data is not available, best approximation techniques for preparing water balance may be adopted.
 - (iii) Work out the water balance and water audit based on available data. It is an important step as this baseline calculation will be the foundation block of SNRWRP.
 - (iv) Develop a DMA wise water balance system in DWASA so that whatever reliable information / data are not available for water balance/ water audit it should start get recorded regularly.

- (v) Monitor and guide for DNA wise periodic review of water balance calculation with improved data so as to institutionalize the nonrevenue water assessment as per IWA standards.
- (vi) Provide field training & international practices to DWASA's staff as a part of capacity improvement.
- (vii) Any other work as may be assigned by the team leader/PD

Qualifications and Experiences

32. The specialist will have degree in civil engineering with masters in water / environmental / public health engineering or any other relevant engineering discipline with 15 years' experience in managing water supply projects. She/he should have 10 years of experience in water audit / Leakage Control and Management / nonrevenue water management. The work experience with ADB will be preferable.

3. Water supply expert (B) Leakage Management Specialist (International, 12 person months)

Tasks & Responsibilities

33. The Leak management specialist will work with the team leader to develop, institutionalize, and implement the leakage management system for DWASA staff to undertake active leakage control, repairs and pressure management. The task of Leak assessment expert is to prepare comprehensive report regarding leak detection and redresses of water supply network concerning Dhaka city. She/he should suggest latest available technology. He should also examine, supervise related works and evaluate/guide the DMA staff / contractor. The specialist will be responsible for DMA wise physical (technical) loss assessment and periodic review of reduction in physical losses.

34. The duties and task of the nonrevenue water Management Expert includes, but not limited to:

- (i) Assess the current practice of leakage detection of DWASA; and provide proposal of active leakage control as like other countries, which should be incorporated in SNRWRP, SOP, and training.
- (ii) Support team leader in developing the SNRWRP particularly for activities related to leakage management
- (iii) Monitor nonrevenue water reduction program and coordinate for DMA wise activities related to leakage management for reduction in nonrevenue water.
- (iv) Provide guidance and coordinate activities at DMA level for speedy leak detection and repair, pressure management flow and pressure data acquisition, management & analysis
- (v) Provide guidance to improve hydraulic modeling, technical / physical loss reduction and management, physical loss monitoring on DMA basis, and introduction of nonrevenue water management communication strategies.
- (vi) Prepare the proposal of institutional development for O&M mainly regarding the leakage management for nonrevenue water reduction with consultation of other experts
- (vii) Assist training expert to conduct training program on leakage management for nonrevenue water reduction process for O&M staffs.
- (viii) Coordinate with other expert for prioritizing leak detection activities, DMA tightness verification, commissioning of Pressure Regulating Valve (PRV),

- installation and set-up of monitoring equipment for flow and pressure monitoring, establishing boundary valves for nonrevenue water reduction etc.
- (ix) Any other work as may be assigned by the TL/PD

Qualifications and Experiences

35. She/he should have degree in civil engineering with masters in water supply/ related engineering with 15 years experience in construction and maintenance of water supply network and additional 10 years experiences for identification and redressal of leaks in complex water supply network through latest technology.

4. **Smart Water Management Specialist (International, 12 person months)**

Tasks & Responsibilities

36. The smart water management specialist (SWMS) will work under the Team Leader in preparing, institutionalize, and implement SNRWRP, SOPs and training modules of sustainable DMA management by providing input particularly related to efficient, automated and modern ways of water management including SCADA system and AMR. The expert will also be responsible for analyzing the constrains of DWASA in sustainable DMA operation and contextualizing good practices in DWASA; and for preparing DMA wise assessment of commercial losses and periodic review of reduction in commercial losses in close coordination with financial management expert.

37. The duties and task of the smart water management specialist includes, but not limited to:

- (i) Propose and pilot use of SCADA and AMR in DMAs as an integral part of preparation and implementation of SNRWRP
- (ii) Review DMA wise System Input Volume (SIV) meter location and Check meter installation at site and commissioning & configuration to relevant computer systems.
- (iii) Provide guidance/ supervise meter testing and calibrations at field and at workshops. Train DWASA's staff for large & small meter calibration & repair techniques and best practices in installation of meters
- (iv) Prepare specifications for selection of reliable water meters.
- (v) Analyze the constrains of DWASA in sustainable DMA operation and contextualizing good practices in DWASA.
- (vi) Support DWASA in exploring the avenues for reducing cost of meter reading.
- (vii) Analyze existing billing system with DWASA's commercial division & with international experience develop system to improve the existing billing system to reduce nonrevenue water
- (viii) Study and provide systems to take accurate & timely meter readings, avoid estimated billing, setting up fast track billing system of new connections, and establish software to calculate the nonrevenue water levels of project area accurately.
- (ix) recommend the suitable geographical information system for the objective identified and implement, formulate GIS base system and assist all the experts and PMU while trouble shooting
- (x) Create data base for maintaining necessary information and establish mechanism to update data base.

- (xi) Contribute in the training program on smart water management including SCADA and AMR
- (xii) Any other tasks as may be assigned by the TL/PD

Qualification and Experiences

38. The specialist should have master's degree in civil/water supply engineering with 15 years of working experience in the management of major water supply Project of which minimum ten years in the operation, maintenance and control of water supply system.

National Experts:

5. Deputy Team Leader /Water Utility Management Expert (National, 42 Person Months)

Tasks & Responsibilities

39. The Water Utility management specialist/ Deputy team leader (DTL) will assist DWASA in the efficient management of the project implementation. She/he will support and be directly responsible to the Team Leader in the overall implementation of the Project and provide specialist inputs in water supply utility management aspects . She/he will assist the Team Leader to manage and coordinate the inputs of team members. She/he will assist DWASA in the draft preparation and implementation of SNRWRP, for effective maintenance of water systems. The expert will also be responsible with international expert in analysis of current constraints of DWASA in terms of organization structure, incentive mechanism, capacity, and budget examination of good practices and lessons. Prepare draft SNNRWRP.

40. The duties and task of the DTL / Water Utility Management specialist includes, but not limited to:

As Deputy Team Leader:

- (i) Assist the Team Leader to manage all aspects of project implementation, including (a) overall project planning, scheduling, management and coordination; (b) monitoring progress and costs; and (c) project reporting
- (ii) Assist the TL to coordinate the work of the national consultants and liaison with PMU/DWASA, ADB and other external agencies
- (iii) Liaising with various bodies and individuals, including local authorities, government agencies, clients, contractors, residents, suppliers, technical experts and other consultants;
- (iv) Act as team leader and run the day to day affairs of the consultancy in the absence of the team leader.
- (v) Coordinate with the PMU Gender Officer and the Social Development/Gender Expert of the DMS Consultant to ensure the gender responsiveness of all activities and services carried out.
- (vi) Assist the TL in the preparation of all reports.

As Water Utility Management specialist:

- (vii) Over all guide and routine supervision of SNRWRP related operation and maintenance of water utility components;

- (viii) Establish a sound accounting practice and systems to manage resources available at the Project
- (ix) Analysis of current constraints of DWASA in terms of organization structure, incentive mechanism, capacity, and budget examination of good practices and lessons
- (x) Develop and train the client staff and other stakeholders to maintain and develop system for water utility management for the entire project area

Qualification and Experiences

41. The Deputy Team Leader / Water Utility Management Expert should have masters degree in any civil / water supply related discipline of engineering with 15 years working experience in any water utility services entity, of which 5 years in nonrevenue water reduction related projects, preparation of water utility asset plans, implementation, operation and maintenance of water supply systems.

6. Corporate Business Management Expert (National, 42 Person Months)

42. The Corporate Business Management Expert will assist the Team Leader in preparing 5-year corporate business plan through consolidating sub-plans input by each expert, institutionalizing, and implementing it.

43. The duties and task of the Corporate Business Management Expert includes, but not limited to:

- (i) Assist the Team Leader to manage all aspects of implementation of services of upgrading Corporate Business Plan, including (a) overall planning, scheduling, management and coordination; (b) monitoring progress and costs; and (c) project reporting
- (ii) The expert will be lead person responsible for arranging and coordinating all activities related to development of updated corporate business plan.
- (iii) Develop the corporate business plan by aggregating all sub plans such as (i) Human resource development Plan (ii) Investment plan (iii) Financial plan (iv) tariff adjustment plan (v) SNRWRP (vii) water quality monitoring plan (viii) demand management plan etc
- (iv) Coordinating with various bodies and individuals, including local authorities, government agencies, clients, contractors, residents, suppliers, technical experts and other consultants for discharging the obligation under the assignment;
- (v) Assist the TL in the preparation of all reports and all other activities as assigned from time to time.
- (vi) Develop and train the DWASA staff and other stakeholders to maintain and develop system for all sub plans proposed under updated corporate business plan

Qualification and Experiences

44. The Corporate Business Management Expert should have master's degree in economics/ finance/ business management / engineering or related field with 15 years working experience in any public utility services entity of which 5 years in preparation of business plans, asset plans, implementation, operation and maintenance of water supply systems.

7. **Water Quality Monitoring Expert (National, 24 Person Months)**

Task and Responsibilities

45. The water quality specialist will assist DWASA in upgrading, institutionalizing, and implementing water quality monitoring plan based on the existing plan of DWASA in line with WHO guideline. The duties and task of the Water Quality Monitoring specialist includes, but not limited to:

- (i) Study existing water sample collection, testing and monitoring system being practiced in DWASA.
- (ii) Develop program of the best practice for the water quality monitoring and control
- (iii) Develop proposals for procurement, installation and operation of equipments, infrastructure and man power for water quality monitoring and control as a part of the sub plan to be included in updated business plan.
- (iv) Develop programme to educate and train personnel for the new institutional setup related to water quality monitoring and control
- (v) Develop and execute training modules to the DWASA staffs for use of laboratory equipment for assuring water quality.
- (vi) Apply a structured change management approach and methodology for the improving the water quality.
- (vii) Any other tasks as may be assigned by the TL/PD

Qualifications and Experiences

46. She/he should have bachelor's degree in civil engineering/ masters in science or relevant discipline with 15 years of applicable work experience in major water supply projects, of which 10 years in water process, water treatment plants, water quality testing and monitoring.

8. **Demand Management Expert (national, 24 person months)**

Tasks & Responsibilities

47. The Demand Management Expert will assist the Team Leader/ Deputy TL in preparing and implementing Demand Management Plan under upgraded 5-year Corporate Business Plan She/he will work closely with other experts including technical training expert and awareness campaign expert.

48. The duties and task of the Demand Management Expert are:

- (i) Review and research documents available and current activities in consultation with DWASA and line agencies for preparation of Demand Management Plan.
- (ii) Examine the good practices and lessons in other countries
- (iii) Draft Demand Management plan
- (iv) Coordinate and manage all activities pertaining to Demand Management Plan.
- (v) Coordinate with technical training expert in preparation of training modules on assessment and management of annual/ monthly/ daily/ hourly water demand.
- (vi) Assist the awareness campaign expert and NGOs in preparing and implementing awareness raising campaign in terms of water conservation.
- (vii) Coordinate for assessment and projection of annual/ monthly/ daily/ hourly water demand, for preparation and implementation of the SNRWRP.

- (viii) Analyze the data from field activities of flow and pressure measurements within DMA boundaries etc related to task assigned under the assignment so as understand the actual demand / consumption pattern.
- (ix) Coordinate with the PMU Gender Officer and the Social Development/Gender Expert of the DMS Consultant to ensure the gender responsiveness of all activities and services carried out.

Qualifications and Experiences

49. The specialist should have a bachelor degree in civil engineering with masters in environmental / water supply related engineering or similar with experience of water sector projects. S/he will have a minimum of 15 years experiences in water supply development, including at least 5 years experiences in assessing, planning, and managing water demands in DMAs. Specialist with working experience on projects funded by ADB, the World Bank and other donors will be given preference.

9. **Tariff Expert/ Economist (National, 12 Person months)**

Tasks & Responsibilities

50. The tariff expert/economist will work with financial management expert to design a optimal tariff adjustment plan. Tariff adjustment plan should be such that DWASA is financially sustainable, and each class of customers can afford the tariff. Introduction of life line tariff and increasing block tariff may be considered. He/she will coordinate with the firm which will be engaged in community awareness for public awareness campaign regarding potential impact of tariff adjustment.

51. The consultant will be responsible to:

- (i) Analyze the current tariff structure, rules and steps taken till date to update the tariff structure to keep pace with the supply and demand scenario of DWASA's water supply and sewerage services;
- (ii) Meticulously look at the procurement, operational and maintenance cost of its services inclusive of the entire spectrum of DWASA's expenses, which could be considered under the tariff setting procedure. In as much as, she/he shall profoundly familiarize her/himself with the relevant water supply and sanitation policies, that provide some road map for the setting of tariff and its concomitant issues e.g. supply issues, utilization issues, environmental issues, etc.;
- (e) estimate operating expenditures over the twenty year period;
- (f) Estimate investment requirements to meet demand. On this, he shall require to work with the chartered accountant/FS
- (iii) Determine a weighted average cost of capital foITr Long Run Marginal Cost (LRMC) & required revenue calculations;
- (iv) Calculate LRMC over a 20 year time period;
- (v) Develop a long time revenue requirement of DWASA in order to develop, operate and maintain its service extent for Dhaka metropolitan area;
- (vi) Review appropriateness of current energy adjustment provisions. On this, she/he shall require to work with the chartered accountant/FMS
- (vii) Assess minimum potable water requirements of low income households & discuss costs & benefits of a cross-subsidized lifeline tariff for basic consumptions (lifeline tariff);

- (viii) Conduct internal and as well, broad based seminar to discuss the tariff issues and get the customers' views in respect of the qualitative and quantitative aspects water supply and sewerage services of DWASA;
- (ix) Recommend a base tariff that would allow DWASA a commercially sustainable operation of the relevant utilities;
- (x) Contribute to writing of the Inception Report; Carryout any other task(s) assigned by the TL/PD; and
- (xi) Coordinate with the PMU Gender Officer and the Social Development/Gender Expert of the DMS Consultant to ensure the gender responsiveness of all activities and services carried out.

Qualifications and Experiences

52. The position will need master degree in economics /development economics / financial management with higher degree / studies in economics / management. He/she must have at least 10 years' experience within economics discipline and must have experience in the analysis of pricing and recommendation of tariff structure of water utility services.

10. Financial Management Expert (National, 18 Person months)

Tasks & Responsibilities

53. The financial management specialist/planning expert will work for upgrading financial management / model and for implementing financial / investment plan in the corporate business planning. She/he will assist DWASA in updating five year corporate business plan, including investment plan, financial plan, tariff adjustment plan and human resource development plan. The platform financial model will be consistent with planned capital investment, human resources, customer base, tariff adjustment, and debt service. She/he will also work closely with tariff expert/economist and other experts to update the financial model which will be used for financial projection, and make it simple and user friendly so that DWASA staff can utilize it easily. She/he will also assist DWASA in formulating concrete action plans to materialize the improvement of financial management in updated five year corporate business plan and develop a system to monitor progress of various plans, and recommend incentive scheme to encourage staff to follow the plans and provide hands-on trainings to relevant DWASA.

54. Main duties and responsibilities, in addition to above stated general requirements, will entail to (not exhaustive):

- (i) Make an in-depth study of the accounting practice of DWASA;
- (ii) Access all previous studies/recommendations and the financial model and five year corporate business plan developed under DWSSDP, in order to ascertain the strengths, weaknesses and opportunities for the overall improvement and updating and of DWASA's accounts practice as an integral part of the entity's overall financial management;
- (iii) Work along with the Tariff Expert in evolving a sustainable tariff structure;
- (iv) Refine current system/evolve a better system for the preparation of DWASA's annual budget;
- (v) Identify shortfalls/ flaws in revenue generation, billing and collection; Formulate an efficient financial monitoring system for DWASA;
- (vi) Review budgetary control process, design budget procedures and budget formats, in DWASA so as to prepare the sub plans under updated business plan,

- (xviii) Review the financial Management system and Asset Management System of client and make recommendations for optimal integration in updated business plan. In particular, assist the accounts section closely with IT expert in identifying the specific bottlenecks and providing recommendations for improving the operation of computerized accounting software and integration of billing software with the accounting software; and improving the electronic link of financial information of individual projects with financial reporting system.
- (vii) Identify the weaknesses in the current and evolve a better debt management system for DWASA;
- (viii) Contribute to training of DWASA staff in financial management with Financial Training Expert;
- (ix) Contribute to computerization of financial practices, importantly in the documentation of DWASA's financial and commercial activities;
- (x) Perform any task assigned by the TL and PD

Qualifications and Experiences

55. The financial management expert shall be a qualified Chartered Accountant / Certified Public Accountant/Post graduate in Public Finance. She/he must have 15 years working experience in major development projects, including at least five years' experience in water utility entity.

11. Awareness Campaign Expert (National, 24 Person Months)

Tasks & Responsibilities

56. The Awareness Campaign Expert (ACE) will be responsible for (i) preparing and implementing public awareness campaign in demand control (water conservation), hygiene, and health in close coordination with the firm who will engage in the campaign under the project; and (ii) preparing, institutionalizing, and implementing demand control plan under corporate business plan. ACE will plan and design the campaign, and assist DWASA in implementing the campaign by engaging media firms and NGOs. ACE will also provide support to improve access of water supply to LICs with the firm through interaction with community to gain public support for Project and DWASA in general. ACE will assist other experts in handling information disclosure and social interactions.

57. In addition to above stipulations, the ACE will constantly liaise with the head of PR unit of DWASA and involve him in appropriate areas of his work under the assignment. On top of above stated areas, the job shall mainly be to (not exhaustive):

- (i) Assist the PD and the TL in supervising, guiding, and monitoring the firm to implement the awareness raising and mass media campaign under the project that shall, as well, entail developing educational materials and to engage and coordinate field workers in conducting community meetings and household visits;
- (ii) Design program and develop appropriate information materials for public awareness campaign including mass-media and along the road, such as brochures and display boards before, during and after rehabilitation work in the supply zones. It should ensure the views of women and vulnerable groups. The program will cover:
 - (a) efficient domestic water use and prevention of wastage
 - (b) understanding the negative aspects on quality and other users on making an illegal connection

- (c) understanding the negative aspects and illegality of using water pumps to withdraw water from DWASA supply line from which there will be no need
- (d) how to read meters that will be installed and how to understand the new bills, which will be sent out in due course along with the improved method of payment
- (e) communication of the benefits of grievance redress procedures to eradicate overcharging with customers
- (f) raising the public consciousness in hygiene and health through educating proper daily practice;
- (iii) familiarize customers with the DWASA's service provision and DWASA-customer working arrangements;
- (iv) mobilize urban communities to be supportive to construction-time and/or construction-stemmed inconveniences which the implementation of the project components may bring about;
- (v) assist DWASA's PR cell in overseeing and managing the customer grievance mechanism for the duration of the Project; through the stated activities, make positive efforts of improving DWASA's public relation and image and in the process, establish some transparency among the public regarding DWASA's modus operandi;
- (vi) Support to develop ownership, especially among the poorer section of the town, LIC regarding water supply features/facilities for better maintenance of such facilities and attain the skill and assume responsibilities associated with communal ownership of infrastructure.
- (vii) Assist to provide water supply connections to LICs in DMA
- (viii) prepare reports on the issues, progress and contribute to the preparation of routine/specific reports;
- (ix) Coordinate with the PMU Gender Officer and the Social Development/Gender Expert of the DMS Consultant to ensure the gender responsiveness of all activities and services carried out; and
- (x) Carryout any other relevant responsibilities assigned by the TL/DTL.

Qualifications and Experiences

58. The position of CAE should have a degree in Sociology/ Anthropology/ Social Welfare, coupled with a Masters in any of the above or related areas. The CAE shall have at least 10 years' experience in public information campaigns.

12. **Training Management Expert (National, 24 person months)**

Tasks & Responsibilities

59. The training management expert (TME) will assist TL/DTL and other experts in assessing the training needs, developing overall training modules, consolidating them into human resources development (HRD) plan under upgraded 5-year corporate business plan, and supervising the implementation of the training modules. The expert should work in close conjunction with the two other Training Experts.

60. In addition to above stated job requirement, responsibilities will additionally entail (not limited to):

- (i) access all previous studies/recommendations, especially those of recently completed Finance and Capacity Building Consultants under DWSSDP in order

- to ascertain the Strengths, Weaknesses, Threats and Opportunities for the overall improvement of DWASA's management;
- (ii) Develop the overall training modules including sustainable DMA management and any other needs, and upgrade the HRD plan;
 - (iii) Develop a set of training manuals. Assistance may be taken from the relevant reports/manuals developed by the FCBC consultants ;
 - (iv) Develop and refine all syllabuses and training materials. Include training of in-house design capacity for preparing future DMAs within DWASA;
 - (v) Assist DWASA in implementing overall training modules in close coordination with DWASA Training Center;
 - (vi) Assist DWASA to institutionalizing and internalizing to plan and implement the trainings without external assistance;
 - (vii) Coordinate with the PMU Gender Officer and the Social Development/Gender Expert of the DMS Consultant to ensure the gender responsiveness of all activities and services carried out; and
 - (viii) To perform any other tasks assigned by the TL and PD.

Qualifications and Experiences

61. The position will require a degree in management / social sciences / finance, topped up by MBA (majoring in HRD/ HRM/ Finance) / Masters or equivalent in any of the above or related area(s). He/she must have at least 15 years' experience in management, training including five years in water utility.

13. **Financial Training Expert (1 National Expert, 18 person months)**

Tasks & Responsibilities

62. The financial training expert (FTE) will be responsible for training program for financial management, including computerized accounting, billing and collection systems, and internal auditing. She/he will assess training needs and update training plans in the context of DMA development and management, and assist DWASA with implementing the plan. She/he will work closely with the training management expert (TME).

63. His/her overall job description in addition to above stated areas shall include (not limited to):

- (i) Review the training manuals/modules and other capacity building documents produced by the FCBC consultants
- (ii) Carry out detailed Training Need Assessment (TNA) exercise for entire DWASA financial and accounting personnel and internal auditing relating to their job description and sustainable DMA management
- (iii) Develop training modules including syllabuses and training materials. Training manuals on financial, accounting and auditing areas also should be prepared for the staff/personnel of finance, accounts, audit divisions as well as for those who have financial and accounting responsibilities;
- (iv) Coordinate for approval and acceptance of modules by ascertaining their relevance and appropriateness. This would include pilot testing of the module(s);
- (v) Develop training calendar, keeping a close liaison with the TU of DWASA (make maximum use of the facility);
- (vi) prepare time-based and pragmatic annual work plans for imparting training and get the requisite budgets approved;

- (vii) Assist DWASA in implementing training modules in close coordination with DWASA Training Center;
- (viii) Assist DWASA in institutionalizing and internalizing the implementation of the training without external assistance;
- (ix) Carry out any other tasks assigned by the TL and PD.

Qualifications and Experiences

64. The position (FTE) will need a degree in Finance/financial management/ MBA majoring in finance. He/she must have at least 15 years' experience in financial management, as a trainer, of which at least five years working experience in any water supply project. FTE shall work in close conjunction with the MTE and TTE (in effect their job description shall be quite similar to each other).

14. Technical Training Expert (National, 18 person months)

65. The technical training expert (TTE) will be responsible for technical trainings, which should include the subjects such as water loss assessment; water balance calculation (water audit); leakage management including pressure management, repairs, and active leakage control; asset management; and smart water management including SCADA and AMR. She/he will assess training needs, and assist DWASA and TME in upgrading the existing HRD plan, and implementing the plan. She/he will work closely with TME, DMS consultants and contractors of distribution network improvement.

66. TTE shall work in close conjunction with the SWMS, FTE and MTE. In addition to above stated area, the TTE's responsibilities shall include (not limited to):

- (i) Access the training manuals/modules and other capacity building documents produced by the FCBC consultants;
- (ii) Carryout detailed TNA exercise for entire DWASA technical personnel relating to their job description to update the HRD plan in the context of DWASA turn around programs and DMA development and management. (the existing manuals/modules available with DWASA should be looked into and made proper use of wherever possible through updating, précising and making them more focused (duplications are to be avoided and time saved may have better application elsewhere under the package);
- (iii) Develop training modules inclusive of training manuals on engineering and O&M areas for the staff/ personnel of engineering/technical divisions who carry out all development, operation and maintenance responsibilities of DWASA's DMA management;
- (iv) Develop modules to include subjects such as water loss assessment; water balance calculation (water audit); leakage management including pressure management, repairs, and active leakage control; asset management; and smart water management including SCADA and AMR;
- (v) Additionally prepare the training module to include development of in-house design capacity for preparing future DMAs within DWASA
- (vi) Develop training calendar, keeping a close liaison with the TU of DWASA (make maximum use of the facility);
- (vii) Prepare time-based and pragmatic annual work plans for imparting training and get the requisite budgets approved;
- (viii) Assist DWASA in implementing training modules in close coordination with DWASA Training Center

- (ix) Assist DWASA in institutionalizing and internalizing the plan and implement the training without external assistance
- (x) Conduct training in conformity with approved work plan over the project period with required documentation;
- (xi) Coordinate with the PMU Gender Officer and the Social Development/Gender Expert of the DMS Consultant to ensure the gender responsiveness of all activities and services carried out; and
- (xii) Carryout any other tasks assigned by the TL and PD

Qualifications and Experiences

67. The position will need a degree in engineering (civil/ sanitary, water supply). The TTE must have at least 15 years' experience in water supply engineering as trainer, including minimum five years' experience working in donor funded project as technical training expert in water supply sector.

15. IT Specialist (National, 24 person month)

Tasks & Responsibilities

68. The IT expert (ITE) will be responsible for assessing the need to upgrade hardware facilities required to run the new accounting software, PIMS software and the billing software developed under the DWSSDP. IT specialist will train DWASA staff to enable them to maintain the system by themselves or arrange outsourcing of the maintenance. If required and helpful, he/she may arrange a study tour for key DWASA staff to see and learn from successful water utilities for the use of IT technology. In addition to the above responsibilities will include:

- (i) Review and assess the IT requirements of the project as well as DWASA as a whole;
- (ii) Assess the need of DWASA-customer interaction and establish systems to improve the level and extent of such interaction in the organizations image building interest;
- (iii) Assist the MIS division of DWASA in refining and improving the project as well as DWASA MIS
- (iv) Review and assess GIS set up of DWASA and recommend improvement and strengthening of the set up for better management of development and O&M aspects of DWASA's services;
- (v) Assist the accounts section with FME in identifying the specific bottlenecks and providing recommendations for improving the operation of computerized accounting software and integration of billing software with the accounting software; and improving the electronic link of financial information of individual projects with financial reporting system.
- (vi) Update the PIMS software and train staff
- (vii) Assist DWASA in design procurement specifications for IT equipment including those for SCADA and AMR with other consultants
- (viii) Design and conduct IT related training to project and DWASA staff;
- (ix) Liaison with the network modeling specialist (under DSM package) and obtain necessary elements from him to build into the IT related training modules (stated above) to be eventually used for the technical training of officers;
- (x) Coordinate with the PMU Gender Officer and the Social Development/Gender Expert of the DMS Consultant to ensure the gender responsiveness of all activities and services carried out; and

- (xi) Carryout all other instructions of PD, TL and DTL that may come at different times.

Qualifications and Experiences

69. The IT expert will require a degree in Computer Engg / IT / Communication Science, preferably topped by an advanced degree in relevant area. He/she must have at least five years' professional experience, preferably in utility companies. Experience in installation, operation and maintenance of SCADA and AMR will be considered as added advantages. The IT specialist shall particularly work in close conjunction with the smart water management and the DTL.

16. **Project Monitoring and Evaluation Expert (National, 24 person months)**

Tasks & Responsibilities

70. The P&ME Specialist will assist DWASA in measuring the beneficial impacts of the project, assessing if the facilities are managed efficiently; and ascertain if the benefits of DMA development reach the targeted groups. The P&ME consultants will evolve a well-designed benefit monitoring and evaluation mechanism for the project and the tool so developed, once approved by DWASA and ADB will be used for measuring of project performance and consequent impact created by the development and management of DMAs; get a quantifiable measure of the services to be delivered vis-a-vis facilities to be created/improved/rehabilitated under the project. She/he will make an assessment of the accuracy and appropriateness of the PMU and its two main sets of consultants in their identification of target beneficiaries from the project inputs and deliverables and their timelines and relevance to the actual need, both related to urban dwellers as well as those under DWASA. Additionally the specialist will make an assessment against the yardsticks of efficiency criteria at specific intervals within the project period as to whether the services already built and those that will stand to be built and commissioned during the project period will reach the intended target beneficiaries.

71. Broad tasks/activities/works (not exhaustive or in any particular sequence) shall be to:
- (i) Ensure close cooperation and assistance to the PD from an efficient implementation of the relevant P&ME activities;
 - (ii) Take a stock of DWASA's organizational parameters, charter of duties (citizens' charter), specific services delivered, mechanisms for such service delivery, cost recovery for services and investment, O&M aspects of the system and conducting a rapid assessment of DWASA's core competency to deliver stipulated services and meet new and unexpected challenges;
 - (iii) Identify information requirements of components concerning planning, monitoring and evaluation;
 - (iv) In association with other consultants, prepare benchmark report on identified parameters to be monitored and the project evaluated in the context of development of DMAs;
 - (v) Analyze the performance of DWASA through metric bench marking method by comparing with the performance indicators;
 - (vi) Evolve monitoring and evaluation framework for the project, appropriate guidelines and strategy thereof, indicators for performance, keeping in view entire DWASA. Inasmuch, agree on the reporting requirements;
 - (vii) Along with the team, present the P&ME framework to DWASA and PMU for finance-turning the framework;

- (viii) Implement the P&ME strategy, so established at central level (PMU), and recommend any possible changes based on the lessons learned at any relevant level;
- (ix) Monitor and report on the project performance and suggest measures to improve the monitoring system;
- (x) Design and conduct beneficiary level baseline, midterm and end line surveys to assess impact of the project;
- (xi) Assist timely preparation of all required reports at specified time-points, and in complete agreement with the PMU;
- (xii) Coordinate with the PMU Gender Officer and the Social Development/Gender Expert of the DMS Consultant to ensure the gender responsiveness of all activities and services carried out; and
- (xiii) Undertake other tasks as may be requested by the TL/PD.

Qualifications and Experiences

72. The position will require a minimum of masters degree in economics/social science/water supply/public policy. She/he should have 10 years of professional experience in project management, project monitoring and impact assessment of projects funded by donor agencies, of which at least five years in water supply/sanitation projects.

E. Reporting Requirements Time Schedule and Deliverables

The Expected Time Schedule:

73. The estimated total duration of consulting services will be 42 months from March 2017 to August 2020. The implementation schedule expected is as shown below:

Key Activities	Date
Commencement of Consulting Services	March 2017
DMA Management	
1. Complete and obtain approval of draft SNRWRP	1. Q4, 2017
2. Submit Final SNRWRP	2. Q4 2017
3. Assist DWASA in implementing SNRWRP	3. Q1 2018 to August 2020
4. Complete and obtain approval of draft SOP	4. Q4 2017
5. Submit final SOP	5. Q4, 2017
6. Assist DWASA in implementing SOP	6. Q1, 2018 to August 2020
7. Complete and obtain approval of draft training module	7. Q4 2017
8. Submit final training module	8. Q4 2017
9. Assist DWASA in implementing training	9. Q2 2018 to Q3 2020
Upgraded 5 year Corporate Business Plan	
1. Complete and obtain approval of upgraded 5 year corporate business plan	1. Q4, 2017
2. Assist DWASA in implementing the business plan.	2. Q1, 2018 to August 2020

The Reports and Documents/Deliverables

74. Within the scope of consulting services, the Consultant shall prepare and submit reports and documents to Project Director of DWASA as shown in Table 3.

Table 3: The Consultant shall provide electronic copy of each of these reports

Category	Type of Report	Timing	No. of Copies	No of CD's
Consultancy Services	Inception Report	Within 6 month after commencement of the services	5	2
	Quarterly Progress	Report Every quarter (including GAP report)	5	2
	Project Completion Report(PCR) (for submission to ADB)	At the end of the services	5	2
	Status Report on DMA establishment & operation	Within 6 months after the consultant's mobilization	5	2
	Interim Report (progress of consultancy assignment)	15 th month and 40 th month	5	2
	Gender Action Plan Implementation (Attached to QPR)	Quarterly	-	-
	Gender Action Plan Implementation (Attached to PCR)	At the end of the services	-	-
DMA management	ii)Draft SNRWRP ii) Final SNRWRP	As per time line mentioned in table at Para 73	5	2
	i)Draft SOP ii) Final SOP		5	2
	i) Training modules ii) Training syllabus and training materials		5	2
Up gradation of 5 year business plan	i) Draft sub-plan (Financial plan, Investment plan, Tariff adjustment plan, Human Resource Development /Training Plan, Water Quality Monitoring Plan, Demand Management Plan, ii) Final sub-plan iii) Draft upgraded 5 year Corporate Business Plan iv) Final upgraded 5 year Corporate Business Plan	As per time line mentioned in table at Para 73	5	2

75. Contents to be included in each report are as follows:

- (i) For Consultancy Services
 - (b) Inception Report: An inception report must be submitted six months after the commencement of the work. The Report will be compiled jointly by PMU and the consultants and will represent their joint approach to implementation of the activities leading to the project outputs. The Report shall detail specific management structures, financial and administrative systems, progress. The report shall present a detailed and budgeted planning of the work to be carried out during the remaining 6 months of the first year of the project and an outline of activities to be carried out during the second year.
 - (c) Quarterly Progress Report: Quarterly progress reports (narrative and financial) must be submitted, describing the progress of activities, measured against the work plan. The reports will present proposals for overcoming delays and problems encountered during the period. Each zonal PIU shall submit their updated status which will be consolidated by the PMU and shown in the report. The reports shall present the project accounts for the period and these shall be compared with the corresponding budget. Major deviations shall be explained. Accumulated accounts shall also be shown. These quarterly financial statements will be the basis for the replenishment of an interest account according to the procedures defined by ADB's Loan Disbursement Handbook of January 2015, as updated periodically and with arrangements between the Government and ADB.
 - (d) Completion Report: The completion report shall describe the project achievements as against project expectations. Shortcomings and successes shall be commented upon and explained. A financial statement shall be included showing disbursement flow as against the planned cash flow. Major deviations shall be commented upon and explained.
 - i. Status report of DMA establishment and operation: It should give details DMA wise diagnostic analysis, and details description of activities proposed in SNRWRP, SOP and trainings.
 - ii. Interim reports on the progress: It reports the implementation of the consultancy assignment and achievement to date at the cut-off time points of 15th month and 40th month (independent of Annual Reports).
 - iii. Quarterly GAP Implementation Report (attached to Project QPR): Present the activities and achievements for each indicator/target of the GAP that are under the responsibility of the DMS Consultant to implement and/or achieve; and provide an analysis of facilitating factors and challenges during the quarter and actions undertaken.
 - iv. GAP Completion Report (attached to PCR): Present a summation of activities and achievements for all indicators/targets of the GAP

that are under the responsibility of the DMS Consultant to implement and achieve; overall facilitating factors and challenges; and lessons learned.

F. Client's input and Counterpart services and Facilities

76. DWASA will provide to the Consultant assistance which include making available all relevant documents, counterpart staff and assistance for obtaining work permit, visa and other similar documents as well as exemption and privileges, if any.

77. Office space, Communication facilities (telephone, access to internet Services), Computers, survey equipment and relevant documents to be provided by the consultant. Necessary office equipment, such as computers; computer peripheral equipment, desks CAD etc should be procured under the Consulting services budget.

Appendix C-3: Project Development Facility (PDF) Consultants

I. PROJECT DESCRIPTION

A. Project

1. The project will improve the water supply system in the country's capital, Dhaka, by making it more reliable, sustainable, and climate-resilient. It will consolidate and enhance the gains made in the efficiency of the water distribution network achieved under two previous Asian Development Bank (ADB) projects (Dhaka Water Supply Sector Development Program [DWSSDP] and Dhaka Environmentally Sustainable Water Supply Project [DESWSP]), and improve the service delivery and the capacity of the Dhaka Water Supply and Sewerage Authority (DWASA).

2. The impacts will be (i) safe drinking water made available for all of Bangladesh's urban populations, aligned with the government's five-year plan for FY2016–FY2020;¹ and (ii) adaptive capacity of water sector enhanced for reducing climate change vulnerability, aligned with the national strategy for water supply and sanitation.² The outcome will be sustainable provision of a more reliable, improved, and climate-resilient water supply in Dhaka City.

3. The outputs will be DWASA's (i) distribution network strengthened, (ii) sustainable managerial capacity of DMA enhanced, and (iii) capacity for quality service delivery enhanced.

4. Output 1: Distribution network strengthened. Building on the ongoing work of two ADB-financed projects, the project will help improve the distribution network in Dhaka City.³ It will finance the improvements (i) in new DMAs not financed by the ongoing loans,⁴ and (ii) in DMAs under the 2007 program through additional financing to meet cost overruns and complete civil works under ongoing contracts.⁵ The project will extend new or regularized water connections to LICs where people are relying on illegal water lines or private water vendors and paying higher charges than they will when they use the expanded systems.

5. Output 2: Sustainable managerial capacity of district metered areas enhanced. DWASA's managerial and technical capacity will be strengthened to keep nonrevenue water at a low level. The project will assist DWASA in (i) preparing and implementing a sustainable nonrevenue water reduction plan;⁶ (ii) strengthening monitoring capacity at the zone level with

¹ Government of Bangladesh, Ministry of Planning, Planning Commission. 2015. *Seventh Five-Year Plan: FY2016–FY2020*. Dhaka.

² Government of Bangladesh, Ministry of Local Government, Rural Development, and Cooperatives. 2014. *National Strategy for Water Supply and Sanitation*. Dhaka.

³ Under the two ADB-financed projects, DWASA has been strengthening the existing water supply network by establishing DMAs in 3 of its 10 zones (5, 6, and 8) and parts of 4 zones (3, 4, 9, and 10) that serve 7 million people.

⁴ The project will cover the new DMAs of 3 zones (1, 2, and 7) and the remaining parts of 4 zones (3, 4, 9, and 10) that serve 6.5 million people. It will rehabilitate 1,500 kilometers of distribution network pipe; and rehabilitate, build, or regularize 234,000 connections.

⁵ DMA improvement under the 2007 program includes rehabilitation of 1,536 kilometers of distribution network pipe and 157,000 service connections. The additional funds are required to cover the cost overruns resulting from (i) changes in the SDR–\$ exchange rate, (ii) an increase after detailed designs and physical verification of the existing distribution networks in the quantity of works and goods required, and (iii) price escalation. More details are provided in the Summary of Additional Financing Part (accessible from the list of linked documents in Appendix 2).

⁶ The sustainable nonrevenue water reduction plan will include the targets for nonrevenue water reduction; optimal DMA-based organizational structure; an incentive mechanism to improve operations; and an asset management plan, budget requirements, and a training plan.

renewed standard operating procedures,⁷ upgraded training modules and SCADA system, and the piloting of automated meter reading; and (iii) enhancing in-house design capacity for sustainable DMA management.

6. Output 3: Capacity for quality service delivery enhanced. The project will help DWASA (i) prepare and implement an operational and financial improvement plan by enhancing the existing 5-year corporate business plan;⁸ (ii) build capacity for planning, design, construction supervision, and project management; (iii) prepare and implement a plan to make the public more aware of demand control, water conservation, and health and hygiene; (iv) make the quality of the service delivery to LICs better; (v) prepare and implement a water quality monitoring system; (vi) implement a gender action plan; and (vii) enhance project readiness for future investment.⁹

B. Consulting Services

7. There will be five consultancy packages. They are: Design Management and Supervision (DMS) consultants; Capacity Building for Sustainability (CBS) consultants; Project Development Facility (PDF) consultants; a firm for Demand Management and Public Awareness Campaign, and a firm for supporting resettlement works.

1. DMS

8. The DMS consultant will assist DWASA in managing and implementing the Project as described in (ii) and (vi) of Output 3, assisting the PMU and Project Coordination Unit (PCU) in supervising all works under packages of distribution network improvement (DNI) liaising with ADB, procuring goods and works under the Project, reviewing detailed design carried out by contractors, handling financial management of the Project, and monitoring safeguards compliance of the Project.

2. CBS

9. The CBS consultants will assist DWASA in enhancing the managerial and technical capacity to prepare and implement sustainable DMA management plan described in Output 2; and upgraded 5-year corporate business plan described in (i), (iii), (iv) and (v) of Output 3.

3. PDF

10. The PDF consultants will assist DWASA in enhancing readiness of future portfolio of projects through preparing bidding documents as described in (vii) of Output 3.

- **Demand control and awareness campaign**

11. The firm will assist DWASA in undertaking awareness campaign programs on water conservation and hygiene education as described in (iii) of Output 3; and improving access to

⁷ Standard operating procedures will include water loss assessment, water balance calculation, leak management, asset management, and smart water management technologies.

⁸ The existing 5-year corporate business plan comprises subplans. These include an investment plan, a financial plan, a tariff plan, and a human resource development plan. In addition, the project will prepare a sustainable nonrevenue water reduction plan, a water quality monitoring plan, and a demand management plan.

⁹ DWASA will engage consultants to prepare future projects, mainly involving sewerage management.

low income communities in the areas to be covered by the proposed project as described in (iv) of Output 3.

- **Support for resettlement work**

12. The firm will assist DWASA in updating and implementing Resettlement Plan through consultations and stakeholder participation. They will support various activities of DWASA such as public information campaign, identification of entitled persons and issuance of ID cards, payment of resettlement benefits, income rehabilitation of family livelihood, grievances redress procedure.

II. SCOPE OF SERVICES

A. Overview

13. The PDF consultant will support DWASA to develop a project to verify the feasibility, provide the required design and specification, and prepare draft bid documents. In preparation for these components, close consultation is anticipated between DWASA and ADB. The project will comprise the following two components based on priority investments in the water supply and sewerage sector:

Component 1: DWASA increases sewer coverage, capacity and reliability of Wastewater Treatment in the Dhaka city:

14. Sewerage coverage is very low in the Dhaka city. The issue gets further aggravated as current planning regulations do not discourage high-density urban development in un-sewered areas of the city. Existing sewerage infrastructure covers only around 20% of the city and the main waste water treatment (WWT) facility in the city located in Pagla, is currently working at less than 50% of its capacity. The proposed intervention will (i) increase WWT capacity of city; (ii) upgrade existing wastewater collection network by additional sewer lines with sewage lifting stations; (iii) upgrade / replace around wastewater trunk mains and (iv) extend sewerage services to households.

15. It is proposed to have a water-born sewerage system to service 65% of the population and to construct a WWTP to be located at the South-western part of the Storm Water Pumping Station and Retention pond. The design for this site should include provision for flood protection as the area is highly prone to seasonal flooding. The design should also include a separate treatment line for fecal sludge.

16. The basic elements of the proposed sewerage system and network are expected as follows:

- (i) Area of the catchment: 44 km²
- (ii) Present population within service coverage area: 2.1 million which is expected to increase to about 4.2 million in 2035, the planning horizon,
- (iii) About 65% of population expected to be served by a water-born sewerage system and the rest 35% by either decentralized collection and treatment or by improved on-site systems
- (iv) Type of sewerage system: Separate (from drainage system)
- (v) Total Length of sewers: 410 km
- (vi) Estimated number of connections: 70000
- (vii) Number of sewage pump stations: 9 including 3 existing to be renovated

- (viii) Area of Sewage Treatment Plant: 34 ha
- (ix) Receiving water body: Low land connecting Buriganga River

Component 2: Increased access to reliable and safe water supply in expanding areas in the Dhaka city.

17. The city is expanding horizontally at a fast rate and the population is also increasing by a significant 3.6%. But, presently, many of these new settlements are located outside the DWASA's service provision jurisdiction. It is, however expected that these areas will be included in DWASA service area within 2025. It has therefore become necessary to assess and build necessary water supply infrastructure facilities in these areas to cater to the newly created needs.

18. For this assignment, the proposed area is Uttara phase three area of Dhaka. The project aims to (i) increase potable water supply through necessary distribution systems for equitable distribution of water, with special reference to LICs, and (ii) maintain low level of nonrevenue water due to technical and non-technical losses.

B. Activities

19. Main activities of the PDF consultants are described below. The description may not be exhaustive and the activities shall not necessarily be limited to those described.

Activity 1: Mobilization

20. The Team Leader will initially mobilize with few key members of the project team to set up of project office including furnishing and then will mobilize further manpower, equipment & peripherals.

Activity 2: Inception report

21. The Consultants will, after initial interactions with the DWASA, review all reports / data available to identify the data gap and will finally draw and present component wise action plan for collection of all such data / information. Under this task the Consultant is required to do the following:

- (i) Preliminary Field visit
- (ii) Review approach and methodology in line with the existing field conditions
- (iii) Prepare action plan for taking up the tasks
- (iv) Draft inception report

Activity 3: Situation analysis report

22. Based on existing studies and available information and through research from other sources, preferably similar project in Dhaka city, the Consultant shall undertake the following assessments:

- (i) The consultant shall carry out a critical review of all existing studies, data /maps and identify gaps in available information to determine demand over a project design life of up to year 2025.
- (ii) The consultant shall conduct necessary surveys, which will include, but not limited to:

- (a) Detailed household surveys of the catchment area – to understand existing practices; ascertain demand and willingness to pay for facilities;
- (b) Topographic survey of each catchment area in sufficient detail for project requirements.
- (c) Geotechnical surveys at sites to meet project requirement.
- (d) Other necessary surveys/studies to select the best technical options for conveyance and treatment process.
- (iii) The consultant should prepare an Environmental Impact Assessment (EIA) report and Social Impact Assessment (SIA) report for the all the sewerage and water supply related investments as per the ADB Safeguard Policy Statement (SPS) 2009, and Government's environmental regulations and policies.
- (iv) Identify illegal encroachments and other obstructing structures, that needs to be relocated or shifted with mitigating measures for associated impacts.

For Component 1:

23. For sewerage project the Consultant shall also undertake following assessments:

- (i) Appropriate surveys of existing simplified sewer system in Rayerbazar.
- (ii) The consultant shall, with the same level of detail, analyze different options for treatment of fecal sludge/septage, to be located within the planned WWTP,
- (iii) Options should be studied for decentralized collection and treatment of wastewater.
- (iv) Explore options between fecal sludge management v/s central network
- (v) Investigations regarding sewage quality and treatment point.
- (vi) Investigation of disposal point of STP.
- (vii) Reuse of treated waste water

For Component 2:

24. For water supply project the Consultant shall also undertake following assessments:

- (i) The portions of the existing and projected water demand presently met and to be met by the existing water systems and other water sources - with and without the Project shall be determined in terms of volume, quality, cost, reliability, and water supply gap determined.
- (ii) The Consultant shall undertake a hydrologic analysis to determine the water yield at the proposed diversion/pumping point at the river system for water supply. The water yield must be reliably established by stream flow analysis and confirmed by stream flow measurements.
- (iii) The Consultant shall develop flow duration curves for the mean, as well as minimum and maximum, monthly flows at the potential diversion pumping points. Similar analysis will have to be done for ground water aquifers also.
- (iv) The Consultant shall assess the quality of raw water at the different alternative sources in terms of pH, color, turbidity, hardness, iron, manganese, arsenic and total dissolved solids, using the standards of the Department of Environment and any other established Bangladesh standards.
- (v) The Consultant shall assess the existing condition and undertake the mapping of the baseline information of the watersheds/aquifers in the project area, the main sources of water supply for the proposed project and determine the data gaps for the formulation of appropriate watershed/aquifer management plan.

- (vi) An engineering analysis, to evaluate the cost effectiveness of water supply sources (s) to address the water supply needs of the proposed service Area.

Activity 4: Feasibility Report

25. Studies will be carried out for all the sub project components to ascertain both the technical and financial viability in the immediate phase and accordingly the listing of packages will be presented on an implementation priority basis. The studies will also look into environmental and social impact assessments, staffing, institutional capacity building, organizational structures, and economic and financial aspects.

26. Based on the above assessment, various alternative options will be ranked and recommendations proposed for the preferred options. Financial analyses and tariff structures shall also be reviewed with recommendations. The recommended improvements shall include capital investment and annual operation and maintenance costs.

27. The Consultant shall formulate alternative schemes for water supply and sewerage network. The alternative schemes including PPP modality shall be analyzed by the combination of source diversion points, locations of pumping stations, treatment plants, reservoirs and main pipe routes. The Consultant's recommendation must be accompanied by a detailed risk assessment.

28. The Report shall address the following aspects:
- (i) Evaluation of design alternatives
 - (ii) Preliminary design and cost estimation
 - (iii) Organization evaluation and capacity assessment
 - (iv) Operation and maintenance aspects
 - (v) Financial and economic analysis
 - (vi) Financial planning and evaluation including PPP modality
 - (vii) Institutional and social capacity
 - (viii) Formulation of work implementation plan
 - (ix) Preliminary procurement plan
 - (x) Preliminary construction schedule
 - (xi) Analyze the method and route of laying the network,
 - (xii) Assess and propose the mitigation measures of safeguard issue of environmental and social)
 - (xiii) Undertake the poverty and social dimension
 - (xiv) Detailed risk assessment of the options
 - (xv) Stakeholder consultation
 - (xvi) Evaluation of probable technical solutions,
 - (xvii) Explore new technologies for setting up of STP and WTP, with probable locations.

For Component 1:

29. The Services to be provided by the Consultant shall include, but not limited to:
- (i) Carry out an option analysis based on social, environmental, economic and technical considerations and prepare and submit an Options Report with clear recommendation on the preferred options for the following for DWASA's consideration and acceptance: (1) Open trench sewer construction vs. trenchless sewer construction for conventional gravity sewer; (2) Trenchless

- sewer construction for conventional gravity sewer vs. deep gravity sewer by trenchless method to eliminate pumping stations
- (ii) Develop a flow diagram that shall clearly identify and analyze the benefits, drawbacks and limitations of different sewer rehabilitation and construction technologies in the context of Dhaka's sewerage system.
 - (iii) Based on the above analysis, develop simple guidelines to be used by DWASA in selection of technologies for sewer construction/rehabilitation as part of future investment programs.
 - (iv) During this stage, it is the responsibility of the Consultant to investigate and carry out relevant technical & financial feasibility studies and if found necessary conduct some specific surveys / investigation so that a comprehensive review of sewerage and drainage need and provisions for Dhaka can be concluded.

For Component 2:

30. For the selected scheme the Consultant shall undertake the following activities:
- (i) The Consultant shall undertake the preliminary engineering design (PED) of the water supply scheme selected by DWASA
 - (ii) Based on the PED, the Consultant shall define the right of-way (ROW) to be acquired for the water supply distribution network of the Project, including technical descriptions of the areas/sites. The Consultant shall also determine resettlement requirements, if any, including estimates of costs and feasible relocation sites.
 - (iii) The Consultant shall prepare the Minimum Performance Standards and Specifications (MPSS) for the design, construction, operation and maintenance (O&M) of the Project.
 - (iv) For the selected scheme, the capital cost estimates shall be made for the different Project components – viz., diversion/impounding darn, pumping stations, treatment plants, main pipes, distribution network, including road cutting cost and reservoir etc.

Activity 5: Detailed Project Report

31. After selection and approval of the alternative options, the Consultants shall carry out the design of all the sub-components of the project to the level sufficient for estimation of capital and operations and maintenance costs to a reasonably accurate level. The design activities for the proposed project shall include detailed engineering analysis and designs, drawings, works specifications, bills of quantities, and cost estimates (Engineer's Cost) based on Schedule of Rates followed by DWASA and/or market rate analysis, along with detailed implementation plans.

32. The consultant should carry out further site surveys, geotechnical and other relevant investigations, field measurements, inspections and testing of existing equipment, as required for the project components, to further develop and refine the concept plan and preliminary design developed during feasibility study to examine better viability with lesser risk of failure and illustrate designs with more elaborate details where necessary.

33. The Consultants after adequate interaction and discussion will finalize the DPR incorporating therein all such relevant comments and suggestions as expressed by the DWASA and other stake holders.

34. The DPR and related documents for the Project must conform to the requirements of the guidelines and procedures of the government and shall include the following:

- (i) Project Proposal
- (ii) Project Evaluation Criteria
 - (a) General information: To include basic technical design, institutional arrangements
 - (b) Estimated Project Cost: including capital costs and operation maintenance costs for 3 years; any assumptions made should be indicated
 - (c) Project Revenue: include fee/tariff structure; demand forecast for 3 years
 - (d) Estimated Project Benefits and Costs
 - i. Financial
 - ii. Economic
 - (e) Risk Allocation Matrix
 - (f) Logical Framework
 - (g) Project and Financing Milestones
- (iii) Economic and financial analyses,
- (iv) Environmental Management Plan
- (v) Location map
- (vi) Project context in DWASA's overall strategy/program
- (vii) Resettlement Action Plan
- (viii) Detailed design, specification of works and materials
- (ix) Engineer's Estimate in the BOQ format, if necessary
- (x) Construction program detailing sequence of the implementation of the whole works
- (xi) Recommendation of suitable construction techniques/ equipment for proposed
- (xii) At this stage consultant should also suggest / propose component different suitable procurement options for proposed projects under the respective component.

For Component 1

35. The scope of services shall carry out the required design of all components including architectural, civil, structural, mechanical, electrical and submission of at least the following information in the form of reports/ drawings for approval:

- (i) Sewer design information such as specification, service connections, material, size, gradient, invert levels, velocities at various design horizons
- (ii) Detailed civil / structural and architectural design of the sewer sections, cross sewer works, sump & pump house for the pumping stations including mechanical & electrical design & specifications for pumps and piping, rising main, mechanical screen, and other mechanical and electrical components.
- (iii) Civil / structural design of Sewage treatment plant including process & hydraulics, mechanical, electrical design of the plant, layout and equipment details, including piping and instrumentation (P&I) diagram.
- (iv) Consultant should further examine different modality options including PPP for the proposed components and give comparative for pros and cons for each option.

For Component 2

36. As DPR is the last stage of planning and design prior to preparation of Bid Documents it must contain in addition to other the following sections.

- (i) Detailed hydraulic calculations, specifications, BOQ if necessary for the proposed water supply network including provision for road cutting.
- (ii) Explore options for use of trenchless technology for laying water supply network.
- (iii) Detailed drawings layout plan, L-section, civil & structural details, P&I diagram, proposed electrical system drawings and standard details for the proposed water supply system, treatment works, pumping stations and outfall structures
- (iv) Consultant should further examine different modality options including PPP for the proposed components and give comparative for pros and cons for each option.

Activity 6: Bid documents

37. Based on discussions with all stakeholders consultant and approval from DWASA consultant should assist DWASA in preparing bid documents for respective project packages.

38. The bid documents shall be based on ADB's updated version of standard bid documents. Consultant has to explore and give rationale for using the type of bid documents for the proposed project.

39. The draft contract to be included in the bid documents shall, among other things, clearly define the obligations of the implementing agency and the contractors with respect to financing, ROW delivery, design, construction, and O&M in compliance with the MPSS, and tariffs; equitably allocate risks between the parties; and specify rules and procedures to address non-performance of contractual obligations.

C. Consultants Requirement

40. The engagement period of the consultant services is 18 months (July 2017 to December 2018). A total of 507 person months including 51 person-months of the International key experts, 456 person-months for the key national experts (150 person-months) and non-key national experts (306 person-months) would be required. The estimated staffing and expertise person-months requirements per component are summarized below:

Table-1: Summary of Consulting Services Requirements

Sl. No	Positions	Person Month Required		
		No of Person	Person month	Total
	International key Experts:			
1	Team Leader/Waste water management specialist	1	15	15
2	Hydraulic / Network Modeling Specialist	1	9	9
3	STP Specialist	1	6	6
4	Sewerage design specialist	1	9	9
5	Water supply design specialist	1	6	6
6	Economic and financial specialist	1	6	6
	National Consultants :			
1	Deputy Team Leader/ water supply expert	1	18	18
2	Waste Water expert	1	12	12

Sl. No	Positions	Person Month Required		
		No of Person	Person month	Total
3	Process Engineer	1	12	12
4	Structural Engineer	1	12	12
5	Electrical Engineer	1	12	12
6	Social Safeguards expert / Gender Expert	1	12	12
7	procurement expert	1	12	12
8	environment management expert	1	12	12
9	Hydraulic modeling expert	1	12	12
10	Hydrologist	1	12	12
11	Civil engineer	1	12	12
12	economist / finance expert	1	12	12
	Other Professional/support Staffs			
13	Quantity Surveyor (4 no)	4	72	72
14	Engineering Surveyors (2 no)	2	36	36
15	AutoCAD Operator / Draft man (4 Nos)	4	72	72
16	Geologist/Geotechnical surveyor (2 no)	2	36	36
17	Project manager (1 no.)	1	18	18
18	Data Entrée Operator(4 no)	4	72	72

D. Reporting Requirements Time Schedule and Deliverables

D.1. The Expected Time Schedule:

41. The estimated total duration of consulting services will be 18 months from January 2017 to June 2018. The implementation schedule expected is as shown below:

Table 2: Time Schedule and Deliverables

Key Activities	Target Date	
	Component 1	Component 2
Mobilization	By 15 July 2017	
Inception report	By 15 Sep 2017	By 31 Aug 2017
Situation analysis Report	By 31 January 2018	By 30 December 2017
Feasibility Report	By 31 May 2018	By 30 April 2018
Detailed Project Report	By 30 September 2018	By 31 August 2018
Bid document	By 31 December 2018	By 31 October 2018

D.2. Reports and Documents Deliverable

42. The Consultant will be engaged under a Lump sum contract. The duration of the assignment shall be approximately 18 months. The list of deliverables, which the Consultant is expected to produce as per time schedule mentioned above, is outlined in the Table 3 below.

Table 3 – Schedule of Deliverables (for each components)

	Deliverables	Description	No. of Copies	No of CD's
1	Inception report	(v) Draft inception report for review of DWASA before finalization (vi) Final inception report after discussion with	5	3

	Deliverables	Description	No. of Copies	No of CD's
		DWASA		
2	Situation analysis Report	<ul style="list-style-type: none"> • Draft Situation analysis report for review of DWASA before finalization • Final Situation analysis report after discussion with DWASA 	5	3
3	Feasibility Report	<ul style="list-style-type: none"> • Draft Feasibility report for review of DWASA before finalization • Final Feasibility report after discussion with DWASA 	5	3
4	Detailed Project Report	<ul style="list-style-type: none"> • Draft Detailed Project report for review of DWASA before finalization • Final Detailed Project report after discussion with DWASA 	5	3
5	Bid document	<ul style="list-style-type: none"> • Draft bid • Final bid document 	5	5
6	Gender Action Plan Implementation	<ul style="list-style-type: none"> • Attached to QPR (quarterly) 	-	-
		<ul style="list-style-type: none"> • Attached to PCR (at the end of the services) 	-	-

43. In addition to above consultant will submit monthly progress reports at the end of each month during the course of assignment mentioning status/ progress of work, activities performed, and issues related to assignment during the month.

44. For GAP Implementation:

- (i) Quarterly GAP Implementation Report (attached to Project QPR): Present the activities and achievements for each indicator/target of the GAP that are under the responsibility of the DMS Consultant to implement and/or achieve; and provide an analysis of facilitating factors and challenges during the quarter and actions undertaken.
- (ii) GAP Completion Report (attached to PCR): Present a summation of activities and achievements for all indicators/targets of the GAP that are under the responsibility of the DMS Consultant to implement and achieve; overall facilitating factors and challenges; and lessons learned.

E. Client's input and Counterpart services and Facilities

45. DWASA will provide to the Consultant assistance which include making available all relevant documents, counterpart staff and assistance for obtaining work permit, visa and other similar documents as well as exemption and privileges, if any.

46. Office space, Communication facilities (telephone, access to internet Services), Computers, survey equipment and relevant documents to be provided by the consultant. Necessary office equipment, such as computers; computer peripheral equipment, desks CAD etc should be procured under the Consulting services budget.

Appendix C-4: NGO Services for Resettlement

A. Project Description

1. The project will improve the water supply system in the country's capital, Dhaka, by making it more reliable, sustainable, and climate-resilient. It will consolidate and enhance the gains made in the efficiency of the water distribution network achieved under two previous Asian Development Bank (ADB) projects (Dhaka Water Supply Sector Development Program [DWSSDP] and Dhaka Environmentally Sustainable Water Supply Project [DESWSP]), and improve the service delivery and the capacity of the Dhaka Water Supply and Sewerage Authority (DWASA).

2. The impacts will be (i) safe drinking water made available for all of Bangladesh's urban populations, aligned with the government's five-year plan for FY2016–FY2020;¹ and (ii) adaptive capacity of water sector enhanced for reducing climate change vulnerability, aligned with the national strategy for water supply and sanitation.² The outcome will be sustainable provision of a more reliable, improved, and climate-resilient water supply in Dhaka City.

3. The outputs will be DWASA's (i) distribution network strengthened, (ii) sustainable managerial capacity of DMA enhanced, and (iii) capacity for quality service delivery enhanced.

Project Implementation Arrangement:

4. Dhaka Water Supply and Sewerage Authority (DWASA) is the executing agency of the Dhaka Water Supply Network Improvement Project (DWSNIP) and on behalf of DWASA an established Project Management Unit (PMU) is trusted to supervise, sustainable management and implementation of the project activities. In this regards, Design, Monitoring and Supervision (DMS) consultant, Capacity Building for Sustainability (CBS) consultant and two NGOs (Public Awareness and Resettlement) will assist and provide technical support to PMU.

5. DWSNIP civil works for rehabilitation of distribution networks will consist of five contracts (packages) within 7 zone areas. They are: (i) ICB 2.8 of zone 9 covering 13 DMAs, (ii) ICB 2.9 of zone 2 covering 15 DMAs, (iii) ICB 2.10 of zone 1 covering 19 DMAs, (iv) ICB 2.11 of zones 3,4,10 covering 16 DMAs, and (v) ICB 2.12 of zone 7 covering 19 DMAs. The network rehabilitation and extension of existing distribution network by using mostly trenchless technology and by establishment of DMA.

Project Implementation Issues:

6. People living in the project area will have some impact in different stages (pre, during and post) of implementing the project activities. In all stages, there has to be a community sensitization effort where the effects of civil works implementation will be made known, and people adversely affected in their daily life need to be identified and compensated. In the implementation phase, there will be a disruption due to construction activities and regular interaction with the community on the sequence of activities will need to be ensured.

¹ Government of Bangladesh, Ministry of Planning, Planning Commission. 2015. *Seventh Five-Year Plan: FY2016–FY2020*. Dhaka.

² Government of Bangladesh, Ministry of Local Government, Rural Development, and Cooperatives. 2014. *National Strategy for Water Supply and Sanitation*. Dhaka.

7. For assisting PMU in performing above mentioned activities, experienced NGO is needed to ensure entire sensitization process and to make community people aware about their rights and responsibilities towards implementing project activity.

8. As the NGO should support PMU on (i) the management of involuntary resettlement impact, if any, due to rehabilitation of distribution network in the affected community, (ii) the preparation and implementation of resettlement plan prior to civil work as coordinated and guided by DMS consultant, and (iii) maintain close interaction with construction firm (contractor) during implementation.

9. This terms of reference (TOR) outlines the duties and responsibilities of involved/engaged NGO in different stages and the management structure of project implementation.

B. Scope of Services

10. The scope of the services to be undertaken by the NGO shall cover all but not restricted to the activities described in the following sections. Throughout the services, the NGO shall all the time exercise all reasonable skill, care and diligence in the discharge of their duties and is responsible for the accuracy and completeness of their work. The NGO will work in close coordination with DWASA PMU, and DMS consultants to ensure dissemination of key messages on possible involuntary resettlement impacts from the project activities, timely dissemination information on implementation schedule, possible disruptions, grievance redress procedures and expected average response time, that are gender sensitive, in a format easily understood by the communities in the project area, during project implementation.

11. The main scopes of NGO services as described below:

- (i) act as the information source center for community interaction with the project
- (ii) manage the project's sensitization activities to the targeted communities
- (iii) support the DMS resettlement specialist in the preparation of final RPs
- (iv) prepare the list of the potential Affected Peoples (APs) and issue ID cards
- (v) prepare physical records (through photos or video) of the project distribution alignment one week ahead of the start of works
- (vi) prepare the entitlement of the APs in the case of the road which will be blocked temporarily for not more than 5 days.
- (vii) assist/deliver the compensation payment to each APs as per final Resettlement Plan (RP)
- (viii) support the grievance redress activities from time to time during implementation of the works
- (ix) maintain liaison between Community, Contractor and DWASA during the execution of the works

12. The contractors of rehabilitation distribution network will be allowed to implement their works in at least 3(three) DMAs simultaneously and the NGO must be able to adequately respond to the detailed implementation program which will include the carrying out of technical surveys of existing network conditions, a design phase during which interaction with the community will take place, and the works execution phase when the actual physical works will impact on the community for shorter or longer duration and to greater or lesser extent depending on the technology adopted to rehabilitate and augment the existing network.

C. Detailed Terms of Reference

a) General Tasks

13. The NGO will be responsible for ensuring that all of the required fieldwork associated with resettlement works are undertaken to a standard approved by the PMU in consultation with the DMS. The NGO will assist the DMS team who will oversee all resettlement works to be pursued under the project. The NGO TOR will generally include:

- (i) provide suitably qualified teams of field workers to undertake all field-work activities related to resettlement works of the project
- (ii) Liaise with the DMS team and the contractors on and before starting of any resettlement works.
- (iii) support the DMS resettlement specialist/PMU resettlement officer in the preparation, updating and implement final RPs
- (iv) manage the workload of the field-workers according to a timely and effective manner
- (v) plan the work to be undertaken in conjunction with the DMS contractors
- (vi) advise residents and take mitigating measures on possible disturbances and measures to be undertaken during project implementation
- (vii) advise APs on the availability of grievance procedure to be followed under the project
- (viii) assist the contractor to disseminate the information about the road closures and the alternative arrangements made for the same
- (ix) prepare the list of the potential APs of the project who are likely to be affected by the project work before and during implementation of the actual work and issue ID card for each AP considered entitled for compensation for being affected by the project works
- (x) develop and keep updated a database recording the APs and status of compensation payment
- (xi) Identify the vulnerable APs in project areas and recommend specific actions/support to be included in the RP
- (xii) ensure video-graph of the project distribution alignments at least one month ahead of the actual project implementation works which will be considered as cut-off date of the project
- (xiii) Prepare the entitlement of the APs in the case of the road which will be blocked temporarily for not more than 5 days.
- (xiv) assist the PMU for paying the required compensation to each AP before physical work can start
- (xv) keep the DMS and PMU informed about all the activities pursued under the resettlement activities of the project
- (xvi) Co-ordinate all field workers, activities in conducting community level information dissemination and meetings.
- (xvii) Mobilize APs to be supportive during construction times and construction created inconveniences, which may be brought about by the implementation of the rehabilitation project.
- (xviii) Adopt participatory approaches at all stages of NGOs' service delivery, ensuring the views of women and vulnerable groups are equally represented in project committees and other decision making bodies.
- (xix) submit the regular monitoring and monthly and quarterly progress reports on the resettlement works from time to time to the DMS and PMU offices as per Reporting Requirements ;

- (xx) in coordination with contractors and DMS/PMU staff develop and keep updated a database recording the grievance/complaint received and its redressed status ; and
 - (xxi) Carry out any other related task as may be assigned by the Team Leader of the DMS or Project Director.
- b) Specific tasks to be performed during pre-construction period

14. In the pre-construction period when the contractor is carrying out the physical conditions survey and prepares the detailed design of the network, there will also be a period of close interaction with the community. In this period the NGO should:

- (i) Assess and identify involuntary resettlement (land and non-land) issues at the local level in each zone/DMA upon the completion of final design, including: (i) prepare the updated resettlement plan(s); (ii) meet APs to discuss and agree their entitlements (iii) assist PMU (Project Management Unit) to distribute compensation and other entitlements to affected persons in each zone, (iv) ensure all APs receive compensation before commencement of civil works (to be communicated to PMU and contractor), (v) ensure specific assistance provided to the vulnerable APs as identified during final RP census; and (v) ensure specific assistance provided to the vulnerable APs as identified during final RP census; (vi) document payment to APs on official Compensation and Entitlement Forms (CEF).
- (ii) Conduct public disclosure meetings at key stages to inform the public of design progress and civil work plans, and to provide copies of Summary Resettlement Framework & Plan(s) with entitlement matrix in Bangla.
- (iii) Disclose final Resettlement Plans by making copies available at convenient locations in each zone, informing the public including affected women of their availability, and providing a mechanism through which comments can be made.
- (iv) Conduct public consultations during detailed design including focus group discussions together with the Resettlement Expert of DMS consultant with stakeholders to discuss and plan construction work with the affected communities to reduce disturbance and other impacts, and provide a mechanism through which stakeholders can participate in project monitoring and evaluation.
- (v) Ensure the views of women and vulnerable groups are equally represented in project committees and other decision making bodies and their voices heard through a special attention to the vulnerability to women, old aged and children affected persons and to the social exclusion, trafficking, and the risk of HIV/AIDS infection.
- (vi) Assist PMU in establishing and functioning of Grievance Redressed Committee (GRC) and maintaining complaint register and record proceeding of the meetings. Also, assist APs to be fully aware of GRC procedure, and lodge their complaints to the GRC, wherever applicable.

c) Specific tasks to be performed during construction and proofing period

15. The NGO will be informed by the contractors of its implementation schedule and determine the use of trenchless and conventional rehabilitation techniques for each DMA package. During this time, the NGO will play a vital role in maintaining an up-to-date flow of information to the community immediately affected by the works. The NGO should perform the following activities:

- (i) inform community about the jobs available for community men and women in construction and about equal wage for equal work.
- (ii) Inform about specific technical aspects relating to consumer connections, pressurization of the network will also have to be intimated to the community.
- (iii) act as the source of information to both the community and contractor, acting as the go-between to have grievances redressed, either by the contractor or DWASA.
- (iv) Support contractors in developing and keeping sex-disaggregated data on employment in construction and reporting.
- (v) Support in the grievances redress process including:
 - (a) Assist the APs in any usual manner (e.g., preparing applications, accompanying them to the hearing and explaining the grievance to the GRCs and the like) to bring the complaints to the committee.
 - (b) Impartially investigate the validity of the complaints and try to settle them amicably, fairly and transparently before they go to the redress committee or the courts of law.
 - (c) Prepare a list of complaint received/registered (based on ownership and other disputes detected while checking the status of documents, information from the DPs themselves and other sources) which would be updated as and when necessary, while RP implementation progresses as well as during civil work activities. In doing so, the NGO will pay special attention to the problems and needs of the vulnerable APs.

D. Team Composition and Qualification Requirements

16. The staff involvement is envisaged in the Table 1 as below. For fulfilling the requirements of the assignment, the NGO should:

- (i) Put a weighted mobilization of staff input during the finalization stages of survey work with the contractor. When technical surveys are being carried out by the contractor, most of the social interaction will take place to complete the preparation of final RP, and act as the go-between the contractor and the community. The Contractor/DMS consultants will have to identify the location of pipe alignment in each roads that will be most impacted by particularly open trenching works so that the NGO will be able to identify persons to be affected by the works.
- (ii) Maintain regular contacts with the relevant consultancies and submit progress report weekly to the Team Leader of DMS. The NGO will require both female and male field workers to facilitate interaction with the community before and during the construction. The NGO will also liaise with the contractors through all site meetings held on a weekly basis to acquire necessary information regarding potential interruption of water services and required access to dwellings and any other disruptions to daily life.

Table 1: Minimum Staff Levels for the Resettlement

Sl. No.	Post	Major Responsibilities	Numbers of persons required	Person-month
01.	Team Leader (key position)	Management of Team; Liaise with PMU, DMS consultants, and contractors through coordination meetings and relevant consultations; Monitoring of team activities; Ensuring timely submission of all deliverables to DMS consultant and PMU; Carrying out any other tasks assigned by PMU and DMS	1	32
02.	Field Supervisor (key positions)	Management of day to day works at the field level and ensure 100% coverage. Assistance for the Team leader in supervising the field officers and their activities	5	114
03.	Resettlement officers (non-key positions)	Engagement in resettlement works at the field level as pointed out in the TORs.	15	342

(Note: The number of persons is average for all packages, and will be adjusted based on size and characteristics of zones concerned.)

Table 2: Qualifications and Experience

Sl. No.	Position	Qualifications and Experience
01.	Team Leader (key position)	Master Degree in Social Science with minimum 10(five) years project management experience in development field/project (in national /international organization) and should have at least 5 (two) year experience in resettlement works.
02.	Field Supervisor (key positions)	Master Degree with minimum 5 (three) years field supervisory experiences and should have at least 3 (one) year experience in resettlement works.
03.	Resettlement Officers (non-key positions)	Bachelor degree with at least 1 (one) year experience in resettlement works.

E. Selection Criteria

17. The NGO should be registered with the NGO Affairs Bureau, or with Department Social Services or Joint Stock Companies.
18. The NGO should have experience and capacity of implementing the following activities:
 - (i) Implementation of urban water supply and sanitation project related resettlement works with at least 3 years previous experience
 - (ii) Build up institutional capacity and networks to mobilize communities, local governments, district land offices, community leaders, and locally elected leaders

- (iii) Implement participatory works in urban settings under international donor funded projects
- (iv) Conduct public consultation and dialogues with multi-sector stakeholders; and conduct Focus Group Discussions (FGDs)
- (v) Developing, and maintain/update the project database
- (vi) Prepare/develop video and digital documentation

The NGO should also have adequate number of professional staff, clear legal status, financially sound and appropriate office location/address.

F. Reporting Requirement and Deliverables

19. The NGO will be required to maintain detailed records of the manner in which it is performing its tasks and the results it has achieved in identifying the social structure of the DMA, the meetings it has held with local community, business and religious leaders, the community at large, affected persons and women interest groups.

20. Monthly and quarterly summaries shall be prepared and reported giving an overview of the achievements in numerical terms and as minutes of meetings documenting number of participants, subjects and understanding / appreciation of the disseminated information.

- (i) The NGO should provide PMU monthly report on the progress in RP(s) updating and implementation, including any issue that might be hindering progress, separately for each section. The report will be brief consisting of both quantitative and qualitative information on:
 - (a) Total number of APs identified by loss categories.
 - (b) Total number of APs eligible for additional payment from DWASA and cumulative progress made in payment by loss and entitlement categories.
 - (c) Total number of vulnerable affected households eligible for special assistance and the progress made in implementing the related policies
 - (d) Grievance/complaint cases received/recorded by contractors/NGO with detailed information on the nature of the complaints, name of complainants and its redressal status
 - (e) Total number of cases received by the Grievance Redress Committee indicating the types of grievance made in favor of or against the complainants.
 - (f) Any other issue that is relevant to implementing the policies stipulated in the RP.
- (ii) Quarterly report will be prepared summarizing the monthly reports.
- (iii) Each report should:
 - (a) set forth concise statement concerning the activities relevant to the jobs and should include:
 - i. A clear and complete account of work performed;
 - ii. Work planned for the next reporting period;
 - iii. Status of funding and expenditure;
 - iv. Identification of any challenges encountered or anticipated that would affect the completion of the project within the time and money constraints set forth in the agreement, together with recommended solution to such problems.
 - (b) design tabular and other formats appropriate for reporting on the above information. To the extent possible, the tables will have to be

preprogrammed in the menu-driven MIS and the quantitative reports will have to be generated directly.

- (c) have six copies with a CD needs to be submitted, and will be submitted within the first week of the due month to the PMU.
- (iv) Final/updated RPs of 82 DMAs to be disclosed in DWASA and DWSNIP website
- (v) The NGO should also assist PMU and DMS resettlement specialist in preparing the semiannual social safeguards implementation report. This will include whether the all provisions as detailed in the RP are delivered by the project.

Appendix C-5: NGO Services for Demand Management and Public Awareness Campaign

I. BACKGROUND

A. Project Description

1. The project will improve the water supply system in the country's capital, Dhaka, by making it more reliable, sustainable, and climate-resilient. It will consolidate and enhance the gains made in the efficiency of the water distribution network achieved under two previous Asian Development Bank (ADB) projects (Dhaka Water Supply Sector Development Program [DWSSDP] and Dhaka Environmentally Sustainable Water Supply Project [DESWSP]), and improve the service delivery and the capacity of the Dhaka Water Supply and Sewerage Authority (DWASA).

2. The impacts will be (i) safe drinking water made available for all of Bangladesh's urban populations, aligned with the government's five-year plan for FY2016–FY2020;¹ and (ii) adaptive capacity of water sector enhanced for reducing climate change vulnerability, aligned with the national strategy for water supply and sanitation.² The outcome will be sustainable provision of a more reliable, improved, and climate-resilient water supply in Dhaka City.

3. The outputs will be DWASA's (i) distribution network strengthened, (ii) sustainable managerial capacity of DMA enhanced, and (iii) capacity for quality service delivery enhanced.

1. Project Structure:

4. DWASA is the executing agency of the Dhaka Water Supply Network Improvement Project (DWSNIP) and on behalf of DWASA an established Project Management Unit (PMU) is trusted to supervise, sustainable management and implementation of the project activities. In this regard, Design, Monitoring and Supervision (DMS) consultant, Capacity Building for Sustainability (CBS) consultant and two NGOs (Public Awareness and Resettlement) will assist and provide technical support to PMU.

2. Implementation Methodology:

5. DWSNIP civil works for rehabilitation of distribution networks will consist of five contracts (packages) within 7 zone areas. They are: (i) ICB 2.8 of zone 9 covering 13 DMAs, (ii) ICB 2.9 of zone 2 covering 15 DMAs, (iii) ICB 2.10 of zone 1 covering 19 DMAs, (iv) ICB 2.11 of zones 3,4,10 covering 16 DMAs, and (v) ICB 2.12 of zone 7 covering 19 DMAs. The network rehabilitation and extension of existing distribution network by using mostly trenchless technology and by establishment of DMA.

6. People living in the project area will have impacts in different stages (pre, during and post) of implementing the project activities. In all stages, there has to be a community sensitization effort where the effects of implementation works will be made known, and people adversely affected in their daily life need to be identified and compensated. In the implementation phase there may be a disruption due to construction activities and regular

¹ Government of Bangladesh, Ministry of Planning, Planning Commission. 2015. *Seventh Five-Year Plan: FY2016–FY2020*. Dhaka.

² Government of Bangladesh, Ministry of Local Government, Rural Development, and Cooperatives. 2014. *National Strategy for Water Supply and Sanitation*. Dhaka.

interaction with the community on the sequence of activities will need to be ensured. In the post-implementation phase a further sensitization shall be carried out on the use of water, meter reading and billing, maintenance of the integrity of the network, water conservation, and hygiene. This latter part will be carried out under the guidance of the CBS consultants as part of the Awareness Activities Program.

7. For assisting PMU in performing above mentioned activities, experienced NGO is needed to ensure entire sensitization process and to make community people aware about their rights and responsibilities towards implementing project activity, and to create the awareness with the community of the tremendous benefits that will be gained from the project in terms of quality and availability of water supplied in the future, the reduction in morbidity, increased earning potential and reduction of medical expenses, reduction in electricity bill for using suction pump etc. and maximizing health and economic benefits from project interventions.

8. The NGO normally should work with guidance of Awareness Campaign Experts of CBS, while the NGO should work with Resettlement Experts of DMS for the awareness program related to resettlement.

9. This Terms of Reference sets out the duties to be performed by the NGO under the different stages and the management structure of the project implementation to be adopted.

II. SCOPE OF SERVICES

10. The scope of the services to be undertaken by the NGO shall cover all but not restricted to the activities described in the following sections. Throughout the services, the NGO shall all the time exercise all reasonable skill, care and diligence in the discharge of their duties and is responsible for the accuracy and completeness of their work. The NGO will work in close coordination with DWASA PMU, DMS consultants, and CBS consultants to ensure dissemination of key messages that are gender sensitive, in a format easily understood by resident of the project area, timely dissemination information on implementation schedule, possible disruptions, grievance redress procedures and expected average response time, during project implementation. The NGO will generate awareness in communities (especially amongst vulnerable APs) in the project area, about employment opportunities, entitlements, livelihood compensation, transitional allowance etc. available under the project, eligibility and procedures to avail/ access the same, and facilities access to such employment. The NGO will assist DWASA, DMS consultants and LIC (Low Income Communities) to provide water connections through formation of CBO (Community Based Organization).

III. TERMS OF REFERENCE

11. The terms of reference (TOR) of the NGO comprises of:
- (i) Undertake awareness campaign programs on demand control (effective use of water, water conservation) and hygiene education through workshop, focus group discussion, community consultation and dissemination of leaflets in areas to be covered by the proposed project to facilitate the understanding of users including:
 - (a) Efficient domestic water use and the prevention of wastage
 - (b) Basic hygiene related knowledge and practices such as washing your hands before eating and after using the toilets etc.
 - (c) Negative aspects and illegality of using water pumps to withdraw water from a DWASA supply line for which there will be no need in any case

- (d) Negative aspect on quality and other users on making an illegal connection
- (e) How to read the meters that will be installed and how to understand the new bills, which will be sent out in due course along with the improved methods of payment
- (f) Communication of the benefits of Customer Grievance Redress procedures to eradicate overcharging
- (ii) Support to improving access to low income communities (LICs) especially focused on Female Headed Households (FHH) in the areas to be covered by the proposed project
- (iii) Assist in implementation of and reporting on the relevant areas of the gender action plan
- (iv) Provide training to the Community-based Organizations and DWASA staff

1. Awareness Campaign

a) Specific Objectives

12. The specific objectives of the assignment are to:

- (i) establish a better understanding of DWASA by the customer and visa versa;
- (ii) assist the general public in how to take meter readings, understand the billing system and the different payment options to be provided;
- (iii) assist the public in understanding the demand for water and the common misuses to which water is frequently subjected including the illegal use of suction pumps to withdraw water from the delivery lines;
- (iv) assist the public in understanding the role of women in conservation, use and demand for water;
- (v) support the public in acquiring basic hygiene and health related knowledge;
- (vi) raise the awareness of the public in understanding the situation of the potential shortage/supply condition of water in Dhaka due to wastage;
- (vii) familiarize customers with DWASA services;
- (viii) alert customers to the optimum use of water.

b) Terms of Reference

13. The NGO will be responsible for

- (i) the delivery of the various elements of the awareness and technical education programs directly to the existing and potential customers.
- (ii) assisting DWASA in developing and implementing the delivery to the public at large within the service area of DWASA in Zones 1, 2, 7 and part of Zone-3, 4, 9, 10:
 - (a) Awareness raising;
 - (b) Assist in the development of educational materials;
 - (c) Coordinate field workers in conducting community meetings and household visits;
 - (d) Mobilize urban communities to be supportive in continued surveillance of service quality and any observed deterioration thereof.
- (iii) advising DWASA on:
 - (a) the relevant approaches to be made to the consumers regarding water consumption, wastage and conservation;
 - (b) extent of information that will be required;

- (c) the design of leaflets, pamphlets and other devices (that are gender sensitized) to ensure maximum impact to the targeted audience/dwellers.
- (iv) planning the delivery of information dissemination programs and awareness raising information following discussions with the community and the concerned consultants.
- (v) providing through the CBS consultants and the PMU of DWASA teams of fieldworkers to carry out all aspects of community based work.
- (vi) monitoring the performance of field-based workers ensuring that all assigned work is delivered within the relevant timeframes to all locations.
- (vii) assisting and advising the Awareness Campaign Expert of CBS consultants on the correct approaches for the implementation of community and water education program to schools, institutions and other community groups.
- (viii) assisting in developing particularly amongst the poorer communities including FHH a sense of ownership and responsibility of the water supply features and facilities to prevent misuse and illegal connections to bring about an improved maintenance of the facilities.
- (ix) preparing all necessary action plans with timeframes and submit costs for fieldworkers to the CBS team for approval prior to implementation.
- (x) notifying the CBS Team Leader of any or all delays and or problem areas that may require additional resources and or inputs from other agencies.
- (xi) carrying out any other related task as may be assigned by the Team Leader of CBS Team or Project Director PMU from time to time.
- (xii) adopting participatory, demand driven and community led approaches at all stages of their services delivery.

c) Tasks to be performed

14. The NGO will be responsible for ensuring that all of the required fieldwork and training associated with public awareness and demand control activities are undertaken to a standard approved by the PMU in consultation with CBS team.

15. The NGO will assist the CBS team in preparing advisory questionnaires, pamphlets, instruments and any other means of communication deemed suitable in order to carry out the information and awareness campaigns that are gender sensitized at all levels.

16. The NGO should receive the authorization by the PMU of DWSNIP in consultation with CBS team before undertaking any activity.

17. Principal Activities of the NGO:

- (i) Advise residents on the
 - (a) Conservation methods suitable for households
 - (b) Importance of repair of leaking taps valves and ball valves on cisterns
 - (c) Types of domestic water saving devices i.e. dual flush toilets or simple volume reducers form toilets, replacement of shower heads and self closing taps for sinks and baths
- (ii) Advise residents on the legal consequences of using suction pumps, illegally connecting to DWASA services and the negative consequences of wasting water at a household level.
- (iii) Advising customers of billing methods and methods of payment

- (iv) Teaching customers how to read new meters and understanding the new billing statements
- (v) Advise customers on the situation regarding availability of water and the consequences of wastage
- (vi) Advise customers on the availability of a new customer grievance procedure to be implemented

2. Support for Improved Access to Low Income Communities (LICs)

a) Overview

18. According to the government specific laws and rules on the supply of WSS (Water Supply and Sanitation) services to slums, DWASA has developed a mechanism to ensure WSS services in the slums of Dhaka city. A division called "Community Program & Consumer Relation Division" (known as DWASA LIC cell) was created and approved by the government in 2007. DWASA has specific rules to provide water supply connection to the LIC when a landowner applies for a water connection, making him responsible for the bill. Or the dwellers can form a CBO and apply for a water supply connections on a collective basis.

b) Definition of LIC

19. A Low Income Community is defined as a neighborhood or residential area with a minimum of 10 households or a mass unit with at least 25 members with four of the following conditions prevailing within it:

- (i) Predominantly very poor housing
- (ii) Very high population density and room crowding
- (iii) Very poor environmental services, particularly water and sanitation facilities
- (iv) Very low socio-economic status

Specific objectives

20. The specific objectives of the assignment are to:

- (a) To provide water connections to the people of LICs of areas to be covered by the proposed project.
- (b) To convince LIC households to pay for water supply services to DWASA
- (c) To assist LICs to form CBO to set up water supply system that can be run and managed by CBO itself.
- (d) To provide technical supervision during the construction of water supply system
- (e) To encourage involvement of LICs women to act as caretaker to undertake the regular maintenance of hardware's of water supply system and collection of community subscriptions for repayment of the installation cost and water bill.

c) Terms of reference

21. The NGO will be responsible to undertake necessary fieldwork activities in order to provide water supply in the LICs of areas to be covered by the proposed project.

- (i) communicate with the LIC (including FHH) and to organize them and help them to form CBOs ensuring participation of women and men as per target;
- (ii) organizes training for the CBO's for smooth functioning of the water points and sewerage facilities;

- (iii) coordinates among CBS team, PMU, DWASA LIC cell and Public and Social leaders;
- (iv) facilitates proper working of the CBOs and set up different ToR for smooth functioning of CBOs and ensure their proper management;
- (v) meets with CBOs and community leaders on a regular basis and to have close understanding with them on different issues and problems related to Water Supply and Sanitation
- (vi) helps organize workshops, seminars and gathering with different stakeholders;
- (vii) monitors and supervises the activities of CBOs with regard to WSS service and hygiene behavior;
- (viii) keeps close liaison with MODS zones, DMS team and PMU DWASA LIC cell and different departments, public leaders, and CBOs;
- (ix) monitors revenue collection by CBOs, finds out new areas of cooperation with the LIC, so that 100% WSS coverage can be achieved
- (x) provide the training consist of:
 - (a) Basic Training: 3 days
 - (b) Caretaker Training of CBOs : 2 days for each batch
 - (c) CBO (Community Based Organization) management training
 - (d) Training to CBOs on Hygiene Promotion (HP) and Behavior Change Communication (BCC)
 - (e) Training to CBOs on Supervision and Monitoring

IV. TEAM COMPOSITION & QUALIFICATION REQUIREMENTS FOR THE KEY EXPERTS:

22. The staff involvement is envisaged to comprise:

Table 1: Minimum Staff Levels

Si No.	Post	Tasks and Responsibilities	Numbers of persons required	Person-Month
1	Team Leader (key position)	Management of Team, Reporting to CBS team and PMU, Monitoring of team activities, Arrangement of Community/Civil society meetings, Communication with local representatives and carried out any other task assigned by PMU & CBS	1	35
2	Field supervisors (key positions)	Management of day to day working of field officers to ensure 100% coverage. Assistance for Team Leader. Support and supervision of information meetings, school program, and Water Week observation. Identification of shortfalls and arranging recovery.	7	153
3	Field Officers (non-key positions)	Implementation of awareness campaigning through door-to-door instructions and coaching, public meetings, after work meetings, meetings with community representatives, market committees, health institutions, and educational institutions as	28	612

Si No.	Post	Tasks and Responsibilities	Numbers of persons required	Person-Month
		well as an annual Water Week Observation Program and a School Program.		

Table 2 - Qualifications and Experience

Sl. No.	Position	Qualifications and Experience
1	Team Leader (key position)	Minimum Master Degree in Social Science with minimum 10 (ten) years project management experience in development field/project (in national and international organization or donor funded projects) and must have at least 5 year experience in mass communication and public contractibility and LICs improvement activities.
2	Field Supervisors (key position)	Master Degree with a minimum of 5 year supervisory experience in mass communication and public contractibility and LICs improvement activities.
3	Field Officers (non-key position)	Graduates with a minimum of 2 year experience of group formation, community mobilization and motivation and awareness programs. Familiarity with Participatory Rapid Appraisal tools and techniques. Behavior change communication.

IV. SELECTION CRITERIA

23. The NGO should be registered with the NGO Affairs Bureau, or with Department Social Services or Joint Stock Companies.
24. The NGO should have experience and capacity in implementation of the following activities;
- (i) Implementation of urban water supply and sanitation project related public awareness and information dissemination activities at least 5 years previous experience
 - (ii) Experience and capacity in organizing and conducting mass Awareness Campaign at least 5 years experience
 - (iii) Experience in the introduction of water supply demand control activities at least 3 years experience
 - (iv) Experience of working in LICs.
 - (v) Arranging dialogues with multi-sector stakeholders
 - (vi) Formation of group and conduct issue based Focus Group Discussions (FGD)
25. The NGO should have experience in all relevant communication material preparation and methodologies.

V. REPORTING REQUIREMENT

26. NGO will be required to maintain detailed records of the manner in which it is performing its tasks and the results it has achieved in identifying the social structure of the DMA, the meetings it has held with local community, business and religious leaders, the community at large, affected persons and women interest groups.

27. Monthly and quarterly summaries shall be prepared and reported giving an overview of the achievements in numerical terms and as minutes of meetings documenting number of participants, subjects and understanding / appreciation of the disseminated information.

- (i) The NGO will prepare all necessary action plans with timeframes and submit costs for fieldworkers to the CBS team for approval prior to implementation.
- (ii) The NGO will produce and submit to the PMU all reports and progress updates as required by the concerned DWASA PMU and consultants which will include but not be limited to:
 - (a) monthly report detailing numbers of properties visited, return visits required and complaints encountered and most commonly received comments
 - (b) Quarterly report detailing costs, progress and complaints including recommendations for additional or change educational material

APPENDIX D: SAMPLE PROJECT LEAFLET FOR SOCIAL SAFEGUARDS

Draft Leaflet for Project Information Disclosure

A. Background

1. Dhaka Water Supply Network Improvement Project (DWSNIP) aims to improve the water supply system in the country's capital, Dhaka, by making it more reliable, sustainable, and climate-resilient. It will consolidate and enhance the gains made in the efficiency of the water distribution network achieved under two previous Asian Development Bank (ADB) projects. Under these on-going projects, distribution network improvement works have been implemented in seven out of ten zones of Dhaka city by establishing district metered areas (DMAs) and focusing on nonrevenue water reduction in each DMA. Commissioned DMAs show good progress in uninterrupted 24/7 water supply, reduced physical water losses, reduced unauthorized or illegal house connections, and assured good quality potable water directly from taps without any other treatment.

2. The next challenge for DWASA is to enhance the efficiency gains throughout its service area and reduce overall physical losses. In areas not covered by the ongoing projects, water losses remain the major cause of insufficient service delivery. DWASA needs to strengthen the distribution networks and enhance O&M capacity through DMAs. Investing in water supply network improvement and managerial and operational capacity enhancement can contribute to provision of more reliable and improved water supply services.

B. Project Description

3. The project will improve the water supply system in the country's capital, Dhaka, by making it more reliable, sustainable, and climate-resilient. It will consolidate and enhance the gains made in the efficiency of the water distribution network achieved under two previous Asian Development Bank (ADB) projects (Dhaka Water Supply Sector Development Program [DWSSDP] and Dhaka Environmentally Sustainable Water Supply Project [DESWSP]), and improve the service delivery and the capacity of the Dhaka Water Supply and Sewerage Authority (DWASA).

4. The impacts will be (i) safe drinking water made available for all of Bangladesh's urban populations, in line with the government's five-year plan for FY2016–FY2020;¹ and (ii) adaptive capacity of water sector enhanced for reducing climate change vulnerability, in line with the national strategy for water supply and sanitation.² The outcome will be sustainable provision of a more reliable, improved, and climate-resilient water supply in Dhaka City. The outputs will be (i) the strengthening of DWASA's distribution network, (ii) the expansion of its capacity to manage DMAs' sustainability, and (iii) the enhancement of its capacity for quality service delivery.

C. Resettlement Plan: Policy and Principles

5. Resettlement Plan for five civil work packages has been prepared for the project based on ADB's Safeguard Policy Statement 2009, and Government of Bangladesh (GOB) *Acquisition*

¹ Government of Bangladesh, Ministry of Planning, Planning Commission. 2015. *Seventh Five-Year Plan: FY2016–FY2020*. Dhaka.

² Government of Bangladesh, Ministry of Local Government, Rural Development, and Cooperatives. 2014. *National Strategy for Water Supply and Sanitation*. Dhaka.

and Requisition of Immovable Property Ordinance 1982 (ARIPPO). The RP was prepared to mitigate the identified impacts that might occur during the construction of the project components.

D. Involuntary Resettlement impact

6. No private land acquisition will be required for the implementation of the project. Only temporary impacts on structures and livelihood are envisaged. For these components a total XXXX households with the total population of XXX persons will be affected temporarily from the government land or public ROW that they are currently using for their livelihood activities. XXX structure owners, XXX vendors will be affected for temporary period.

E. Entitlement

7. The project provides for compensation of all potential losses including potential income losses for vendors at replacement value. As required by ADB Safeguards Policy (2009) the project will provide compensation and resettlement assistance for households' lost land, business, structures and other lost assets in connection with the project. The RP approach incorporates (i) compensation for lost assets; (ii) resettlement issues; (iii) impact mitigation with special attention to the women and vulnerable groups; and (iv) income generating support to the members of the physically displaced households and including them in the poverty reduction and livelihood enhancement program. A budgetary provision of \$XXXX for resettlement plan implementation is made, including provisional sums of \$XXXX for compensation of lost income and \$XXXX for additional assistance to vulnerable affected persons.

8. The eligible displaced persons for this project are (a) title owner who will lose land partial or total; (b) owners of affected houses, shops, sheds or other types of structures for residential, commercial purposes regardless to their title to the land; (c) owners of affected trees, crops, fish ponds affected by the land acquisition regardless to their titles to the land; (d) any displaced persons who will lose livelihood income permanent or temporary from any income generating activity affected by the project; (e) displaced person who will loss access to land or communal facility; (e) any formal and in formal lessee to land, shelters, shops, sharecroppers, shareholders, renters, etc. who will lose their access to land or shops/shelters due to acquisition of such assets by the project and (f) vulnerable displaced persons as defined by ADB safeguards policy. The people who have legal title of the affected properties will be compensated in two steps. Initially they will receive compensation according to the government policy (ARIPPO) from district council office based on their legal documents. In the next step they will receive additional compensation from DWASA. On the other hand the non-title holders identified through census and socioeconomic survey will receive compensation from DWASA through the resettlement assistance NGO directly.

F. Institutional Arrangement

9. DWASA has established, for the Project, a project management unit (PMU) headed by a project director, who will be responsible for the overall execution of the Project. The PMU will be supported with an experienced NGO for the implementation of resettlement activities which include livelihood rehabilitation. DWASA will implement the resettlement plan through setting a Safeguard Implementation (SIU) headed by project director at the DWSNIP PMU. The SIU, under the overall responsibility of the project director, will undertake day-to-day activities with the appointed NGO. The concerned Safeguards Officer at the level of AE, of SIU will be convener of the JVC (Joint verification committee) and PVAC (Property Valuation Advisory

Committee). The project director will perform as convener of GRC (Grievance Redress Committee) and RAC (Resettlement Advisory Committee). The resettlement assistance NGO will assist affected persons to put forth grievances and access information on opportunities for employment in project related activities, rights and entitlements and the grievance redress process, and make informed choices.

G. Grievance Redress Mechanism (GRM)

10. To resolve all project related grievances and complaints a common social and environmental grievance redress mechanism will be in place. Common and simple grievances will be sorted out at project site level by the Contractor’s Resettlement Supervisor, supervision staff of PMU and project NGO within 7 days. More serious complaints will be sent to the safeguard officer at the PMU to be resolved in 14 days. Any unresolved grievances will be forwarded to GRC to be resolved within 21 days. Despite the project GRM, an aggrieved person shall have access to the country’s legal system at any stage.

H. Environmental Management

11. Five draft initial environmental examination (IEEs) with environmental management plans (EMPs) were prepared for each package (Package No. ICB 2.8, 2.9, 2.10, 2.11 and 2.12). in accordance with ADB’s Safeguards Policy Statement (SPS, 2009) and Government of Bangladesh Environmental Conservation Rules (1997). The IEEs and EMPs will be updated and submitted to ADB for review and approval during detailed design, and DWASA will obtain all necessary permits and clearances from relevant government agencies, including Department of Environment. IEEs are available upon request from DWASA. These will also be made available on DWASA’s and ADB’s websites.

12. The IEEs concluded that no significant adverse environmental impacts are anticipated and any impacts will be mitigated through measures outlined in the EMP. The EMP will be incorporated into bidding and contract documents and implemented by contractors, and monitored by consultants. There are no sensitive environmental features located in the project area. Environmental management measures defined in the EMP, such as sound construction site management and regular monitoring of the project’s environmental performance will reduce these impacts to acceptable levels.

13. Consultation and public participation will continue throughout project implementation and any environmental complaints or disputes will be handled in accordance with the grievance redress mechanism developed for the project. The PMU will be supported by environmental specialists on the consultant team to assist EMP implementation and environmental monitoring and reporting activities.

14. DWASA will report progress to ADB on a semi-annual basis. ADB and DWASA will disclose all reports on respective websites.

Contact detail for inquiry:

Name : Designation : DWSNIP Safeguards Implementation Unit Telephone No: E-mail: Address:	Name: Designation: DWSNIP Project Management Unit Telephone No: E-mail: Address:
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APPENDIX E: SAMPLE GRIEVANCE REDRESS FORM
(To be available in Bangla)

The _____ Project welcomes complaints, suggestions, queries and comments regarding project implementation. We encourage persons with grievance to provide their name and contact information to enable us to get in touch with you for clarification and feedback. Should you choose to include your personal details but want that information to remain confidential, please inform us by writing/typing ***(CONFIDENTIAL)*** above your name. Thank you.

Date		Place of registration		
Contact Information/Personal Details				
Name		Gender	* Male * Female	Age
Home Address				
Place				
Phone no.				
E-mail				
Complaint/Suggestion/Comment/Question Please provide the details (who, what, where and how) of your grievance below:				
If included as attachment/note/letter, please tick here:				
How do you want us to reach you for feedback or update on your comment/grievance?				

FOR OFFICIAL USE ONLY

Registered by: (Name of Official registering grievance)	
Mode of communication: Note/Letter	
E-mail	
Verbal/Telephonic	
Reviewed by: (Names/Positions of Official(s) reviewing grievance)	
Action Taken:	
Whether Action Taken Disclosed:	Yes No
Means of Disclosure:	

APPENDIX F: SAMPLE MONITORING TEMPLATE AND OUTLINE OF SEMIANNUAL MONITORING REPORT

1. A semi-annual monitoring report shall be prepared on Resettlement Plan implementation and submitted to ADB by the PMU. It will include: (1) **the list of APs**, with compensation and details of compensation paid with signed receipts annexed to the report, socio-economic status and satisfaction levels of APs with the RP implementation process, compensation and mitigation measures; (2) **the list of vulnerable APs** and additional compensation / special protection measures planned/implemented for them; socio-economic status and satisfaction levels of vulnerable APs with the RP implementation process, compensation and mitigation measures; (3) **list of affected common facilities** affected, plan to restore access/ livelihood and/or actions taken to restore access to the same or facilities of equal quality elsewhere; (4) **list of roads for closure** and actions planned / taken to minimize disturbance; (5) **details of consultations held with APs** (with number of participants by gender, issues raised, conclusion / agreement reached, actions required/taken); (6) **details of grievances** registered, redressed, outstanding complaints, minutes of GRM meetings held; (7) **details of information disclosure** and awareness generation activities, levels of awareness among target population and behavior change, if any; (9) **implementation of livelihood and income restoration program** this will include the activities made, progress and numbers of affected families resettled and restored their income generating activities; (10) **describe the institutional capacity and coordination** for the implementation of the resettlement plan; (9) **any other relevant information** showing RP implementation progress, issues identified; and (10) **action plan or next target of activities** up to the next monitoring report. The following checklist may be used as a guideline for overall monitoring of RP implementation.

S. N.	Resettlement Plan Activities	Completed Y/N	Remarks
A. Pre Construction Activities and Resettlement Plan Activities			
1	Approval of final Resettlement Plan by ADB prior to contract award		
2	Disclosure of final Resettlement Plan on ADB and EA websites		
3	Circulation of summary RP in the three local languages to all stakeholders		
4	Establishment of GRC and other committees for the RP finalization/ implementation		
5	Recruitment/ appointment of external monitoring agency		
B. Resettlement Plan Implementation			
1	Grievance Redress Committee and telephone hotlines established		
2	Entitlements and grievance redress procedure disclosed		
3	Finalization of list of APs, vulnerable APs and compensation/ assistance/ allowances		
4	Finalization of list of affected common facilities and roads for closure; mitigation measures proposed		
5	Affected persons received entitlements as per amounts and program specified in RP		
6	Payment of compensation, allowances and assistance (No. of APs)		
7	Additional assistance for vulnerable households given (No. of vulnerable APs)		
8	Livelihood arrangements provided to vulnerable APs		
9	Reinstallation of affected common facilities		
10	Grievances No. of grievances registered No. of grievances redressed		

S. N.	Resettlement Plan Activities	Completed Y/N	Remarks
	Outstanding complaints Disclosure of grievance redress statistics		
11	Consultation, participation and disclosure as per Plan		
12	Livelihood and income restoration activities: 1. No of families resettled 2. No of families attend the retraining program 3. No of families replaced their agricultural land 4. No of families join the micro finance program 5. No of families reconstruct the loss businesses		
C. Monitoring			
1	Survey on socio-economic status of APs (including vulnerable APs) completed and compared with baseline survey results		
2	Survey on satisfaction levels of APs with RP implementation completed		
D. Labor			
1	Implementation of all statutory provisions on labor like health, safety, welfare, sanitation, and working conditions by Contractors		
2	Equal pay for equal work for men and women		

NOTE: Where applicable, the information provided in the table should be supported by detailed explanatory report, receipts and other details.