7th PROJECT (DESWSP)SEMI-ANNUAL ENVIRONMENTAL SAFEGUARDS MONITORING REPORT FOR THE PERIOD OF JULY –DECEMBER, 2018

Dhaka Environmentally Sustainable Water Supply Project (DESWSP)

Funded by

Asian Development Bank and Government of Bangladesh

Part A: Distribution Network Improvement (DNI) Package No.: ICB 02.7

Part-B: (Intake, RW Pipeline, WTP, Treated Water Pipeline & Distribution Network)
ICB-01/B&D/DESWSP/2014 (Package 1)
ICB-3.0/TWP/DESWSP/2018 (Package 2)
ICB-3.1/DRP/DESWSP/2018 (Package 3.1)
ICB-3.2/FL/DESWSP/2018 (Package 3.2)

July -December, 2018

Dhaka Environmentally Sustainable Water Supply Project (DESWSP) – ADB Loan

No. 3051-BAN

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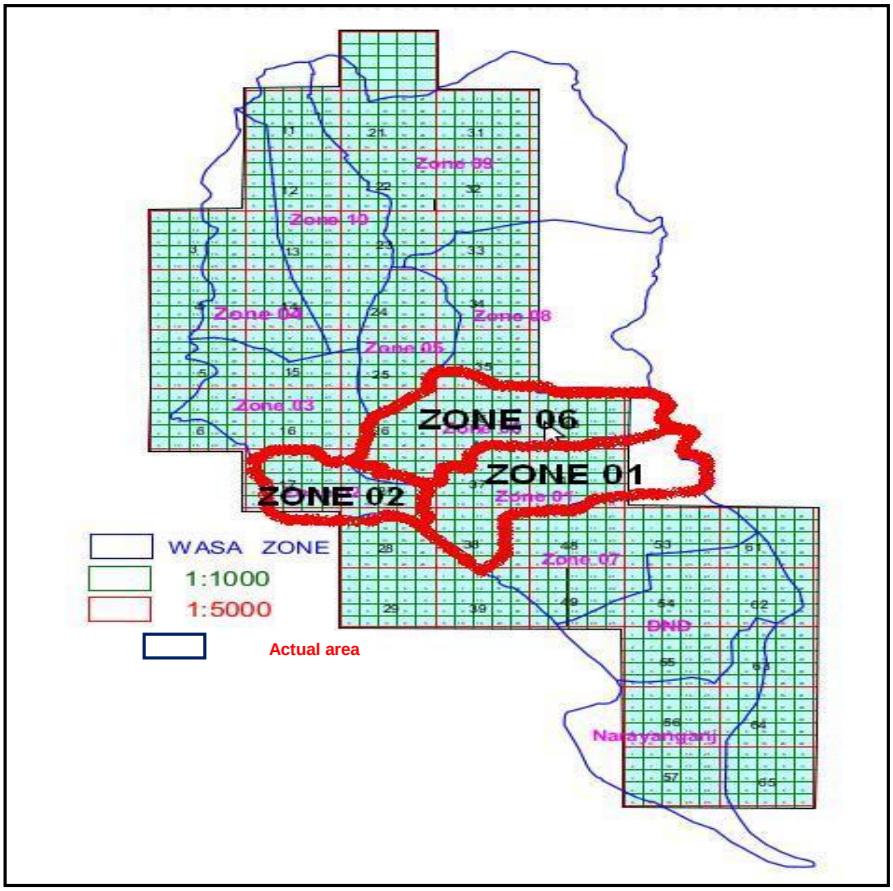
Contents

Part A: Distribution Network Improvement (DNI) Package No.: ICB 02.7



PREPARED BY:

Kunhwa Engineering & Consulting Co. Ltd., Korea

in Joint Venture with

Development Design Consultants Ltd., Bangladesh

Farhat Consulting Engineers and Architects Ltd., Bangladesh

in association with

Vernacular Consultants Ltd., Bangladesh

Abbreviations

AC	:	Asbestos Cement
ADB	:	Asian Development Bank
AFD	:	Agence Française de Développement
AP	:	Affected Person
DBO	:	Design-Build-Operate or Design-Build-Operation
DDR	:	Detailed Design Reports
DED	:	Detailed Engineering Designs
DEEP	:	Dhaka Elevated Expressway Project
DoE	:	Department of Environment
DORP	:	Development Organization for the Rural Poor
DESA	:	Dhaka Electricity Supply Authority
DESWSP	:	Dhaka Environmentally Sustainable Water Supply Project
DMA	:	District Metered Area
DNCC	:	Dhaka North City Corporation
DSCC	:	Dhaka South City Corporation
DWASA	:	Dhaka Water Supply and Sewerage Authority
DNI	:	Distribution Network Improvement
DP	:	Displaced Person
ECC	:	Environmental Clearance Certificate
ECA	:	Environmental Conservation Act
ECR	:	Environmental Conservation Rules
EIA	:	Environmental Impact Assessment
EME	:	Environmental Management Expert
EMP	:	Environmental Management Plan
EMR	:	Environmental monitoring Report
EA	:	Executing Agency
GoB	:	Government of Bangladesh
HDPE	:	High Density Polyethylene
HDD	:	Horizontal Directional Drilling
IA	:	Implementing Agency
IEE	:	Initial Environmental Examination
ICB	:	International Contract Bidding
MDSC	:	Management Design and Supervision Consultants
MSC	:	Management and Supervision Consultants
NGO	:	Non-governmental Organization
PPE	:	Personal Protective Equipment
PB	:	Pipe Bursting
PMU	:	Project management unit
SPM	:	Suspended Particulate Matter
ToR	:	Terms of Reference

Executive Summary

Dhaka Water Supply and Sewerage Authority (DWASA) is both the Executing Agency (EA) and Implementing Agency (IA). A Project Management Unit (PMU) has been established to monitor the project work execution and implementation. The PMU is being assisted by a Management and Supervision Consultants (MSC) in (i) distribution system and quality improvement; (ii) capacity building and institutional strengthening; and (iii) project management and implementation support. The project is being implemented under the contract package ICB 02.7covers the area commonly known as MODS Zone-6 of DWASA comprising of 16 DMAs from DMA 601-616. The project is being supervised by MSC for 36 months starting from 12 April, 2015. The contract package of ICB 02.7 was signed on 24th April, 2014.

The project under the contract package ICB 02.7 is subdivided into 16 district metered areas (DMAs) which will be hydraulically isolated from one to another with at least one water export and import facility between the adjacent DMAs.

Package No. ICB-02.7 includes (i) rehabilitation of 376-km water distribution network in 16 DMAs (DMA 601 to 616); (ii) replacement of all fitting of all production tube wells (Up gradation of more than 100 Deep Tube Wells are included in the package which includes survey, modeling and detailed design); (iii) about 32000 service connections including installations of meter chamber, domestic meters and floating valve; and (iv) installations of valves, bulk meters and loggers, etc. For efficient and effective execution, the package will be implemented through a design-built contract i.e. the civil works contractors will also prepare the detail designs.

This report was prepared by Dhaka Water Supply and Sewerage Authority, Ministry of Local Government and Rural Development and Cooperatives, Government of Bangladesh for the Asian Development Bank. This document is made publicly available in accordance with ADB's Public Communication Policy (2011) and DoEs not necessarily reflect the views of ADB.

This environmental monitoring report is a document of the borrower. The views expressed herein do not necessarily represent those of ADB's Board of Directors, Management, or staff, and may be preliminary in nature.

The project would be contributed to sustained economic growth and public health improvement in the urban water supply sector, particularly in Dhaka Metropolitan Area, through the improvement of living standards by improving the water supply. The supply of clean water could be reduced child mortality, improve general health, convert into time for economic activity by saving time spent fetching and storing water, and conserving precious natural resources, the surface and groundwater. Further, the trenchless method of lying of pipelines would be reduced the public sufferings remarkably during implementation phase of the work.

DWASA is responsible for providing potable water supply services to about 90% of Dhaka's population, sewerage services, and storm water drainage services throughout its 400km2 services areas. In fact, the city relies heavily on groundwater sources for water supply, but current abstraction exceeds sustainable yields, water table levels are falling by 2 to 3 m /year and increasing numbers of tube wells become inoperable. Groundwater extraction is expected to be reduced from 1,900 MLD in 2012 to 1,360 MLD by 2020 and 1,260 MLD by 2025. In addition, ground water quality deteriorates continuously. At the same time, the overall supply needs to be increased to cater for the growing population in a larger service area

The objectives of SAEMR are: (a) Ensure that the construction activities are implemented in a responsible non-detrimental manner; (b) Provide a practical working tool to enable the measurement and monitoring of environmental performance on site; (c) Detail specific actions to assist in mitigating the environmental impact of the construction; and (d) Ensure that safety guidance are complied with. The site-specific management plan (SSMP) includes a monitoring program to measure the environmental condition and effectiveness of implementation of the mitigation measures. It will include observations on-and off-site, document checks, and interviews with workers and beneficiaries.

Chapter 1: Project Background

1.1. Context of the Monitoring Report

1.1.1. Project Background

Dhaka Environmentally Sustainable Water Supply Project (DESWSP) is the part of Water Supply Sector Development Program into Dhaka Metropolitan Area and jointly financed by Asian Development Bank (ADB) and the Government of Bangladesh (GoB). The aim of the Project is to improve the water supply network of Dhaka city by forming District Metering Areas (DMAs); rehabilitation of water lines; and replacement of service connections. The package No. ICB 02.7 is organized as a part of DESWSP and the implementation process is similarly as all contracts under Dhaka Water Supply Sector Development Project (DWSSDP).

2. The objective of the project is to improve health and quality of life and reduces car city of drinking water in the project area by providing access to adequate, sustainable safe water supply facilities. Specific task of the project is to improve the overall distribution network in the project area to ensure 24/7 water supply line with pressure 1 bar (10m). Also, the water supply system will run with system lossless than 15% in the DMA areas. Each DMA will be hydraulically isolated from other DMA. Reliable source of safe drinking water should be established in the DMA.

1.1.2. ADB/AFD/EIB Development partners loan number, project title, borrower, Executive Agencies.

3.
Loan agreement: Loan agreement was held on 24th April 2014 between People`s Republic of Bangladesh (borrower) and Asian Development Bank (ADB) Financer.
Loan Number: 3051-BAN (SF)
Project Number: 42173-013
Development Partner`s (DP`s): Asian Development Bank (ADB), Agence Francaise de Development (AFD) and European Investment Bank (EIB)
Project Title: Dhaka Environmentally Sustainable Water Supply Project (DESWSP). Distribution Network Improvement (Package No.ICB 02.7) Zone-6; Pilot Area Project Study for 500 connections (dropped by Client), Outline Design & Tender Documents Preparation for Packages ICB 02.9 (Zone 2) and ICB 02.10 (Zone 1).
Project Agreement: Dated 24th April 2014 between Asian Development Bank (ADB) on the one part and Dhaka Water Supply and Sewerage Authority (DWASA) on behalf of GOB on the other part.
Borrower: People`s Republic of Bangladesh (GoB).
Implementing Agency: Dhaka Water Supply and Sewerage Authority (DWASA).
Executing Agency: Project Director, Dhaka Environmentally Sustainable Water Supply Project (DESWSP), DWASA.
Total Estimated Project Cost: USD 164,986,000 (One Hundred Sixty Four Million Nine Hundred Eighty Six Thousand) only.

1.1.3. Environmental Responsibilities and Institutional Set-up

4. Organizational procedures/institutional roles and responsibilities for the safeguards implementation are described below:

Activities	Agency Responsible
Disclosure of proposed project and anticipated social and environmental impacts on website	ADB, DWASA
Disclosure of proposed project, social/environmental impacts, proposed entitlements/mitigation measures in local languages	DWASA
Disclosure of grievance redress mechanism/process	DWASA (PMU),MSC, PCU, ZLCC, NGO

Activities	Agency Responsible
Finalization of sites and alignments	DWASA (PMU), MSC, Contractors
Identification of roads for closure, existing utilities, road conditions	DWASA (PMU), MSC Contractors
Updating of safeguard documents (IEE and RP) based on detailed design	MSC with assistance from contractors and NGO
Review of updated RP/IEE and send to ADB for approval prior to contract award	DWASA (PMU)
Clearance and disclosure of updated safeguard documents	ADB, DWASA
Conducting transect walks through road stretches to identify extent of impacts	MSC, Contractor, NGO
Conducting meetings at community/household level with Affected Persons (APs)	MSC, Contractor, NGO
Design/implementation of detailed measurement survey (DMS) on roads identified for full/partial closure; identification of poor and vulnerable APs	MSC, NGO
Computation of entitlements	DWASA (PMU), MSC
Categorization of APs for finalizing entitlements	MSC, NGO
Conducting focus group discussions/meetings/consultations/workshops during DMS survey and updating safeguards documents	DWASA (PMU), MSC, NGO
Finalizing entitlements and rehabilitation packages for all Aps	DWASA (PMU), MSC NGO
Disclosure of final entitlements and rehabilitation packages	DWASA (PMU), MSC, NGO
Delivery of entitlements/award of checks	DWASA(PMU)
Implementation of mitigation and rehabilitation measures	DWASA (PMU), MSC, Contractor
Consultations with APs during rehabilitation activities	MSC, Contractor, NGO
Grievance redressed	DWASA (PMU), MSC, NGO, Contractor
Internal monitoring	DWASA (PMU), MSC

1.1.4. Environmental Category

5. ADB requires the consideration of environmental issues in all aspects of ADB's operations, and the requirements for environmental assessment are described in ADB SPS, 2009. This states that ADB requires environmental assessment of all project loans, program loans, sector loans, sector development program loans, loans involving financial intermediaries, and private sector loans.

6. ADB's Screening and Categorization: The nature of the environmental assessment required for a project depends on the significance of its environmental impacts, which are related to the type and location of the project; the sensitivity, scale, nature, and magnitude of its potential impacts; and the availability of cost-effective mitigation measures. Projects are screened for their expected environmental impacts, and are assigned to one of the following four categories:

Category A. Projects could have significant adverse environmental impacts. An EIA is required to address significant impacts.

(ii) Category B. Projects could have some adverse environmental impacts, but of lesser degree or significance than those in category A. An IEE is required to determine whether significant environmental impacts warranting an EIA are likely. If an EIA is not needed, the IEE is regarded as the final environmental assessment report.

(iii) Category C. Projects are unlikely to have adverse environmental impacts. No EIA or IEE is required, although environmental implications are reviewed.

(iv) Category FI. Projects involve a credit line through a financial intermediary or an equity investment in a financial intermediary. The financial intermediary must apply an environmental management system, unless all projects will result in insignificant impacts.

7. This project, as explained above has been classified by ADB as Category B, because it is not expected to have major negative environmental impacts. Under ADB procedures such projects require an IEE to identify and mitigate the impacts, and to determine whether further study or a more detailed EIA may be required.

8. GoB's Screening and Categorization: The implementation of the projects will be governed by Environmental Acts, Rules, Regulations and Standards of Government of Bangladesh (GoB). These regulations impose restrictions on the activities to minimize/mitigate likely impacts on the environment. It is the responsibility of DWASA to ensure projects are consistent with the legal framework, whether national, state, or municipal/local. Compliance is required in all stages of the project, including design, construction, and operation and maintenance.

9. The main provisions for environmental protection and pollution control in Bangladesh are contained in the Environmental Conservation Rules 1997. This legislation also provides the principal mechanism for assessing and mitigating the environmental impacts of projects, both existing and proposed. Projects are classified as green, orange, or red depending on their location and environmental impacts, and Schedule 1 of the law indicates that "water, power and gas distribution line laying/relaying/extension" are considered as RED Category activities.

10. Rule 7 states that the proponent of such projects must obtain a Location Clearance Certificate and an Environmental Clearance Certificate (ECC) from the DoE. For proposed RED category projects this requires submission to the relevant DoE Divisional Officer of the following:

(i) Completed application for ECC and the appropriate fee, shown in Schedule 13 of the Rules;
(ii) Report on the feasibility of the project;
(iii) Report on the IEE for the project, Terms of Reference (ToR) for an EIA of the project, and its process flow diagram; or an EIA prepared from a previously approved TOR, layout plan, process flow diagram, and design and time schedule;
(iv) No Objection Certificate (NOC) from the local authorities;
(v) Emergency plan relating adverse environmental impact and plan for mitigation of the effect of pollution; and
(vi) Outline of the relocation and rehabilitation plan (where applicable).

11. Discussions with DoE in August 2006 suggested that the IEE, Resettlement Framework and other study reports prepared during DWSSDP preparation in 2006 should fulfill a substantial proportion of the national EIA requirements. Upon submission of the necessary documents including a draft IEE for ICB 02.7, Environmental Clearance Certificate is obtained and is available at Project Management Unit (PMU) office.

1.1.5. Compliance with Environment Related Project Covenants

1.1.5. A. Compliance with National Environmental Laws

12. At the time of project preparation at feasibility stage, the TAPP consultants were deputed for the survey and preparation of IEE for the DESWSP (Ref: IEE, DWASA, 2006). As part of detailed

project preparation, environmental screening and assessment reports, IEEs were prepared by environmental consultant engaged by the DWASA supported by ADB. Further, the consultant suggested to ensure in procurement process that all information required for environmental safeguard stated in the Environmental Assessment (EA) report and Environmental Management Plan (EMP) which have been prepared earlier under the respective pipeline rehabilitation clauses have to be incorporated in the work schedule so that contractors can adopt mitigation measures associated with construction works.

13. Management and Supervision Consultants (MSC) have to monitor the field implementation of EMP which is used to work by contractors; and ensure that the EMP is implemented throughout project construction period. Half yearly Environmental Safeguard Monitoring Report has to be prepared by the Consultant to be forwarded to PMU and ADB. It could be mentioned that IEE with EMP has been prepared according to ECA'95 (Environmental Conservation Act) & ECR'97 (Environmental Conservation Rules) and it is mandatory to follow the rules ordered by GoBand ADB guidelines. To follow the rules, contractors have to collect No Objection Certificates (NOC) from local authorities (i.e.DoE, DESA, DESCO, City Corporations and Housing Society etc.) before starting the works of the sub-projects.

1.1.5. B. Compliance with ADB Guidelines

14. According to the environmental guidelines of ADB the project falls under Category B and hence an IEE is sufficient to meet the environmental requirements. An IEE report was prepared by the consultant engaged by the ADB during appraisal. However, during the detailed design stage an updated Environmental Management Plan (EMP) was jointly prepared by Environmental unit of MSC and Environmental representative of contractor in reference to ADB guidelines. The project is also in conformity with the latest Guideline of ADB i.e. Safeguard Policy Statement 2009.

1.1.5. C. Development of Environmental Management Plan

15. The IEE report including EMP that already had been prepared provided necessary recommendations on how the potential environmental hazards' impacts could be mitigated. The IEE guided to develop environmental management plan to provide a set of guidance on what, how, when and where the mitigation measures have to be implemented. It includes also who has to implement and monitor the implementation of mitigation measures in different phases of the project. The Initial Environmental Examination (IEE) report prepared under the feasibility stage included an EMP that:

Provides the basic information about the existing environmental features as baseline of the sub-project areas and what will be the potential environmental impacts;
Provides the recommendations to mitigate potential environmental impacts and describes on how to implement in the Environmental Management Plan (EMP);
Provides guidance on how the environmental monitoring has to be carried out; and
Indicates what kind of environmental lawful clearance will need to be obtained.

16. The IEEs including EMPs of construction batch 1 (DMAs 602, 603 and 604), batch 2 (DMAs 606, 609 and 612) and batch 3 (DMAs 601, 605, 607 and 608) has already been completed and already published in ADBs Website. EMP has been approved and IEEs for construction batch 4 (DMAs 610, 611 and 613) was published in project website (www. DESWSP-DWASA.com on January 16, 2018) and EMPs of construction batch-5 (DMA 614, 615 and 616) reviewed and approved.

1.1.6. Status of the Project:

17. Activities of the Project have started from 2nd July 2015 as the effective date for Contractor of ICB 02.7 Zone-6. Agreement with NGO has been signed on 30.01.2015 with DWASA for

Resettlement issues, Gender Action Plan (GAP) and Contact with Low Income Communities (LICs) for re-addressing their grievances (particularly W/S) & Environmental Impact studies under Package ICB 02.7 (Zone-6). Contractor is also responsible for cooperation with NGO in Resettlement & Environmental activities. Both the Contractor & NGO are doing their works satisfactorily till December, 2018.

18. Up-to the Month of December, 2018 progress of ICB 02.7; i.e. the target and achievement
Design service
Implementation Provision & Preliminaries
Installation & other service

19. Work Progress (up-to December, 2018)

Components	Work Status
Survey & Model Design	16 DMAs has been Completed.
Detailed Design	16 DMAs has been Completed,
Pipe Installation	DMA–601, 602, 603, 604, 605,606, 607, 608. 609, 610 & 612 has been completed
	DMA – 611, 613, 614, 615 & 616 are in Progress.
	Total Pipe installation: 377.40km (out of 498.00km) Progress: 75.78%
PTW UP-gradation	104 nos. have completed in 16 DMAs.
House Connection	28,738 nos. has completed (out of approx. 31,816). Progress: 90.33%
Pre-Commissioning	DMA – 601, 602, 603, 604, 605, 606, 607, 608, 609,610 & 612 has been completed.
Commissioning	DMA – 601, 602, 603, 604, 606, 607, 608 & 609 has been completed
Post-Modeling & Handover	DMA – 601, 602, 603, 604, 606, 607, 608 & 609
DTWs (NCB 4.1)	Bidding process: Ongoing
Cumulative Progress (ICB 2.7)	Physical: 77.42%; Financial: 48.76%
Cumulative Progress (NCB 4.1)	Physical Less than 1% and Financial less than 1%

1.1.7. The cumulative physical and financial achievements of the project component ICB 02.7:

20. The cumulative physical and financial achievements of the project component ICB 02.7 till December 2018 were 77.42% and 48.76% respectively and the cumulative physical and financial achievements of the project component NCB 4.1 till December were less than 1% and 1%

1.1.8. The project area of DWASA's MODS Zone 6:

21. The project area of DWASA's MODS Zone 6 is under the jurisdiction of both Dhaka North City Corporation (DNCC) and Dhaka South City Corporation (DSCC). DWASA has total 12 operation zones including 10 MODS zones. Package No. ICB-02.7 of Dhaka Environmentally Sustainable Water Supply Project (DESWSP) is located in the MODSZone-6. Figure 1 is representing the operating zones of DWASA and Figure 2 is showing the DMAs of MODSZone-6.

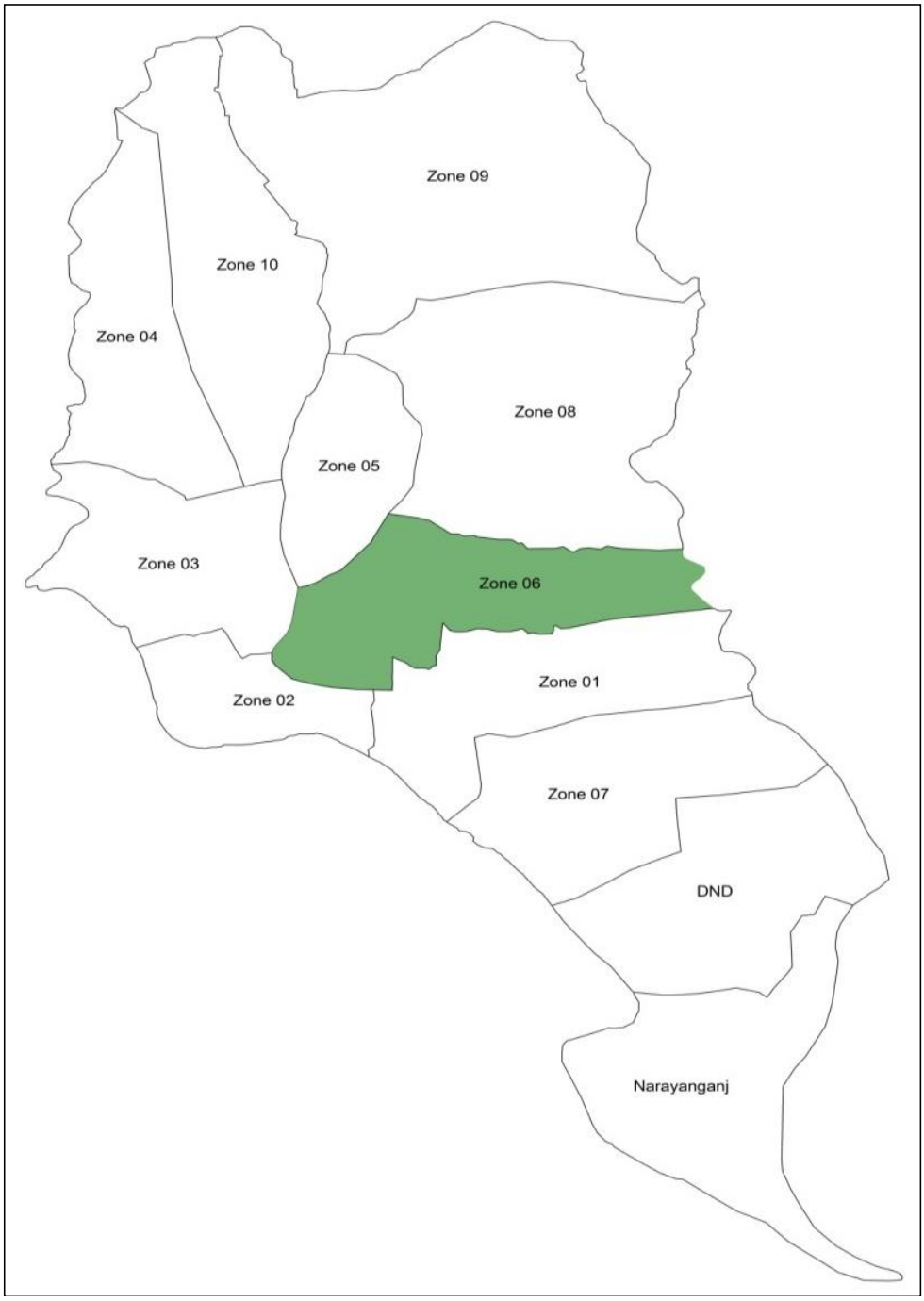


Figure 1: Operational Zones of DWASA

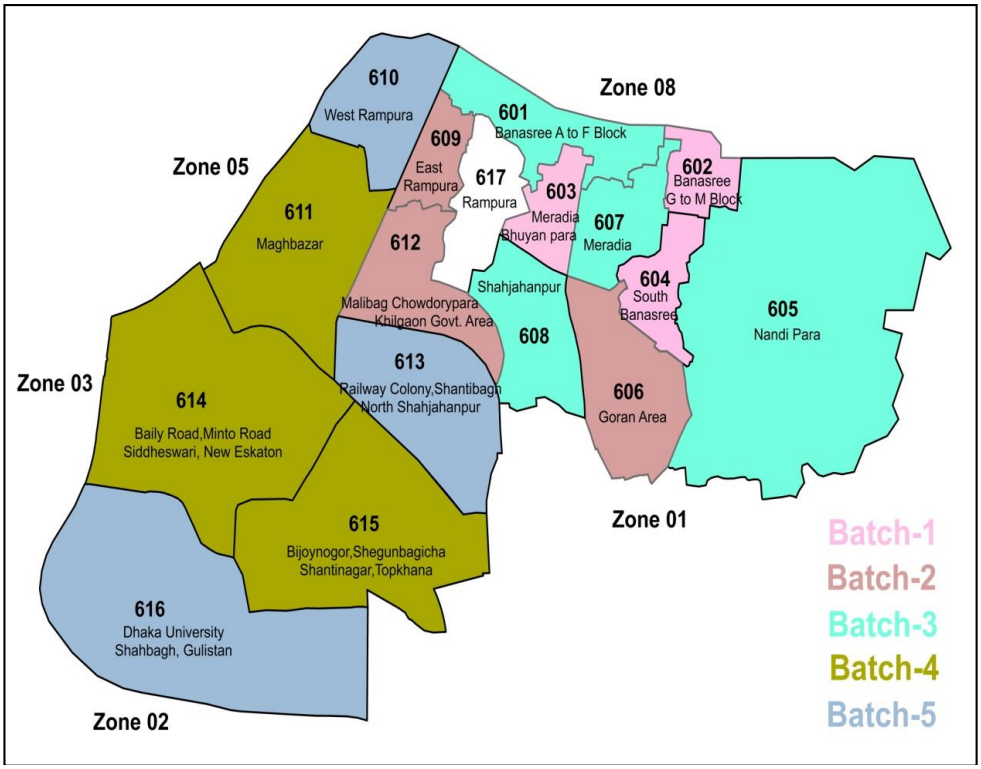


Figure 2: DMAs in MODS Zone 6 (ICB-02.7)

22. The project areas are Eastern part of Hatir Jheel, Eden girls college, Hatir pool Bazar, Fuller road Paribagh, SAARC fountain, Panthokunja South part of Begunbarikhal, North of Zahir Rayhan road bango bazaar Gulistan bus terminal, RAJUK Bangabhaban Bangladesh bank, Khilga one flyover , Moddhya bashabo. Nandipara bazaar Uttar Mugda, Dakshingaone, Sunna, Par Digar.

1.1.9. The project scopes

23. The project scopes are:
i.) The work consists of rehabilitation of 376 Km water distribution network and rehabilitation of about 32000 water connections including installation of new meters.
ii.) Up gradation of more than 100 Deep Tube Wells are included in the package which includes survey, modeling and detailed design.
iii.) Preparation need of DNI Package of ICB-02.9 (MODS Zone-2) and ICB-02.10 (MODS Zone-1) including design and bid documents preparation etc.
iv.) Gender mainstreaming & social development activities in project area.

1.1.10. The main activities of the project

24. The main activities of the project as per contract are expected, as a minimum, to comprise the following steps:
(i) Survey;
(ii) Implementation of Resettlement Plan (RP);
(iii) Design comprising of (a) detailed survey of area (location of water pipes, service connections, valves, tube wells, bulk meters, and other utility lines); (b) detailed network modeling

of areas and updating of basic model (outline design) with additional information obtained from survey; and (c) submission of detailed design package of area including design drawings (1:2000) and expected work methodologies for each DMA;
(iv) Pipe works comprising of (a) disconnection of cross connections between DMAs; (b) installation of bulk meters and valves at all needed cross connections between DMAs; (c) repair/rehabilitation or replacement of 305.296 km existing pipes according to outline design; (d) extension of network to areas not adequately served (70.988km); and (e) pressure testing of each section of repaired/rehabilitated and/or replaced or new laid pipe;
(v) Service connections comprising of (a) installing a meter chamber for each existing connection; (b) connecting the meter chamber with the water pipes, using new materials; (c) installing water meter in meter chamber; (d) pressure testing of each service connection; and (e) installing float valves at the first reservoir of the household.
(vi) Other works such as (a) repair of roads according to given requirements wherever needed; (b) repair of other utility lines in case they are damaged during the work; and (c) provision of alternative sources of water for people while being disconnected from water supply system during the implementation.

1.1.11 Activities of ICB 02.9 [Zone-2] & ICB 02.10 [Zone-1]

25.
Extensive Engineering Survey to be completed for Outline Design.
Necessary Drawings are submitted.
Correction, modification & finalization of Bid Documents, Price schedule, Cost estimate and Outline design & report of ICB-2.10 (Zone-1) for invitation of International Tender.

1.2. Physical Progress of the Project Activities

26.
Date of signing and effectiveness: 24th April 2014
The Loan closing date: 30th June 2020 or such other date as may be from time to time be agreed between the borrower (DWASA) and ADB.
The achieved progress is less than target. The financial and physical progresses are 48.76% and 77.42% respectively (in every respect).
Major bottlenecks are the prolong process of delay in Road Cutting permission from the DNCC/DSCC.
Off late Road cutting Permissions are duly available from NDCC & DSCC for some DMAs. So Progress of work is becoming satisfactory.

1.2.1. Implementation Plan

27. The pipe installation work is being done in batch system; each batch consists of at least three DMAs. The following flowchart shows the implementation plan of ICB-02.7.

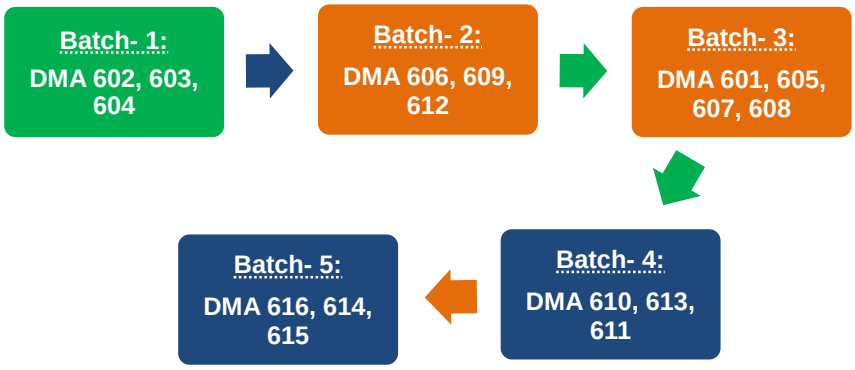


Figure: Flow Diagram of Implementation Plan of ICB 02.7.

1.2.2. The physical work progress up-to December, 31, 2018:

28.

Sl. No.	Construction Batch	DMA No.	Work Status up-to December, 2018			Remarks
			Physical Works	RP/AP	EMP/IEE	
1	Construction Batch -1	602	Handed Over to PCU (Zone-6) on 04/01/2017	Done	EMP and IEE has completed and already been published in ADBs Website	Works Completed
2		603	Handed Over to PCU (Zone-6) on 16/03/2017	Done		Works Completed
3		604	Handed Over to PCU (Zone-6) on 25/01/2017	Done		Works Completed
4	Construction Batch-2	606	Handed Over to PCU (Zone-6) on 28/08/2017	Done	EMP and IEE has completed and already been published in ADBs Website	Works Completed
5		609	Commissioning ended on 01.10.2018	Done		Approx. 99% Physical Works is completed
6		612	Commissioning started on 10.12.2018	Done		Approx. 95% Physical works is completed. Commissioning not possible due to water shortage. Drilling of PTW in going on
7	Construction Batch-3	601	Handed Over to PCU (Zone-6) on 07/02/2018	Done	EMP and IEE has completed and already been published in ADBs Website	Works Completed
8		605	Meter shifting and DMA isolation is running.	Done		Approx. 97% Physical works is completed.
9		607	Handed Over to PCU (Zone-6) on 13/12/2017	Done		Works Completed
10		608	Handed over to PCU (Zone-6) on 23/10/2018	Done		Works Completed
11	Construction Batch-4	610	Commissioning started on 17/12/2018	Done	EMP has approved and IEE published in project website (www. DESWSP-DWASA.com on January 16, 2018).	Approx: 95%
12		611	Pressure testing & House connection are on going.	Done		
13		613	Pressure testing & House connection are on going.	Done		
14	Constructio	614	Pipe Installation will	Submitt	EMP for DMA	

Sl. No.	Construction Batch	DMA No.	Work Status up-to December, 2018			Remarks
			Physical Works	RP/AP	EMP/IEE	
	n Batch-5		be running	ed	614,615and 616 reviewed and approved	
15		615	Pipe Installation will be running	Submitted		
16		616	Pipe Installation will be running	Submitted		

1.2.3. DMA STATUS

29.
DMA 602,604,603,606,607,601 and 608 (Seven DMA) has been handed over to PCU, Zone-6, DWASA.
DMA 609 ended on 01.10.2018 probable handover will be on January 2019.
Installation of SV chambers interconnection, House connections will be running at DMA 611 and DMA 613 simultaneously with the DMA 614, DMA 615 & DMA 616.
MRT portion of pipe installation in all respect.
Commissioning started at DMA 612 and DMA 610 on 10.12.2018 and 17.12.2018.
Segment wise pressure testing and pre commissioning will be going on at DMA 613 and 611.
Detailed design approved for all the16 DMAs.
EMP submitted and approved for all the phases for 16 DMAs.
Ambient air quality and noise monitoring for fourth phase completed. Fifth phase will be done on receipt of the road cutting permission for DMA 614,615,616.
Adequate quantity of Environmental and safety items are in use at site.
Special arrangement will be been introduce to ensure the personnel and Environmental Safety compliance.
DMA wise pipes and fittings are being inspected and random sampling done by PMU and MSC.
No road cutting permission is available for any of the DMA to work with.

Completed Work as at end of December 2018														
DMA No.	606	609	601	612	607	605	608	610	611	613	614	615	616	Total
Installed in km:	38.13	12.27	23.55	30.31	16.37	63.02	33.32	28.33	47.10	38.21	2.28	1.45	5.19	339.53

1.2.4. Scope of Monitoring Report

30. This Semi-Annual Environmental Safeguard Monitoring Report (ESMR) has been prepared by the Management and Supervision Consultants (MSC) for borrower in order to evaluate and assess overall project activities to ensure the effective implementation of the Environmental Management Plan (EMP) of Dhaka Environmentally Sustainable Water Supply Project (DESWSP) funded by Asian Development Bank, Project Number ADB Loan No 3051-BAN.

31. This report covers contract package ICB 02.7 (MODS Zone 6) in Dhaka city and the management and supervision of these contracts is being implemented by Kunhwa Engineering & Consulting Co. Ltd., Korea in joint venture with Development Design Consultants Ltd. Bangladesh and Farhat Consulting Engineers and Architects Ltd. Bangladesh in association with Vernacular Consultants Ltd. Bangladesh. This report has been prepared in accordance with the environmental

monitoring program followed by the updated Environmental Management Plans (EMP) prepared for the contract.

32. The purpose of this 7th SEMR is to document the Environmental Management activities and compliance with the approved EMP for the period of July 01, 2018 to December 31, 2018. This report has been prepared in accordance with the environmental monitoring program as defined in the EMP. In line with targets aimed at reducing the negative environmental impacts of the Project and in accordance with all the relevant specifications and standards of the GoB, as well as the policies of the Asian Development Bank (ADB), this report will emphasize: (i) progress made in implementing the EMP, (ii) implementation of mitigation measures, (iii) Monitoring actions undertaken, as prescribed in the EMP, (iv) environmental compliance and (v) problems that have occurred and corrective actions taken.

33. This SEMR has been prepared considering field observations during visit of worksites by the Environmental Unit of MSC where is now responsible Safeguard Officer (Environmental), DESWESP, DWASA as an additional responsibility. Now the Safeguard Officer (Environmental), DESWESP, DWASA is overseeing the implementation of Environmental Management Plan (EMP) at worksites and Environmental Supervisors of contractor are responsible for the field implementation of EMP in different phases of the sub-project works. Moreover, Environmental Management Expert (EME) and Environmental Inspector of the MSC are mainly overall responsible for Environmental Monitoring, but these positions are void due to completion of man-month from the end of November 2017.Now Safeguard Officer (Environmental), DESWESP, DWASA is working for both field implementation of EMP and Environmental Monitoring from DESWESP, DWASA and MSC.

1.2.5. Reporting Period

34.
July 01, -December 31, 2018.

1.2.6. Environmental Monitoring Requirements

35. The methodology is a combination of organizational principles and strategies through which responsibility for performing the monitoring process is shared with different stakeholder groups. Methods like site visits, stakeholder consultation, qualitative as well as quantitative analysis of quality parameters, analysis of monitoring reports of site inspectors, subjective judgment etc. are used for environmental monitoring. Usually, Environmental Inspector of MSC and Environmental Supervisor of contractors are responsible for monitoring the EMP implementation at field level in the sub-projects area and the environmental findings are sent to the Environmental unit of MSC. Environmental unit of MSC (Now only Safeguard Officer (Environmental)) monitors the environmental parameters during construction phase and oversees the activities of contractors related with environmental requirements. MSC also coordinates with Donor agencies and related Governmental agencies on the issue of environmental requirements and monitoring.

36. The EMP contains 38 mitigation measures and 38 associated monitoring actions, presented in the project work period (planning & design phase, pre-construction phase, construction phase, post-construction phase, and operation & maintenance phase) and they would most likely take place in. Each of the tasks is numbered such that any mitigation measure can be cross referenced to the associated monitoring requirement. This same numbering is then extended to the monitoring checklist, permitting an easy confirmation of the entire EMP implementation procedure which is described in Appendix A.

37. The potential environmental impacts of the project, the required monitoring &mitigation measures and the related general timelines are set out in the Environmental Management Plan. The detailed implementation schedule can also be found in the revised EMP.

38. The mitigation measures regarding negative impacts are also defined in the mitigation table of EMP and described in detailing the affected component of the environment, the impact, proposed mitigation action, where it is to take place, when and who will implement and supervise the action.

39. The environmental monitoring requirements are presented in the EMP table. The EMP considers the scope of monitoring, monitoring parameters, time & frequency, required outputs and implementing & supervising agencies.

1.2.6. A. Observation

40. With some exceptions, excavated materials were removed immediately. Workers received their required Personal Protective Equipment (PPE)and the PPEs were being used properly by the workers during reporting period because after several types of efforts taken by contractors for wearing proper PPEs. High Density Polyethylene (HDPE) pipes are being used for the Package ICB-02.7,the pipes were being handled in proper manner as stated in the detailed EMP. The environmental quality test program was conducted as per EMP; test of ambient air quality and noise level should be carried out frequently: tests before starting any physical works as baseline and periodic test during construction phase of each DMA; water quality should be tested before supplying the dwellers/consumers. However, the following table showed the incident report for utility were found and taken necessary action in the following ways:

Incident Report for Utility (July-2018)						
Sl. No.	Date & time of accident	Location	Nature of Accident	Description of Accident	Repair Complete on date & time	Remarks
01.	12.07.2018 (02:30am)	House-688/3, Mogazar Noyatola Rd	Water Line H/C-20mm	HDD work ramming time	14.07.2018 (12:30pm)	
02.	12.07.2018 (04:40am)	House-688/4, Mogazar Noyatola Rd	Water Line H/C-25mm	HDD work ramming time	14.06.2018 (04:40pm)	
03.	26.07.2018 (03:30am)	House-529/1, Shah Shaheeb Bari rd	Water Line H/C-25mm	HDD work ramming time	28.08.2018 (04:40pm)	
04.	29.07.2018	Malibagh near Maruf Market at DMA 613	11 KV electric line	HDD work ramming time	30.07.2018	
05.	10.07.2018	Rajarbagh near party house at DMA 613	TNT 70 pair	Inter connection work	11.07.2018	
06.	14.07.2018	Sajahanpur near mirza abbas women college at DMA 613	TNT 70 pair	HDD Puling time	15.07.2018	
07.	24.07.2018	In front of National Museum at DMA 614	33kv electric line	HDD Puling time	25.07.2018	

Incident Report for Human (July-2018)							
Sl. No.	Date & time of accident	Name of Affected Person	Injury Sustained	Treatment Administered	Location of Incident	Description on Incident	Remarks
01.	23.07.2016 (03:15pm)	Md. Mamun mia	Slightly Injury	First Aid	Goran road -8 at DMA-606	Small Injury on his right foot	

Incident Report for Utility DMA-611 & DMA-615 (August-2018)						
Sl. No.	Date & time of accident	Location	Nature of Accident	Description of Accident	Repair Complete on date & time	Remarks
01.	03.08.2018 (02:30am)	H-491/D/2, Old Elephent road-07	Water Line H/C-20mm	HDD work ramming time	04.08.2018 (12:30pm)	
02.	03.08.2018 (04:20am)	H-490, , Old Elephent road-07	Water Line H/C-25mm	HDD work ramming time	04.08.2018 (04:20pm)	
03.	03.08.2018	H-16/F/1, , Old Elephent road-07	Water Line H/C-25mm	HDD work ramming	05.08.2018	

	(03:30am)			time	(03:50pm)	
04.	10.08.2018	H-566/1, Mogbazar noyatola road	Water Line H/C-25mm	HDD work ramming time	12.08.2018 (04:15 pm)	
05.	10.08.2018	H-566/A/2, Mogbazar noyatola road	Water Line H/C-25mm	HDD work ramming time	12.08.2018(05:40am)	
06.	15.08.2018	H-104/1, Mogbazar noyatola road	Water Line H/C-25mm	HDD Puling time	16.08.2018 (11:05 am)	
07.	31.08.2018 (2:30 am)	In front of HBFC building	BTCL primary cable	HDD work remaining time	Repaired within a week	
08.	10.08.18	In between Paribagh crossing to Sheraton Hotel	Fiber @ home Optical fibre	During HDD	Yet to be repaired	

Incident Report for Utility DMA-611 (September-2018)						
Sl. No.	Date & time of accident	Location	Nature of Accident	Description of Accident	Repair Complete on date & time	Remarks
01.	07.09.2018 (04:40 am)	House-182, Mogazar Noyatola Rd	Water Line H/C-20mm	HDD work ramming time	09.09.2018 (2pm)	
02.	07.09.2018 (04:40 am)	NH-624/1, D-163/165, Mogbazar noyatola	Water Line H/C-20mm	HDD work ramming time	09.09.2018 (6:05pm)	

Incident Report for Human (September-2018)							
Sl. No.	Date & time of accident	Name of Affected Person	Injury Sustained	Treatment Administered	Location of Incident	Description on Incident	Remarks
01.	09.102018	Md. Ruhul Amin	Slightly Injury	Slightly Injury	Near Baitul Mukarram at DMA 616	Small Injury on his right hand	

41. To establish the basic elements of accident prevention, establish standard Health and safety (HS) practices; maintain a safe working environment for all employees on the jobsite and healthy working environment in the office are being arranged by this time. All the health and safety arrangement has been ensured in the work site with supply water line and healthy Sanitation facilities. Measures are being taken for the First aid arrangement at site , First Aid Box and all other health issues are being taken care of with due importance.

42. Personnel Safety items; sufficient numbers of Helmet, Safety boot, Gum boot, hand gloves, goggles, working dress, and other Personnel Safety Equipment's has been procured and provided to the person concern according to their respective jobs. The items are in use by the laborer working at the running DMAs.

43. Contractor arranged weekly assembly meetings for adaptation of the safety items and ensuring Health and Safety on every Monday. DMA wise Health and safety meeting schedule is set on the 1st working day of the respective DMA. However, the following table showed the incident report for human was found during July-December 2018 period and ware taken the following necessary steps to mitigate these incidents:

The Safeguard Officer (environmental), DESWSP, DWASA made a series of visit in different DMAs to see the health and safety issues. The health and safety arrangements including a first aid box, personal protective equipment (PPE), and fire prevention systems were found at site office. The safety barrier including warning tape & stands, proper plane sheet covering over trenches during day time were found during site inspection. (Photos attached in appendix).B. Temporary water supply services have been provided on July- December, 2018 to the houses of by water bowser:

Temporary water supply details (August) DMA-611					
Sl. No.	Date	Block & Road No	House No.	DMA No.	Qty. (lit)
1.	04.08.2018	Mr. Rahmot Ullah	H-491/D/2	611	3000
2.	04.08.2018	Mrs. Salina Begum	H-490	611	6000
3.	05.08.2018	Mrs. Rajia Begum	H-16/F/1	611	6000
4.	12.08.2018	Mrs. Rehana Begum	H-566/1	611	6000
5.	12.08.2018	Md. Saiful Ahmed Akash	H-566/A/2	611	3000
6.	05.08.2018	Block-B, Road-3	H-2	601	6000
7.	16.08.2018	South Banasree Project Road, B-A		611	6000
Total (liter)					36,000

Temporary water supply details (September) DMA-611					
Sl. No.	Date	Block & Road No	House No.	DMA No.	Qty. (lit)
1.	08.09.2018	MRs. Pazilatu N Nesa	H-182	611	3000
2.	08.09.2018	Md. Abdul Jabbar	NH-624/1,D-163/165	611	6000
3.	12.09.2018	Mrs. Nafiza Haque	H-405	611	6000
4.	12.09.2018	Md. Awal	H-4/2/1	611	3000

Temporary water supply details (September) DMA-611					
Sl. No.	Date	Block & Road No	House No.	DMA No.	Qty. (lit)
5.	13.09.2018	MRs. Shahida Akter	H-349/C	611	3000
Total (liter)					21,000

1.2.6. B. Environmental Quality Test Program

44. The level of impacts of environmental pollution related to water for workers, air quality and noise can be determined in quantitative terms by sampling a range of related parameters. Based on these results the mitigation measures provided for in the EMP can be adjusted accordingly. The field sampling work for each DMA was specified for the pre-construction and construction period frequently. The picture shows that the contractor carried out an environmental quality test program for DMA 611on 20th December 2017. The test reports reattached in Appendix B.

45. The test result contains ambient air quality and ambient noise level. The water quality test result of DWASA will be considered. So, the contractors did not submit any water quality test report separately.

1.2.6. C. Assessment of the results

46. According to the test results, the ambient noise levels at different locations near construction sites of DMA-611 were from 51.5 to 76.3dB. The allowable limit is set as less than 70 dB at all time of construction phase. The test report concluded that the recorded noise levels (A) have insignificant impacts to the surroundings of the worksite areas. Safeguard Officer (Environmental) of DESWSP, DWASA suggested to contractor for using canopy or noise reducer box especially for noisy equipment i.e. road breaker, generator, compactor etc. The test result of ambient air quality analysis shows the Suspended Particulate Matter (SPM) found in some DMAs are about 96 - 167 µg/m3, Particulate Matter (PM) are about 76 – 98 µg/m3, Sulpher Oxides (SOx) are about 99 – 122 µg/m3and Nitrogen Oxides (NOx) are about 72 – 76 µg/m3. The DoE, Bangladesh limits for SPM, PM, SOx, NOx in these working areas are 200, 150, 365 and 100 µg/m3 respectively. The test report quoted a note that the weather was fogging. However, Safeguard Officer (Environmental), DESWSP suggested to the contractor for increasing the water spraying activity at worksites area.

47. Observing the test results, it can be concluded that slightly increased but within acceptable limit of DoE in ambient air quality and noise level have experienced at the working areas of DMA 611 under ICB 02.7. Therefore, the contractors were requested to do the followings in order to mitigate the environmental quality issues.
Excavated materials have to be removed immediately from worksites.
The trucks have to be covered while transporting off excavated materials and transporting in sand for backfilling.
Watering of stockpiles and barren roads has to be done twice a day between 8:30AM to 10:30 AM and 4:00 PM to 6:00 PM.
All equipment that produces noise i.e. HDD and PB machine, road breaker, generator etc. have to be equipped with sound reduction box or canopy while operating.
No night work to be permitted in areas that are noise sensitive, i.e. residential, hospital etc., places.

1.2.7. Change in Project Scope (if any)

48. There is no major change in the scope of activates in the implementation phase. More or less it is mentioned here that if it is possible to shorten the span of times elapsed in testing of materials, procurement of materials, mobilization of staff & labours, road cutting permission, than project implementation will run smoothly and timely. Yet seasonal condition is one of the major causes delay of work in installation of pipe line. However we are getting good dry season this year & cooperation from DNCC & DSCC, so progress is satisfactory.

1.2,8. Updating of Environmental Management Plan

49. Updating of Environmental Management Plan (EMP) is needed to be updated for arising different circumstances at worksites due to pipeline installation works. During the period July – December 2018 the contactor is also instructed to prepare the EMP for other DMAs further by accomplishing the possible environmental issues and prepare proper plan for implementing EMP at worksites.

1.2.9. Updating of Initial Environmental Examination (IEE) Report

50. IEEs of construction batch 1 (DMAs 602, 603 and 604), batch 2 (DMAs 606, 609 and 612) and batch 3 (DMAs 601, 605, 607 and 608) has already been completed and already published in ADBs Website. IEE for construction batch 4 (DMAs 610, 611 and 613) was published in project website (www. DESWSP-DWASA.com on January 16, 2018) and IEE of construction batch-5 (DMA 614, 615 and 616) was prepared and sent it to ADB for approval.
Chapter 2: Environmental Monitoring

2.1. Qualitative and Quantitative Monitoring Data

51. All the preparatory measures have been taken to mitigate the suffering of local people and the traffic system. Specially controlled emissions air quality, noise and nuisance.

52. Monitoring to DMA 610, 613 and 611 has been conducted on 15th February 2018. During the noise level monitoring the Luton Sound level meter (model-4012) were being placed just near the generators, HDD machines, and Backhoe caused a higher level recorded sound; usually mobile generator placed in a safe distance place to avoid public disturbance and low level of sound, thinking of placing additional device to the silencer of the generator to reduce the sound as canopy DoEs not work well.

53. The contractor avoided the operation of HDD and other noisy equipment nearer to the educational institute during Examination time period.

54. Dumping the hazardous substance to the City corporation's designated dumping ground. Solid Waste bucket are being provided at the end of the road to keep the item generated from the site. At the end of the day transport it to the designated dumping depot.

55. City corporation's are doing necessary for the Solid waste management. They are taking the wastes from the dumping depot to yards and taking necessary measures on that.

56. Waste water disposal to the nearby local storm drainage or the nearby canals. In case of no drain available carry the waste water in water tank to the nearby canal and disposed it off.

57. All materials, equipment, tools and plants kept at the site go down at Aftabnagor and South Banasree, Dhaka in a designated manner. Small stock of emergency items and equipment kept to the site go down as and when required basis.

58. Safety barricade, Signal lights, Flags , temporary road blocker and other items of the traffic control and management using during implementation of the installation work at the Rampura DIT main and other busy roads having night work program at DMA 610 & 613 .

59. Considering the importance of proper implementation of Environmental Management Plan (EMP), the Environmental unit of MSC has already conducted several orientation and capacity building training workshops regarding field implementation of EMP under ICB-02.7 to fulfill the Environmental Safeguard Requirements of GoB and ADB for supervising staffs of PMU, PCU, MSC, Contractors, NGO and Site staffs including Sub-contractors. The attendees were comprehended about the rules, guidelines and processes of EMP implementation and environment of worksites at the end of those workshops.

60. Monitoring Parameters/ Indicators and Methods Based on the Monitoring Plan Previously Agreed Upon with EMP

2.2. Implementation of Environmental Management Plan (EMP)

61. Through site visit by Safeguard Officer (Environmental) of PMU and Environmental Inspector, MSC it was identified that there were some areas where more improvement was needed in terms of compliance with environmental safeguards requirement. It is noted that the excavated materials were remove immediately from worksites with some exception where difficult to handle the excavation materials due to narrow road. Removing excavated earth from the narrow by lane some time takes much time for head loading and non-availability of suitable vehicles. Steel sheet are being used on Open trench for crossing., otherwise soil, sand and/or debris becomes muddy with rain and spreads over surrounding road; causing disturbance to pedestrians and traffic. Furthermore, the mud dries out with sunlight during day and creates dust. It is also noted that the pipes were handled in proper manner; in particular, the pipes were plugged in while stack &installation. The Safeguard Officer (Environmental), DESWSP, DWASA requested the contractors to consider the issues with supreme importance as both issues have direct relationship with human health degradation. The contractor informed about more important priority areas of DMA614, 615, 616 under the jurisdiction of Dhaka Mass Rapid Transit Development Project (DMRTDP) safety and environmental issues were specially taken care of.

62. Site environmental plan has been circulated at the work site, base camp etc. Site Environmental Plan (SEP) was provided showing arrangement for disposal of sanitary and other house hold waste, location of fuel, oil and lubricant depots, sheds for equipment, garage for the vehicle, labor and housing facilities.2.3. Monitoring Results Compared Against Previously Established Benchmarks/ Baseline and Compliance Status

63.

Table 1: Monitoring Results

ENVIRONMENTAL MONITORINGREPORT							
Activity	Mitigation Measures	Responsible for Implement-ation	Responsible for Monitoring	Parameters to Monitor	Frequency of Monitoring	Guidelines/ Standards	Compliance Status
PLANNING AND DESIGN PHASE (Applicable for Batch 5 (DMA 614, 615 and 616)							
Contractor's responsibility	-Be familiar with the present traffic congestion of Dhaka city, rules and regulation	Contractors	DWASA PMU MSC	- Road Cutting Plan -	Regular site inspection by	Contract Provisions	Temporary water supply arrangement is made to the

ENVIRONMENTAL MONITORINGREPORT							
Activity	Mitigation Measures	Responsible for Implement-ation	Responsible for Monitoring	Parameters to Monitor	Frequency of Monitoring	Guidelines/ Standards	Compliance Status
	of Dhaka City Corporations (DCCs) for preparation of road cutting plans before execution of works; - Arrange for temporary water supply to every household as and when their water supply is disconnected or disrupted; - Protect all underground and over ground utility services viz. telephone, electricity, gas, sewer, drainage, etc. from damage during execution of the contract. Necessary compensation to be paid to the respective organization(s) as per their prevailing rules and regulations.			Arrangement for temporary water supply - Disruption to utilities	Environmental Inspector of MSC and Safety Officer of contractors.	EMP	households disconnected from the regular water supply. Due emphasis is being given to the utility services including protection of the trenches and poles. Necessary compensation is being given to the utility agencies if any damage is caused by installation work. Complied
Pipe replacement rehabilitation,1 and network extension2	- In all cases, AC pipes shall be replaced. Existing AC pipes, where intact, shall be left in-situ and not disturbed. Where the AC pipe is damaged and where there is a risk of asbestos particles becoming airborne, the contractor shall follow all necessary procedures, guidelines and laws as laid out locally or by this	Contractors	DWASA PMU MSC	- Residual design life and proposed methods of repair - Inventory of AC	As required in the Program of Performance	Contract Provisions EMP USEPA OSHA Guidelines for Asbestos	Complied

1The term pipe replacement is understood to mean that the existing pipe will be replaced, either by the traditional open trench method, where the existing pipe will be abandoned and a new pipe will be installed or by pipe bursting, where the existing pipe will be used as a host pipe which will be cut open, expanded and a new pipe will be installed inside the old pipe.

2 The term pipe extension is understood to mean the laying of a new pipe where no distribution pipes previously existed. Laying pipes in un-served and underserved area and replacing spaghetti lines (bunch of small diameter coil pipes) with new reticulation pipe lines will be considered as extension work.

ENVIRONMENTAL MONITORINGREPORT							
Activity	Mitigation Measures	Responsible for Implement-ation	Responsible for Monitoring	Parameters to Monitor	Frequency of Monitoring	Guidelines/ Standards	Compliance Status
	EMP to contain and remove hazardous material. - The network expansion into different residential / industrial areas will be through trenchless or conventional trenching methods whereby the pipelines will be laid with a minimum cover depth of 1.0 metres.			pipes			
Working hours and times	- All work in major roads and on minor roads that are heavily used by traffic will only be permitted at night between 7:00 PM and 7:00 AM. - All the minor roads and alley with less traffic may be considered for both day and night working provided alternative passageway can be maintained.	Contractors	DWASA PMU MSC	Work hours	As required in the Program of Performance	- Contract Provisions - EMP	(With some exceptions working hours is being maintained except places where work is allowed at night time). Complied
Road cutting3	- Unnecessary road cutting should be avoided. - The contractor has to take all necessary safeguards to avoid accidents at site, prevent loss/damage to all existing utilities like pipelines, telephone/gas/electric cables, poles etc. and any government or private property during the contract period. - DWASA will apply for the road cutting permission and the contractorshall give full	Contractors for preparation of road cutting plan and payment for pavement restoration Contractor for prepar	DWASA PMU DCCs for issuance and monitoring of pavement compaction	- Road category along pipe alignments - Budget allocation for pavement restoration - Road cutting plan - Road cutting	Prior to start of civil works After compaction and turn-over to DCCs for pavement restoration	- Contract Provisions - EMP	(Numbers of Road Blocker, safety items, Divider, Cones and other items are being used at worksite). Complied

3 Most of the roads are owned and maintained by DCC. Some narrow roads having width even less than 2 m are privately-owned.

ENVIRONMENTAL MONITORINGREPORT							
Activity	Mitigation Measures	Responsible for Implement-ation	Responsible for Monitoring	Parameters to Monitor	Frequency of Monitoring	Guidelines/ Standards	Compliance Status
	effort and cost for collection of road cutting permission for required days. Therefore, the road cutting plans necessary for the application must be prepared by the contractor. - No temporary or permanent works must proceed before the design and drawings are approved by the Project Manager and road cutting permission obtained from DCCs by PMU. - The contractor shall prepare a traffic management scheme (road closure program or diversions) and incorporate detail of traffic diversions and pedestrian routes, all traffic signs (for the regulation and for information) and road markings shall be ensured prior to start of road cutting.	ation and implementation of traffic management scheme DWASA for the road cutting permit DCCs for pavement restoration		permission from DCCs			
Road excavation	- All excavations shall be done to the minimum dimension as required for safety and working facility - The excavation shall not damage or interfere with existing services or structures. If damage or interference is so caused the contractor shall make arrangements with the supply and/or building owner to execute the repairs at the contractor's own cost.	Contractors for preparation of road cutting plan and payment for pavement restoration Contra	DWASA PMU DCCs for issuance and monitoring of pavement compaction	- Road category along pipe alignments - Budget allocation for pavement restoration - Road cutting plan	Prior to start of civil works After compaction and turn-over to DCCs for pavement restoration	- Bangladeshi Standards and Codes of Practice in their latest version, National Building code and	Long waiting period for road cutting permission from DNCC/DSCC is causing the project in delay. The Flag man with a road supervisor work for traffic diversion when necessary.

ENVIRONMENTAL MONITORINGREPORT							
Activity	Mitigation Measures	Responsible for Implement-ation	Responsible for Monitoring	Parameters to Monitor	Frequency of Monitoring	Guidelines/ Standards	Compliance Status
	- All trench and pit excavations and other work shall be carried out during night time and within the limits of any existing road area shall be completed as rapidly as possible. - Road drains and channels shall be kept free from obstructions at all times. - In case of excavation in VIP and other large roads, the trenches and pits maybe need to be covered by steel plates to allow traffic to pass during non-working periods. The contractor must liaise with the DCC and the responsible police to familiarize them and adhere to such rules. All costs involved to adhere to such rules shall be borne by the contractor. - Pits and trenches not backfilled at end of a night shift, the excavation must be covered with steel plates and in alleys with wooden plates. - Where trench excavation or any other part of the works obstructs any footpath or right-of-way, the contractor shall provide, at his own cost, a temporary footpath around the obstruction to the satisfaction of the Project Manager. - The contractor shall have particular regard to the safety of pedestrian, livestock, and shall	ctor for preparation and implementation of traffic management scheme DWASA for the road cutting permit DCCs for pavement restoration		- Road cutting permission from DCCs		Public Works Department (PWD) specification of the Govt. - Contract provisions - EMP	Pits and trenches are always covered with steel plates and in alleys with wooden plates. Complied

ENVIRONMENTAL MONITORINGREPORT							
Activity	Mitigation Measures	Responsible for Implement-ation	Responsible for Monitoring	Parameters to Monitor	Frequency of Monitoring	Guidelines/ Standards	Compliance Status
	ensure that all open excavation, access routes and steep or loose slopes arising from the contractor's operations are adequately fenced and protected.						
Trenchless pipe installation	- Pipes shall be installed by the horizontal directional drilling (HDD) methods where required. Should survey information indicate that the method is not feasible the contractor shall inform the Project Manager and gain prior approval for an alternative method or for open trench method. - Excavation material shall be removed from the conduit as the work progresses. No accumulation of excavated material within the conduit will be permitted. - The contractor shall provide sediment and erosion control measures to prevent drilling fluid or borehole cuttings from entering water courses or other land adjacent to the site in accordance with local environmental legislation. - The contractor shall supply portable mud tanks or construct temporary mud pits to contain excess drill fluids during construction. Spent drilling fluids and cuttings shall be confined to the entrance	Contractors	DWASA PMU MSC	- Program of Performance - Pipe Bursting Plan - Plan for locating, exposing and re-connecting service connections - Proposed pit size and location - Temporary water supply plan; - Plan for consumer notification. - Traffic management	As required in the Program of Performance	Contract provisions	- Extra care being taken to protect the existing utility services. In case of any damage to the private or organizational utility services or any structures; repairing and rebuilding done with the entire satisfaction of the respective agencies/ person concern. - The open trances, access routes and steep or loose slopes are not always being fenced and protected during working period. Complied

ENVIRONMENTAL MONITORINGREPORT							
Activity	Mitigation Measures	Responsible for Implement-ation	Responsible for Monitoring	Parameters to Monitor	Frequency of Monitoring	Guidelines/ Standards	Compliance Status
	and exit pits. - The contractor shall take all necessary precautions to minimize the damage to the adjacent properties. Any drilling fluid that enters the pipe shall be removed by flushing or other suitable methods. - The contractor shall be responsible for clean-up and restoration - Pits excavated to permit connection of bored pipe shall be backfilled, and disturbed areas shall be restored to their original state or better. Sections of sidewalks, curbs, and gutters or other permanent improvements damaged during HDD operations shall be repaired or replaced at the contractor's expense.			plan			
Resettlement Plan	- Implement Resettlement Plans, prepared by DWASA updated by MSC. No civil works will begin until all compensation to affected persons is paid.	PMU DSC Contractors NGO	DWASA ADB	- Number of affected person - Compensation to affected persons - Number and type of information dissemination activities	Prior to start and during civil works	Resettlement Plan	- RP of DMA 602, 603, 604, 606, 609, 612; 601, 605, 607 & 608, 610, 611, 613has already been implemented. RP of DMAs 614, 615 and 616 are on going . Complied

ENVIRONMENTAL MONITORINGREPORT							
Activity	Mitigation Measures	Responsible for Implement-ation	Responsible for Monitoring	Parameters to Monitor	Frequency of Monitoring	Guidelines/ Standards	Compliance Status
				- Complaints from stakeholders			
Preparation of catalogues, installation and O&M manuals	- The contractor shall supply catalogues and installation manuals for each type of pipes to DWASA at the time of submission the Operation and Maintenance manuals. - All catalogues and manuals shall be printed in the English language or accompanied by an English translation.	Contractors	DWASA PMU MSC	- Program of Performance	Completion of civil works and decommissioning	- Contract provisions	DMA 602, DMA 604, DMA 603, DMA 606 and 607 have been handed over on 4th and 25th January, 2017, 16th March, 22nd August, and 13th December 2017 respectively. DMAs 601 and 607 (TOTAL SIX DMAs) also has been handed over to Zone – 6, DWASA. The O&M manuals have approved by MSC and supplied to PMU and PCU. Complied
PRIOR TO CONSTRUCTION PHASE (Applicable for DMA 614, 615 and616)							
Preparation of final IEE/EMP	- Revise/update IEE/EMP based on detailed design - Submit to ADB for approval and disclosure	MSC to update DWAS	DWASA	- Detailed Design	After completion of detailed design	ADB SPS EARF	- IEE of 4th batch of construction: DMA-610, 611& 613EMP

ENVIRONMENTAL MONITORINGREPORT							
Activity	Mitigation Measures	Responsible for Implement-ation	Responsible for Monitoring	Parameters to Monitor	Frequency of Monitoring	Guidelines/ Standards	Compliance Status
		A to submit to ADB			and prior to start of civil works		has approved and IEE published in project website (www. DESWSP-DWASA.com on January 16, 2018). IEE of 5th batch of construction: DMA-614, 615& 616 submitted to ADB. EMP has been approved Construction 5th batch (DMA-614, 615 & 616) after approval of Detailed Design and Resettlement Plan (RP) is ongoing. Complied
Environmental Monitoring Report	- Submit to ADB semi-annual environmental monitoring report	MSC to prepare DWASA to submit to ADB	DWASA	- EMP - Contract provisions	Semi-annual	ADB SPS EARF IEE	5thSemi-Annual report has submitted to ADB for approval and already disclosed it ADB's website. 6th Semi-Annual report is being prepared. Complied
Legislation,	- In all instances, DWASA, service	Contractor	PMU Enviro	All applica	Prior to award	- Locatio	Copy of IEE remain at the

ENVIRONMENTAL MONITORINGREPORT							
Activity	Mitigation Measures	Responsible for Implement-ation	Responsible for Monitoring	Parameters to Monitor	Frequency of Monitoring	Guidelines/ Standards	Compliance Status
permits, and agreements	providers, contractors, and consultants must remain in compliance with relevant local and national legislation. - A copy of the IEE must be kept on-site and disclosed in DWASA and ADB website		nment Specialist and MSC Environment Monitoring Specialist	ble permits and approvals	of contract and as necessary	n Clearance - ECC - Road cutting permit	site office including the EMPs. Complied
Education of site staff on general and environmental conduct 4	- Ensure that all site personnel have a basic level of environmental awareness training. - Staff operating equipment (such as excavators, loaders, etc.) shall be adequately trained and sensitized to any potential hazards associated with their task. - No operator shall be permitted to operate critical items of mechanical equipment without having been trained by the contractor. - All employees must undergo safety training.	Contractor	PMU and MSC	Records of training	Prior to start of civil works and every new employee	Environmental management plan (capacity building)	Two trainings on field implementation of EMP by Environmental Unit of ADB & MSC and Periodic training on H&S is conducted by contractor. Complied
Safeguards supervisors	- The contractor shall appoint one environment safeguard supervisor and one resettlement supervisor who will be responsible for assisting contractors in implementation of EMP, coordinating with the MSC environment management specialist and resettlement specialist, community liaison, consultations with interested/affected parties, reporting, and grievance redressal on a	Contractor	Consultant	Hiring and actual work	As work progresses	Continuous work output and reporting records	One Environmental and Safety Engineer, Safety supervisor and Resettlement supervisors have been appointed by the contractor. Complied

4 These points need to be made clear to all staff on-site before the project begins.

ENVIRONMENTAL MONITORINGREPORT							
Activity	Mitigation Measures	Responsible for Implement-ation	Responsible for Monitoring	Parameters to Monitor	Frequency of Monitoring	Guidelines/ Standards	Compliance Status
	day-to-day basis.						
CONSTRUCTION PHASE (Applicable for DMA 609, 612 and 601, 605, 607, 608, 610, 611 and 613)							
Safety, security and protection of the environment	- Take all necessary precautions against pollution or interference with the supply or obstruction of the flow of, surface or underground water. These precautions shall include but not be limited to physical measures such as earth bunds of adequate capacity around fuel, oil and solvent storage tanks and stores, oil and grease traps in drainage systems from workshops, vehicle and plant washing facilities and service and fuelling areas and kitchens - Establish sanitary solid and liquid waste disposal systems - Should any pollution arise, clean up the affected area immediately at his own cost and to the satisfaction of the Project Manager, and pay full compensation to any affected parties.	Contractors	DWASA PMU MSC MoEF	- ECC provisions - Program of Performance - Waste Management Plan - Complaints from stakeholders	- As required in the Program of Performance - As work progresses	- ECC - Contract provisions - EMP - No complaints received	Safety and precaution measures are being considered to protect the pollution of surface or ground water. Use of petroleum and lubricant done with extra care to avoid any seepage into the ground. Complied
Protection of waterwa	- Every effort shall be made to ensure that any chemicals or hazardous	Contractor	DWASA MSC	- ECC Provisions	As work progresses	- No visible increas	Usage of chemicals that will

ENVIRONMENTAL MONITORINGREPORT							
Activity	Mitigation Measures	Responsible for Implement-ation	Responsible for Monitoring	Parameters to Monitor	Frequency of Monitoring	Guidelines/ Standards	Compliance Status
ys	substances do not contaminate the soil or water on-site. - Care must be taken to ensure that runoff from vehicle or plant washing DoEs not enter the surface/ground water. - Site staff shall not be permitted to use any stream, river, other open water body, or natural water source adjacent to or within the designated site for the purposes of bathing, washing of clothing, or for any construction or related activities. - All concrete mixing must take place on a designated, impermeable surface. - No vehicles transporting concrete to the site may be washed on-site. - No vehicles transporting, placing, or compacting asphalt or any other bituminous product may be washed on-site. - All substances required for vehicle maintenance and repair must be stored in sealed containers until they can be disposed of removed from the site. - Hazardous substance/ materials are to be transported in sealed containers or bags.			- Complaints from community		e in turbidity and construction materials/ wastes in surface water, any waterways, or drainage channels - Zero complaints from community	contaminate the soil or water at site is not seen. Complied
Construction of temporary structure	- Before commencement of the works on the sites submit to the Project Manager the drawings, where the proposed	Contractor	MSC	Location plan	- Prior to start of civil works - As	- Approved location plan	Necessary offices, storages, warehouses, etc. have been

ENVIRONMENTAL MONITORINGREPORT							
Activity	Mitigation Measures	Responsible for Implement-ation	Responsible for Monitoring	Parameters to Monitor	Frequency of Monitoring	Guidelines/ Standards	Compliance Status
s (such as offices, storages, warehouses, scaffolding, etc.)	location and general arrangement or site construction survey of the contractor's office premises, workshops, storages, headquarters and other temporary constructions, necessary for adequate and easy execution of the contract. - Obtain own information about the access to all the parts of the sites and, if the contractor wants to use the roads, going through private properties, he shall complete all the formalities with the owners. - Ensure all necessary precautionary measures to avoid any accident due to traffic. He should ensure that for any activities/temporary or permanent structures, machineries and equipment, scaffolding or shoring should not obstruct free flow of surface runoff towards sewer system or drain. - Under no circumstances may open areas or the surrounding bushes be used as a toilet facility. - Encourage recycling and provide separate waste receptacles for different types of wastes. Ensure that all litter is collected from the work and camp areas daily. Ensure camp and working areas are kept clean and tidy at all				work progresses	- Construction method - No complaints received - No dumped wastes and litter at work sites at all times	established. Complied

ENVIRONMENTAL MONITORINGREPORT							
Activity	Mitigation Measures	Responsible for Implement-ation	Responsible for Monitoring	Parameters to Monitor	Frequency of Monitoring	Guidelines/ Standards	Compliance Status
	times. - No trees, shrubs, or groundcover may be removed or vegetation stripped without the prior permission of the engineer. - The contractor shall submit a method statement and plans for the storage of hazardous materials (fuels, oils, and chemicals) and emergency procedures. - The contractor shall ensure the material safety data sheets of chemicals are posted in conspicuous areas.						
Handling of surface water, flooding event, downpour, etc.5	- Protect the working area including pits, trenches, materials, machineries and equipment from any damage due to inundation by downpour. - Ensure not to make any congestion in the open drains or natural or artificial channels by any of his activity. - Take necessary measure to bring the site to the condition prevailing before the downpour without delay. Necessary measure has to be taken so that storm water DoEs not get into the newly installed pipelines. - Be particular in keeping	Contractors	DWASA PMU MSC	- Program of Performance - Bi-weekly 6 weeks running plan - On-site record book	- As required in the Program of Performance - As work progresses	- Contract Provisions - EMP	- Site was kept clear during downpour to avoid the damages. Complied

5 Water logging problem exists during downpours and monsoon. Portions of roads may be flooded for prolonged periods after heavy downpours. The existing drainage facilities of Dhaka are insufficient. Only about 30% of the city's population is connected to the sewerage system. Discharging the wastewater through surface drains, or in low-lying areas, natural drains, or water bodies that find their way to storm sewers. During monsoon period with medium to downpour the roads are inundated for 1-6 hrs.

ENVIRONMENTAL MONITORINGREPORT							
Activity	Mitigation Measures	Responsible for Implement-ation	Responsible for Monitoring	Parameters to Monitor	Frequency of Monitoring	Guidelines/ Standards	Compliance Status
	updated weather forecast and maintain a record book at site in which weather condition is recorded.						
Handling of excavated soil	- Make own arrangements for the temporary storage of any excavated material. Haul away all excavated materials from the excavation site and deposit these in an area designated by DWASA. - Have regard to the working areas available to him for the construction of the pipeline particularly where this is located in roads or in other places to which the public has free access. - Be responsible for removal and disposal of any excavated material required for or not suitable for use as refilling as aforesaid or use elsewhere in the works. The cost of such removal of excess excavated earth shall be deemed to be included in the contract rates. - Hauling vehicles must always be present at the excavation site.	Contractors	DWASA PMU MSC	- Program of Performance - Bi-weekly 6 weeks running plan - On-site record book - Complaints from stakeholders	- Prior to start of civil works - As work progresses	- Contract Provisions - EMP	The arrangements have been made to remove the excavated materials to the designated city corporation dumping ground nearer to the DMA. With some exceptions, excavated materials are not being removed immediately from worksites as per EMP. Complied
Minimization of public disturbance	- Restrict site works and keep the sites accessible for inspection by competent authority at any time. - Ensure, as far as possible to minimize public disturbance and work during the nights. - Advance road signage indicating the road	Contractors	DWASA PMU MSC	- Program of Performance - Inventory of utilities, signs and	- Prior to start of civil works (per pipe section) - During pipe laying/ replace	- Contract provisions - EMP - No complaints received	In case of night works, prior information to locals, noise reducers are used at worksites with minimal level of disturbance possible to

ENVIRONMENTAL MONITORINGREPORT							
Activity	Mitigation Measures	Responsible for Implement-ation	Responsible for Monitoring	Parameters to Monitor	Frequency of Monitoring	Guidelines/ Standards	Compliance Status
	detour and alternative routes. Provide sign boards for pedestrians to inform them of nature and duration of construction works and contact numbers for concerns/ complaints. - Provide adequately illuminated signs and barriers at night. Ensure these are clean, legible at all times and repositioned as necessary as the work progresses. - For the duration of the works, provide convenient access to paths, steps, bridges, crossings or drives for all entrances to property abutting the site and maintain them clear, tidy, and free from mud and objectionable matter.			barriers - access to paths, steps, bridges, crossings or drives for all entrances to property - Complaints from stakeholders and affected people - Records of disclosure and public consultations	ment/ bursting - As work progresses		locality. Complied
Warning of users prior to any disturbance in water supply	- Submit detailed work plan for the particular portion of the work to the Project Manager for approval. - Before setting out for the work, inform the inhabitants, businesses and consumers through appropriate means (bill board display, leaflet distribution, using colour papers announcement on radio and TV, publishing in the widely circulated daily newspapers) at least 7	Contractors NGO	DWASA PMU MSC	- Program of Performance - Inventory of utilities - Liaison with utilities owners and operators	- Prior to start of civil works (per pipe section) - During pipe laying/ replacement/ bursting	- Contract provisions - EMP - No complaints received - 7-day notice to public	- NGO and representatives from contractor given the prior information regarding the disturbance in water supply. Complied

ENVIRONMENTAL MONITORINGREPORT							
Activity	Mitigation Measures	Responsible for Implement-ation	Responsible for Monitoring	Parameters to Monitor	Frequency of Monitoring	Guidelines/ Standards	Compliance Status
	days (or as directed by the Project Manager) before commencement of any work.			- Number and type of information dissemination activities - Complaints from stakeholders and affected people			
Maintaining water supply	- Plan and execute in such a way the water supply shall be kept in operation with maximum disruptions of one working day (12 hours) - Notify existing users about temporary disruption of water supply if unavoidable. - Provide with alternative water source to disconnected consumers to meet their daily requirement. - Ensure only clean water free from deleterious materials and of appropriate quality for its intended use is supplied. - In providing water, ensure that the rights of and supply to existing users are not affected either in quality, quantity or timing. - Inform the Project manager about the event of a dispute over the	Contractors	DWASA PMU MSC	- Program of Performance - Number of disconnected consumers - Quantity of supplied water to affected consumers	- Prior to start of civil works (per pipe section) - During pipe laying/ replacement/ bursting	- Contract provisions - EMP - No complaints received	NGO and representatives from contractor give the prior information regarding probable disruption with water supply. Arrangement is made for temporary water supply when necessary. Temporary water was also supplied where needed for disconnecting the water supply due to pipe interconnection, PB, damaged any utility etc.

ENVIRONMENTAL MONITORINGREPORT							
Activity	Mitigation Measures	Responsible for Implement-ation	Responsible for Monitoring	Parameters to Monitor	Frequency of Monitoring	Guidelines/ Standards	Compliance Status
	effect of the contractor's arrangements on the water supply of others.						Complied
Provision for security of the sites	- Be responsible for guarding all utilities, plants equipment, material, etc. delivered on sites and for ensuring that all sign, lights, fences, etc. are in their proper place. - Provide, install and maintain suitable barriers and/or fences to protect the facilities, constructions camp, storage yard, existing facilities and construction and installation operations and to remove same when no longer required by DWASA, or at completion of the project.	Contractors	DWASA PMU MSC	- Program of Performance - Signs and barriers - Security measures in place	- Prior to start of civil works (per pipe section) - During pipe laying/ replacement/ bursting - As work progresses	- Contract provisions - EMP - No complaints received	Complied
Protection of trees and vegetation	- Ensure that no trees or shrubs are felled or harmed except for those required to be cleared for execution of the works. - Ensure no tree shall be removed without the prior approval of the Project Manager and any competent authorities. - Plant and maintain two trees of the same species for every one that is removed.	Contractors	DWASA PMU MSC MoEF	- Program of Performance - Complaints from stakeholders - Number of trees cut and planted	- As required in the Program of Performance - As work progresses	- ECC - Contract provisions - EMP - No complaints received - 100% survival of trees planted	For being the pipe line alignment along the roads where no trees are present eliminate the chance of trees to be cut. In case of any trees to be cut it is compensated at the rate of double. Complied
Use of wood as fuel	- Not use wood as a fuel for the execution of any part of the works, including but not limited to the heating of bitumen and bitumen mixtures	Contractors	DWASA PMU MSC	- Program of Performance -	- As required in the Program of Perform	- Contract provisions - EMP	Usually compressed gas or other type of fuel is used but no wood for

ENVIRONMENTAL MONITORINGREPORT							
Activity	Mitigation Measures	Responsible for Implement-ation	Responsible for Monitoring	Parameters to Monitor	Frequency of Monitoring	Guidelines/ Standards	Compliance Status
	and the manufacture of bricks for use in the works. - To the extent practicable, ensure that fuels other than wood are used for cooking, and water heating in all his camps and living accommodations.			Complaints from stakeholders	ance - As work progresses	- No complaints received	cooking is allowed. Complied
Fire prevention	- Take all precautions necessary ensure that no buildings and supply utilities, etc. or vegetation along the line of the road outside the area of the permanent works is affected by fires arising from the execution of the works. - Follow any instructions of the competent authorities with respect to fire hazard when working in the vicinity of gas installations. - Immediately suppress if a fire occurs in the natural vegetation or plantations adjacent to the road for any reason. - In areas of forest, shrub or plantation damaged by fire considered by the Project Manager to have been initiated by the contractor's staff or labour, replant and restore to the satisfaction of the Project Manager.	Contractors	DWASA PMU MSC	- Program of Performance - Number of fire occurrences	- As required in the Program of Performance - As work progresses	- Contract provisions - EMP - Zero fire occurrence	Precautionary measures for such incident have been considered. Complied
Handling traffic and access	- Submit to the Project Manager for approval a traffic management plan and detailed work plan showing activities on hourly basis. - Plan and conduct work	Contractors	DWASA PMU MSC	- Program of Performance - Traffic manag	- As required in the Program of Performance	- Contract provisions - EMP - No	Contractor has a supervisor working with the placing and replacing of the traffic management

ENVIRONMENTAL MONITORINGREPORT							
Activity	Mitigation Measures	Responsible for Implement-ation	Responsible for Monitoring	Parameters to Monitor	Frequency of Monitoring	Guidelines/ Standards	Compliance Status
	in such a way that can be completed in 6-8 hours with as little as possible of traffic interruption, so all of this work (and probably most of the daytime work in minor roads) will be conducted by small teams of men, working on short lengths of the network (around 100 - 150 m) at a time. - Provide, erect and maintain barricades, signs, markings, flags, lights and flagmen as may be required for the information and protection of traffic. The flagmen shall be equipped with red and green flags and lanterns/lights. - Ensure barricades, signs, marking, and flags are of strong design. All barriers on roads and pedestrian areas shall be lit with warning lights during night time or when there is poor visibility. - Where the diversion or closure of any existing carriageway, walkway or public right of way is temporarily necessitated by the works, provide and maintain an alternative, which shall be operational before interference with the existing way. - Where ramps, temporary carriageways and walkways are required, they shall be provided and maintained			ement plan - Lists and samples of warning signs and barricades	- As work progresses	complaints received	items including maintenance of Ramps and carriageways. Complied

ENVIRONMENTAL MONITORINGREPORT							
Activity	Mitigation Measures	Responsible for Implement-ation	Responsible for Monitoring	Parameters to Monitor	Frequency of Monitoring	Guidelines/ Standards	Compliance Status
	to a standard suitable in all respects for the class or classes or traffic or pedestrians. These must be kept usable by women, children, patients and disables.						
Minimizing noise level	- Ensure noise level of the machineries and equipment must not exceed 70dB(A). - Use modern vehicles and machinery with standard adaptations to reduce noise and exhaust emissions, and ensure they are maintained to manufacturers' specifications. - Noise-generating equipment must be fitted with silencers. - If a worker is exposed to noise above a noise exposure limit, the contractor must investigate options for engineered noise control such as using low-noise excavators, jackhammers, drills, and power generators. - If it is not practicable to reduce noise levels to or below noise exposure limits, the contractor must post warning signs in the noise hazard areas. Workers in a posted noise hazard area must wear hearing protection.	Contractors	DWASA PMU MSC	- Complaints from community - Noise level monitoring record	As work progresses	- Bangladeshi Noise Standards - ECC Provisions	Noise level at most of worksites was found higher than allowable limit 70 dB(A). Noise reduction box was not in use while operating machineries. Complied
Minimizing dust generation and air pollution	- Limit dust by removing waste soil quickly, bringing sand to site only when necessary, covering and watering stockpiles, and covering	Contractors	DWASA PMU MSC	- Program of Performance -	- As required in the Program of Perform	- No visible increase in dust and	Excavated soil is not being removed and covered while transporting offsite as

ENVIRONMENTAL MONITORINGREPORT							
Activity	Mitigation Measures	Responsible for Implement-ation	Responsible for Monitoring	Parameters to Monitor	Frequency of Monitoring	Guidelines/ Standards	Compliance Status
	soil and sand when carried on trucks. - Vehicles travelling to and from the construction site must adhere to speed limits so as to avoid producing excessive dust. - Access and other cleared surfaces, including backfilled trenches, must be dampened whenever possible and especially in dry and windy conditions to avoid excessive dust. - Vehicles and machinery are to be kept in good working order and to meet manufacturer's specifications for safety, fuel consumption, etc. - The contractor is to have the equipment seen to as soon as possible should excessive emissions be observed.			Complaints from stakeholders - Vehicle emission testing records	ance - As work progresses	particulate matters - No complaints received	stated in the EMP, which promoting dust generation & air pollution. Complied
Protecting the community and facilities and locations of social and cultural importance (e.g. schools, hospitals, mosques,	- Increase the workforce in sensitive areas to complete the work quickly. - Provide wooden walkways for pedestrians and metal sheets for vehicles to allow access across open trenches, where required. - Use directional down-facing lighting, fitted with effective shades at all times when working at night. - Give special attention to the screening of higly	Contractors	DWASA PMU MSC	- Program of Performance - Bi-weekly 6 weeks running plan - On-site record book - Complaints	As required in the Program of Performance	- Contract Provisions - EMP - Zero complaints from the stakeholders	School, College and other educational institutes including mosque, temples and other religious establishments are taken in to account for disturbance. Complied

ENVIRONMENTAL MONITORINGREPORT							
Activity	Mitigation Measures	Responsible for Implement-ation	Responsible for Monitoring	Parameters to Monitor	Frequency of Monitoring	Guidelines/ Standards	Compliance Status
museums, etc.)	reflective materials on site. - Locate storage facilities and other temporary structures on site such that they have as little visual impact on local residents as possible. - Provide screening in areas where the visual environment is particularly important (e.g., along commercial routes) or privacy concerns for surrounding buildings exist. This can be in a form of shade cloth, temporary walls, or other suitable materials.			from stakeholders - Grievance Redress Mechanism records			
Protecting health and safety of workers	- Ensure continuing health and safety of the employees by producing and applying a Health and Safety (H&S) Plan for all working sites. The H&S plans will include such measures as: (i) excluding the public from construction sites; (ii) ensuring that all workers are provided with and use appropriate Personal Protective Equipment; (iii) health and Safety Training for all site personnel; (iv) documented procedures to be followed for all site activities; (vi) documented procedures to be followed for AC pipes; and (vi) accident reports and records. - Prior to the commencement of any hazardous operation, submit a Safety Method Statement to the Project Manager for his	Contractors	DWASA PMU MSC	- Program of Performance - Number of accidents - On-site Record	As required in the Program of Performance	- Contract provisions - EMP - Zero accident record - No complaints received	Workers have the intention of not wearing the Personal Protective Equipment (PPE) at worksites. But awareness campaign is conducted by contractor to change the practice. Complied

ENVIRONMENTAL MONITORINGREPORT							
Activity	Mitigation Measures	Responsible for Implement-ation	Responsible for Monitoring	Parameters to Monitor	Frequency of Monitoring	Guidelines/ Standards	Compliance Status
	approval. - Ensure all workers have been suitably trained prior to commencing work and are to be adequately supervised whilst carrying it out. - Ensure all plant and equipment are suitable for the task to be undertaken and properly inspected/tested prior to being put into operation. - Maintain records and make reports concerning health, safety and welfare of persons, and damage to property. Take remedial action to prevent a recurrence of any accidents that may occur. - Provide hard hats, boots, other protective equipment and first aid box with all necessary medicines. - Train workers in safety issues. Provide suitable arrangements to cater for emergencies, including: first aid equipment (dressings, etc.); person(s) trained to administer first aid; communication with, and transport to, the nearest hospital with an accident / emergency department; monitoring equipment; rescue equipment; fire fighting equipment; and communication with nearest fire brigade station. - Provide adequate welfare facilities including, as a minimum,						

ENVIRONMENTAL MONITORINGREPORT							
Activity	Mitigation Measures	Responsible for Implement-ation	Responsible for Monitoring	Parameters to Monitor	Frequency of Monitoring	Guidelines/ Standards	Compliance Status
	drinking water; toilets; washbasins with warm water, soap and towels; and clean/dry/warm area equipped with tables and chairs at which food can be eaten.						
Replacement of asbestos cement (AC) pipes	- Follow the protocol prepared by the design consultants to be applied in any instance that AC pipes are found. - Train all personnel (including manual laborers) to enable them to understand the dangers of AC pipes and to be able to recognize them in situ. - Inform the management immediately if AC pipes are encountered. - Remove all persons to a safe distance. - Delegate trained persons to deal with AC materials and require use of appropriate breathing apparatus and protective equipment - Implement procedures for the safe removal and long-term disposal of all asbestos-containing material encountered.	Contractor MSC to develop AC pipes protocol	DWASA MSC	- H&S plan - Number of accidents and work-related injuries - Complaints from community	As work progresses	- Construction method - Detailed design documents - H&S Plan - AC Protocol - Zero accident and work-related injuries	All AC pipes will be left in situ where intact. In case of need of handling of AC pipes, AC pipe handling protocol will be followed. Complied
Cultural and historical environment	- All the staff and laborers of the contractor be informed about the possible items of historical or archaeological value, which include old stone foundations, tools, clay ware, jewellery, remains, fossils, etc. - If something of this nature is uncovered, the Department of	Contractor	Consultant	Chance finds	As necessary	All chance finds shall be reported and turned over to the Department of Archaeology.	Noting important is existed nor found in the project area so far that is culturally or historically important. Complied

ENVIRONMENTAL MONITORINGREPORT							
Activity	Mitigation Measures	Responsible for Implement-ation	Responsible for Monitoring	Parameters to Monitor	Frequency of Monitoring	Guidelines/ Standards	Compliance Status
	Archaeology shall be contacted and work shall be stopped immediately.						
POST-CONSTRUCTION PHASE (PRIOR TO TURNOVER TO DWASA) (Applicable for DMA 601, 602, 603 &604, 606 and 607)							
Access	- All excavated roads shall be reinstated to original or better condition.	Contractor	Consultant	Road conditions	Prior to turn-over	Pre-existing conditions	Complied
Utilities and other existing infrastructure	- All disrupted utilities restored - All affected structures rehabilitated/compensated	Contractor	Consultant	All affected utilities	Immediately after civil works	All disrupted services restored	Complied
Construction camps and storage areas	- After construction work, all structures comprising the construction camp are to be removed from site or handed over to the property owner/community as per mutual agreement (if established on private/community land). - The area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up. - All hardened surfaces within the construction camp area shall be ripped, all imported materials removed, and the area shall be top-soiled and re-grassed using the guidelines set out in the regeneration specification that forms part of this document. - The contractor must arrange the cancellation of all temporary services.	Contractor	Consultant	General condition of the areas	Prior to end of construction period/demobilization	Pre-existing condition	Complied
Waste	- All wastes shall be	Contra	Consul	General	Prior to	Pre-	

ENVIRONMENTAL MONITORINGREPORT							
Activity	Mitigation Measures	Responsible for Implement-ation	Responsible for Monitoring	Parameters to Monitor	Frequency of Monitoring	Guidelines/ Standards	Compliance Status
management	removed from the site and transported to a disposal site or as directed by the environment management specialist. Waybills proving disposal at each site shall be provided for the environment management specialist's inspection.	ctor	tant	condition of the areas	end of construction period/demobilization	existing condition	Complied
OPERATION AND MAINTENANCE PHASE (INCLUDING DEFECTS LIABILITY PERIOD) (Not applicable during this reporting period)							
Detection and repair of leaks and pipe bursts	- Ensure leak detection and restoration time is minimized to the extent possible.	DWASA	DWASA	Number of reported leaks	As part of operations and maintenance of the improved system	Standards set by DWASA	

Chapter 3: Results of Environmental Monitoring and Compliance Measures

3.1. Monitoring Results Compared Against the Objectives of Environment Safeguards or Desired Outcomes Documented

64. Environmental quality monitoring is ensuring the implementation of Environmental Management Plan (EMP) at all ongoing worksites by assessing of environmental parameters which might be affected defined in detailed EMP i.e. ambient air quality. All the preparatory measures have been taken to mitigate the suffering of local people and the traffic system. Specially controlled emissions, air quality, noise and nuisance.

65. Monitoring to DMA 610, 613 and 611 has been conducted on 15th January 2018 . During the noise level monitoring the Luton Sound level meter (model-4012) are being placed just near the generators, HDD machines, and Backhoe caused a higher level recorded sound; usually mobile generator placed in a safe distance place to avoid public disturbance and low level of sound, thinking of placing additional device to the silencer of the generator to reduce the sound as canopy DoEs not work well.

66. Avoided the operation of HDD and other noisy equipment nearer to the educational institute during Examination time period. The contractors to arrange environmental quality test program once before any physical works and periodically during construction phase by means of field and

laboratory test for assessment of ambient air quality to ensure the implementation of EMP at ongoing worksites. In the 4th quarter (October-December) of 2017, two environmental quality test program was reported. The contractor was suggested to spray water minimum twice in a day every worksite as 8:30-10:30AM, and 3:30-5:30PM regularly at worksites area to mitigate air pollution caused by the project activities.

Noise and Nuisance

67. The generators used for temporary electricity supply and the tools and machineries used for pipe installation by HDD and PB methods are the main source of noise generation at worksites. The contractor was instructed for using noise reducer box/canopy to control the objectionable and excessive noise from the noisy equipment as mitigation and measure the noise level each worksites area regularly as monitoring. Unfortunately, no uses and adaptation of noise reducer box/canopy was seen at worksite during site inspection in July-December 2018.

68. The health and safety arrangements including a first aid box, personal protective equipment (PPE), fire prevention system etc. were not found at every site/DMA office. The safety barrier including warning tape and stands, plane sheet covering over trenches during awaiting works were not found (photo attached) at some worksites also. The workers without PPEs were common at worksites. Contractors took attempt to increase the practice of using PPEs through periodic awareness program, but unfortunately the same outcomes were noticed during site inspection in July -December 2018.

69. The generated waste at worksite i.e. excavated materials, debris, bricks etc. found in an average 1-2 days after excavation in July-December 2018.. Dumping the hazardous substance to the City corporation's designated dumping ground. Solid Waste bucket are being provided at the end of the road to keep the item generated from the site. At the end of the day transport it to the designated dumping depot. City corporation's are doing necessary for the Solid waste management. They are taking the wastes from the dumping depot to yards and taking necessary measures on that.

70. It was suggested contactors several times to manage and dumped the waste as prescribed in the detailed EMP. Valuable waste materials like pipe cuttings, fittings and etc. are collected at the end of the day and stored for recycling.

71. Waste water disposal to the nearby local storm drainage or the nearby canals. In case of no drain available carry the waste water in water tank to the nearby canal and disposed it off. The contractor was instructed to discharge the wastewater, black-water and grey-water as pointed-up in the detailed EMP.

72. Different traffic management scheme for different DMAs was developed and describes in SEP. The requirement of adaptation of the scheme was raised based on field conditions for the roads next to worksite area. It was noticed that as previous the contractor was successful in managing and adapting traffic management system as describing in EMP for the pipe installation period and they showed the no excuses. The contractor was instructed to adopt traffic management scheme immediately as per EMP.

73. Ensuring safe working environment and passage way for workers, site staffs for and city dwellers at worksites by the contractor during installation of pipe network is the main objective of EMP/IEE to avoid least incident. Both traffic and pedestrian congestion was also recoded due to that incident. No severe incident was recorded in the reporting quarter. The contractor was instructed to resolve all the environmental issues due to incidents immediately and compact well the filling sand layer by layer to assure quality works.

74. The contractors were also instructed to maintain a log book named “Incident Resister Book” at worksites and keep recording all incidents of worksites. The details of damaged/affected utility services and injured workers with taken action during pipe installation works for the reporting period of July-December 2018.

75. The mobile toilets were not installed and found at deliberated location as described in Site Environmental Plan (SEP) having adequate hand-wash facilities i.e. soap & water. Water for drinking and other purposes were found at nearby the DMA stores and labor sheds.

76. A central fuel and lubricants storage is established in Aftabnagor as described in EMP. The required fuel and lubricants are brought to the sites as needed.

77. The contractors have erected small equipment sheds in every DMA but the pipes were found on roads while inspected.

78. The cut piece of pipes were generated during pipe jointing and collected at the end of the day for reuse. Reuses of water were not seen at worksites except for direct human consumption.

79. Litter was contained within a designated area at work site and disposed off with prescribed manner. Water sprinkling activity was seen at work sites during this quarter where the contractor was instructed to sprinkle water at least two times in a day in every worksite during 8:30-10:30AM, and 3:30-5:30PM regularly.

80. There are also some observations recorded as follows and need to be adopted immediately.

The local people were informed about road cutting schedule and that earlier announcement was made prior any road cutting, pipe installation work.
In secondary and tertiary roads, it was seen the proper safety measures, warning tape, stands etc at most of the sites. The children and disabled people are not at risk of falling in trench kept safety measures for long time, i.e. around 3-5 days for all trenches.
To minimize the dust emission, water spraying should be increase minimum twice in a day (8:30-10:30AM and 3:30-5:30PM) for all the ongoing worksites.
Pipe must be stacked with proper covering and plugged as shown in the capacity building training workshop.
All the environmental parameters (ambient air, noise, water etc.) must be tested regularly before starting the work and during the work for each DMA. It would be appreciable, if monthly environmental test program can be arranged.
Removal activity of excavated materials and wastages should be increased to keep clean the worksites effectively.

3.2. If Non-compliance or any Major Gaps Corrective Action Plan

81. In some locations, problems raised warrant for hindrance to development work in the work site.

Cutting of narrow footpaths are creating miserable problems to the Community. Problems are also mitigated shortly with skill labor in implementation.

During rainy season development work are difficult to speed up. On the other hand, if road cutting permission of DCC is available in time, than various methods may be adopted to make good progress in pipe laying works. But DNCC already declared not to give any permission of road cutting for any development work during rainy season. So progress of pipe installation is simply low.

There is a variation in Project provision and design provision/implementation provision of physical work. It surely affects the payment schedule of the contractor. So this should be looked into and competent authority may be requested to overcome the problems.

There is a delay in the implementation works of the project. So for many reasons work is behind this aspect. Specially, contractor may be advised not to delay in implementation work (mobilization of skilled labour, suitable quality materials should be stacked on site for use, filling materials to be carried just after removing of the cut earth and every joint should be proper & trench shall be crossable by wooden planks within short time so that public shall not suffer).

Lagging in road cutting permission & materials mobilization with its testing are detected in DMA 614, DMA 615 & DMA 616..

Some problems arise in DMA 611 and it is being mitigated through gradual rectifications.

There are so many canal or river crossing/bridge crossings construction. Contractor could not maintain suitable level, contractual depth and exact alignment.

Washout was fitted with 150mm dia pipe which is not technically viable.

Casing pipes should cover all the portions of pipes including bend, at reducing/enlarging pipe dia in such a way to avoid expose of HDPE pipe.

82. One of the major responsibilities of environmental unit of MSC is to oversee and/or monitor the implementation of the Environmental Management Plan (EMP) by contractors during construction phase. The contractor found compliance in implementation of the approved EMP (e.g. health and safety plan, traffic management, environmental quality, stakeholder consultations etc.). As a means of Environmental Monitoring, the contractor needs more attention to conduct weekly labor demonstration training, execute the health and safety plan properly as described in EMP and arrange monthly environmental quality test (ambient air quality, ambient noise level, supplied and/or injected water etc.) at all ongoing worksites.

3.3. Records on Disclosure of Monitoring Information

83. The Safeguard Implementation Unit (SIU) of PMU consisted of Safeguard Officer (Environmental) and Safeguard Officer (Social and Gender) are being assisted by relevant Resettlement Specialists and social and Gender Expert in the MSC team updated the previous draft RP, IEEs and EMPs based on 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. The Social Safeguard and environmental reporting to ADB is being submitted on a semiannual basis. Consultation and public participation is being done throughout the project implementation and any social and environmental grievance is being handled in accordance with the Grievance Redress Mechanism Developed by the project.

Establishment of PMU including one full-time PD, 2 DPDs, one Senior Water supply engineer 4 XENs and Junior Members of the Dhaka Environmental Sustainable Water Supply Project (DESWSP), as well and has not yet been replaced.
Establishment of a SIU to provide policy guidance and overall coordination in Project implementation.
Providing counterpart funds by the Government of Bangladesh for project implementation on time- Ongoing. The GOB has allocated required counterpart funds.
The Government is to involve concerned ministries, agencies, and divisions in the implementation of the Project - Ongoing. The GOB has ensured cooperation of the concerned ministries and agencies.

Creation of project website by DWASA within 9 months of the effective date- is under process.
Preparation of grievance redress mechanism by DWASA within 9 months of the effective date- DWASA established a taskforce to receive and resolve complaints and/or grievances or act upon reports from stakeholders on misuse of funds and other irregularities, including grievances due to resettlement. DWASA also opened the help & complaint desk in January 2011 on pilot basis, and is expanding it in full scale. Awareness campaign has been launched and ongoing.
Involuntary resettlement is being carried out in accordance to Resettlement Framework to ensure that all land and right-of-way required for the project made available- For ICB-02.7 resettlement business survey has been carried out, resettlement action plans have been prepared and implementation is in progress. For ICB-02.7 recruitment of NGOs was completed and the NGOs mobilized in January 2015.
To comply environmental requirements the DWASA ensures that the design, construction, operation and implementation of all project facilities is being carried out in accordance with the IEE and complies with GOB environmental laws and regulations and ADB's Environmental Policy (2002)- ongoing. DWASA is aware and following up the issue. Contractor prepares Environmental Management Plans implementation of which is monitored and reported on to ADB semi-annually.
Preparation and implementation of the project in accordance with ADB's Policy on Indigenous People- Ongoing. Although the socio-economic survey showed that there are no any indigenous people within the zone 6. Participation of IP in the development and avoidance of undesired effect of development will be ensured in the project activities if any indigenous people are found in the project.
The project is carried out in accordance with ADB's Policy on Gender and Development (1998) - Ongoing. The upgraded gender action plan is being implemented by DWASA with support of consultants and NGOs.
Social Issues. The Government and Dhaka WASA ensure that the civil works contractors comply with all applicable labor, health and safety laws and regulations of Bangladesh- Ongoing. Specific clauses have been provided in the bidding documents and contracts to ensure adherence to the provisions of Bangladesh labor laws and in the Health and Safety Plan.
The Government and DWASA ensure that financial management capacity of DWASA is maintained and strengthened. MSC mobilized a financial accounting expert to assist PMU in this connection. A computerized accounts program (Tally) has been procured and accounts set up according to a chart of accounts, which reflects the budget lines of the DPP.
Dhaka WASA conducts initial baseline physical and socio-economic surveys for the purpose of project performance monitoring and evaluation. Baseline conditions are being established as part of the network modeling process. PMU Consultants are mobilized and will submit the report to layout the PMU plan.
The Borrower shall enable ADB's representatives to inspect the Project, the Goods and Works financed out of the proceeds of the Loan and all other plants, sites, properties and equipment of the Borrower and any relevant records and documents- Ongoing
The Borrower shall take all action which shall be necessary on its part to enable Dhaka WASA to perform its obligations under the Project Agreement, including the establishment and maintenance of tariffs as stipulated in the WASA Act 1996, and shall not take or permit any action which would interfere with the performance of such obligations- Ongoing
Dhaka WASA shall furnish to ADB all such reports and information as ADB shall reasonably request. DWASA shall also furnish to ADB quarterly reports on the execution of the Project and on the operation and management of the Project facilities - Ongoing.
Dhaka WASA shall (i) maintain separate accounts for the Project and for its overall operations; (ii) have such accounts and related financial statements (balance sheet, statement of income and expenses, and related statements) audited annually by independent auditors; and (iii) furnish to ADB, promptly after preparation but in any event not later than 6 months after the close of the fiscal year to which these are related ongoing.

3.3.1. Site Environmental Plan (SEP)

84. Site Environmental Plan (SEP) circulated at worksites by contractors for Construction Batch-1 (DMA-602, 603, 604), Batch-2 (DMA-606, 609, 612), Batch-3 (DMA-601, 605, 607, 608) and Batch-4 (DMA-610, 611, 613). The facilities to be provided to both workers & staffs and alternative passages were described properly in the circulated SEP. The contractor was instructed by the Safeguard Officer (Environmental), DESWSP, DWASA, to provide the detailed SEP as instructed earlier and clip to the all site/project office display board. Site environmental plan has been circulated at the work site, base camp etc. Site Environmental Plan (SEP) was provided showing arrangement for disposal of sanitary and other house hold waste, location of fuel, oil and lubricant depots, sheds for equipment, garage for the vehicle, labor and housing facilities.

Chapter 4: Recommendation and Conclusion

4.1. Identification of Key Issues on Affected Ecosystem or Complaints from Affected People

85. The implementation of the Package ICB 02.7 involves a significant waste management issue, as pipe installation work includes making trenches along the alignment for Open Trench (OT) method and making open pits for Horizontal Directional Drilling (HDD) and Pipe Bursting (PB) methods. These activities generate very large quantity of excavated soil and debris at worksites and also involve importation of a large quantity of backfilling sand. The handling of this generated wastes have obvious physical impacts on ambient air quality, noise level, and topography of dumping spots.

86. It is noted that the excavated materials were remove immediately from worksites with some exception where difficult to handle the excavation materials due to narrow road. Removing excavated earth from the narrow by lane some time takes much time for head loading and non-availability of suitable vehicles. Steel sheet are being used on Open trench for crossing., otherwise soil, sand and/or debris becomes muddy with rain and spreads over surrounding road; causing disturbance to pedestrians and traffic. Furthermore, the mud dries out with sunlight during day and creates dust. It is also noted that the pipes were handled in proper manner; in particular, the pipes were plugged in while stack & installation. The Safeguard Officer (Environmental), DESWSP, DWASA requested the contractors to consider the issues with supreme importance as both issues have direct relationship with human health degradation. The contractor informed about more important priority areas of DMA614, 615, 616 under the jurisdiction of Dhaka Mass Rapid Transit Development Project (DMRTDP) safety and environmental issues to be specially taken care of.

87. All materials, equipment, tools and plants kept at the site godown Dhaka in a designated manner. Small stock of emergency items and equipment kept to the site godown as and when required basis. Safety barricade, Signal lights, Flags , temporary road blocker and other items of the traffic control and management using during implementation of the installation work at the Rampura DIT main and other busy roads having night work program at DMA 610 & 613

88. The Safeguard Officer (environmental), DESWSP, DWASA made a series of visit in different DMAs to see the health and safety issues. The health and safety arrangements including a first aid box, personal protective equipment (PPE), and fire prevention systems were found at site office. The safety barrier including warning tape & stands, proper plane sheet covering over trenches during day time were found during site inspection.

89. In the project area, there are issues raised out.

During the installation work of pipe networking, incident/accident is encountered by using machine of HDD in the underground cable lines.

In some narrow area, electric poles or walls are about to fall down causing problems to the people in the community.
Passers-by are facing numerous obnoxious hazards in their way to the houses. Specially, women and children are badly affected and sensible to incident/accident.
Electric high voltage lines laid underground are also susceptible during using machines for Pipe Bursting & HDD.
Dewatering is to continue at time of necessity. Sometimes, it happens lately as removal of excavated earth from the work site.
Plan & program should match with time factor achieving good progress of work.
- Pipeline works of 13 nos. of DMAs are almost completed including installation of water pipelines, fittings etc.

Pressure test was also conducted to the completed water pipelines with/without house service connections.
Chlorination is also conducted after completion of the physical works to disinfect the pipeline.
Pre-commissioning & commissioning of the DMAs are also conducted and in this respect, MSC already reported and focused in the monthly progress report.

4.2. Recommendation for Improvement

90. The contractors must ensure that all excavated materials are removed immediately from the worksites as prescribed in revised EMP. The trucks carrying excavated materials and sand for backfilling must be fully covered.

91. The overall management of camps and worksite must be further improved according to the best practices on occupational health and safety so that these areas of the site can be fully compliant.
The contractors must ensure that all HDPE pipes to be installed and stacks are plugged in so that no wastewater and dirt can get into the pipes.

92. Contractors must take all necessary measures to keep the values of environmental quality parameters within the standard range as described in detailed EMP.
93. Drinking water supply and sanitary facilities for laborers should be ensured within the short distance from construction area.
Every section of offices (Project Director, Team Leader, PCU, Contractors) must be particular in disposing of their share of duty within stipulated time.
Everyday every personnel should be conscious of the clearing of his own table, clearing/solving the problems with initiative of his individuality or with joint initiatives.
Every personnel should consider himself as owner of the project. Only Project Director is not the owner of project. Then we will be capable to give importance to time, money, dispose-up of the work in right way our conscience.
Road cutting permission should be handled with more zeal, pursue to take minimum time to avoid delay in implementation.
As per contract document, Section-6, Clause no. 1.3.2 maximum 70 nos. of house connections per km. pipeline of 200mm diameter or less may be provided in the water pipeline in general. With discretion of project Manager, this matter may be settled in respect of different diameter of pipes as well as demands of consumers.
Where there is a development work, there are problems in executing of activities. To overcome the problems, practical & immediate action in this respect are vital in co-ordination with all stack-holders. This project work is time-bound. So Contractor should think the matter in positive manner engaging their skilled labours, proper & precise equipments, cautious & experienced management with co-ordinate efforts of all to achieve the goal.

4.3. Monitoring Adjustment Measures Recommended Based on Monitoring Experience and Stakeholders Response

94. There are so many factors to make good progress in the project work.
Trained-up man power.
Acceptable materials. Pipes, fittings, bends, Tees, GV, ARV, PRV, PSV etc.
Management:
DWASA
Contractor
Consultant.

95. Proposal for better progress:

Every section of offices (Project Director, Team Leader, PCU, Contractors) must be particular in disposing of their share of duty within stipulated time.
Everyday every personnel should be conscious of the clearing of his own table, clearing/solving the problems with initiative of his individuality or with joint initiatives.
Every personnel should consider himself as owner of the project. Only Project Director is not the owner of project. Then we will be capable to give importance to time, money, dispose-up of the work in right way our conscience.
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4.4. Proposed Items of Focus for the Next Report and Due Date

96. Where there is a development work, there are problems in executing of activities. To overcome the problems, practical & immediate actions in this respect are vital in co-ordination with all stack-holders. This project work is time-bound. So Contractor should think the matter in positive manner engaging their skilled labours, proper & precise equipment's, cautious & experienced management with co-ordinate efforts of all to achieve the goal.

5. APPENDIXES

97.

Appendix A: Photographs of the activities under package 2.7 during July - December, 2018

Appendix B: Ambient Air Quality and Noise Level Test

98. According to approved detailed EMP and IEE, monthly ambient air quality test to be performed at ongoing worksites and reported to MSC.
Picture:

Part B (Intake, RW Pipeline, WTP, Treated Water Pipeline & Distribution Network)

1.1 Executive summary

The Dhaka Environmentally Sustainable Water Supply Project (DESWSP) funded by Asian Development Bank (ADB Loan No 346152-BAN) supports the ongoing efforts of the Government of Bangladesh to improve health and quality of life and reduce poverty of the people in the project area by providing access to adequate, sustainable safe water supply facilities.

This Semiannual Environmental Safeguard Monitoring Report (SAEMR) covers contract components

- Package 1 (Bisnandi intake point at Meghna River, raw water pipeline, Gandharbpur WTP),
- Package 2 (14 km treated water transmission pipeline from Gandharbpur WTP to American Embassy in Dhaka),
- Package 3.1 (22 km of primary distribution pipelines from American Embassy in Dhaka) and
- Package 3.2 (43 km of feeder pipelines to DMAs).

The contract for Package 1 was signed in May 2018 and constructions activities are due to commence in May 2019, while Package 2, 3.1 and 3.2 have not been awarded yet. No construction activity has been performed from July to December 2018.

The project is considered Category B as per the ADB SPS 2009 as no significant impacts are envisioned. An Initial Environmental Examination (IEE) report was prepared by the consultant engaged by the ADB during appraisal. However, during the detailed design stage updated IEEs for all packages are being prepared by the Management, Design, Supervision Consultant (MDSC).

A first Environmental Impact Assessment (EIA) was prepared by an environmental consultant engaged by DWASA and supported by ADB, and was approved by the DoE in 2015. An updated EIA report was prepared by Enviro Consultants for all packages in April 2018 to take into account of detail design changes in pipeline routes and additional geotechnical investigation works. This document was approved by the Department of Environment (DoE) on 11/12/2018.

Comment [PV1]: When? Rahat please add.

Comment [HR2]: 11/12/2018

The IEE and EIA report include an EMP that provide necessary recommendations on how the potential environmental impacts could be mitigated. MDSC will review the EMPs and later monitor the implementation of the EMPs by the contractors at the construction sites.

The purpose of the SAEMR is to document the environmental management activities and compliance with the approved Environmental Management Plan (EMP). This 7th SAEMR is an update on the status of safeguard compliance period between July to December 2018.

Currently all activities are at pre-construction stage and no construction-related environmental issues had to be considered yet. The results of these monitoring activities will be summarized in future SAEMRs.

The Environmental Inspector of MDSC and the Contractors' inspector will monitor the EMP implementation works at the construction sites of the sub-projects and the results will be sent periodically to Environmental Management Expert (EME) of MDSC. The EME will monitor the construction works and oversees the work of contractors' activities regarding environmental requirements. MDSC will also coordinate with stakeholders and related Governmental agencies on issues regarding environmental requirements and monitoring.

Chapter 1 Purpose of the Report

1. This semi-annual environmental safeguard monitoring report, July to December 2018 (SAEMR) has been prepared by the Management, Design and Supervision Consultants (MDSC) for the borrower in order to evaluate and assess overall project monitoring activities to ensure the effective implementation of the Environmental Management Plan (EMP) for the Dhaka Environmentally Sustainable Water Supply Project (DESWSP) funded by Asian Development Bank, Project Number ADB Loan No 346152-BAN.

2. This report covers contract components Package 1, Package 2, Package 3.1 and Package 3.2 as outlined in the table below.

Comment [PV3]: Table included as per ADB comment

Table 1: Four packages and status of implementation

No.	Subproject name	Status of sub-project				List of works	Progress of works
		Design	Pre-construction	Construction	Operational Phase		
1	Package 1		x			Bisnandi intake point at Meghna River, raw water pipeline, Gandharbpur WTP	Not started
2	Package 2		x			14 km treated water transmission pipeline from Gandharbpur WTP to American Embassy in Dhaka	Not started
3	Package 3.1		x			22 km of primary distribution pipelines from American Embassy in Dhaka	Not started
4	Package 3.2		x			43 km of feeder pipelines	Not started

The management and supervision of these contracts is being implemented by the Management, Design and Supervision Consultant (MDSC) Euroconsult Mott MacDonald, and Fichtner GmbH & Co KG. This report has been prepared in accordance with the environmental monitoring program followed by the updated environmental management plans (EMP) prepared for the contract.

3. The purpose of this SAEMR is to document the environmental management activities and compliance with the approved EMP for the period between July to December 2018.

4. The semiannual environmental safeguard monitoring report for Part B is required during construction phase as part of the construction supervision for all packages. This report records

the implementation of environmental safeguards. It is an update on the status of safeguard compliance. No construction activity has been performed from July to December 2018.

5. Activities performed by the environmental team were described in the monthly and quarterly progress reports. These activities are not subject to semiannual reports.

6. Semiannual reports are prepared in accordance with the environmental monitoring program as defined in the EMP. In line with targets aimed at reducing the negative environmental impacts of the Project and in accordance with all the relevant specifications and standards of the GOB, as well as the policies of the Asian Development Bank (ADB). These reports emphasize:

○ Progress made in implementing the EMP,
○ Implementation of mitigation measures,
○ Monitoring actions undertaken, as prescribed in the EMP,
○ Environmental compliance and
○ Problems that have occurred and corrective actions taken.

Chapter 2: Project Objective

7. The objective of the project is to improve health and quality of life and reduce poverty of the people in the project area by providing access to adequate, sustainable safe water supply facilities. Specific task of the project is to monitor the overall supervision of EMP of the project.

Chapter 3: Project Implementation

8. Dhaka Water Supply and Sewerage Authority (DWASA) is both the Executing Agency (EA) and the Implementing Agency (IA). A Project management unit (PMU) has been established. The PMU is being assisted by a Management, Design and Supervision Consultant (MDSC). The project is being implemented under the contract package P1, P2, P3.1 and P3.2 and covers the whole project from the Intake point at the Meghna River to the distribution pipeline area in Dhaka city. The project will be implemented during 50 months. The contract package P1 was awarded to SUEZ International, OTV, and Veolia following ICB procedure.

Comment [PV4]: Explain P3.1 and P3.2

Comment [HR5]: Explained.

9. All activities are at pre-construction stage and no construction-related environmental issues had to be considered yet.

10. Semiannual reports refer to the implementation of IEE/EIA and EMP and to inputs from contractors according to PAM. IEE/EIA and EMP have not been implemented yet as the project is still at pre-construction phase and contractors are not involved at this stage. No semiannual report is required at this stage accordingly.

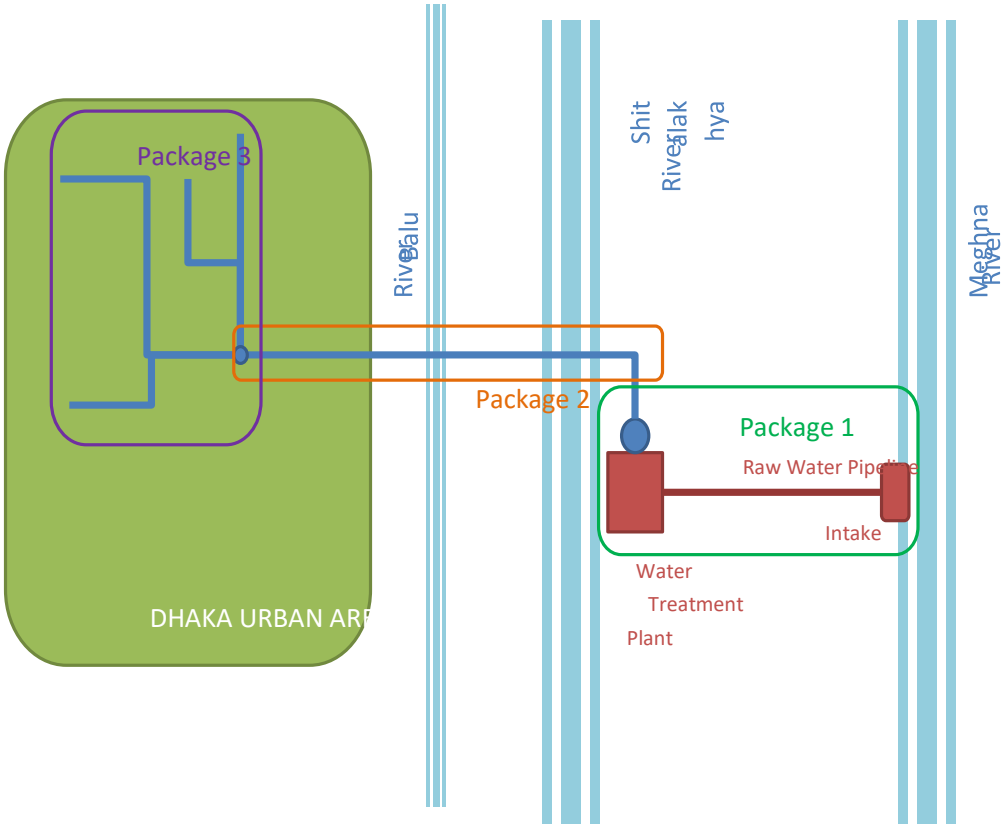
Chapter 4: Location:

11. The location of the project area is

- starting from Bisnandi intake point, transmission main from intake point to Gandharbpur Treatment Plant as package 1,
- starting from Gandarbpur Treatment plant to near at American embassy in Dhaka city as package 2, and
- the distribution and feeder pipelines in Uttara as package 3.1 and 3.2.

The following Figure 0.1 shows the overall scheme of the project with the four project packages.

Figure 0.1: Location of the project



Chapter 5: Project Components

12. The project components are as follows:

– P1- Intake structure, transmission main for raw water and treatment Plant,

- P2- Transmission main for drinking water
- P3.1- Distribution pipeline of drinking water up to DMA in Uttara under DNCC
- P3.2-Feeder pipes to DMAs.

Comment [PV6]: Need to introduce P3.1and P3.2

Chapter 6: Institutional Setup and Responsibilities

13. Organizational procedures/institutional roles and responsibilities for the safeguards implementation are described in the Table 1 below.

Table 1: Organizational procedures/institutional roles and responsibilities

Activities	Agency Responsible
Disclosure of proposed project and anticipated environmental and social impacts on website	ADB, DWASA
Disclosure of proposed project, social/environmental impacts, proposed mitigation/entitlements measures in local languages	DWASA
Disclosure of grievance redress mechanism/process	DWASA (PMU), MDSC, PCU, ZLCC, NGO
Finalization of sites and alignments	DWASA (PMU), MDSC, Contractors
Identification of roads for closure, existing utilities, road conditions	DWASA (PMU), MDSC Contractors
Updating of safeguard documents (IEE/EIA and RP) based on detailed design	MDSC with assistance from contractors and NGO
Review of updated IEE and send to ADB for approval prior to contract award	DWASA (PMU)
Clearance and disclosure of updated safeguard documents	ADB, DWASA
Implementation of mitigation and rehabilitation measures	DWASA (PMU), MDSC, Contractor
Internal monitoring	DWASA (PMU), MDSC

Chapter 7: Project Status

Work Progress (up-to December, 2018)

Cumulative Progress (DBO Package): P1, P2, P3.1 & P3.2	Physical: 4.00%; Financial: 6.00% (Upto Dec 2018)

G.1. Implementation Plan

14. The project work for P2, P3.1 and P3.2 has not started yet. The DBO contract (P1) was signed on 16 May 2018. The P1 Contractor (GWT) has commenced ground investigation works. The other contractors for P2, P3.1 and P3.2 are not yet selected. The geotechnical investigation study is ongoing. The contractors have to prepare specific EMPs for Package 1, 2, 3.1 and P3.2, and for the geotechnical investigation for implementation. MDSC will review the EMPs and later monitor the implementation of the EMPs at the construction sites. The results of these monitoring activities will be summarized in the Semi-annual Environmental Monitoring Reports.

Comment [HR7]: The Contractors

Comment [PV8]: This was not done in Jun-Dec 2018

G.2. Status of EIA Report and Updating of Initial Environmental Examination (IEE) Report

15. The EIA Report for P1, P2, P3.1 and P3.2 was approved by the DoE. The Environmental Clearance Certificate (ECC) was also obtained for the DESWSP (DoE ECC Memo No. 22.02.6700.140.72.138.1148 dated 11.12.2018) and attached to Appendix . The application has been sent by the PD to Water Resources Planning Organization (WARPO) for approval of drawing water from Meghna River related to the DESWSP. The IEE prepared during project preparation period is being updated based on the detailed design of P1, P2 and P3.1 and P3.2.

G.3 Public Consultation

16. In July-December 2018 a series of consultation meetings was organized. The meeting objectives include sharing of project related issues, such as house connection, access to connection permission, illegal connection, project supports, grievance redress mechanism, cooperation & coordination from the community, social safeguard and environmental matters. Participants were teachers, guardians, businessmen, house owners, housewives, civil society representatives, project personnel's and Management Design and Supervision Consultants personnel. The following table outlines date, subject and place of the meetings.

Date	Subject	Place of Meeting
29-09-2018	Impact of the Project and APs Entitlements	Beraide Bazar Club Office,

	(P2, Appendix-1)	Dhaka
13-11-2018	Social Safeguards/Resettlement and Environmental Awareness Program (P 3.1) Appendix-2	Azampur Gov. Primary School, Uttara, Dhaka-1230.
11-12-2018	Social Safeguards/Resettlement and Environmental Awareness Program (P 3.1) Appendix-2	Oxford Noble International School, Merul Badd, Dhaka
13-12-2018	Social Safeguards/Resettlement and Environmental Awareness Program (P 3.1) Appendix-2	Shrebangla Ideal High School, Kuril, Vatara, Dhaka

Chapter 8: Implementation of Environmental Management Plan

17. Through regular site visits conducted by the Environmental Inspector of PMU and the MDSC inspectors and periodic site visits by the Environmental Management Expert (EME) of MDSC and the Environmental Safeguard Officer of PMU, compliance of the construction activities with the environmental safeguard requirements will be supervised. In case of non-compliance the inspectors will define counter measures to get the safeguard requirements back on track.

Considering the importance of proper EMP implementation, an orientation workshop on "Environmental Safeguard Requirements of GoB and ADB" for supervising staffs of PMU, PCU, MDSC, Contractors and NGO will be conducted by EME of MDSC.

Chapter 9: Compliance with Environment Related Project Covenants

I.1. Compliance with National Environmental Laws

18. At the time of project preparation at feasibility stage, the TAPP consultants were responsible for the survey and preparation of IEE for the DESWSP (Ref: IEE, DWASA, 2006). As part of the detailed project preparation, an environmental impact assessment (EIA) report was prepared by an environmental consultant engaged by DWASA and supported by ADB, and was approved by the DoE in 2015. Further, the consultant suggested to ensure in procurement process that all information required for environmental safeguard stated in the environmental assessment report and its Environmental Management Plan (EMP), which have been prepared earlier under the respective pipeline rehabilitation Contract, have to be incorporated in the work schedule so that contractors can adopt mitigation measures associated with construction works. Management, Design and Supervision Consultants (MDSC) have to monitor the implementation of the EMP which is the task of the contractors; who have to ensure that the EMP is implemented throughout

project construction period. Semi-Annual Environmental Safeguard Reports have to be prepared by the Consultant to be forwarded to PMU and ADB. An IEE with EMP has been prepared according to ECA'95 (Environmental Conservation Act) & ECR'97 (Environmental Conservation Rules) and it is mandatory to follow the rules ordered by GoB and ADB guidelines. To follow the rules, contractors have to collect no objection certificates from local authorities (like DESA, City Corporation, Union Parishad, etc.) before starting the construction works of all the components of the project.

I.2. Compliance with ADB Guidelines

19. According to the environmental guidelines of ADB the project falls under Category B and hence an IEE is sufficient to meet the environmental requirements. An IEE report was prepared by the consultant engaged by the ADB during appraisal. However, during the detailed design stage updated IEEs for all packages are being prepared. The project is also in conformity with the latest Guideline of ADB i.e. Safeguard Policy Statement 2009.

I.3. Compliance Status with Environmental Loan Covenants

20. The following table summarizes the working schedules and the status of these schedules at the time when this semi-annual Safeguard Monitoring Report has been compiled.

SL No	Reference	Details	Status	Remarks
2	Schedule 4	**Conditions for Issuance of Notice to Commence Works** The Borrower shall not issue a notice to commence Works under: (a) any Works contracts which involves environmental impacts until: (i) the Borrower's Department of Environment has granted the approval of the IEE (including approval of separate environmental impact assessment required to be prepared under Bangladesh law); and (ii) the Borrower has incorporated the relevant provisions from the EMP into the Works contract; and (b) any Works contracts which involves involuntary resettlement impacts, until the Borrower has prepared and submitted to ADB the final RP based on the Project's detailed design, and obtained ADB's clearance of such RP.	For DBO: 8 (a) & (b) under process.	
3	Schedule 5	**Environment** The Borrower and DWASA shall ensure that the	For DBO: 8 (a) & (b)	

		preparation, design, construction, implementation, operation and decommissioning of the Project and all Project facilities comply with (a) all applicable laws and regulations of the Borrower relating to environment, health and safety; (b) the Environmental Safeguards; and (c) all measures and requirements set forth in the IEE, the EMP, and any corrective or preventative actions set forth in any Safeguards Monitoring Report to be provided to ADB.	under process.	
4	Schedule 5	Human and Financial Resources to Implement Safeguards Requirements The Borrower and DWASA shall make available necessary budgetary and human resources to fully implement the EMP and the RP.	Complied	
5	Schedule 5	**Safeguards** – Related Provisions in Bidding Documents and Works Contracts The Borrower and DWASA shall ensure that all bidding documents and contracts for Works contain provisions that require contractors to: Comply with the measures relevant to the contractor as set forth in the IEE, the EMP, and the RP (to the extent they concern impacts on affected people during construction), and any corrective or preventative actions set forth in a Safeguards Monitoring Report; Make available a budget for all such environmental and social measures; Provide the Borrower and DWASA with a written notice of any unanticipated environmental, resettlement or small ethnic community peoples risks or impacts that arise during construction, implementation or operation of the Project that were not considered in the IEE, the EMP, and RP; Adequately record the condition of roads, agricultural land and other infrastructure prior to starting to transport materials and construction; and Fully reinstate pathways, other local infrastructure, and agricultural land to at least their pre-project condition	a) Complied b) under process c) under process d) under process e) will be addressed in due time.	

		upon the completion of construction.		
6	Schedule 5	**Safeguards Monitoring and Reporting** The Borrower shall do the following or cause DWASA to do the following: Submit semi-annual Safeguards Monitoring Reports to ADB and disclose relevant information from such reports to affected persons promptly upon submission; If any unanticipated environmental and/or social risks and impacts arise during construction, implementation or operation of the Project that were not considered in the IEE, the EMP, and the RP, promptly inform ADB of the occurrence of such risks or impacts, with detailed description of the event and proposed corrective action plan in accordance with the SPS; and Report any actual or potential breach of compliance with the measure and requirements set forth in the EMP, or the RP promptly after becoming aware of the breach. The Contractor shall appoint its own environmental safeguards officer (EHS).	a) Sent to ADB on 7.1.16 and 18.1.16 b) will be addressed in due time. c) will be addressed whenever situation arises. d) will be appointed.	
		Grievance Redress Mechanism Within 6 months of Effectiveness Date, the Borrower shall establish and maintain a grievance redress committee with representation from all stakeholders in the Project facilities for the purpose of addressing any grievances, from affected peoples concerning land acquisition, environment and any other social issues, in a timely manner.	GRC established GRM under process	

I.4. Development of Environmental Management Plan

20. The IEE and EIA report including EMP that already had been prepared provided necessary recommendations on how the potential environmental impacts could be mitigated. The IEE and EIA guided to develop an environmental management plan to provide guidance on what, how, when and where the mitigation measures have to be implemented. It includes also who has to implement and monitor the implementation of mitigation measures in different phases of the project. The Initial Environmental Examination (IEE) and EIA report prepared in the feasibility stage included an EMP that:

- Provides the basic information about the environmental conditions of the project areas and what will be the potential environmental impacts;
- Provides the recommendations to mitigate potential environmental impacts and describes on how to implement in the environmental management plan;
- Provides guidance on how the environmental monitoring has to be carried out; and
- Indicates what kind of environmental statutory clearance will need to be obtained.

Chapter 10: Environmental Monitoring Requirements

J.1. The Environmental Management Plan

22. The EMP contains mitigation measures and related associated monitoring actions, presented in the project work period (planning and design phase, pre-construction phase, construction phase, post-construction phase, and operation & maintenance phase) for potential environmental impacts. Each of the tasks is numbered so that any mitigation measure can be cross referenced to the associated monitoring requirement. This same numbering is then used in the monitoring checklist, permitting an easy confirmation of the entire EMP implementation procedure.

23. The potential environmental impacts of the Project and the required mitigation and monitoring measures and the related general timelines are set out in the Environmental Management Plan. The detailed implementation schedule is also found in the EMP, a mandatory document of the Contractor and provided in Annex A (Other Appendices).

24. The EMP's mitigation tasks are also defined in the EMP's mitigation Annex A and describe the component of the environment affected, the impact, proposed mitigation action, where it is to take place, when and who will implement and supervise the action.

25. The environmental monitoring requirements are presented in the EMP Annex B. The EMP considers the scope of monitoring; monitoring parameters; time and frequency; the outputs required and implementing and supervising agencies.

J.2. Environmental Monitoring

26. However, the Environmental Experts of MDSC coordinate with contractors to work for meeting the full compliance to ECR'97 if any noncompliance is found. Immediate action is required by the Contractors who have not followed the laws especially ECR'97 properly and measures have to be taken to enforce the Environmental laws and regulations of Government of Bangladesh and the ADB guidelines.

J.3. Monitoring activities on IEE and safeguards issues

27. The compliance status of different assurances as at the end of the reporting period:

- The Safeguard Implementation Unit (SIU) of PMU consists of one Environmental Officer and one Social and Gender Officer assisted by relevant Resettlement Specialists in the MDSC teams. Previous draft IEEs/EMPs will be updated based on detailed designs in accordance

with ADB's Safeguards Policy Statement (SPS, 2009) and Environmental Conservation Rules (ECR 1997) and submitted to ADB for review, final approval, and disclosure prior to commencement of construction works. An environmental report regarding construction supervision to ADB will be submitted on a semi-annual basis. Consultation and public participation will be done throughout the project implementation and any environmental grievance will be handled in accordance with the Grievance Redress Mechanism (GRM) developed for the project.

- Dhaka WASA will establish an environmental cell within PMU with PD as the head of cell, 2 DPDs, safe guard officer and field inspector of the Dhaka Environmentally Sustainable Water Supply Project (DESWSP). The environmental and social cell will monitor all the environmentally relevant activities at the construction sites.
- Dhaka WASA will establish a SIU to provide policy guidance and overall coordination in Project implementation.

28. A grievance redress mechanism must be developed by DWASA within 9 months of the effective date. DWASA already established a taskforce to receive and resolve complaints and/or grievances or act upon reports from stakeholders on misuse of funds and other irregularities, including grievances due to resettlement. DWASA also opened the help & complaint desk in January 2011 on a pilot basis, and is expanding it towards full scale. An awareness campaign has been launched and is ongoing.

Chapter 11: Environmental Quality Test Program

29. The extent of the impacts of environmental pollution related to water for workers, air quality and noise level can be determined in quantitative terms by sampling a range of related parameters. Based on these results the mitigation measures provided for in the EMP can be adjusted accordingly. The field sampling work for each package still needs to be specified for the pre-construction and construction period. The contractors should carry out an environmental monitoring and quality test program for all the packages during the construction period. The test result report format is shown in Annex B to this report. The test results shall comprise ambient air quality, ambient noise level and water quality.

Chapter 12: Assessment of the results

30. Once the project physical activities started the ambient noise levels and ambient air at different locations near construction sites must be measured by the contractors. The allowable limits set by the DoE for ambient noise level in mixed area (mainly residential area and also simultaneously used for commercial and industrial purposes) is 60 dBA and 50 dBA during day and night time respectively. The DoE limit for SPM, PM_{10} and $PM_{2.5}$ in residential areas is 200 $\mu g/m^3$,150 $\mu g/m^3$, 65 $\mu g/m^3$ respectively. The contractors have to take care that these emission limits are kept. It is anticipated that the environmental mitigation measures and monitoring are be

based on a systematic approach with technically sound methods to obtain data on environmental parameters. Monitoring will be carried out through daily visual observation. The Contractor's environmental inspectors will summarize their monitoring activities in daily reports to provide input to the periodic project monitoring reports which will be issued to Owner's RCM and Social and Environment Manager.

Chapter 13: Approach & Methodology for Environmental Monitoring

31. The methodology is a combination of organizational principles and strategies through which responsibility for performing the monitoring process is shared with different stakeholder groups. Methods like site visits, stakeholder's consultation, qualitative as well as quantitative analysis of quality parameters, analysis of monitoring reports from site inspectors, subjective judgment etc. are used for environmental monitoring. The Environmental Inspector of MDSC and the Contractors' inspector will monitor the EMP implementation works at the construction sites of the sub-projects and the results will be sent periodically to EME of MDSC. The EME monitors the construction works and oversees the work of contractors' activities regarding environmental requirements. MDSC also coordinates with stakeholders and related Governmental agencies on issues regarding environmental requirements and monitoring.

Chapter 14: Collection, evaluation and storage of information

32. Before and during each half-year mission the contractors will collect data and will use qualitative as well as quantitative monitoring survey methods to evaluate these data. Quantitative figures will be given wherever possible. The MDSC will use the following information sources as a basis for the subsequent monitoring compliance assessment:

- Documents
- Direct physical observations on site
- Interviews
- Sampling and Analyses

Chapter 15: Documents

- 33. Monthly and quarterly reports from all environmental supervision experts (PMU, consultants, construction companies) on site;
- 34. Reports from the Environmental Quality Monitoring and Pollution Assessment Consultant,
- 35. All new studies and reports which have been prepared since the last monitoring mission/report.
- 36. Environmentally relevant documents from external parties which have been officially handed over to the Client (from authorities, communities, other stakeholders)

37. The MDSC will also collect other documents (letters, studies, reports, newspaper articles, etc.) which are provided by third parties in the monitoring process e.g. during interviews and site visits.

38. All documents will be reviewed and evaluated by the MDSC monitoring experts concerning their relevancy for the subsequent environmental compliance assessment. Only the relevant information will be used for the assessment and also each field visit will focus on the relevant aspects identified.

Chapter 16: Direct observations on site

39. Based on the evaluation of the documents provided by the Client and third parties an audit plan will be set up and sent to the respective construction company prior to any half-year audit to make the necessary arrangements and to ensure the availability of the PMU, the construction site personnel and to plan eventual meetings for the necessary interviews.

40. All data and information received at site will be checked directly at site and eventual questions clarified. During the site visit the MDSC will visit selected parts of the total project area, preferably together with the responsible environmental supervisor from the contractor or the consultant, and collect first-hand observation data of the actual situation at the respective site. The sites to be selected for a visit at a specific mission depend on the construction process, problems identified in the documents before the site and eventual risks, which had been identified in other, comparable projects by the specific MDSC experts.

41. Site visits will also be conducted to sites, where no construction activities are conducted yet in order to get an impression of the environmental base line conditions before commencement of construction activities. This knowledge will be useful in the further compliance assessment process as well as by implementation of remedy activities after finalization of the construction process.

42. During all missions to the construction site photos will be taken which will be used in the Monitoring Reports in order to illustrate end explain relevant environmental issues.

All site visits will be recorded in site visit protocols, with the following information at least:

- date, time, location,
- participants of the site visit,
- environmental surveyor responsible for the specific site,
- actual weather conditions,
- flow/water level near surface waters,
- construction progress / actual construction activities;
- observations regarding human, natural and physical environmental factors and activities,
- risks and deviations identified
- others.

43. Mission specific site visit protocols will be attached to the mission specific half-yearly Monitoring Reports. All site visit protocols and photos taken during missions will be stored in the project data base.

Chapter 17: Interviews

44. After revision and evaluation of the documents provided by the Client a specific stakeholder consultation plan will be set up by the MDSC and sent to the Client before each mission. The interview methodology applied by the MDSC depends on the subject, the location, the interview partner and the opportunity and comprises interviews with single persons without questionnaires, with questionnaires (deep interviews), meetings and group discussions. Interviews will be conducted during the respective missions with the PMU, the Consultants and the Contractors on site as well as with other stakeholders. Random communication during the site visits will be considered if relevant.

45. Public participation meetings and interviews will be held especially with local communities to elicit the information status about and attitude towards the planned project, to figure out their awareness of the general project and of project specific issues, and to check solutions for complaints and for mitigating negative impacts of the DESWSP project to their livelihood and biodiversity resources.

46. Meetings and interviews will also be conducted with non-residents (e.g. police, governmental staff, local authorities, natural reserve administrations, etc. The RRA (Rapid Rural Appraisals) method will be used to assess natural resources. Questionnaires might be used for quantitative data, but in-depth interview will be the usual tool to gather information.

47. All stakeholder meetings will be recorded in form of protocols, with the following information at least:

- date, time, location,
- participants,
- themes discussed and findings,
- complaints / problems identified,
- solutions discussed / proposed,
- further procedure / further meetings,
- signatures of the participants.

48. Mission specific interview protocols will be attached to the specific half-yearly Monitoring Report. All interview protocols will be stored in the project data base.

Chapter 18: Sampling

49. Annex B summarizes the specific monitoring and sampling parameters, the locations, the frequency, the sites and responsibilities, which will be considered at least by the MDSC during the construction phase of the project. Sampling location is shown in Map 1 under Annex G.

These tables may be enhanced by some factors if specific problems, which had not been considered yet, come up in the monitoring process. Sampling, analysis and evaluation will be conducted by the contractor.

50. The task of the MDSC is to monitor, if the sampling and analysis is done properly, completely for all parameters, and in line with the demands of the EMP. This monitoring comprises the full sampling and analysis process from measurements and taking samples at the site, conservation and transport of the samples, analysis methods in the laboratory, up to the evaluation of the analysis and measurement data. Chain of custody should be maintained for quality assurance and quality control.

51. In order to verify the sampling and analysis data the MDSC will make own measurements, take random samples, or specific samples in cases where the results of the Environmental Quality Monitoring and Pollution Assessment Consultant are not in line with what has to be expected, based on the experience of the specific MDSC experts in comparable projects and under comparable conditions.

52. According to the contract regular sample collection and analysis (4 times/year) shall be conducted by a separate agency, if needed. The MDSC Consultant shall collect and analyze samples for verification purpose on a random basis (not exceeding 2 samples/year) to check the compliance with the requirements of the EMP and the applicable state standards. Sampling and analysis protocols will be attached to the specific half-yearly Monitoring Report. All sampling and analysis protocols interview protocols will be stored in the project data base.

Chapter 19: Storing of Information

53. All collected information and all environmentally relevant data will be stored in a data base of the MDSC, which mainly will contain texts, maps and photos. This data base is property of MDSC and will be handed over to the Client as soon as the Contract signed with the Consultant expires.

Chapter 20: Compliance assessment

T.1. Evaluation of environmental information

54. All collected information will be checked for its plausibility and its relevance regarding environmental monitoring. Only relevant information will be compiled for all parts of the project area and for each Monitoring Factor and the parameters mentioned in the EMP. An exemplary Checklist for the Monitoring sites is attached in this report, showing the environmental monitoring aspects which should be considered at each site for construction safety shown in Annex C. This Checklist addresses as an example from the kick-off mission in the last two columns relevant findings and compliance assessment for the MDSC quarterly reports as well as the observations from the site visit. More columns will be added in the Monitoring reports, depending on the availability of data sources (site supervision reports, observations, etc.). Also more lines may be

added in the monitoring process e.g. for additional project areas or additional issues which have to be considered.

55. The evaluation will follow a 3-grade scale, where “3” means, that the minimum requirements for the respective monitoring aspect are fulfilled. Numbers lower than 3 mean that the minimum EMP requirements are not met by the MDSC findings with “1” as “not fulfilled at all” or “not considered/addressed”. For each issue in each project area this evaluation will be done for each half-yearly mission.

56. All relevant findings and evaluations for each data source will be compiled for each monitoring indicator. From all compiled compliance evaluations, a mean value will be determined by the MDSC for each monitoring indicator. Sample environmental site inspection template is shown in Annex D. Orientation Workshop on Environmental Safeguard Issues Template is shown in Annex E and photograph of non-compliance for evidence is shown in Annex F.

57. The overall findings of the half-yearly Monitoring Missions will be finally summarized in form of a spider diagram, which is shown in Annex H. This Diagram shows the situation, when the minimum requirements for all monitoring indicators have been fulfilled. Texts, maps, pictures and diagrams will be used in the Monitoring Reports to describe the actual environmental situation at the project site and eventually influenced outside areas for each mission. The reports will contain an initial description of the status of the project, of its performance and main findings, conclusions and an executive summary. Furthermore, the reports will include recommendations regarding measures that need more efforts for appropriate implementation.

T.2. Capturing issues of non-compliance

58. For issues of non-compliance the MDSC will develop and propose solutions to timely avoid or at least minimize arising problems.

These proposals will address the following questions:

- What is the problem identified and how serious is the potential impact/risk?
- What measures are proposed to avoid / minimize the problem/risk?
- Where, when and by whom should these measures be applied?
- What monitoring measures are necessary to verify the success of the measures?
- How far can the environmental impacts/risks be minimized and what cannot be avoided?

T.3. Monitoring frequency and timeline

59. For the duration of the contract the environmental monitoring missions will be performed twice per year in the defined monitoring areas and according to the requirements of the EMP and the construction progress, ensuring that the foreseen mitigation and monitoring measures are completely and properly applied. The independent monitoring consultancy services will last for 50 months. The monitoring period will end 6 months after full completion of the construction activities. A general format of Working Plan with a timeline for all relevant reporting activities as

well as a time schedule for MDSC environmental expert, including the estimation of their working days on site or in the home office are included in Annex A.

Comment [PV9]: Rahat, this is not included in Annex A

Comment [HR10]: I think the word format is missing.

Chapter 21: Progress of Work

60. Since the project construction work has not commenced yet there is no need to undertake physical environmental monitoring activities. However, preliminary activities undertaken under Environmental Safeguards during the reporting period, July to December 2018 are described below:

Environmental

61. The following documents have been prepared during predesign phase by Dhaka Water Supply and Sewerage Authority:

- IEE: Dhaka Environmentally Sustainable Water Supply Project: Water Intake, Gandharbpur Water Treatment Plant, and Raw and Treated Water Pipelines (August 2013)
- EIA: Package 1: Raw Water Intake, Pipeline & Water Treatment Plant (August 2014)

The update focused on the following:

- Changes in the alignment of pipes
- Changes in the location of major components (e.g. WTP, river crossings).

62. IEE reports for packages 2, 3.1 and 3.2 have been updated and prepared in April 2018, further updated in January 2019. IEE reports including EMP will be part of the bidding documents for packages 2, 3.1 and 3.2. The DBO contract has been signed and construction activities are expected to begin after the rainy season. The EMP must strictly be followed by the contractor during construction phase to meet environmental national law and ADB guidelines. Environmental inspectors will supervise construction activities. The reports have been submitted to DWASA for review.

63. An updated EIA report has been prepared by Enviro Consultants for all packages, taking account of detail design changes in pipeline routes and additional geotechnical investigation works. This document was approved by the DoE for construction sites of packages 1, 2, 3.1 and 3.2.

64. All reports have been carried out in relation to legislative framework relevant to the environmental studies and ADB Guidelines. Practical and cost-effective measures to enhance beneficial impacts and to avoid creation of adverse impacts have been described.

The environmental part of the design report has been prepared (Chapter 17 Environmental, Social & Resettlement) including following paragraphs:

- Borrow pit filling
- Disposal of spoil and arising
- Dewatering during construction
- Noise impacts
- Impact on neighboring properties
- Impact on vegetation

- Impact on wildlife

Chapter 22: Conclusion

65. All activities are at pre-construction stage and no construction-related environmental issues had to be considered yet. Semiannual reports refer to the implementation of EIA and EMP and to inputs from contractors according to PAM. EIA and EMP have not been implemented yet as the project is still at pre-construction phase and contractors are not involved at this stage. No semiannual report is required at this stage accordingly.

Photographs

Photo-1: Introductory speech by Mr Md Quaisarul Islam, Deputy Team Leader, 29 September 2018

Photo-2: Project Introduction by Mr Iqbal, DORP, 29 September 2018

Photo-3: Overview of Package 2 by Engr. Imtiazul Haque, 29 September 2018

Photo-4: Environmental issues of Package 2 by Syed Latif, 29 September 2018

Photo-5: Social, LAR issues of Package 2 by Dr Rafeza, 29 September 2018

Appendixes

Valid upto 10/12/19

Government of the People's Republic of Bangladesh
Department of Environment
Head Office, Paribesh Bhaban
E-16 Agargaon, Dhaka-1207
www.doe.gov.bd

Memo No: 22.02.6700.140.72.138.18. 1148 Date: 11/12/2018

Subject: Environmental Clearance for Dhaka Environmentally Sustainable Water Supply Project under Dhaka WASA.

Ref: Your application dated 30/07/2018 and 28/11/2018.

Dear Sir,

Please refer to your letter of 30th July 2018 and 28th November 2018 on the captioned subject, I have the pleasure to convey the approval of Environmental Clearance in favor of Dhaka Environmentally Sustainable Water Supply Project under Dhaka WASA.

A copy of the said Environmental Clearance Certificate is attached herewith for your kind information and necessary action at your end.

11.12.2018

(Syed Nazmul Ahsan)
Director (Environmental Clearance)
Phone: 8181673

Project Director
Dhaka Environmentally Sustainable Water Supply Project
Dhaka WASA, WASA Bhaban (9th Floor)
98, Kazi Nazrul Islam Avenue, Kawran Bazar
Dhaka-1215.

Copy Forwarded to :

1) Private Secretary to the Hon'ble Secretary, Ministry of Environment, Forest and Climate Change, Bangladesh Secretariat, Dhaka.
2) Director, Department of Environment, Dhaka Metropolitan/Regional office, Dhaka.
3) Assistant Director, Office of the Director General, Department of Environment, Head Office, Dhaka.

Government of the People's Republic of Bangladesh
Department of Environment
Paribesh Bhaban, E-16, Agargaon
Sher-e-Bangla Nagar, Dhaka-1207
www.doe.gov.bd

Environmental Clearance Certificate

Section 12 of the Environment Conservation Act, 1995 (Amended 2002)

Clearance Certificate Number: ।।৭৪

File number: 22.02.6700.140.72.138.18.

Clearance Certificate Issue Date: 11, December 2018

Renewal date not later than: 10, November 2018

A. Clearance Certificate Type
Environmental Clearance Certificate

B. Clearance Certificate Holder
Project Director Dhaka Environmentally Sustainable Water Supply Project Dhaka WASA,WASA Bhaban (9th Floor) 98, Kazi Nazrul Islam Avenue, Kawran Bazar Dhaka-1215.

C. Premises to which this Clearance Certificate Applies
Project Director Dhaka Environmentally Sustainable Water Supply Project Dhaka WASA,WASA Bhaban (9th Floor) 98, Kazi Nazrul Islam Avenue, Kawran Bazar Dhaka-1215.

D. Activities for which this Clearance Certificate Authorizes and Regulates
The following components will be implemented through Dhaka Environmentally Sustainable Water Supply Project under Dhaka WASA - Component 1 : Water Treatment Plant (WTP) (capacity 500MLD) Component 2 : Water Intake Structure (capacity 1050 MLD) Component 3 : 21.7 kilometer Raw Water Transmission Pipeline Component 4 : 13 kilometer Treated Water Transmission Pipeline Component 5 : 23 kilometer Distribution Reinforcement within the existing network Component 6 : 56 kilometer Distribution Reinforcement, small distribution pipe to DMA

1/4

E. Terms and Conditions for Environmental Clearance Certificate

1. **Limit Condition for Discharges to Air and Water**: The Environmental Clearance Certificate must comply with schedule 2 and 10, rule 12 of the Environment Conservation Rules, 1997.

2. **Noise Limit**: The Environmental Clearance Certificate must comply with the Noise Pollution (Control) Rules, 2006.

In case of non-coverage of ECR 1997 the World Bank Environment, Health and Safety Guideline shall be adhered to.

3. Operating conditions:

3.1 Activities must be carried out in a competent manner. This includes:
(a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and
(b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.

3.2 All plant and equipment installed at the premises or used in connection with the Environmental Clearance activity:
(a) must be maintained in a proper and efficient condition; and
(b) must be operated in a proper and efficient manner.

3.3 Construction works shall be restricted to day time hours so as to avoid/mitigate the disturbance of local lives as well as implementation schedules of the works shall be notified in advance to nearby residents.

3.4 Storage area for soils and other construction materials shall be carefully selected to avoid disturbance of the natural drainage.

3.5 This shall be ensured that soil is obtained from nearby areas, which are free of invasive plants. Re-vegetation and replanting shall be undertaken if rehabilitation works involve extensive vegetation clearance.

3.6 Vegetation clearance shall be minimizing at the construction phase as to minimize soil erosion. Soils for embankments shall be properly tested and compacted to ensure stability.

3.7 Proper construction practices shall be followed that minimize loss of habitats and fish breeding, feeding & nursery sites.

3.8 Proper and adequate sanitation facilities shall be ensured in labor camps throughout the proposed project period.

3.9 In order to control noise pollution, vehicles & equipment shall be maintained regularly; working during sensitive hours and locating machinery close to sensitive receptor shall be avoided.

3.10 No solid waste can be burnt in the project area. An environment friendly solid waste management should be in place during whole the period of the project in the field.

3.11 Proper and adequate on-site precautionary measures and safety measures shall be ensured so that no habitat of any flora and fauna would be demolished or destructed.

3.12 All the required mitigation measures suggested in the EIA report are to be strictly implemented and kept operative/functioning on a continuous basis.

2/4

3.13 Any heritage sight, ecological critical area, and other environmentally and/or religious sensitive places shall be avoided during project construction phase.

3.14 Resettlement plan should be properly implemented and people should be adequately compensated, where necessary.

3.15 Construction material should be properly disposed off after the construction work is over.

3.16 The Environmental Management Plan included in the EIA report shall strictly be implemented and kept functioning on a continuous basis.

4.1 Monitoring and Recording conditions:

4.1.1 The results of any monitoring required to be conducted by this Clearance Certificate must be recorded.

4.1.2 The following records must be kept in respect of any samples required to be collected for the purposes of this Clearance Certificate:
(a) the date(s) on which the sample was taken;
(b) the time(s) at which the sample was collected;
(c) the point at which the sample was taken; and
(d) the name of the person who collected the sample.

4.2 Requirement to monitor concentration of pollutants discharged

For each monitoring, the Clearance Certificate holder must monitor (by sampling and obtaining results by analysis) the following parameter: air quality, water quality and Noise.

5. Reporting Conditions: Environmental Monitoring Reports shall be made available simultaneously to Head quarters and Dhaka Metropolitan/Regional office of the Department of Environment on a quarterly basis during the whole period of the project.

6. Notification of environmental harm: The Clearance Certificate holder or its employees must notify the Department of Environment of incidents causing or threatening material harm to the environment as soon as practicable after the person becomes aware of the incident.

F. Recording of pollution complaints

The certificate holder must keep a legible record of all complaints made to the certificate holder or any employee or agent of the certificate holder in relation to pollution arising from any activity to which this Environmental certificate applies. The record must include details of the following:

(a) the date and time of the complaint;
(b) the method by which the complaint was made;
(c) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect;
(d) the nature of the complaint;

3/4

(e) the action taken by the certificate holder in relation to the complaint, including any follow-up contact with the complainant; and
(f) if no action was taken by the certificate holder, the reasons why no action was taken.

The record of a complaint must be kept for at least 4 years after the complaint was made. The record must be produced to any authorized officer of the DOE who asks to see them.

G. Validity of the Clearance Certificate

This Environmental Clearance is valid for one year from the date of issuance and the project authority shall apply for renewal to the Head Office of DOE with a copy to Dhaka Metropolitan/Regional office at least 30 days ahead of expiry.

Violation of any of the above conditions shall render this clearance void.

11.12.2018

(Syed Nazmul Ahsan)
Director (Environmental Clearance)
Phone: 8181673

4/4

Date: 13.11.2018

Dhaka Environmentally Sustainable Water supply Project (DESWSP)
Social Safeguards/Resettlement and Environmental Awareness Program
(Meeting Summary)

Venue : Azampur Gov. Primary School, Uttara, Dhaka-1230. Oxford Noble International School, Merul Badd, Dhaka and Shrebangla Ideal High School, Kuril, Vatara, Dhaka,

Introduction: Social Safeguards/Resettlement and Environmental Awareness Meeting is one of the major activities of Safeguards Implementation Unit (SIU) of DESWS Project. This activity is a platform to disseminate messages among water users in the community especially to the House Owners. We used to choose School's as venue because of targeting the female like guardians, teachers, housewives and house owners. We always distribute a project leaflet to the participants in the meeting and request teacher's discussing the leaflets in different classes. The leaflet consists of Project related information as well as messages. If it is then a huge no of families are informed of the Project. On the other hand it is an ADB concern whether mass people are informed of or not during Resettlement/Environmental Plan Preparation. Meeting covers the area Package ICB-3.1 We conducts at least 3 Public Consultation Meetings at 3 different places to cover all area of the Package ICB-3.1. This is the summarized picture of the meetings.

Objective of the Meeting: The main objective of the meeting is to share project related issues like house connection, access to connection permission, illegal connection, project supports, grievance redress mechanism, cooperation & coordination from the community, social safeguard and environmental matters with the participants. Actually this is not a decision making meeting. We conduct a question & answer session in the meeting how beneficiaries can get support from the project. In this procedure we collect recommendations or opinion from the participant's for implementing the project smoothly.

Participants of the meetings:

Teachers, Guardians, Businessmen, House Owner, House Wives, Civil Society Representatives, Project Personnel's and Management Design and Supervision Consultants personnel's were the participants A total of 79 attendees were present in the meetings where 10 (8%)women and 69 men were present.

Discussions are been made in the meeting with issue-based information…

The following DWASA Representative:

DWASA representative gave Project description and informed the house why DESWS Project?

- The Govt. is going to establish DESWS Project in Package ICB P3.1of DHAKA City.
- Population is increasing in Dhaka City day by day and consequently demand of water also increasing.
- Existing Water Supply System is underground water producing by DTW
- Current pipe and fittings are not fit for much water supply
- Reducing water loss at least 10% from 40%
- New establishment is needed to cut the Road for Pipe installation.
- Support is needed from community.
- Environmentally Sustainable Water Supply Project.
- The waste soil will be removed from the narrow roads immediately and from the wider road within 24 hours.
- Old line will be disconnect after establishing new supply line
- Sound pollution will be reduced.
- Plain Sheet will be used for as bridge entering houses
- The Current Project is environmentally sustainable though there is less scope polluting environment in this project.
- During open cut some soil dust could causes a little pollution but contractors are ready to remove the dust within 24 hour from the place.
- During HDD, sound pollution could be happen but the contractor will use the machine by avoiding class time, prayer time and avoiding hospital & clinic areas.
- There should be put an enclosure covers the trenches
- Labor & worker might be abiding by the safeguard policy and worn safeguard compliance.
- Compensation will be providing to Affected Persons (AP's) as per Grievance Redress Mechanism (GRM).

\

MDSC Representative: MDSC Representative informed the technical issues.

- Three types of pipe installation method will be used.
- High quality materials will be used establishing the new project.
- Connection from transmission line to preserver will be established by project cost.
- Ensuring 24-hour water supply with sufficient pressure.
- Respective Authority will be responsible for repair work.
- Ensuring sufficient water supply

Conclusion:

Participants of the meeting have shown their mixed reaction. Some of them couldn't be trust for

their past experience and some of them said wait and see. But MDSC representative invited them to observe another WASA construction system. However, hoping that DESWS Project of Dhaka WASA will do the work well, the meeting was concluded.

Attachment:

1. Meeting Attendance Sheet
2. Meeting Photographs

Office of the Project Director
Dhaka Environmentally Sustainable Water Supply Project (DESWSP)
Dhaka Water Supply and Sewerage Authority
WASA Bhaban, 98, KaziNazrul Islam Avenue (9th Floor)
Kawran Bazar, Dhaka-1215
Email: pddeswspgwtp@gmail.com

Attendance Sheet
Date : 13-11-2018

Name of Work:

SL	Name	ORG & Designation	Signature
1.			
2.	Md. Shaheedul Islam Procurement officer PMU, DESWSP, DWASA.	PMU. DWASA	
3.			
4.			
5.			
6.			
7.			
8.			
9.			

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Email: pddeswspgwtp@gmail.com

Attendance Sheet

Name of Work:

SL	Name	ORG & Designation	Signature
10	[illegible]	[illegible]	[illegible]
11	[illegible]	[illegible]	[illegible]
12	[illegible]	[illegible]	[illegible]
13	[illegible]	[illegible]	[illegible]
14	[illegible]	[illegible]	[illegible]
15	[illegible]	[illegible]	[illegible]
16	[illegible]	[illegible]	[illegible]
17	[illegible]	[illegible]	[illegible]
18	[illegible]	[illegible]	[illegible]

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Email: pddeswspgwtp@gmail.com

Attendance Sheet

Name of Work:

SL	Name	ORG & Designation	Signature
19	Ayesha Siddiqua	[illegible]	[signature]
20.	Anima Sarker	[illegible]	Anima
21	Parvin Akhter	[illegible]	[signature]
22	Rina	[illegible]	Rina
23.	Md Sayedul Islam	[illegible]	[signature]
24	Md: Azizul	[illegible]	[signature]
25	Md. Saidur Rahman	Safeguard Officer (Env) DESWSP DWASA	[signature]
26	F.M. Manour Ali	Design Engr. MDSC/DWASA	[signature]
27.	Md. Saiful Islam	Asstt. Engineer Dhaka WASA	13/11/18

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Attendance Sheet

Name of Work:

SL	Name	ORG & Designation	Signature
28.	MIZAN	MDE	
29.	Tofazzal Hossen	DESWSP, DUAASD. Safeguardsofficer	
30.			

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Email: pddeswspowtp@gmail.com

Attendance Sheet

Date: 11-12-2018

Name of Work:
Venue: Oxford Nobel International School, Mercul Badda, Dhaka

SL	Name	ORG & Designation	Signature
1	Nargis Akter Lipi	Oxford Nobel School-Teacher	11.12.18
2	Jamatul Ferdous Mumu	" "	Ferdous 11.12.18
3	Joytun Ara Begum	" "	11.12.18
4	Most. Mukta Akter	" "	11.12.18
5	Shamema Islam	" "	11.12.18
6	SRISTE BANIK	" "	11.12.18
7	[illegible]	[illegible]	[illegible]
8	[illegible]	"	[illegible]
9	[illegible]	"	[illegible]

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Dhaka Water Supply and Sewerage Authority
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Kawran Bazar, Dhaka-1215
Email: pddeswspowp@gmail.com

Attendance Sheet

Date : 11-12-2018

Name of Work:

Venue: Oxford Nobel International School. Mertul Badda, Dhal

SL	Name	ORG & Designation	Signature
10	[illegible]	[illegible]	[illegible]
11	[illegible]	[illegible]	[illegible]
12	Tofazzal Hossen	DESWSP, DWASA. Safe guard offici	[illegible]
13	MIZAN SARKAR	Deven	[illegible]
14	Mohammed Shahidul Islam	PMU, DESWSP Dhaka, WASA	[illegible]
15	Md. Zakir Hossain	Mott MacDonald MPSC	[illegible]
16	K.M Riyaz Uddin	Oxford Noble School Headmaster	[illegible]
17	Md: Faridul Islam	PMU, DESWSP Dhaka WASA. Office assistant	[illegible]
18.	MD. SOBUJ Hossain	—	[illegible]

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Email: pddeswspgowtp@gmail.com

Attendance Sheet

Name of Work:

SL	Name	ORG & Designation	Signature
19.	Md. Abdur Rahman	House owner	
20.	Md. Sakil Mahmud	"	
21.	Sagor Shikder	"	
22.	Md. Shamsun Ahmed	House owner	
23.	Md. Akash Bhuiya	"	
24.	Mohammad Nishan		
25.	Md. Saiful Islam	Asstt. Engineer Dhaka WASA.	
26.	Md. Saidur Rahman	Safeguard Officer (Env) DESWSP, DWASA	

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Attendance Sheet
Date: 13.12.2018

Name of Work:
Venue: SHEREBANGLA IDEA HIGH SCHOOL, KUKIL, VATARA, DHAKA.

SL	Name	ORG & Designation	Signature
1	Dr. Rafeza Akter	National Resettlement Expert, DESWSP, MDSC MM	Rafeza
2.	Md. Shahidul Islam	PMU, DESWSP DWASA	
3.	DEEN MOHAMMAD	Director & Teacher, Shere Bangla Ideal High School.	
4	MD. HANIF KHAN	Senior teacher Do	
5.	MD. Khairul Islam	Senior teacher Shere Bangla Ideal School	
6	MD. RAFIQUL ISLAM	Assistant teacher Shere Bangla Ideal High School	
7.	MD. Jahirul Islam	Assistant teacher Shere Bangla Ideal High School.	
8.	MD RINKU SHAHRIAR	Assistant teacher Shere Bangla Ideal High School	
9.	MD. Nurul Haque.	Senior teacher Shere Bangla Ideal high school	

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Attendance Sheet

Date: 13.12.2018

Name of Work:
Venue: SHEREBAGLA IDEA HIGH SCHOOL. KURIL, VATARA, DHAKA.

SL	Name	ORG & Designation	Signature
10.	MD. ARMIA AL-MAMUN	SHERA BANGLA HIGH SCHOOL	
11	Mahbuba Sultana Jemy	11	
12	Rabina yasmin	11	
13	Farjana Boby	11	
14	Nadira sultana	11	
15	HABIBA	11	
16	Sheuly Akter Khanam	11	
17	Rubina yesmin,	11	
18	Rehana Akter	Headmistress Shera Bangla Ideal High	

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Attendance Sheet

Date: 13.12.2018

Name of Work:
Venue: SHEREBANGLA IDEAL HIGH SCHOOL, KURIL, VATARA, DHAKA.

SL	Name	ORG & Designation	Signature
19.	Mahmuda parvin	Shere Bang la Ideal High school	13.12.18
20	Laila Gul Raihan	"	13.12.18
21	MD. Zakir Hossain	civil Engineer	
22.	Tofazzel Hossen	PMU, DESWSP DWASA. Safeguard Officer	
23.	Md. Saiful Islam	Asst. Engineer Dhaka WASA	
24.	Md. Saidur Rahman	Safeguard Officer (Env). DESWSP, DWASA	

Social Safeguards/Resettlement & Enviromental Awareness Meeting at Azampur Gov. Primary School. Uttara, Dhaka-1230. Date: 13 November 2018

Social Safeguards/Resettlement & Enviromental Awareness Meeting at Oxford Noble International School, Merul Badda, Dhaka. (Dated: 11.12.2018)

Social Safeguards/Resettlement & Enviromental Awareness Meeting at Sherebangla Ideal High School, Kuril, Vatara, Dhaka. (Dated: 13.12.2018)

A. Environmental Management Plan

Environmental Management Plan

ENVIRONMENTAL MANAGEMENT PLAN							
Activity	**Mitigation Measures**	**Responsible for Implementation**	**Responsible for Monitoring**	**Parameter to Monitor**	**Frequency of Monitoring**	**Guidelines / Standards**	**Compliance Status**
PLANNING AND DESIGN PHASE							
PRE-CONSTRUCTION STAGE							
CONSTRUCTION STAGE							

POST CONSTRUCTION STAGE							
OPERATION STAGE							

B. Environmental Monitoring Quality Test Program During Construction Period

Test report format for Ambient Air, Water and Noise Level Quality during construction period is shown below.

A. B.1. Air Quality Results

Site No.	Date of Testing	Site Location	Parameters (Government Standards)					
			SPM µg/m3	$PM_{2.5}$ µg/m3	PM_{10} µg/m3	SO_2 µg/m3	NO_2 µg/m3	CO ppm
Site No.	**Date of Testing**	**Site Location**	**Parameters (Monitoring Results)**					
			SPM µg/m3	$PM_{2.5}$ µg/m3	PM_{10} µg/m3	SO_2 µg/m3	NO_2 µg/m3	CO ppm

B. B.2. Water Quality Results

Site No.	Date of Sampling	Site Location	Parameters (Government Standards)					
			pH	Conductivity µS/cm	BOD mg/l	TSS mg/l	TN mg/l	TP mg/l
Site No.	**Date of Sampling**	**Site Location**	**Parameters (Monitoring Results)**					
			pH	Conductivity µS/cm	BOD mg/l	TSS mg/l	TN mg/l	TP mg/l

C. B.3. Noise Quality Results

Site No.	Date of Testing	Site Location	LA_{eq} (dBA) (Government Standard)	
			Day Time	Nighttime
Site No.	**Date of Testing**	**Site Location**	**LA_{eq} (dBA) (Monitoring Results)**	

			Day Time	Nighttime

C. Checklist for Construction Safety

Sl. No.	Safety Issues	Yes	No	Non-Compliance	Corrective Action	Penalty	Remarks
1	Appointment of qualified construction safety officers						
2	Approval for construction safety management plan by the SC						
3	Approval for traffic management/control plan in accordance with IRC: SP: 55-2001						
4	Proper use of PPE						
5	Provision of temporary traffic barriers/barricades/caution tapes in construction zones						
6	Provision of traffic signboards						
7	Provision for flags and warning lights						
9	Providing plastic crash barrier						
10	Provision of adequate staging, form work, and access (ladders with handrail) for works at a height of more than 3 m						
11	Provision of adequate shoring/ bracing/						

	barricading/ lighting for all deep excavations of more than 3 m depth.						
12	Demarcations (fencing, guarding, and watching) at construction sites						
13	Provision for sufficient lighting, especially for nighttime work						
14	Arrangements for controlled access and entry to construction zones						
15	Safety arrangements for road users/pedestrians						
16	Arrangements for detouring traffic to alternate facilities						
17	Regular inspection of work zone traffic control devices by authorized contractor personnel						
18	Construction workers' safety - Provision of personnel protective equipment						
19	A. Helmets						
	B. Safety shoes						
	C. Dust masks						
	D. Hand gloves						
	E. Safety belts						
	F. Reflective jackets						
	G. Earplugs for labor						
20	Workers employed on bituminous works, stone crushers, concrete batching plants, etc. provided with protective goggles, gloves,						

	gumboots, etc.						
21	Workers engaged in welding work shall be provided with welder protective shields						
22	All vehicles are provided with reverse horns.						
23	All scaffolds, ladders, and other safety devices shall be maintained in safe and sound condition.						
24	Regular health checkup for labor/ contractor's personnel						
25	Ensuring sanitary conditions and all waste disposal procedures and methods in the camps.						
26	The contractor shall provide adequate circuit for traffic flow around construction areas, control speed of construction vehicles through road safety and training of drivers, provide adequate signage, barriers, and flag persons for traffic control						
27	Provision of insurance coverage for the contractor's personnel						

Contractor Consultant

D. Sample Environmental Site Inspection Report

Physical inspection and visual assessment and review of relevant site documentation during routine site inspection need to identified, and record the following:

i. Detail of dust suppression techniques, visualize the any dust found to escape the site boundaries;
ii. Discharge of muddy water or muddy tracks seen on adjacent roads;
iii. Check during heavy rain erosion and sediment control measures;
iv. Spill of liquid, fuel, oil & grease on site, and if there are site procedure for handling emergencies;
v. Onsite chemical storage and its condition;
vi. Discharge of dewatering activities and location
vii. Management of stockpiles
viii. Management of onsite solid and liquid waste
ix. GRM and complaint management system review; and
x. Is there any other activities being undertaken out of working hours

This is a routine environmental site inspection report, followed by a summary in the semiannual report

Project Name
Contract Number

NAME: _____ DATE: _____

TITLE: _____ Component : _____ LOCATION: _____ GROUP: _____

WEATHER CONDITION:

_____

INITIAL SITE CONDITION:

_____

CONCLUDING SITE CONDITION:

Satisfactory ____Unsatisfactory _____ Incident_____Resolved ____Unresolved

INCIDENT:

Nature of incident:

_____

Intervention steps

_____

Project Activity Stage	A. Survey	
	Design	
	Implementation	
	Pre-Commissioning	
	Guarantee Period	

Incident issues

Resolution

Inspection

Emissions	Waste minimization
Air quality	Reuse and recycling
Noise pollution	Dust and litter control
Hazardous substances	Trees and vegetation

Site restored to original condition	Yes		
	No		

Signature

_____

Name _____Name

_____

Position_____Position_____

Attachment-1: Renewal of Environmental Clearance Certificate

Government of the People's Republic of Bangladesh J0lepartmenl of Environment
Head Office, Paribesh Bhaban E-I *6*
Agargaon, Dhaka-1207
www.doe.gov.bd

Memo No: 22.02.0000.018."/2.124.19 Date: @I¿/ tj /2019

Subject: Renewal of Environmental Clearance Certificate for Dhaka Environmentally

Ref: Your Application dated 28/10/2019.

With reference to the above, the Department of Environment has decided to renew the Environmental Clearance Certificate for Dhaka Environmentally Sustainable Water Supply Project subject to following terms and conditions.

i. The terms and conditions as stated in Environmental Clearance issued on 11/12/2018 vide 22.02.6700.140.72.138.18.1148 shall remain valid for the renewed period.

ii. .This renewal is valid upto 10/12/2020. Application for further renewal along with the renewal fee and Vat on renewal See in separate Treasury Chalan shall have to be submitted to the Director, Department of Environment, Dhaka Metropolitan Office, Dhaka with a copy to Head Office at least 30 days before the expiry.

24.11.19

Director (Environmental Clearance) Phone: 8181673

Dhaka Environmentally Sustainable Water Supply Project Dhaka WASA, WASA Bhaban (9 ' floor)
98, Kazi Nazrul Islam Avenue Kawran Bazar, Dhaka.

1) Private Secretary to the Hon'b1e Secretary, Ministry of Environment, Forest and Climate Change, Bangladesh Secretariat, Dhaka.
2) Director, Department of Environment, Dhaka Metropolitan Office, Dhaka.

Assistant Director, Office of the Director General, Department of Environment, Head Office, Dhaka.