



Environmental Monitoring Report

Project Number: 42266-023
June 2019
Period: December 2018 – May 2019

IND: Kolkata Environmental Improvement Investment Program - Tranche 1

Submitted by:

The Kolkata Municipal Corporation (KMC), Kolkata

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Asian Development Bank

From: Project Director KEIP <pdkeip@gmail.com>

Sent: Thursday, June 20, 2019 4:37 PM

To: Sourav MAJUMDER

Cc: Neeta Pokhrel; Pramod Kumar; Soumya Ganguly; Narayan chandra Mondal; Chinmoy Chakrabarti; Ardhendu Mitra

Subject: Re: SEMR for Tranche-2, KEIP for the period from January, 2018 to June 2018

 [SEMR Tr1 Dec to May 2019 19.06.19.docx](#)

 [SEMR Tr1 Dec to May 2019 19.06.19.pdf](#)

Dear Sourav,

Kindly find enclosed the "Semi Annual Environmental Monitoring Report, Tranche-1 KEIP" (period from December 2018 to May, 2019), for your kind perusal.

With warm regards,

Project Director

Kolkata Environment Improvement Investment Programme

Kolkata Municipal Corporation

Kolkata



Soft copy recd 20.06.19

Semi-Annual Environmental Monitoring Report

ADB Loan Number 3053-IND

Period Covered: December 2018 to May 2019

June 2019

**IND: KOLKATA ENVIRONMENTAL IMPROVEMENT
INVESTMENT PROGRAM (KEIIP) – Project 1**

Prepared by Project Management Unit, Kolkata Environmental Improvement Investment Program, Kolkata Municipal Corporation, Government of West Bengal for Asian Development Bank



KOLKATA ENVIRONMENTAL IMPROVEMENT INVESTMENT PROGRAM (KEIP) – PROJECT 1

PROJECT MANAGEMENT UNIT

10th
SEMI ANNUAL ENVIRONMENT MONITORING REPORT
TRANCHE 1
ADB Loan 3053-IND
(Period December 2018 to May 2019)

June 2019



KOLKATA MUNICIPAL CORPORATION

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ABBREVIATIONS

ADB	- Asian Development Bank
ASI	- Archaeological Survey of India
BIS	- Bureau of Indian Standards
BOD	- Biochemical Oxygen Demand
CBO	- Community Based Organization
COD	- Chemical Oxygen Demand
CPCB	- Central Pollution Control Board
CPHEEO	- Central Public Health and Environmental Engineering Organisation
CTE	- Consent to Establish
CTO	- Consent to Operate
CW	- Canal Water
DG	- Diesel Generator
DO	- Dissolved Oxygen
DPR	- Detailed Project Report
DSC	- Design and Supervision Consultants
DWF	Dry Weather Flow
KMC	- Kolkata Municipal Corporation
EA	- Executing Agency
EARF	- Environmental Assessment and Review Framework
EIA	- Environmental Impact Assessment
EMP	- Environmental Management Plan
GRC	- Grievance Redressal Committee
GRM	- Grievance Redress Mechanism
GW	- Groundwater
HC	- Hydrocarbons
IEE	- Initial Environmental Examination
INR	- Indian National Rupee
KEIP	- Kolkata Environmental Improvement Project
KEIIP	Kolkata Environmental Improvement Investment Program
KMC	- Kolkata Municipal Corporation
KMDA	- Kolkata Metropolitan Development Authority
LPG	- Liquefied Petroleum Gas
MoEFCC	- Ministry of Environment and Forest & Climate Change, Government of India
MTBM	- Micro Tunnel Boring Machine
NIOSH	- National Institute of Occupational Health
NGO	- Non Government Organization

O and M	-	Operation and Maintenance
PMC	-	Project Management Consultant
PMU	-	Project Management Unit
PS	-	Pumping Station
REA	-	Rapid Environmental Assessment
ROW	-	Right of Way
RP	-	Resettlement Plan
S & D	-	Sewage & Drainage
SEIAA	-	State Level Environmental Impact Assessment Authority
SPM	-	Suspended Particulate Matter
SPS	-	Safeguard Policy Statement
STP	-	Sewage Treatment Plant
SWF	-	Storm Water Flow
SW	-	Surface Water
TDS	-	Total Dissolved Solids
TMP	-	Traffic Management Plan
TSS	-	Total Suspended Solids
UFW	-	Unaccounted For Water
USD	-	US Dollar
WBPCB	-	West Bengal Pollution Control Board
WTP	-	Water Treatment Plant

I. INTRODUCTION

A. Background

1. Kolkata Environmental Improvement Project (KEIP) was a key urban infrastructure initiative of the Kolkata Municipal Corporation (KMC) funded by Asian Development Bank (ADB) since 2000 which succeeded in improvement of the urban environment and quality of life in parts (mainly added areas) of KMC area. On completion of the project, both KMC & ADB agreed to continue their combined effort to improve further basic urban municipal infrastructures of Kolkata through a multi - tranche financing program (MFF) of US \$400 million - 'Kolkata Environmental Improvement Investment Program' (KEIIP). Figure in **Appendix 1** shows the areas of Kolkata considered to be taken up under KEIIP Tranche 1, 2 & 3. ADB has released the necessary fund for implementation. The total investment duration for Tranche 1, 2 & 3 is from 2014 to 2022 whereas the duration for Tranche 1 works is from 2014 to 2019.
2. The main objective of the Program is to improve service quality and operational sustainability of increased water supply and sewerage in 20% of the KMC area. The Investment Program also aims towards increase in operational efficiency and scale of water supply, sewerage and drainage services in 5% of KMC area.
3. The Program output comprises of:
 - ✓ rehabilitation of inefficient and outdated water supply assets;
 - ✓ continued extension of sewerage to newly developed areas and
 - ✓ further development of financial and project management capacity.
4. The Program is being carried out by the Govt. of West Bengal (GoWB) acting through KMC as the Executing Agency (EA). Sub project location map for Tranche 1 (Project 1) is shown in **Figure 1**.

B. Project & Report Purpose

5. Sub projects under **Project 1** has been classified by ADB as environmental assessment category B (some negative impacts but less significant than category A) and the impacts of subprojects were assessed through Initial Environmental Examination (IEE), prepared according to ADB Safeguard Policy (SPS 2009).
6. This report is the semi-annual environment monitoring report (SEMR) covering period from **December 2018 to May 2019** and describes the implementation of the environmental management plan (EMP) in respect of each subproject as laid down in the approved IEE.

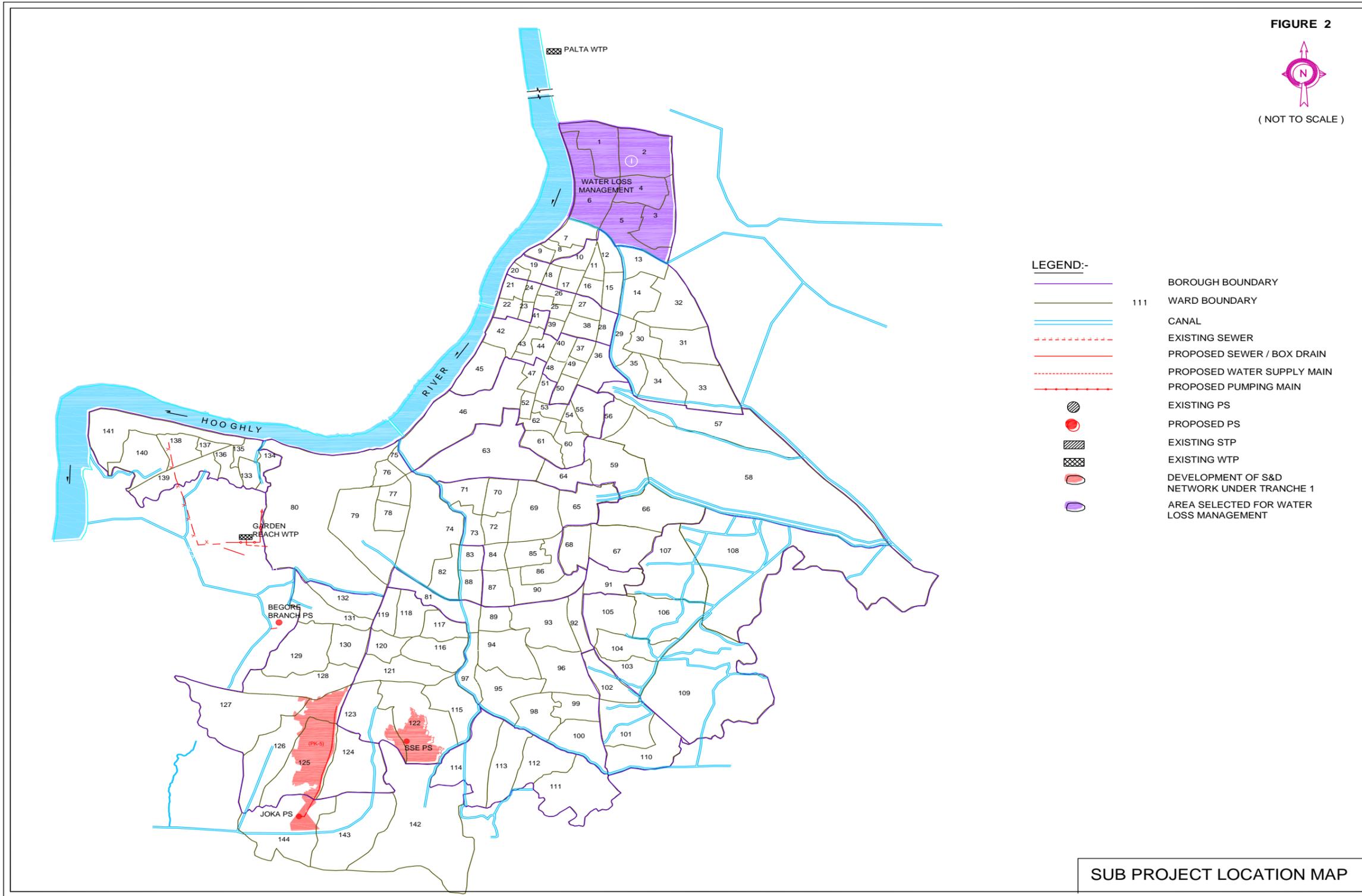


Figure 1: Sub Project location map- Project 1(Tranche 1)

II. IMPLEMENTATION PROGRESS

A. Status of Subprojects under Tranche 1

7. There are total **9** packages under Tranche 1. **Table 1** shows the summary of subprojects under Tranche 1 including their work components, starting date and schedule date of completion, physical progress and progress of implementation of work components as on 31st May 2019. Photo illustration of progress of work of some packages has been presented in **Appendix 2**. All the 9 packages have been already awarded, work has already completed in some packages and in some others work is under various stages of implementation.

Table 1: Summary of Subprojects under KEIIP Tranche 1 (As on 31st May 2019)

Package Number	Major Work Components	Start Date	Target/date of completion	% Physical Progress as on 31 st May 2019	Status of work upto 31 st May 2019
KEIIP/ICB/Tr-1/WS01/2015-16	Performance Based Water Loss Management Works at Cossipore Service Zone, Ward no. 01 to 06	21.10.2016	20.10.2019	47.50	<ul style="list-style-type: none"> House service connection done for 2113 houses. Water meter installation done for 3615 houses. Pipe line laying (new and rehabilitation) done for 62.81 km. Road restoration done for 62.2 km.
KEIIP/ICB/ Tr-1/WS02/2013-14	Rehabilitation and Refurbishment of Water Works at Palta and Garden Reach	07.11.2014	06.11.2018	97	<ul style="list-style-type: none"> Palta Jetty work completed. Gardenreach Jetty work completed. Testing and commissioning of WTP civil and electromechanical work are under progress.
KEIIP/ICB/ Tr-1/WS03/2013-14 Environment non-sensitive package	Supply and Installation of Pumps & Motors at, Tallah- Palta System and Garden Reach System	19.05.2014	18.05.2016	100.0	All works completed
KEIIP/ICB/ Tr-1/WS & SD-04/13-14	Laying of water trunk main from Garden Reach waterworks to Taratala valve station and laying of sewer line along Diamond Harbour Road by Micro tunneling method	19.05.2014	18.05.2017 (Extension upto 31.03.2018) Further Extension under process	100.0	All works completed
KEIIP/ICB/Tr-1/SD-05/13-14	Construction of pumping stations in Begore khal and in Joka Tram Depot and Construction of Sewerage and Drainage Network within Diamond Harbour Road catchment	27.10.2014	26.04.2018 Extension under progress	70	<ul style="list-style-type: none"> Construction of Joka P.S. 80% completed. Construction of Bagore Khal P.S.905 completed. Construction of 150 numbers of box drain completed. Laying of sewer line at Parnashree area completed upto – 1280 km. Modification works of Behala Flying Club PS. 80% completed. Misc. works at R.K. Ghosh PS. And Noapara PS. Completed. Laying of Incoming Sewer of SWF & DWF Pumping Mains from Begore Khal Pumping Station :-

Package Number	Major Work Components	Start Date	Target/date of completion	% Physical Progress as on 31 st May 2019	Status of work upto 31 st May 2019
					-Completed up to 340 km (1300 mm dia SWF Pumping Main) - Completed up to 1450km (400 & 450 mm dia DWF Pumping Main).
KEIIP/NCB/ Tr-1/SD-06/13-14	Micro-tunneling works on pressure main from Santoshpur Pumping Station to Garden Reach Sewage Treatment Plant	19.05.2014	28.02.2016	100.0	All works completed
KEIIP/ICB/ Tr-1/SD-07/15-16	Construction of S & D Network and Pumping Station in Borough XIII (Ward 122) including Replacement of GAP Sewer Line in Borough XV, Laying of Pumping Main and Rehabilitation of SSE STP including Operation & Maintenance of the Pumping Stations(s) and STP	05.01.2016	04.07.2018	80	<ul style="list-style-type: none"> • Rehabilitation of GAP sewer completed upto 60%. • Laying of Pumping Main from Trenching ground to Santoshpur Pumping Station 100% completed. • Construction of SSE Pumping Station 85% completed. • Rehabilitation of South Suburban East (SSE) STP 92% completed. • S&D Network in W-122 92% completed.
KEIIP/NCB/TR-1/BR-08A/2015-16	Interior renovation of KEIIP office at Business Towers, 206 AJC Bose Road, Kolkata 700017 including Electrical works & Air-conditioning works	04.02.2016	03.02.2017	100.0	All works completed
KEIIP/NCB/TR-1/BR-08B/2016-17 Lot 2 Environment non-sensitive package	Supply and Installation of Geographical Information System (GIS) Software	04.10.2016	03.01.2017	100.0	Supply of software completed. Installation also completed. Training & integration done
KEIIP/NCB/TR-1/BR-08B/2016-17 Lot 1 Environment non-sensitive package	Supply and Installation of Software & Hardware for development of project accounting system	08.09.2017	07.05.2018	In progress	Software and hardware components delivered. Development of project account system is in progress.

B. Compliance of Safeguard Loan Covenants

8. The loan agreement for KEIIP Project 1 was signed on 3rd March 2014 and details are available in ADB website (<http://www.adb.org/projects/documents/loan-agreement-kolkata-environmental-improvement-investment-program-project-1>). **Table 2** provides a summary of compliance to the loan covenants related to environmental safeguards.

Table 2: Compliance of Loan Covenants – Environment part

Serial no. as per loan agreement	Program Specific Covenants	Status / Issues
Environment		
7	The Borrower shall ensure or cause the EA to ensure that the preparation, design, construction, implementation, operation and decommissioning of the Project, and all projects' facilities comply with (i) all applicable laws and regulations of the Borrower and the State relating to environment, health, and safety; (ii) the Environmental Safeguards; (iii) the EARF; and (iv) all measures and requirements set forth in the respective IEE and EMP, and any corrective or preventative actions set forth in a Safeguards Monitoring Report.	<p>Under compliance</p> <p>Document is prepared/ or under preparation by complying all relevant State and National Laws, Safeguard Policy Statement (SPS 2009) of ADB, Environment Assessment Review Framework (EARF) for Tranche-1 program.</p> <p>For Tranche 1 project Initial Environmental Examination (IEE), Environment Management Plan (EMP) report prepared and approved by ADB.</p> <p>IEE for Sewage and Drainage for Tranche 1 has been updated and that report has already been disclosed in ADB website on October 2015.</p> <p>Further updation of Sewage and Drainage IEE was done on August 2016 due to change in scope</p> <p>IEE for water supply for Tranche 1 has been updated and that report has already been disclosed in ADB website on February 2016</p> <p>Further updation of water supply IEE was done on August 2016 due to change in scope</p> <p>IEE will be revised further in case of any change of scope and location.</p> <p>All measures and requirements as prescribed in IEE/EIA and EMP are being considered during implementation. Corrective or preventive action plans will be reflected in Environment Monitoring Report and project implementation authority will take care of such actions when required.</p>
Human and Financial Resources to Implement Safeguards Requirements		
11	The Borrower shall make available, or cause the EA to make available, all necessary budgetary and human resources to fully implement the EMP required.	<p>Complied</p> <p>Budgetary provisions have been included in EMP of Tranche 1 project</p> <p>An Environment Specialist is in place in Project Management Unit heading Safeguard Monitoring Unit.</p>

Serial no. as per loan agreement	Program Specific Covenants	Status / Issues
		An Environmental Specialist of DSC, for implementation of EMPs, is in place for regular monitoring to secure complete compliance.
Safeguards – Related Provisions in Bidding Documents and Works Contracts		
12.	<p>The Borrower shall ensure, or cause the EA to ensure, that all bidding documents and contracts for Works contain provisions that require contractors to:</p> <p>(a) comply with the measures and requirements relevant to the contractor set forth in the IEE, the EMP, the RP and the IPP (to the extent they concern impacts on affected people during construction), and any corrective or preventative actions set out in a Safeguards Monitoring Report;</p> <p>(b) make available a budget for all such environmental measures;</p> <p>(c) provide the EA with a written notice of any unanticipated environmental risks or impacts that arise during construction, implementation or operation of the Project that were not considered in the IEE, the EMP, the RP or the IPP;</p> <p>(d) adequately record the condition of roads, agricultural land and other infrastructure prior to starting to transport materials and construction; and</p> <p>(e) fully reinstate pathways, other local infrastructure, and agricultural land to at least their pre-project condition upon the completion of construction.</p>	<p>Under compliance</p> <p>(a) Approved IEE, EMP for Tranche 1 project is attached in Bidding documents. This process will be followed for all the sub projects within the present Tranche. In case of any change of scope, revised IEEs with EMP(s) will be prepared and corrective measures will be disclosed to the contractor and same will be reflected in the “Environment Monitoring Report”.</p> <p>IEE for Sewage and Drainage for Tranche 1 has been updated and that report has already been disclosed in ADB website on October 2015. Further updation of Sewage and Drainage IEE was done on August 2016 due to change in scope</p> <p>IEE for water supply for Tranche 1 has been updated and that report has already been disclosed in ADB website on February 2016. Further updation of water supply IEE was done on August 2016 due to change in scope</p> <p>(b) IEE includes budgetary provisions for implementation of EMP.</p> <p>(c) During implementation of any sub project if additional impacts/risks arise due to change in scope/area that will be reflected in the revised IEEs, EMPs and Environment Monitoring Report and accordingly project Executing Agency will inform the Construction Agency for taking relevant corrective measures.</p> <p>(d) Haul roads will be marked properly (by avoiding residential and agricultural land) before commencement of transportation of materials.</p> <p>(e) Pathways, infrastructure and land which are likely to be affected for varying periods during implementation of the sub project will be restored by concerned construction agency before acceptance of the work.</p>

Serial no. as per loan agreement	Program Specific Covenants	Status / Issues
		Restoration status will be reflected in post construction monitoring report.
Safeguards Monitoring and Reporting		
13	<p>The Borrower shall cause the EA to do the following:</p> <p>(a) submit semi-annual Safeguards Monitoring Reports to ADB and disclose relevant information from such reports to affected persons promptly upon submission;</p> <p>(b) 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 IEEs, the EMPs, promptly inform ADB of the occurrence of such risks or impacts, with detailed description of the event and proposed corrective action plan; and</p> <p>(c) report any breach of compliance with the measures and requirements set forth in the EMPs, promptly after becoming aware of the breach.</p>	<p>Under compliance</p> <p>(a) This is 8th Semi-annual safeguard monitoring report on Environment for the period December 2017 to May 2018. The next report will be due by end of November 2018. 7th Semi-annual monitoring report on Environment for the period May 2017 to November 2017 already disclosed in ADB website</p> <p>(b) During implementation of any sub project, if additional impacts/risks arise due to change in scope/area, those will be reflected in revised IEEs with EMPs and accordingly Executing Agency (EA) will inform the ADB such change along with corrective action plan which will be reflected in the subsequent Monitoring Reports.</p> <p>(c) in case of any breach of compliance with the measures and requirements set forth in the EMP, EA will promptly inform ADB and suitable corrective action program will be planned/initiated.</p>
Prohibited List of Investments		
14	The Borrower shall ensure or cause the State to ensure that no proceeds of the Loan are used to finance any activity included in the list of prohibited investment activities provided in Appendix 5 of the SPS.	<p>Complied</p> <p>Under Tranche -1, there is no violation of prohibited investment activities as per ADB SPS (2009) Appendix 5.</p>
Other Social Measures		
15	The EA shall ensure that civil works contracts under the Project follow all applicable labourer laws of the Borrower and the State, and that these further include provisions to the effect that contractors: (i) carry out HIV/AIDS awareness programs for labourer and disseminate information at worksites on risks of sexually transmitted diseases and HIV/AIDS as part of health and safety measures for those employed during construction; and (ii) follow and implement all statutory provisions on labourer (including not employing or using children as labourer, equal pay for equal work), health, safety, welfare, sanitation, and working conditions. Such contracts will also include clauses for termination in case of any breach of the stated provisions by the contractors.	<p>Complied in Bid documents and being complied during implementation</p> <p>Provision are included (as per EMP & BID document) to carry out HIV/AIDS awareness programs for construction contractor, application of all relevant labour laws for health and safety including child labour law and engagement of local labours (preferably from economically backward group) covering women labours.</p> <p>In case of any breach of provision, necessary corrective measures as per contract clauses shall be taken.</p> <p>All activities including awareness program will be reflected in "Monitoring Report".</p>

C. Implementation Arrangement

9. The institutional arrangement follows KEIIP's organizational structure and functions (**Figure 2**). The subproject is being implemented and monitored by the Project Management Unit (PMU). The KEIIP's PMU Environment Specialist is the overall in-charge on Environmental safeguard of the program. The responsibilities of the Environmental Specialist ensures that (i) environmental safeguard issues are addressed; (ii) EMP/approved Site Environment Plan (SEP) is implemented; (iii) physical and non-physical activities under the subproject are monitored; and (iv) monitoring reports are prepared on time and submitted to ADB. Safeguard Monitoring Unit (SMU) of PMU is ensuring field level monitoring and safeguard documentation.

10. PMU is supported by the Design and Supervision Consultants (DSC). An Environment Specialist is in place to ensure: (i) EMP/ approved SEP is implemented; (ii) surveys and measurements are undertaken; (iii) inspections and observations throughout the construction period are recorded to ensure that safeguards and mitigation measures are provided as intended; and (iv) statutory clearances and permits from government agencies/other entities are obtained prior to start of civil works.

11. The Safeguards Monitoring Unit will:

- (i) prepare the REA checklist, draft the EIA/IEE and arrange for disclosure of the approved EIA/IEE in the website
- (ii) ensure that Environmental Clearance (EC), Consent to Establishment and Consent to Operate and other certificates, as required, are obtained in time from appropriate authorities and ensure compliances with conditions imposed.
- (iii) ensure incorporation of the EMP, environmental mitigation and monitoring measures into the contract documents
- (iv) monitor disclosure and public consultation arranged by DSC during IEE process and ensure that comments are reflected in the IEE report
- (v) ensure disclosure of information throughout the duration of the subproject through suitable visual means and publications
- (vi) provide necessary input for grievance redress
- (vii) approve contractor's proposed locations for construction work camps, storage areas, hauling roads, lay-down areas, and disposal areas for solid and hazardous wastes on recommendations of DSC
- (viii) guide the Contractor for drawing up of Site Environmental Management Plan and to approve the same
- (ix) induct the Contractor for taking up the construction following environmental and social safeguards
- (x) facilitate scheduled monitoring during implementation of the project.
- (xi) carry out regular onsite monitoring and guide the Contractor to adopt the required site management standard.
- (xii) ensure the required health and safety measures at work sites
- (xiii) obtain in time and to review the monthly monitoring report of the Contractors
- (xiv) prepare 6-monthly monitoring and EMP implementation report, including the status of project compliance, statutory clearances and relevant loan covenants, and submit the approved 6-monthly report to ADB and seek permission to disclose the same in the investment program website
- (xv) prepare monitoring report on post-construction activities by the contractors as

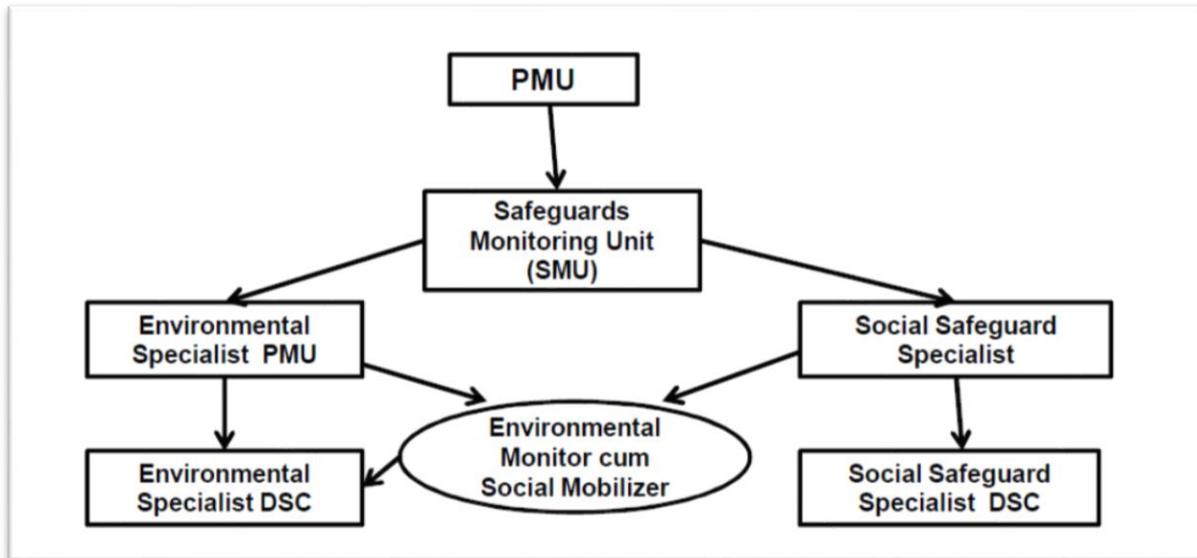
specified in the EMP

12. The Contractor’s responsibilities included:
- (i). Submission of Site environmental plan (SEP) covering proposed sites / locations for construction work camps, storage areas, haul roads, lay down areas, disposal areas for solid and hazardous wastes
 - (ii). Compliance with all applicable legislation and be conversant with the requirements of the EMP/ approved SEP;
 - (iii). Briefing of his staff, employees, and labourer about the requirements of the EMP/ approved SEP;
 - (iv). Ensuring that any sub-contractors/suppliers engaged within the context of the contract comply with the environmental requirements of the EMP/ approved SEP. The Contractor will be held responsible for non-compliance on their behalf;
 - (v). Providing methodology/information for all activities requiring special attention as specified and/or requested by the DSC Environment Specialist during the duration of the Contract;
 - (vi). Providing environmental awareness training to staff, employees, and labourers;
 - (vii). Bearing the costs of any damages/compensation resulting from non-adherence to the EMP/ approved SEP or written site instructions;
 - (viii). Conducting all activities in a manner that minimizes disturbance to directly affected residents and the public in general, and foreseeable impacts on the environment.
 - (ix). Ensuring that the PMU and DSC Environment Specialists are timely informed of any foreseeable activities that will require their expert input

13. Environment Specialist and Junior Environmental Scientist of DSC visited all construction sites every month and arranged onsite training program for contractors and supervisory staff and instructed contractors for application of corrective action measures to mitigate impacts. **Table 3** shows detail of environment safeguard team for KEIIP.

Table 3: Details of KEIIP Environmental Safeguard Team

Designation	Name and Contact Details
PMU, Environment Specialist Safeguard Monitors in SMU	Name: Dr. Chinmoy Chakrabarti Office Address: Unnayan Bhawan, 206 A. J. C Bose Road, Kolkata 700017 Phone:033 2283 0169 Email:pdkeip@gmail.com, chin_moy@yahoo.com
DSC, Environmental Engineer	Name: Dr. Bidisha Mukherjee Office Address: Unnayan Bhawan, 206 A. J. C Bose Road, Kolkata 700 017 Phone:033 2283 0044, 9830592875 Email: dsckeip@gmail.com , bidisha1809@gmail.com



Notes: PMU = project management unit; DSC = design and supervision consultants

Figure 2: Institutional Arrangement – Safeguards

III. ENVIRONMENTAL PROCEDURE REVIEW

A. Environmental Legal Requirement

14. For implementation of the project both national and state rules & regulations need to be followed. **Table 4** in next section indicates environment legal requirement for the projects under KEIIP.

B. Compliance with Environmental Legal Requirements

15. Before implementation of the project, compliance with environmental policy, law and legislation is necessary.

16. Under Tranche 1 present status of Environment, forest and other clearances are mentioned below.

Table 4: Status of Compliance with National and State Legal Requirements (upto 31st May 2019)

Package	Main package work	National and State Legal Requirement	Status	Conditions of the Clearance/NOCs
KEIIP/ICB/Tr-1/ WS01/2015-16	Performance Based Water Loss Management Works at Cossipore Service Zone, Ward no. 01 to 06	Water (Prevention and Control of Pollution) Act. 1974. The Air (Prevention and Control of Pollution) Act, 1981, as amended by Amendment Act, 1987. Noise Pollution (Regulation and Control) Rules, 2002 amended up to 2010. Also for setting up diesel generator Consent to Establish (CTE) and Consent to	Compliance with Air Act, Noise Rules and Water Act are being implemented. Types of Generator (acoustic) being used - do not require CTE and CTO	

Package	Main package work	National and State Legal Requirement	Status	Conditions of the Clearance/NOCs
		Operate (CTO) will be required.		
KEIIP/ICB/ Tr-1/WS02/2013-14	Rehabilitation and Refurbishment of Water Works at Palta and Garden Reach	<p>Water (Prevention and Control of Pollution) Act. 1974.</p> <p>Consent to Establish (CTE) for rehabilitation of WTP from West Bengal Pollution Control Board.</p> <p>Consent to operate (CTO) will be required before operation.</p> <p>Forest (Conservation) Act 1980; West Bengal Trees (Protection and Conservation in Non-Forest Areas) Act, 2006 for felling of trees.</p> <p>The Air (Prevention and Control of Pollution) Act, 1981, as amended by Amendment Act, 1987.</p> <p>Noise Pollution (Regulation and Control) Rules, 2002 amended up to 2010.</p> <p>Also for setting up hot mix plant, batching plant and use of diesel generator Consent to Establish (CTE) and Consent to Operate (CTO).</p>	<p>CTE received on 03.09.2015 from WPCB for Rehabilitation of Water Treatment Plant, which is valid for 5 years.</p> <p>Pipeline alignment shifted as per design modification. No tree felling is required</p> <p>Compliance with Air Act, Noise Rules and Water Act are being implemented.</p> <p>Not required now as per present work Green silent DGs are in use.</p>	Conditions and compliance are shown below (Table 5)
KEIIP/ICB/ Tr-1/SD-05/13-14	Construction of pumping stations in Begore khal and in Joka Tram Depot and Construction of Sewerage and Drainage Network within Diamond Harbour Road catchment	<p>Water (Prevention and Control of Pollution) Act. 1974</p> <p>The Air (Prevention and Control of Pollution) Act, 1981, as amended by Amendment Act, 1987</p> <p>Noise Pollution (Regulation and Control) Rules, 2002 amended up to 2010</p> <p>Also for setting up diesel generator Consent to Establish</p>	<p>Compliance with Air Act, Noise Rules and Water Act are being implemented.</p> <p>Types of Generator (acoustic) being used - do not require CTE and CTO</p>	-

Package	Main package work	National and State Legal Requirement	Status	Conditions of the Clearance/NOCs
		(CTE) and Consent to Operate (CTO)		
KEIIP/ICB/ Tr-1/SD-07/15-16	Construction of S & D Network and Pumping Station in Borough XIII (Ward 122) including Replacement of GAP Sewer Line in Borough XV, Laying of Pumping Main and Rehabilitation of SSE STP including Operation & Maintenance of the Pumping Stations(s) and STP	Water (Prevention and Control of Pollution) Act. 1974 The Air (Prevention and Control of Pollution) Act, 1981, as amended by Amendment Act, 1987 Noise Pollution (Regulation and Control) Rules, 2002 amended up to 2010 Also for setting up diesel generator Consent to Establish (CTE) and Consent to Operate (CTO)	Compliance with Air Act, Noise Rules and Water Act are being implemented. Types of Generator (acoustic) being used - do not require CTE and CTO	-

Table 5: Compliance of Consent to Establish (CTE) Water Treatment Plant under Palta Water Works

Sl. No.	Conditions	Compliances
1	The quality of sewage and trade effluent to be discharged from your factory shall satisfy the permissible limits as prescribed in IS: 2490 (Pt.) of 1974, and/or its subsequent amendment and Environment (Protection) Rules 1986.	During operation of WTP sewage will be discharged after conforming permissible limit (IS:2490)
2	Suitable measures to treat your effluent shall be adopted by you in order to reduce the pollution load so that the quality of the effluent satisfies the standards mentioned above.	Effluent will be treated before discharge to reduce pollution load
3	You shall have to apply to this Board for its consent to operate and discharge of sewage and trade effluent according to the provisions of the water (Prevention & control of Pollution) Act, 1974. No sewage or trade effluent shall be discharged by you without prior consent of this Board.	Consent to Operate will be taken from Pollution Control Board before commissioning of WTP. No sewage will be discharged without prior consent of the Board.
4	All emission from your factory shall conform to the standards as laid down by this Board.	No air emission expected from WTP
5	No emission shall be permitted without prior approval of this Board and you shall apply to this Board for its consent to operate and atmospheric emission as per provision of the Air (Prevention & control Pollution) Act, 1981.	No emission expected from WTP
6	You shall comply with	
	(i) Water (Prevention and Control of Pollution Cess Act, 1977, if applicable.	Under compliance during construction and will be complied (relevant Rules & Regulation) during operation Public Liability Insurance for the entire water treatment plant has been taken from National Insurance Company.
	(ii) Water (Prevention and Control of Pollution) Cess Act, 1978, if applicable.	
	(iii) Environment (Protection) Act, 1986	
	(iv) Environment (Protection) Rules, 1986	

Sl. No.	Conditions	Compliances
	(v) Hazardous Wastes (Management and Handling) Rules, 1989 and Amended Rules, 2000	
	(vi) Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989 and Amended Rules, 2000.	
	(vii) Manufacture, Use, Import and Storage and Hazardous Micro-Organisms, Genetically Engineered Organisms or Cell Rules, 1989.	
	(viii) The Public Liability Insurance Act, 1991 and Amended Act, 1992.	
	(ix) The Public Liability Insurance Rules, 1991 and Amended Rules 1993.	
	(x) Biomedical Wastes (Management & Handling) Rules, 1998 and Amended rules 2000, if applicable.	
	(xi) Recycled Plastics Manufacture and Usage rules 1999, if applicable and	
	(xii) Ozone Depleting Substances (Regulation & Control) Rules, 2000, if applicable.	
7	You will have to abide by any other stipulations as may be prescribed by any authority/local bodies/Government Departments, etc.	Will abide by any other stipulations as may be prescribed by any authority/local bodies/Government Departments, etc
Special conditions		
1	Water shall be sourced from the Hooghly River.	Presently water sourced from river Hooghly
2	The surface water treatment system shall consist of flash Mixing, flocculation, inclined plate settling rapid sand filtration. Chlorination & sludge handing system.	The surface water treatment system will consist of flash Mixing, flocculation, inclined plate settling rapid sand filtration. Chlorination & sludge handing system.
3	All sorts of precaution should be taken as per statutory rules for handling and storage of chlorine. Explosive license should be obtained from appropriate authorities for handling and storage of Chlorine.	All sorts of precaution would be taken as per statutory rules for handling and storage of chlorine. Explosive license already exists for running plant.
4	No additional machinery/equipment can be installed without prior permission from WBPCB. No change in raw materials, products, production capacity and manufacturing process shall be made without prior permission from the Board.	No additional machinery/equipment will be installed without prior permission from WBPCB. No change in raw materials, products, production capacity and manufacturing process will be made without prior permission from the Board.
5	Noise Control – Ambient noise level not to exceed the permissible limit.	During construction and operation phase noise mitigation measures will be applied
6	Work shall be done under covered shed for noise reduction.	It will be maintained as per site condition
7	Good housekeeping to be maintained.	Satisfactory housekeeping already maintained
8	Free planting, sapling along the periphery of the unit.	Plantation will be done after completion of construction activity
9	Land Conversion Certificate to be obtained	Proposed site within existing premises of Palta water works
10	Consent for Operate to be obtained from the State Board before commissioning of the unit.	Consent for Operate will be obtained from the State Board before commissioning of the new treatment unit.

Sl. No.	Conditions	Compliances
11	Provision of drinking water & waste water disposal shall be ensured for labour camps. Proper sanitation facilities shall be provided for construction workers to ensure environmental sanitation, health and safety of the workers shall be ensured during construction.	Drinking water and toilet facility are available at labour camp. Waste water discharges as per site condition. Also health and safety of the workers maintained during construction. Health check up camp has been arranged.
12	The project proponent shall take necessary care not to cause any inconvenience to the residents or surrounding neighbourhood. Regular supervision shall be in place all through the construction phase so as to avoid disturbance to the surrounding.	Project location within Palta Water Works campus no impact is expected on resident movement
13	The Project Proponent will ensure that no accumulation of any kind of water occurs within the project area to prevent breeding of various diseases spreading vectors.	The Project Proponent would ensure that no accumulation of any kind of water occurs within the project area to prevent breeding of various diseases spreading vectors.
14	Ground water shall not be abstracted without prior permission of the Local Body as well as the Competent Authority as per the West Bengal Ground Water Resources (Management Control and Regulation) Act, 2005.	There is no need for groundwater abstraction, as per plan only surface (river) water will be utilized Presently for drinking purpose supplied water are used
15	The unit shall abide by the West Bengal Trees (Prevention and Conservation in Non-Forest Area) Rules, 2007. Adequate green belt shall be developed.	The unit will abide by the West Bengal Trees (Prevention and Conservation in Non-Forest Area) Rules, 2007. Adequate green belt will be developed after completion of the construction activity.
16	No tree can be felled without prior permission from the Tree Cutting Authority constituted as per the West Bengal Tree (Prevention and Conservation in Non-Forest Area) Act, 2006 and subsequent rules.	No tree will be felled without prior permission from the Tree Cutting Authority constituted as per the West Bengal Tree (Prevention and Conservation in Non-Forest Area) Act, 2006 and subsequent rules.

IV. COMPLIANCE STATUS WITH THE ENVIRONMENTAL MANAGEMENT AND MONITORING PLAN

17. There are 4 environment sensitive subprojects under implementation. Site Environment plans including site specific EMPs were submitted by the contractors before starting of each construction package. These EMPs are generally revised semi-annually as per progress of construction work. Sample report was submitted in previous SEMR.

18. Environment Specialist from DSC and PMU carried out periodic monitoring of EMP implementation through desk review of contractor's records and site inspections. Package wise findings are presented in **Tables 6**.

19. Over all, most of the sites are environmentally well managed. However, in a few running packages, there were scopes for further improvement in site management measures as mentioned below,

- Use of PPEs (particularly working shoes/ gumboots, hand gloves) by contractors' at different work locations.
- Inclusion of emergency contact no. and project detail at display/ caution board placed at few work sites of running packages.
- Use of caution tape/ barricade at few locations of running packages.

20. The concerned contractors were instructed verbally and also in writing. During subsequent field visits and from monthly monitoring reports it was observed that such deficiencies are mostly removed and site management has considerably improved.

Table 6: Summarized Compliance to EMP Implementation for Tranche 1 Packages (Package No. WS 01, WS 02, SD 05, SD 07)

	Environmental Issues	Mitigation Activities and Method	Parameters monitored & Monitoring method adopted	Responsible for Mitigation & Monitoring	Location & Date of Monitoring	Compliance Status/ Explanation WS 01	Compliance Status/ Explanation WS 02	Compliance Status/ Explanation SD 05	Compliance Status/ Explanation SD 07
1	Site clearance	Site preparation work including necessary clearance and permission.	<ul style="list-style-type: none"> Tree felling requirement – site environment plan. NOC – paper documents from line agency. Method - Site observation and document checking. 	Environment Specialist of DSC and PMU	All Project locations, before commencement of physical work.	Complied Tree felling not required.	Complied Tree felling not required.	Complied Tree felling not required.	Complied Tree felling not required.
2	Access to Site	<ul style="list-style-type: none"> maintained via existing roads Involvement of local Traffic Department in the planning stages for road closure traffic diversion. 	<ul style="list-style-type: none"> Involvement of traffic dept. Road closure planning Method – Site observation 	Environment Specialist of DSC and PMU	Specific project location	Site is accessible.	Site is accessible.	Site is accessible.	Site is accessible.
3	Affected utilities	Shifting of affected utilities like electric and telephone lines, cable lines, pipe lines etc.	<ul style="list-style-type: none"> List of affected utilities if any, contact operators. Bid document to include requirement for a contingency plan for service interruptions. Method - Site observation and document checking. 	Environment Specialist of DSC and PMU	Specific project location	Done as per requirement with the help of concerned authority.	Done as per requirement with the help of concerned authority.	Done as per requirement with the help of concerned authority.	Done as per requirement with the help of concerned authority.
4	Water supply	Health risk due to damage in water supply line	<ul style="list-style-type: none"> Schedule of closure. Delivery of KMC potable water to affected people . Method - Site observation 	Environment Specialist of DSC and PMU	Specific project location	Not required as per present nature of work	Not required as per present nature of work	Not required as per present nature of work	Not required as per present nature of work
5	Traffic Management	Planning for Traffic Management	Ensure traffic management plan is part of contract documents and being implemented. Method - Site observation and document checking.	Environment Specialist of DSC and PMU	-	Complied Traffic management plan prepared and approved from traffic/ police dept. Copy available as back up with DSC.	Not required as per present nature of work	Complied Traffic management plan prepared and approved from traffic/ police dept. Copy available as back up with DSC.	Not required as per present nature of work
6	Setting of construction camps, hot mix plants, stockpile areas, storage areas, and disposal areas.	<ul style="list-style-type: none"> Planning for setting up construction camp, hot mix plants, stockpile areas, storage and disposal areas – to be submitted to DSC for prior approval. Prioritize areas within or nearest possible vacant space in the sub-project location No use of residential areas No disposal of waste in water 	List of selected location for construction work camps, hot mix plants, stockpile areas, storage areas, and disposal areas. Method - Site observation and document checking.	Environment Specialist of DSC and PMU	Camp and other sites, before start of physical work & Continuous	Setting of hot mix plant not required. Stockpile and storage area demarcated. Overall status - Complied.	Not required as per present nature of work	Setting of hot mix plant not required. Stockpile and storage area demarcated. Overall status - Complied.	Setting of hot mix plant not required. Stockpile and storage area demarcated. Overall status - Complied.

	Environmental Issues	Mitigation Activities and Method	Parameters monitored & Monitoring method adopted	Responsible for Mitigation & Monitoring	Location & Date of Monitoring	Compliance Status/ Explanation WS 01	Compliance Status/ Explanation WS 02	Compliance Status/ Explanation SD 05	Compliance Status/ Explanation SD 07
7	Establishing Equipment Lay-down and Storage Area ¹	<ul style="list-style-type: none"> Choice of location for equipment lay-down and storage areas must take into account prevailing winds, distances to adjacent land uses, general on-site topography and water erosion potential of the soil. Storage areas shall be secure so as to minimize the risk of crime. Away from school and direct residential areas Fire prevention facilities must be present at all storage facilities Proper storage facilities for the storage of oils, paints, grease, fuels, chemicals and any hazardous materials These storage facilities (including any tanks) must be on an impermeable surface Staff must be aware of their potential impacts and follow the appropriate safety measures 	List of selected location and facility. Method - Site observation and document checking.	Environment Specialist of DSC and PMU	Proposed locations considered in the package. Before start of physical work & Continuous	Complied. Proper storage of fuels, lubricants done. Equipment lay-down area demarcated.	Complied. Proper storage of fuels, lubricants done. Equipment lay-down area demarcated.	Complied. Proper storage of fuels, lubricants done. Equipment lay-down area demarcated.	Complied. Proper storage of fuels, lubricants done. Equipment lay-down area demarcated.
8	Education of site staff on general and Environmental Conduct ²	<ul style="list-style-type: none"> Ensure that all site personnel have a basic level of environmental awareness training All employees must undergo safety training and wear the necessary protective clothing 	Documentation – Training and awareness. Method - Materials and records on awareness training program	Environment Specialist of DSC and PMU	-	Site Safety training continued for worker and recorded properly. Copy available as back up with DSC. Photographic evidences attached as appendix-3	Site Safety training continued for worker and recorded properly. Photographic evidences attached as appendix-3	Site Safety training continued for worker and recorded properly. Copy available as back up with DSC.	Site Safety training continued for worker and recorded properly. Copy available as back up with DSC.
Construction									
9	Materials Management – Sourcing ³	<ul style="list-style-type: none"> Contractors shall prepare a source statement indicating the sources of all materials (including topsoil, sands, natural gravels, crushed stone, asphalt, clay liners etc), and submit these to the DSC for approval prior to commencement of any work. Use of Govt. approved quarry sites for procurement of materials Verify suitability of all material sources and obtain approval of Investment from PMU/DSC 	<ul style="list-style-type: none"> List of approved quarry sites and sources of materials Bid document to include requirement for verification of suitability of sources and permit for additional quarry sites if necessary. Construction Contractor documentation Method - Site observation and document checking. 	For mitigation - contractor, for monitoring - Environment Specialist of DSC and PMU.	Quarries and material source areas. Daily visit by construction supervisor of DSC. Weekly visit by Construction Manager. Fortnight visit by Environment Specialist / Environmental Engineer.	Complied Approval obtained from PMU and DSC as per requirement.	Complied Approval obtained from PMU and DSC as per requirement.	Complied Approval obtained from PMU and DSC as per requirement	Complied Approval obtained from PMU and DSC as per requirement

¹ Storage areas can be hazardous, unsightly and can cause environmental pollution if not designed and managed carefully

² These points need to be made clear to all staff on site before the subproject begin.

³ Materials must be sourced in a legal and sustainable way to prevent offsite environmental degradation.

	Environmental Issues	Mitigation Activities and Method	Parameters monitored & Monitoring method adopted	Responsible for Mitigation & Monitoring	Location & Date of Monitoring	Compliance Status/ Explanation WS 01	Compliance Status/ Explanation WS 02	Compliance Status/ Explanation SD 05	Compliance Status/ Explanation SD 07
10	Maintenance of Construction Camp	<ul style="list-style-type: none"> Establishment of temporary camps with drinking water, sanitary and solid waste management arrangement Train employees in the storage and handling of materials Remove all wreckage, rubbish, or temporary structures 	<ul style="list-style-type: none"> Complaints from sensitive Receptors Water and sanitation facilities for employees Housekeeping – regular disposal of solid waste. Method – site observation 	For mitigation - contractor, for monitoring - Environment Specialist of DSC and PMU.	Camp site. Same as above.	Complied. Rented house arranged for labours with all facility.	Not required as per present nature of work.	Complied. Rented house arranged for labours with all facility.	Complied. Rented house arranged for labours with all facility.
11	Landscape and Aesthetics	<ul style="list-style-type: none"> Removal of overburden and excavated material from working site and use / preservation of the same – as per mitigation measures Fencing of storage areas Disposal of construction debris if any as per mitigation measures Prepare and implement Waste Management List Avoid stockpiling of excess excavated soils Coordinate with KMC for beneficial uses of excess excavated soils 	<ul style="list-style-type: none"> Waste Management List Complaints from sensitive receptors PMU/PIU/DSC to report in writing that the necessary environmental restoration work has been done. Method – checking of records, visual observation 	For mitigation - contractor, for monitoring - Environment Specialist of DSC and PMU.	Project Locations. Same as above.	Complied. Utilization of excess earth is being done as per EMP. Spoil management plan applied as per EMP. Copy available as back up with DSC.	Complied. Spoil management plan applied as per EMP.	Partially complied. Excess earth earth is being disposed as per EMP but need improvement. Spoil management plan applied as per EMP. Copy available as back up with DSC.	Complied. Utilization of excess earth is being done as per EMP. Spoil management plan applied as per EMP. Copy available as back up with DSC.
12	Dust and Air Pollution ⁴	<ul style="list-style-type: none"> Selection of materials storage area Water sprinkling at construction site for arresting dust (if any during dry period) Use tarpaulins to cover sand and other loose material- Reducing dust hazard All vehicles and equipments mobilized to construction site and producing emission, have Pollution Under Control certification No fire wood burning is allowed on site Carry out air quality monitoring 	<ul style="list-style-type: none"> Location of stockpiles Complaints from sensitive receptors Monitoring data Heavy equipment and machinery with air pollution control Water sprinkling arrangement Cover materials. Method – checking of records, visual observation 	For mitigation - contractor, for monitoring - Environment Specialist of DSC and PMU.	Project Locations, same as above.	Complied. Location of stockpiles selected. Covering of materials done. Sprinkling of water done as per requirement. During construction air quality monitoring done as per EMP. (Complete result certificates available in DSC office as back up paper). Pollution under Control Certificate of vehicles and equipments collected.	Complied.	Complied. Location of stockpiles selected. Covering of materials done. Sprinkling of water done as per requirement. During construction air quality monitoring done as per EMP. (Complete result certificates available in DSC office as back up paper). Pollution under Control Certificate of vehicles and equipments collected.	Complied. Location of stockpiles selected. Covering of materials done. Sprinkling of water done as per requirement. During construction air quality monitoring done as per EMP. (Complete result certificates available in DSC office as back up paper). Pollution under Control Certificate of vehicles and equipments collected.

⁴ Main causes of air pollution during construction are dust from vehicle movements and stockpiles, vehicle emissions and fires.

	Environmental Issues	Mitigation Activities and Method	Parameters monitored & Monitoring method adopted	Responsible for Mitigation & Monitoring	Location & Date of Monitoring	Compliance Status/ Explanation WS 01	Compliance Status/ Explanation WS 02	Compliance Status/ Explanation SD 05	Compliance Status/ Explanation SD 07
13	Noise level	<ul style="list-style-type: none"> Noise producing work needs to be conducted at day time Regular maintenance of noise producing equipment Horns not be used unless it is necessary to warn other road users Maintain maximum sound levels not exceeding 80 decibels (dbA) when measured at a distance of 10 m or more from the vehicle/s At sensitive locations, enclosures provided around generator set or other noise producing machinery. 	<ul style="list-style-type: none"> Complaints from sensitive receptors Use of silencers in noise-producing equipment and sound barriers Monitoring data. Method – checking of records, visual observation 	For mitigation - contractor, for monitoring - Environment Specialist of DSC and PMU.	Project Locations, same as above.	Complied No as such noise producing machinery mobilized at site. PPE supplied to workers and utilized as per requirement. During construction monitoring done. (Complete result certificates available in DSC office as back up paper).	Not required as per present nature of work. During construction monitoring done. (Complete result certificates available in DSC office as back up paper).	Complied No as such noise producing machinery mobilized at site. PPE supplied to workers and utilized as per requirement. During construction monitoring done. (Complete result certificates available in DSC office as back up paper).	Complied No as such noise producing machinery mobilized at site. PPE supplied to workers and utilized as per requirement. During construction monitoring done. (Complete result certificates available in DSC office as back up paper).
14	Storm water management	Arrangement of drainage of waste water and arresting of solid waste/silt from waste water generated at construction site	<ul style="list-style-type: none"> Areas for stockpiles, storage of fuels and lubricants and waste materials Number of silt traps installed along drainages (in slope) leading to water bodies. Method – checking of records, visual observation. 	For mitigation - contractor, for monitoring - Environment Specialist of DSC and PMU.	Project Locations, same as above.	Complied. Arrangement of drainage of waste water from construction site is maintained.	Not required as per present nature of work.	Complied. Arrangement of drainage of waste water from construction site is maintained.	Complied. Arrangement of drainage of waste water from construction site is maintained.
15	Water Quality ⁵	<ul style="list-style-type: none"> Contractor to ensure run-off from vehicle or plant washing does not enter Hooghly river Contractor to ensure every effort is made that any chemicals or hazardous substances do not contaminate the soil, Hooghly river, or groundwater on site. 	Non entry of pollutant in water body. Method – site observation.	For mitigation - contractor, for monitoring - Environment Specialist of DSC and PMU.	Project Locations	At present there is no water source nearby the project location.	No water source near the construction location.	No water source near the construction location.	No water source near the construction location.
16	Conservation of Natural Environment	<ul style="list-style-type: none"> Contractor to ensure removal of only trees that have been marked beforehand Contractor to immediately re-vegetate stripped areas Contractor to prohibit site staff from gathering firewood, fruits, plants, crops or any other natural material on-site or in areas adjacent to the sites. 	Tree felling requirement and afforestation after final design. Method – checking of records, visual observation.	For mitigation - contractor, for monitoring - Environment Specialist of DSC and PMU.	Project Locations	No tree cutting as per present working condition	No tree cutting as per present working condition	No tree cutting as per present working condition	No tree cutting as per present working condition
17	Materials Management	<ul style="list-style-type: none"> Contractor to ensure stockpiles do not obstruct natural water pathways. 	Stockpile management. Method – checking of records, visual	For mitigation - contractor, for monitoring -	Stockpile / storage area	Complied Stockpiling of materials done at	Complied Stockpiling of materials done at designated	Complied Stockpiling of materials done at	Complied Stockpiling of materials done at designated

⁵ Water quality is affected by the incorrect handling of substances and materials. Soil erosion and sediment is also detrimental to water quality. Mismanagement of polluted run-off from vehicle and plant washing and wind dispersal of dry materials into rivers and watercourses are detrimental to water quality.

	Environmental Issues	Mitigation Activities and Method	Parameters monitored & Monitoring method adopted	Responsible for Mitigation & Monitoring	Location & Date of Monitoring	Compliance Status/ Explanation WS 01	Compliance Status/ Explanation WS 02	Compliance Status/ Explanation SD 05	Compliance Status/ Explanation SD 07
		<ul style="list-style-type: none"> Contractor to cover stockpiles exposed to windy conditions or heavy rain with vegetation, cloth, or tarps. Contractor to ensure all concrete mixing take place on a designated, impermeable surface. 	observation.	Environment Specialist of DSC and PMU.		designated areas.	areas	designated areas	areas.
18	Occupational Health & safety	<ul style="list-style-type: none"> Develop and implement site-specific Health and Safety (H&S) Plan Use Personal Protective Equipment like helmet, gumboot, gloves, nose mask and earplugs H&S Training for all site personnel Documentation of work-related accidents; Designate a safeguard focal person and undertake safeguards orientation by PMU/PIU Provide specific guidance for suitable PPE for every on-site work assignment Ensure availability of First aid box at all working sites and labour camp Provide medical insurance coverage for workers; Provide supplies of potable drinking water at working sites; Provide H&S orientation training to all new workers Mark and provide sign boards for hazardous areas such as energized electrical devices and lines Disallow worker exposure to noise level greater than 85 dBA for a duration of more than 8 hours per day without hearing protection. 	<ul style="list-style-type: none"> Site-specific Health and Safety (H&S) Plan Equipped first-aid stations; Medical insurance coverage for workers Number of accidents Supplies of potable drinking water; Record of H&S orientation trainings Personal protective equipments Sign boards for hazardous areas such as energized electrical devices and lines, service rooms. Method – checking of records, visual observation. 	For mitigation - contractor, for monitoring - Environment Specialist of DSC and PMU.	Project Locations	Site-specific HSE Plan under implementation The plan available with DSC. HSE training arranged for the labours on regular basis. Drinking water and first aid box available at site. Use of PPEs satisfactory at site. Insurance arranged for the Labours. Tie up with nearby health center/ hospital done. Overall compliance is satisfactory.	Complied.	Site-specific HSE Plan under implementation The plan available with DSC. HSE training arranged for the labours on regular basis. Drinking water and first aid box available at site. Use of PPEs partially satisfactory at site. Insurance arranged for the Labours.. Tie up with nearby health center/ hospital done. Overall compliance is satisfactory.	Site-specific HSE Plan under implementation The plan available with DSC. HSE training arranged for the labours on regular basis. Drinking water and first aid box available at site. Use of PPEs partially satisfactory at site. Insurance arranged for the Labours. Tie up with nearby health center/ hospital done. Overall compliance is satisfactory.
19	Social Impacts ⁶ - Community Health & safety, accessibility	<ul style="list-style-type: none"> Plan truck routes (for carrying construction materials including pipes) to avoid narrow or congested roads and tourist sites Contractor to ensure disruption of access for local residents is minimized Contractor to restrict activities and movement of staff to designated construction areas 	<ul style="list-style-type: none"> Traffic Management Strategy Complaints from sensitive receptors Number of signages placed at subproject location. Method – checking of records, visual observation. 	For mitigation - contractor, for monitoring - Environment Specialist of DSC and PMU.	Project Locations	Complied. Caution tape placed around excavated and working area as and when required. Sufficient access maintained.	Not required as per present nature of work	Caution tape/ barricade placed around excavated area mostly. Access maintained mostly. Emergency contact number displayed.	Caution tape/ barricade placed around excavated area mostly. Access maintained mostly. Emergency contact number displayed.

⁶ Regular communication between the Contractor and the interested and affected parties is important for the duration of the contract.

	Environmental Issues	Mitigation Activities and Method	Parameters monitored & Monitoring method adopted	Responsible for Mitigation & Monitoring	Location & Date of Monitoring	Compliance Status/ Explanation WS 01	Compliance Status/ Explanation WS 02	Compliance Status/ Explanation SD 05	Compliance Status/ Explanation SD 07
		<ul style="list-style-type: none"> Contractor to provide walkways and metal sheets where required to maintain access across for people and vehicles Consideration of public safety - as per prescribed mitigation measures Contractors to ensure lighting on the construction site Provide protective fencing around open trenches Provide road signs and flag persons to warn Schedule transport and hauling activities during non- peak hours 							
20	Socio cultural resources	<ul style="list-style-type: none"> Strictly follow the protocol for chance archaeological finds in any excavation work Stop work immediately to allow further investigation if any finds are suspected 	Chance find protocol. Method - Checking of records	For mitigation - contractor, for monitoring - Environment Specialist of DSC and PMU.	Project Locations	Not required till date. Instruction has been given	Not required till date. Instruction has been given	Not required till date. Instruction has been given	Not required till date. Instruction has been given
21	Employment generation	<ul style="list-style-type: none"> The use of labor intensive construction measures will be used where appropriate Employ local (unskilled) labor if possible Training of labor to benefit individuals beyond completion of the subproject 	Employment record. Method - Checking of records	For mitigation - contractor, for monitoring - Environment Specialist of DSC and PMU.	Project Locations	Local labours are engaged as much as possible.	At present local labors are mostly engaged.	Local labours are engaged as much as possible.	At present local labours are mostly engaged.

V. ENVIRONMENTAL MONITORING AND EVALUATION

21. In addition to desk reviews and site inspections, monitoring of selected environmental parameters have been conducted during the reporting period. The frequencies of the environmental monitoring activities are commensurate to the type and significance of the impacts. For Tranche 1 subprojects, the parameters to be monitored are ambient air quality and noise levels.
22. During report period, during construction air quality and noise level monitoring has been conducted in WS 01 and WS 02. However it was not conducted in SD 05⁷ and SD 07⁸.
23. Base line and during construction air quality monitoring results are shown in **Table 7** below. All test certificates are available in DSC office as back up paper.
24. Salient findings from air quality monitoring are as follows,
- In all cases concentration of SO₂ is within the prescribed standard. Increase level of SO₂ concentration during construction phase may be due to local emission from burning of fuels.
 - In all cases concentration of NO_x is within the prescribed standard. Increase level of NO_x concentration during construction may be due to traffic movement.
 - In all cases concentration of PM_{2.5} is within the prescribed standard. Increase level of PM_{2.5} concentration during construction phase may be due to generation of dust from that area which is mostly due to poor condition of road. Instruction has been given to contractor for water sprinkling at construction site.
 - In all cases during construction, PM₁₀ are less than base line concentration and within the standard.
25. Contractors are being advised regularly to take necessary action on dust suppression by sprinkling of water whenever required.

⁷ SD 05 has been terminated for 1 year, work has just resumed in this package.

⁸ No substantial physical work during the reporting period at SD 07

Table 7: Ambient Air Quality Monitoring Data at working sites

Package	Monitoring location	Monitoring stage	Date of monitoring	Parameters				
				SO ₂ µg/m ³	NO ₂ µg/m ³	PM _{2.5} µg/m ³	PM ₁₀ µg/m ³	HC µg/m ³
Performance Based Water Loss Management Works at Cossipore Service Zone, Ward no. 01 to 06/KEIIP/ICB/Tr-1/WS01/2015-16		Average Base line	27.11.17	15.7	35.1	21.9	63.7	
	Karim Bux Row	During Construction	24.12.18	17.0	55.59	27.43	71.17	
	Ghosh Bagan Lane	During Construction	24.12.18	18.06	58.15	28.71	76.12	
		Average During Construction		17.53	56.87	28.07	73.65	
Rehabilitation and Refurbishment of Water Works at Palta and Garden Reach KEIIP/ICB/ Tr-1/WS02/2013-14		Average Base line	07.03.15	7.72	31.62	51.20	118.34	
	Near WTP	During construction	16.03.19	10.02	23.17	18.11	53.25	
Construction of pumping stations in Begore khal and in Joka Tram Depot and Construction of Sewerage and Drainage Network within Diamond Harbour Road catchment (KEIIP/ICB/ Tr-1/SD-05/13-14)		Average Base line	27.12.14	23.96	49.31	46.77	101.69	
	No AQM was carried out as there was no substantial physical work during the reporting period.							
Rehabilitation and Replacement of GAP sewer and allied works, KEIIP/ICB/TR-1/SD-07/2015-16		Average Base line	21.06.16	10.89	24.29	25.01	72.53	
	No AQM was carried out as there was no substantial physical work during the reporting period.							
	STANDARD			80.0	80.0	60.0	100.0	

Note- During construction monitoring period from December 2018 to May 2019 – Report periods have been changed as per instructions of ADB to June- November and December-May

Note- (i) In linear pipeline construction, base line air quality data have been calculated as the average air quality status of the project working area from monitoring at 3 to 4 stations before commencement of the construction work of the package as a whole. This provides a rational basis for comparison of monitored data during construction with the average baseline data as calculated.

(ii) In linear pipe laying packages the activity locations (sinking of shaft, site camp office, deployment of equipment etc.) shifted as construction work progressed from one site to another. Air quality sampling locations shifted

accordingly. Location at which construction is complete is abandoned for new stations where construction has commenced.

26. Base line and during construction ambient noise level data are presented in **Table 8**. During the report period noise level was within the standard at all constructions sites. Since all the working sites are within the main road and accordingly level of ambient noise is higher. Noise level is comparatively low at Palta water works location, which is at an isolated area away from traffic route. In most of the cases Leq value is near the standard in respect to commercial area standard but above the limit when compared to residential area standard. In all the cases mitigation measures need to be applied as per site specific EMP. Particularly use of ear plugs by workers at high noise producing area is necessary. It is ensured that the contractors will strictly implement the action plan as per EMP for reduction of noise level and minimization of noise impact.

Table 8: Noise Level Monitoring Data at Working Sites

Package	Sampling Locations	Implementation Stage	Date of Monitoring	Day Time Leq dB(A)	Night Time Leq dB(A)
Performance Based Water Loss Management Works at Cossipore Service Zone, Ward no. 01 to 06KEIIP/ICB/Tr-1/WS01/2015- 16		Average Base line	27.11.17	59.0	-
	Karim Bux Row	During Construction	24.12.18	57.43	-
	Ghosh Bagan Lane	During Construction	24.12.18	59.24	-
Rehabilitation and Refurbishment of Water Works at Palta and Garden Reach KEIIP/ICB/Tr-1/WS02/2013-14		Avg. Baseline	07.0315	50.1	50.2
	Near WTP	During construction	15.03.19	59.46	-
Construction of pumping stations in Begore khal and in Joka Tram Depot and Construction of Sewerage and Drainage Network within Diamond Harbour Road catchment (KEIIP/ICB/ Tr-1/SD-05/13-14)		Average Base line	27.12.14	57.92	51.83
	No noise monitoring was carried out as there was no substantial physical work during the reporting period.				
Rehabilitation and Replacement of GAP sewer and allied works, KEIIP/ICB/TR-1/SD-07/2015-16		Average Base line	21.06.16	62.15	50.83
	No noise monitoring was carried out as there was no substantial physical work during the reporting period.				
Standard		Day time: Industrial area:75 Commercial: 65 Residential area: 55 Night time: Industrial area:70 Commercial: 55 Residential area: 45			

Note- During construction monitoring period from December 2018 to May 2019 – Report periods have been changed as per instructions of ADB to June- November and December-May

Note (i) *In linear pipeline construction, base line data have been calculated as the average noise level status of the project working area from monitoring at 3 to 4 stations before commencement of the construction work of the package as a whole. This provides a rational basis for comparison of monitored data during construction with the average baseline data as calculated.*

(ii) *In linear pipe laying package, the activity locations (sinking of shaft, site camp office, deployment of equipment etc.) shifted as construction work progressed from one site to another. Noise level monitoring locations shifted accordingly. Location at which construction is complete is abandoned for new stations where construction has commenced.*

27. “During construction” air quality, noise level monitoring will be continued for all packages as per Environment Management and Monitoring Plan. All monitoring expenses will be borne by contractors from their project Health safety monitoring budget.

28. A performance monitoring fact sheet has been prepared to facilitate tracking and quick reference on environmental monitoring of Tranche 1 subproject packages (**Tables 9 and 10**).

Table 9: Performance Fact Sheet for Required Environmental Consents/Clearances of KEIP Tranche 1 (Package-wise)

	Package	Name of Contractor	EMP Part of contract Document(Yes / No)	Environmental Consents / Clearances Required					
				Tree Cutting	Crusher	Batching Plant	Hot Mix Plant	Diesel Generator Set	Pollution Under Control (PUC) Certificates for Contractor's Vehicles
1	Performance Based Water Loss Management Works at Cossipore Service Zone, Ward no. 01 to 06 (KEIP/ICB/Tr-1/WS01/2015- 16)	M/s Suez India Pvt. Ltd. (Formerly Degremont Pvt. Ltd)	Yes	Not required till date.	Not required	NR as per present work	NR as per present work	Not required as per present work	Obtained
2	Rehabilitation and Refurbishment of Water Works at Palta and Garden Reach (KEIP/ICB/ Tr-1/WS02/2013-14)	M/s ITD- CEM India JV	Yes	Not required till date.	Not required	NR as per present work	NR as per present work	Not required as per present work	Obtained

4	Construction of pumping stations in Begore khal and in Joka Tram Depot and Construction of Sewerage and Drainage Network within Diamond Harbour Road catchment (KEIIP/ICB/Tr-1/SD-05/13-14)	M/s Tantia – MPPL (WILO) Jv	Yes	Not required till date	Not required	NR as per present work	NR as per present work	Not required as per present work	Obtained
5	Construction of S & D Network and Pumping Station in Borough XIII (Ward 122) including Replacement of GAP Sewer Line in Borough XV, Laying of Pumping Main and Rehabilitation of SSE STP including Operation & Maintenance of the Pumping Stations(s) and STP(KEIIP/ICB/Tr-1/SD-07/15-16)	M/s SNET-SSG Joint Venture	Yes	Not required till date	Not required	NR as per present work	NR as per present work	Not required as per present work	Obtained

Table 10: Performance Fact Sheet for EMP Implementation of KEIIP Tranche 1 (Package-wise)

	Package Number	Name of Contractor	EMP Part of contract Document(Yes / No)	Contractor Social/ Environment Person	Overall Status of EMP Implementation	Field to be Monitored as per EMP												
						Source of Materials	Camp Sites	Landscape and Aesthetics	Air Quality	Noise Level	Traffic	Ecological Resources – Terrestrial	Accessibility	Water Quality	Occupational Health & safety	Community Health & safety	Socio cultural resources	Employment generation
						In compliance (2) / Partial Compliance (1) / Not in compliance (0) / Not applicable (n/a)												
1	Performance Based Water Loss Management Works at Cossipore Service Zone, Ward no. 01 to 06(KEIIP/ICB/Tr-1/ WS01/2015-16)	M/s Suez India Pvt. Ltd.	Yes	Nominated	Complied	2	n/a	2	2	2	2	n/a	2	n/a	2	2	n/a	2
2	Rehabilitation and Refurbishment of Water Works at Palta and Garden Reach (KEIIP/ICB/Tr-1/WS02/2013-14)	M/s ITD-CEM India JV	Yes	Nominated	Complied	2	2	2	2	2	n/a	n/a	n/a	n/a	2	n/a	n/a	2
4	Construction of pumping stations in Begore khal and in Joka Tram Depot and Construction of Sewerage and Drainage Network within Diamond Harbour Road catchment (KEIIP/ICB/Tr-1/SD-05/13-14)	M/s Tantia – MPPL (WILO) Jv	Yes	Nominated	Complied	2	2	1	2	2	2	n/a	2	n/a	1	1	n/a	2

	Package Number	Name of Contractor	EMP Part of contract Document(Yes / No)	Contractor Social/ Environment Person	Overall Status of EMP Implementation	Field to be Monitored as per EMP												
						Source of Materials	Camp Sites	Landscape and Aesthetics	Air Quality	Noise Level	Traffic	Ecological Resources – Terrestrial	Accessibility	Water Quality	Occupational Health & safety	Community Health & safety	Socio cultural resources	Employment generation
						In compliance (2) / Partial Compliance (1) / Not in compliance (0) / Not applicable (n/a)												
5	Construction of S & D Network and Pumping Station in Borough XIII (Ward 122) including Replacement of GAP Sewer Line in Borough XV, Laying of Pumping Main and Rehabilitation of SSE STP including Operation & Maintenance of the Pumping Stations(s) and STP(KEIP/ICB/ Tr-1/SD-07/15-16)	M/s SNET-SSG Joint Venture	Yes	Nominated	Complied	2	1	2	2	2	2	n/a	2	n/a	1	2	n/a	2

Note calculation of numerical value for determining performance status- Calculation is based on addition of numerical value like below-
 Package - KEIP/ICB/Tr-1/ WS01/2015- 16= Total score-- 2+1+2+2+2+2+2+2=17. Number of working field=9, then-**18/9=2**, More than 1.5 (Complied)
 Package - KEIP/ICB/ Tr-1/WS02/2013-14= Total score- 2+2+2+2+2+2+2 = 14. Number of working field=7, Then- **14/7=2**, More than 1.5 (Complied)
 Package- KEIP/ICB/ Tr-1/SD-05/13-14= Total score- 2+2+1+2+2+2+2+1+1+2= 17. Number of field=10, Then- **17/10=1.7**, More than 1.5 (Complied)
 Package - KEIP/ICB/ Tr-1/SD-07/15-16= Total score- 2+1+1+2+2+2+2+1+2+2= 17. Number of field=10, Then- **18/10=1.8** More than 1.5 (Complied)

VI. CONSULTATIONS AND DISCLOSURES CONDUCTED

29. As per approved IEE, consultations and disclosure will be a continuous process throughout Tranche 1 project implementation involving public consultations and focus group discussions. Informal consultations were also carried out with local people, pedestrian, etc.

30. Types of consultations and disclosure conducted in different packages of Tranche 1 is presented in **Table 11**.

Table 11: Types of consultations and disclosure conducted in different packages of Tranche 1

Type of Consultation/ Disclosure	Target Date	Location	Target Participants	Responsible Person and Source of Funds
Local level consultation / FGD	Weekly – to be continued	At all construction locations	General public, shop keepers, pedestrian	Construction supervisor, Environment & safety officer of contractor Project budget – continuous process
Consultation – safety issues, implementation of EMP	During December 2018 to May 2019	At KEIIP office and project site office	Supervisor Engineer, PMU Engineer, all safety and environment staff of contractors	Construction Manager, Environment specialist of DSC and PMU
Consultation – safety issues, implementation of EMP and other social issues	During December 2018 to May 2019	During site visit at all sites and any grievance /complain received	Supervisor Engineer, PMU Engineer, all safety and environment staff of contractors	Construction Manager, Environment social team of DSC and PMU

31. Field level training program has been arranged for contractors, supervisors by DSC's Environment Specialist on safety and environment on regular basis.

32. There are series of informal discussions by the DSC &PMC engineering Consultants with Chief Engineers of KMC and Director General (Projects), PMU mainly on understanding current situation and optimum design to be adopted in order to attain the objectives of taking up the work items.

33. Photographic evidences of training and awareness programme conducted at different project sites of Tranche-1 and consultations at sites have been provided in **Appendix 4**.

34. **Table 12** indicates different types of consultations, issues raised and resolved in different packages of Tranche 1 during December 2018 to May 2019.

Table 12: Issues raised during public consultation in different packages of Tranche 1 during December 2018 to May 2019

Package Number	Place and Date of Consultation	Issues Raised/ Discussed
WS 01	Ward no. 6 (19.03.19)	Water conservation

WS 05	Pallymangal (06.03.19), Bhattacharjee Para (23.05.19)	House service connection, improvement of drainage in nearby areas.
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35. A Workshop cum Training programme on Safeguard Issues and Implementation of the safeguards in the project (Kolkata Environmental Improvement Investment Program (KEIIP) – Tranche 1& 2) was organised by the Safeguard Unit (environment & social Safeguard) of Design & Supervision Consultants (DSC), KEIIP on 24th January 2019 at Conference Room of KEIIP. The workshop cum training programme was attended by Contractor's Project Managers, Environment Safety Officers, DSC's Construction Managers & Experts, DSC's Safeguard Team Members and PMU's Safeguard Team.

36. In the workshop topics were discussed in detail are - ADB Safeguard Policy, IEE & EMP Implementation, Some Good and Bad EHS practices in Urban Infrastructure Projects, Document preparation on EMP Implementation, Social issues of the project and implementation. In addition to the above mentioned issued during interaction EMP implementation mechanisms, contractual obligation of the contractor related to safeguard was also discussed in detail. Constraints of EMP implementation were also discussed by the contractor.

37. A workshop on ADB Safeguard Policy Statement 2009 (E-Learning Course) was organized by the DSC Environmental Safeguard Team, KEIIP on 22.04.19. The program was attended by Team Leader (DSC), Dy. Team Leader (DSC), Environmental Expert (PMU), Team Leader (PMC) contractor's Project Managers, contractor's environment & Safety officers from the all the packages (Tranche 1 & 2) and safeguard team members from DSC, PMC, and PMU. Summary sheet of the workshop has been given in **Appendix 5** of this report.

38. A workshop on ADB Safeguard Policy Statement 2009 was organized by the DSC Environmental Safeguard Team, KEIIP for engineers of Project Management Unit (PMU) & Contract Management Unit (CMU) and safeguard team (Environmental & Social) of KEIIP on 08.05.19. Summary sheet of the workshop has been given in Appendix 5 of this report.

VII. GRIEVANCE REDRESSAL

39. **Common Grievance Redress Mechanism.** A common grievance redress mechanism (GRM) has been established for social, environmental or any other subproject related grievances.

40. **Grievance Redress Process.** PMU will maintain a Complaint Cell at KEIIP office located in 206 A J C Bose Road Kolkata 700017 headed by a designated Grievance Officer (currently the Administrative Officer) under Project Director. The Complaint Cell will also serve as Public Information Centers, where, apart from grievance registration, information on the Project, subprojects, social and environmental safeguards, etc can be provided.

41. At every Borough of KMC under which works are in progress, a Public Relations & Grievance Redressal Unit is to be established for information disclosure on request from public and for receipt of complaints.

42. At Contractors' site offices, complaint and suggestion books will be available for lodging any complaint. The concerned Executive Engineers of KEIIP will monitor these books and if possible take necessary actions for redressal of minor complaints with intimation to the complainant.

43. The Grievance Registration/Suggestion Form will be available at the Complaints Cell and in Borough Offices and will also be downloadable from the KEIIP/KMC websites.

Grievances/ suggestions of affected persons can be dropped in suggestion boxes or conveyed through phone or mail. Affected Persons will also be able to register grievances - social, environmental or other, personally at the Complaint Cell and at Borough offices of KMC. The Grievance Officer and designated official at the Boroughs will be able to correctly interpret/record verbal grievances of non-literate persons and those received over telephone.

44. All complaints (unresolved at local site/Borough level) relating to KEIIP will be sent to the Project Director, KEIIP including those received in the KMC/KEIIP website for redressal. The Grievance Officer will resolve simple unresolved issues and in case of complicated issues, consult/seek the assistance of the Environment/Social Specialist of the DSC/PMU. Grievances not redressed through this process within one month of registration will be brought to the notice of the Project Director, KEIIP. Action taken in respect of all complains will be communicated to the complainant by letter, over phone or e-mail or WhatsApp as the case may be.

45. Periodic community meetings with affected communities to understand their concerns and help them through the process of grievance redress (including translation from local dialect/language, recording and registering grievances of non-literate affected persons and explaining the process of grievance redress) will be conducted if required. The above Grievance Redress Process will be discussed with the stakeholders at the proposed disclosure workshop.

46. **Grievance Redressal Committee (GRC).** A PMU level GRC has already been constituted by the Project Director to address grievances. Grievances not resolved at borough level are referred to PMU level. However grievances that cannot be resolved at PMU level will be referred to an apex grievance redress committee (GRC).⁹ Still unresolved issues will be referred to an appropriate court of law. Despite the project GRM, an aggrieved person shall have access to the country's legal system at any stage, and accessing the country's legal system can run parallel to accessing the GRM and is not dependent on the negative outcome of the GRM.

47. The time limit for grievance redressal will be as follows,

- ✓ Site level – 7 days
- ✓ Borough level – 7 days
- ✓ GRC – PMU level – 15 days
- ✓ Apex GRC- 15 days

48. **Consultation Arrangements.** This will include group meetings and discussions with affected persons, to be announced in advance and conducted at the time of day agreed on with affected persons and conducted to address general/common grievances; and if required with the Environment/Social Specialist of PMU/DSC for one-to-one consultations. Non-literate affected persons/ vulnerable affected persons will be assisted to understand the grievance redress process, to register complaints and with follow-up actions at different stages in the process.

49. **Record-keeping.** Records will be kept by PMU/Borough Office/Contractors' site office of all grievances received including contact details of complainant, date the complaint was received, nature of grievance, agreed corrective actions and the date these were in effect, and final outcome.

50. **Information Dissemination Methods of the GRM.** Grievances received and responses provided will be documented and reported back to the affected persons (**Appendix**

⁹ The apex GRC will have the following members: KMC Commissioner as Chairperson, KEIIP Project Director, Director General (P), KEIIP, Environment/Social Safeguard Officer, Administrative Officer as the convener, representatives of APs, Community Based Organizations (CBOs), and eminent citizens. The GRC must have at least two women members.

6 Sample Grievance Registration Format). The number of grievances recorded and resolved and the outcomes will be displayed/disclosed in the offices of the different Boroughs of KMC and web. The phone number where grievances are to be recorded will be prominently displayed at the construction sites.

51. Periodic Review and Documentation of Lessons Learned. PMU will periodically review the functioning of the GRM and effectiveness of the mechanism, especially on the Project's ability to prevent and address grievances.

52. **Costs.** All costs involved in resolving the complaints (meetings, consultations, communication and reporting / information dissemination) will be borne by PMU.

53. **Figure 3** shows GRM flow chart.

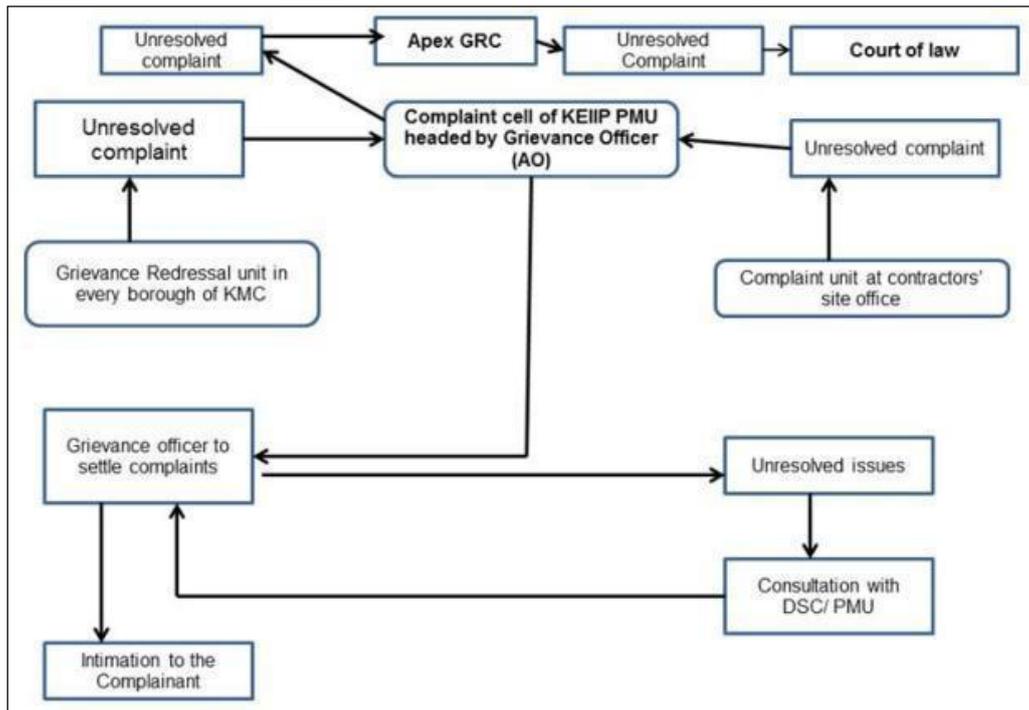


Figure 4: Grievance Redress Mechanism

Table 13: Grievance recorded and resolved in different packages of Tranche 1 during December 2018 to May 2019

Package Number	Place and Date of Consultation	Issues registered / recorded	Status of the issues registered / recorded
WS 01	Khudiram Bose Sarani	Road restoration in front of local residential houses	Issues resolved immediately, verified by DSC.
WS 05	Silpara Lane	Damaged in water supply line.	Issues resolved immediately, verified by DSC.
WS 01	Raja Manindra Road	Repair of potholes and restoration of road on urgent basis.	Issues resolved immediately, verified by DSC.

WS 01	Paikpara Road	Overburden earth disposition beside the road. After backfilling, proper road restoration.	Issues resolved immediately, verified by DSC.
WS 05	Bhattacharya Para Road	Excess earth deposition, dust generation during construction	Issues resolved immediately, verified by DSC.

VIII. FINDINGS AND RECOMMENDATIONS

1. Field construction activity is already over in many of the Tranche 1 packages. Up to May 31, 2018 contractors have done good progress in all subprojects and in some area considerable progress has been reported. Provisions in the EMP have been implemented in all the subprojects. During this reporting period (December 2018 to May 2019), no major environmental health and safety issues and problems have been encountered with at the sub project locations.

2. Based on the foregoing observations, findings and environmental monitoring carried out from December 2018 to May 2019, it may be concluded that KEIIP Tranche 1 sub projects have been implemented in almost full compliance of the required environmental safeguards.

3. However, there are issues common to all ongoing packages that require continuous monitoring so as to achieve almost full compliances. These are listed in Table 14.

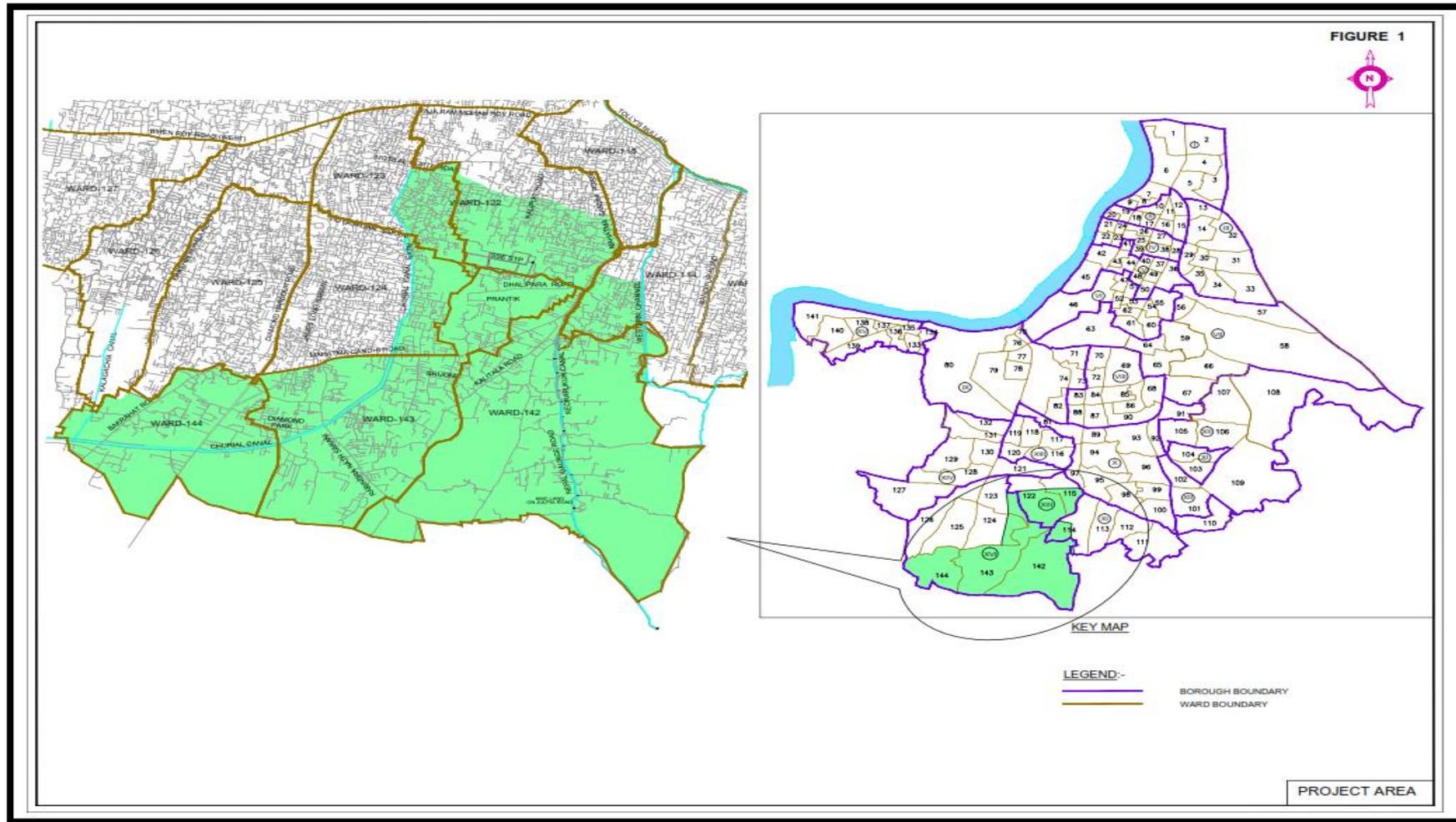
4. The concerned Contractors have been suitably advised to maintain strict vigil and communicate corrective action taken if there are any short term non-compliances

Table 14: Corrective Action Plan

Sr. No.	Issues common to all on-going packages	Action Required	Responsible	Target Date	Indicator of Compliance
1	Application of EMP	Continue on regular basis	Contractor in association with PIU and DSC	Continuous process	Site observation and checking
2	Incomplete Use of PPEs (particularly working shoes/gumboots, hand gloves) by contractors' at different work locations in all packages	Complete use of PPEs, particularly use of working shoes, gumboots	Contractor	Immediate	Availability and use of PPE
3	Missing caution tape/barricade at few locations of running packages	Complete use of caution tape/ barricade at all working sites	Contractor	Immediate	Site observation and checking
4	Non Availability of emergency contact no. at display/ caution board placed at few work sites of running packages	Complete arrangement of display / caution board with all emergency contact no.	Contractor	Immediate	Site observation
5	Air pollution and increase in dust at few work sites of the running packages	Immediate action to be taken like, water sprinkling, maintaining of stack height in Dg set,	Contractor	Immediate	Monitoring result

Sr. No.	Issues common to all on-going packages	Action Required	Responsible	Target Date	Indicator of Compliance
		use of CPCB approved green DG set etc.			
7	Unsatisfactory Housekeeping at work site for the package	Immediate improvement of housekeeping	Contractor	Immediate	Site observation
9	Training to workers	Regular tool box training for labour. Safeguard orientation training for contractor	Contractor, PIU, DSC	Continue process	Record keeping and safeguard implementation
10	Renewal of Labour License	Continue on regular basis	Contractor, PIU, DSC	Continue process	Record keeping

Appendix 1: LOCATION MAP PROJECT AREA



Project Area – Water Supply

Appendix 2: Progress of Work



Appendix 3: Training conducted at different project sites



Appendix 4: Good practice adopted at different sites





Appendix 5: Public Consultation at different project sites of Tranche -1



Appendix 6: Workshop Training Organized By DSC

Summary Sheet

Workshop on Safeguard Implementation Issues in KEIIP Project

Date: 24.01.19

Venue: Conference Room of KEIIP

A workshop on safeguard implementation issues in the project was organized by the DSC Environmental Safeguard Team KEIIP on 24.01.19. The program was attended by DG (project), Dy. Team Leader (DSC), Environmental Expert (PMU), contractor's project managers and safety officers from the respective packages, DSC's construction managers and experts, DSC's safeguard team members and PMU's safeguard team.

In the workshop following topic was discussed in detail:

- Implementation of EMP in the project
- Contractual obligations of contractor in EMP implementation in the project
- Some good and bad EHS practices in KEIIP project

In addition to these issues, contractor's safety officers were asked to make a short power point presentation on their own sites regarding:

Good practices adopted to minimise the EHs issues, spoil management, environmental monitoring, public consultation and existing safeguard issues which need DSC's intervention to mitigate.

The workshop was interactive, successful and ended with vote of thanks. No. of total participants: 31, No of female participants: 4

Photographic evidences and list of participants are attached herewith for record.



Summary Sheet

Workshop on ADB E-Learning Course & Implementation of Gender Action Plan

Date: 22.04.19

Venue: Conference Room of KEIIP

A workshop on ADB Safeguard Policy Statement 2009 (E-Learning Course) was organized by the DSC Environmental Safeguard Team KEIIP on 22.04.19. The program was attended by Team Leader (DSC), Dy. Team Leader (DSC), Environmental Expert (PMU), Team Leader (PMC) Contractor's Project Managers, Contractor's environment & Safety officers from the all the packages (Trnache-2 & 3) and safeguard team members from DSC, PMC, and PMU.

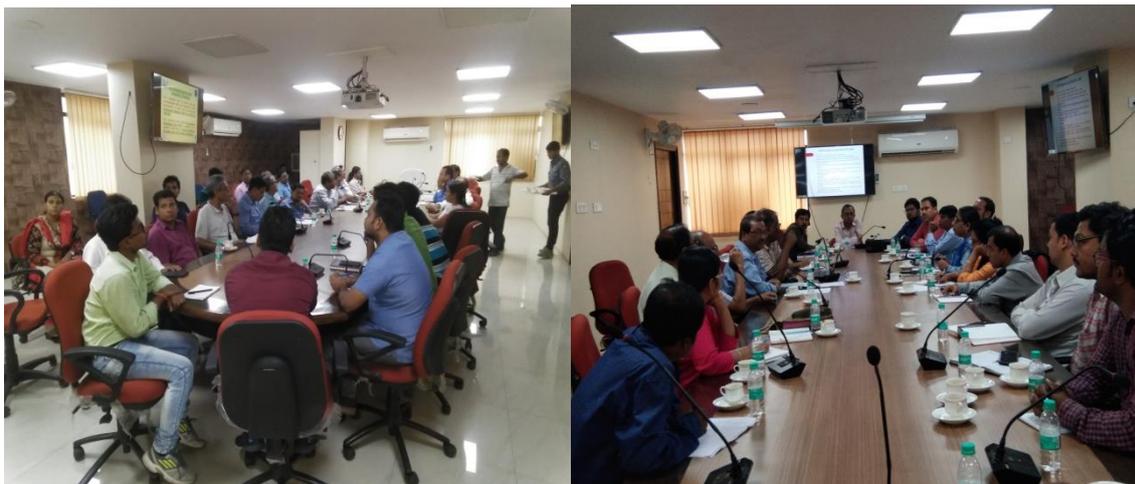
In the workshop following topic was discussed in detail:

- ADB Environmental Safeguard Policy Statement
- ADB Social Safeguard Policy Statement
- Summary of different learning module from the course
- On line practical demonstration of the Safeguard Policy Statement 2009 (E-Learning Course)
- Implementation of Gender Action Plan in project

All the participants were provided with the link for safeguard e-learning course and were guided to learn the modules in the course. All the modules were also discussed and explained to the participants.

The workshop was interactive, successful and ended with vote of thanks.

Photographic evidences and list of participants are attached herewith for record.



Photographs - Workshop on ADB Safeguard Policy Statement 2009 (E-Learning Course) on 22.04.19

List of Participants

**Workshop on ADB E-Learning Course & Implementation of Gender Action Plan on
22.04.19**

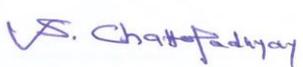
Date: 22/04/2019

Venue : KEIP Conference room

SI No.	Name and Designation	Contact No.	Signature
1			
2.			
3.	Dr. Chinmay Chakrabarti	9830284 360	
4	MILAN DHOLE (safety officer).	7595864 794	
5	LENA SAMANTA (Quality Control and Environment)	9477955 766	
6	ABHIJIT BERA (Sr Safety officer Simplex)	8195005 253	
7	Vicky Kumar (Safety Sup. III)	90624412 15	
8.	Peham Patel (Asst. Manger)	9073674 290.	
9	Anupam Koley (Safety Engineer)	9073683985	
10.	Bijoy Krishna Dc (Project Engineer Safety)	9825988598	

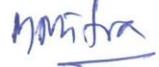
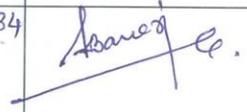
Venue : KEIP Conference room

Date: 22/04/2019

Sl No.	Name and Designation	Contact No.	Signature
11.	Sumanta Kumar Behera Sr. Executive safety officer	8274007434	
12.	DIPTARUP KHALI Team Lead, DSE, KEIP	905702223	
13.	PARTHA DUTTA SSE, KEIP (Project Asst)	9830192170	
14.	MADHUMITA SUR SSC, KEIP (P. Asst.)	9433477 118	
15.	BIMAN MUTRA SSE, KEIP (P/Asst.)	98317 34396	
16.	Aneelosee Nayak. HSE OFFICER .C.G.D.C.L.	75958 37426	
17.	Shubankar Chattopadhyay, Safety Engineer (FPIL-RIL JV)	62921280 71	
18.	Subhajit Patra. Safety Supervisor (FPIL-RIL JV)	62921280 78	
19.	Subhakar Haldi (Installation in-charge)	801793689	
20.	Debasis Ghosh (Implementation In-charge)	8420058751	

Venue : KEIP Conference room

Date: 22/04/2019

Sl No.	Name and Designation	Contact No.	Signature
24	Arghavree Saha. Asst. Manager - ITD Cem India JV	858486 4132	
25	Shilajit Koley Sr. Engineer - ITD Cem India JV	8584012 802	
26	Moutan Mitra Engineer, PMC, KEIP	76880 4184	
27	Rajib Dulle Engineer, PMC, KEIP	98307182	
28	Rupasmata Kahali Engineer, PMC, KEIP	83360 56709	
29	Subhajit Chakraborty. Project Assistant (Engg), PMC, KEIP.	8420245 704	
30	NABAMITA MUKHERJEE PUBLIC COMM. AND MEDIA EXPERT PMC	9831537314	
31	ANINDITA ROY SOCIAL DEVELOPMENT & GENDER- EXPERT - PMC - KEIP	9903392826	
32	Moumita Choudhury Dy. TL, DSC, KEIP.	9831753108	
33	Mr. Samar Kr. Banerjee.	9831291734	

Summary Sheet

Workshop on ADB Safeguard Policy Statement 2009 for Project Management Unit (PMU), & Contract Management Unit (CMU), Engineers of KEIIP

Date: 08.05.19

Venue: Conference Room of KEIIP

A workshop on ADB Safeguard Policy Statement 2009 was organized by the DSC Environmental Safeguard Team, KEIIP for Project Management Unit (PMU) & Contract Management Unit (CMU) Engineers and safeguard team (Environmental & Social) of KEIIP on 08.05.19.

The program was chaired by Team Leader (DSC), and attended by the Engineers of Project Management Unit (PMU), Contract Management Unit (KEIIP), Environmental Expert (PMU), Construction Managers (DSC) of all the packages and safeguard team members from DSC, and PMU.

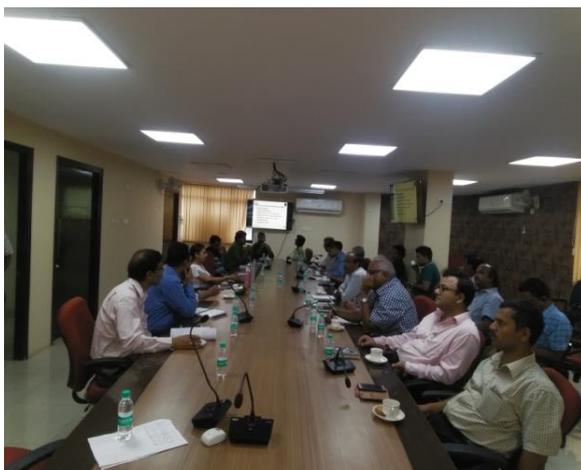
In the workshop following topic was discussed in detail:

- SPS (2009) & ADB Environmental Safeguard Policy Statement
- Implementation of Environmental Safeguard
- Environment Safeguard provisions in the contract packages
- Contractual obligations of KEIIP in safeguard implementation
- Contractual obligations of contractors in safeguard implementation

All the participants were provided with the link for **ADB safeguard e-learning course** on SPS 2009 and were guided to learn the modules in the course. An interactive session on issues related to implementation of EHS & EMP in the project was also organised during the workshop.

The workshop was interactive, successful and ended with vote of thanks.

Photographic evidences and list of participants are attached herewith for record.



Photographs - Workshop on ADB Safeguard Policy Statement 2009 for PMU & CMU Engineers on 08.05.2019

List of Participants

Workshop on ADB Safeguard Policy Statement 2009 for PMU & CMU Engineers on
08.05.2019

ATTENDANCE SHEET			
Date: 8 th May 2019			
Venue: Conference Room of KEIIP			
Subject: Workshop cum Training Programme on Safeguard Issues and Implementation of Safeguard in the Project			
Name	Designation	Contact Number	Signature
Chinmay Chakrabarti	Env. Spl., PMU	9830284360	
AMIT SEN GUPTA	Dy. (Ch. Engr.) (c)	9830499130	
ASHUTOSH GHOSH	S.O. (Engr.)	9830710756	
SAMIR BARAN DAS.	Ex. Engr.	914375423.	
Partha Sarathi Senker	S.O (Civil)	9433178714	
Kamalaksha Nandy.	EE (c)	9433146504	
ASOKE ROY	E.E (C)	7278318783	
Subhasishu Datta	S.O.	9830505831.	
Rabin Mondal	AE (C)	9051168605	
Suprobnat Malin	AE (M)	8013520162	
Nabanita Nath	AE (C)	9874611431	N. Nath.
Sarfanay Mallick	AE (C)	9614222738	
Kanayat Ali	AE (C)	9681375970	
SABIR ALI ANSARI	AE (E)	7980421225	
Tanajit Mondal.	AE (C)	8620998270	
Dr. Samrat K. Banerjee.	Env. Specialist DSC, Tr-2	9831291734	
Subhasish Bhattacharyya	CM	9748129720	
Harj Kumar Mondal	Construction Manager DEC	9874345945	

APPENDIX 7: CTE for PALTA WTP

ORANGE CATEGORY

Sl. No. NO137933

WEST BENGAL POLLUTION CONTROL BOARD

Paribesh Bhawan
10A, Block-LA, Sector-III
Bidhannagar, Kolkata-700 098

Memo No. 2049/NC/15/WPB/BR/214/15

Dated 10.09.2015

From: Member Secretary,
West Bengal Pollution Control Board

To: M/s. Indira Gandhi
Palta Water Works, Monirampur,
P.O: Manirampur,
Kolkata - 700120.

Txx

Sub: Consent to Establish (CTE) from Environmental Point of View

Ref: Your letter No. PMU/282/2015-16 Dated 17/08/15 submitted on 03/09/2015

Dear Sirs,

In response to your application for expansion of Palta Water Works, Monirampur, P.O: Manirampur, Kolkata - 700120, for manufacturing of water treatment chemicals, capacity - 20 MGD.

at Palta Water Works, Monirampur, Kolkata - 700120, P.S: Barrackpore, this is to inform you that this Board has granted Consent to Establish (CTE) from the environmental point of view of the above subject to the following conditions and special conditions annexed.

North Barrackpore Municipality Ward no.19

1. The quality of sewage and trade effluent to be discharged from your factory shall satisfy the permissible limits as prescribed in IS : 2490 (Pt. I) of 1974, and/or its subsequent amendment and Environment (Protection) Rules 1986.
2. Suitable measures to treat your effluent shall be adopted by you in order to reduce the pollutional load so that the quality of the effluent satisfies the standards mentioned above.
3. You shall have to apply to this Board for its consent to operate and discharge of sewage and trade effluent according to the provisions of the water (Prevention & Control of Pollution) Act, 1974. No sewage or trade effluent shall be discharged by you without prior consent of this Board.
4. All emission from your factory shall conform to the standards as laid down by this Board.
5. No. emission shall be permitted without prior approval of this Board and you shall apply to this Board for its consent to operate and atmospheric emission as per provision of the Air (Prevention & Control Pollution) act, 1981.
6. No industrial plant, furnace, flues, chimneys, control equipment, etc. shall be constructed/reconstructed/erected/re-erected without prior approval of this Board.

NOC Sl.No. NO137934 M/s. Indira Gandhi Water Treatment Plant,

7. You shall comply with
- (i) Water (Prevention and Control of Pollution) Cess Act, 1977, if applicable.
 - (ii) Water (Prevention and Control of Pollution) Cess Act, 1978, if applicable.
 - (iii) Environment (Protection) Act, 1986
 - (iv) Environment (Protection) Rules, 1986
 - (v) Hazardous Wastes (Management and Handling) Rules, 1989 and Amended Rules, 2000
 - (vi) Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989 and Amended Rules, 2000
 - (vii) Manufacture, Use, Import and Storage and Hazardous Micro-Organisms, Genetically Engineered Organisms or Cell Rules, 1989
 - (viii) The Public Liability Insurance Act, 1991 and Amended Act, 1992
 - (ix) The Public Liability Insurance Rules, 1991 and Amended Rules 1993
 - (x) Biomedical Wastes (Management & Handling) Rules, 1998 and Amended Rules 2000 if applicable.
 - (xi) Recycled Plastics Manufacture and Usage Rules 1999, if applicable and
 - (xii) Ozone Depleting Substances (Regulation & Control) Rules, 2000, if applicable
8. You will have to abide by any other stipulations as may be prescribed by any authority/local bodies/Government Departments etc.

SPECIAL CONDITION :

See Annexure attached herewith.

Gross capital investment for expansion Rs. 43,48,00,000/-
(forty three crore forty eight lac only).

This NOC is valid for 5(five) years from the date of issue of
this letter for setting up of the unit only.

Any violation of the aforesaid conditions shall entail cancellation of this Consent to Establish (NOC)

Yours faithfully,

[Signature]
09/09/19
Dr. Somnath Narayan
Member Secretary, Environmental Engineer
West Bengal Pollution Control Board
Kankinara Circle Office
Kankinara
W.B. Pollution Control Board

Memo No.

Copy forwarded for information to :

1. Chief Inspector of Factories, Government of West Bengal, N. S. Building, Kolkata-700 001
2. Director of Industries/Director of Cottage & Small Scale Industries, Government of West Bengal, N. S. Building, Kolkata-700 001
3. Guard file, West Bengal Pollution Control Board.
4. Environmental Engineer, I/II/Alipur R.O./Howrah R.O./Hooghly R.O./B.R.O./D.R.O./Haldia R.O./S.R.O./Asansol/ Sub-R.O./WBPC Board

Paribesh Bhawan
10A, LA-Block, Sector-III
Salt Lake City,
Kolkata - 700 098

Block-05 at 40
Flats Complex
Adjacent to Priyambada
Housing Estate
P.O. : Khanjanachak,
P.S. Durgachak
Haldia-721602
Dist. : Purba Medinipur

Sahid Khudiram Sarani
City Centre, Durgapur-16
Dist. Burdwan
Kolkata-700 047

Asansol Sub-Regional Office
ADDA Commercial Market (2nd Floor)
Opposite Asansol Fire Station
G.T. Road, Asansol-713 301

Member Secretary,
West Bengal Pollution Control Board



Annexure to NOC Sl. No. : NO137933
Special Conditions issued to: M/s. Indira Gandhi Water Treatment Plant,
Palta Water Works, Monirampur, P.O: Monirampur, Kolkata – 700120.

A. Emission: – Nil.

B. Effluent :-

1. Process wash: Water generated from rinsing and backwashing of filter media should be recirculated.
2. Domestic – to be treated through septic tank to municipal drain.

C. Solid Waste: Sludge generated from the water treatment plant to be disposed off in an environment friendly manner.

D. General :-

1. Water shall be sourced from the Hooghly River.
2. The surface water treatment system shall consist of flash Mixing, flocculation, inclined plate settling, rapid sand filtration, Chlorination & sludge handling system.
3. All sorts of precautions should be taken as per statutory rules for handling and storage of chlorine. Explosive licence should be obtained from appropriate authorities for handling and storage of Chlorine.
4. No additional machinery/equipment can be installed without prior permission from WBPCB. No change in raw materials, products, production capacity and manufacturing process shall be made without prior permission from the Board.
5. Noise Control – Ambient noise level not to exceed the permissible limit.
6. Work shall be done under covered shed for noise reduction.
7. Good housekeeping to be maintained.
8. Tree planting saplings – along the periphery of the unit.
9. 'Land Conversion Certificate' to be obtained.
10. 'Consent to Operate' to be obtained from the State Board before commissioning of the unit.
11. Provision of drinking water & wastewater disposal shall be ensured for labour camps. Proper sanitation facilities shall be provided for construction workers to ensure environmental sanitation. Health and safety of the workers shall be ensured during construction.
12. The project proponent shall take necessary care not to cause any inconvenience to the residents of surrounding neighbourhood. Regular supervision shall be in place all through the construction phase so as to avoid disturbance to the surrounding.
13. The Project Proponent will ensure that no accumulation of any kind of water occurs within the project area to prevent breeding of various disease spreading vectors.
14. Ground water shall not be abstracted without prior permission of the Local Body as well as the Competent Authority as per the West Bengal Ground Water Resources (Management, Control and Regulation) Act, 2005.
15. The unit shall abide by the West Bengal Trees (Protection and Conservation in Non-Forest Area) Rules, 2007. Adequate green belt shall be developed.
16. No tree can be felled without prior permission from the Tree Cutting Authority constituted as per the West Bengal Tree (Protection and Conservation in Non-Forest Area) Act, 2006 and subsequent rules.
17. No Water body shall be lined and no embankments shall be cemented. The Water body, if any is to be kept in natural conditions without disturbing the ecological habitat.
18. No expansion of the project shall be undertaken without prior permission of the State Board.
19. This NOC is valid for 5(five) years for setting up the unit effective from the date of issuance of this certificate.



[Handwritten Signature]
09/09/15

Senior Environmental Engineer
Dr. Somnath Narayan
Senior Environmental Engineer
Kankinara Circle Office
W.B., Pollution Control Board

consent to operate and atmospheric emission as per provision of the Air (Prevention & Control Pollution) act, 1981.

6. No industrial plant, furnace, flues, chimneys, control equipment, etc. shall be constructed/reconstructed/erected/re-erected without prior approval of this Board.

APPENDIX 8 SAMPLE GRIEVANCE REGISTRATION FORM

(To be available in Hindi and English or local language - Bengali)

The **Kolkata Environmental Improvement Investment Program (KEIIP)** welcomes complaints, suggestions, queries and comments regarding project implementation. We encourage persons with grievance to provide their name and contact information to enable us to get in touch with you for clarification and feedback.

Should you choose to include your personal details but want that information to remain confidential, please inform us by writing/typing ***(CONFIDENTIAL)*** above your name. Thank you.

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

FOR OFFICIAL USE ONLY

Registered by: (Name of official registering grievance)	
If – then mode:	
<ul style="list-style-type: none"> • Note/Letter • E-mail • Verbal/Telephonic 	
Reviewed by: (Names/Positions of Official(s) reviewing grievance)	
Action Taken:	
Whether Action Taken Disclosed:	<ul style="list-style-type: none"> • Yes • No
Means of Disclosure:	

GRIVENCE REDRESS REGISTAR GRIVENCES RECORD AND ACTION TAKEN

Sr. No.	Date	Name and Contact No. of Complainer	Type of Complain	Place	Status of Redress	Remarks