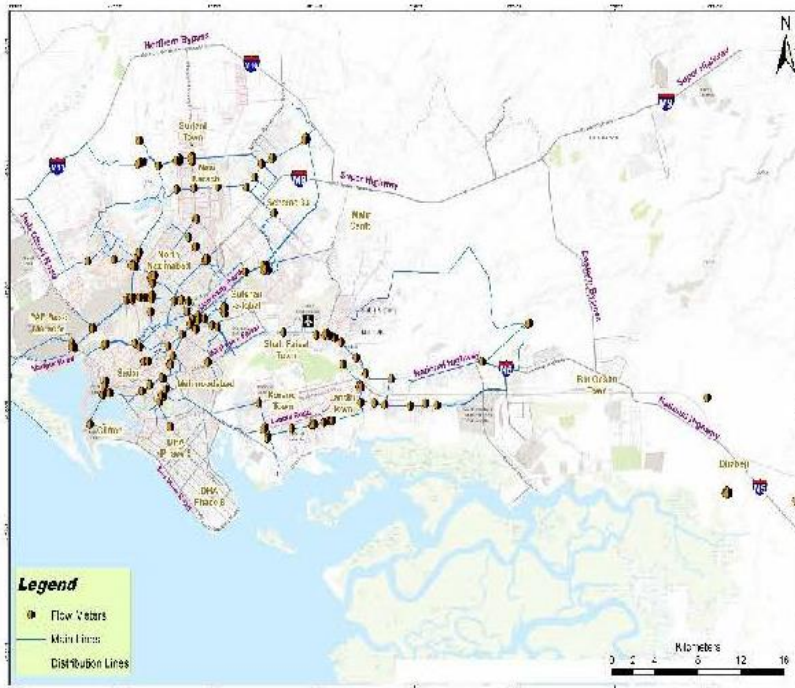




## ENVIRONMENTAL AND SOCIAL SCREENING



### Final Report

### PROVISION OF BULK FLOW METERS, INTERMITTENT CHLORINATION STATIONS AND LEAKAGE DETECTION EQUIPMENT UNDER ASSIGNMENT-B (COMPONENT-2), SOP-1

September 2022



**PROVISION OF BULK FLOW METERS, INTERMITTENT CHLORINATION STATIONS,  
AND LEAKAGE DETECTION EQUIPMENT UNDER ASSIGNMENT-B (COMPONENT-2),  
SOP-1**

**ENVIRONMENTAL AND SOCIAL SCREENING REPORT**

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## LIST OF ABBREVIATIONS / ACRONYMS

AED	Anti-Encroachment Drive
AIDS	Acquired Immunodeficiency Syndrome
AIB	Asian Infrastructure Investment Bank
ARAP	Abbreviated Resettlement Action Plan
CAPEX	Capital Expenditure
CC	Construction Contractor
CCR	Community Complaints Register
CFT	Cubic Feet
CHS	Community Health & Safety
CI	Cast Iron
COVID	Coronavirus Disease
DC	Deputy Commissioner
DC	Design Consultant
DCP	Dicalcium Phosphate
DMA	District Metered Area
DMC	District Municipal Corporation
DS	Downstream
E&S	Environmental and Social
E&SS	Environmental and Social Safeguard
EIA	Environmental Impact Assessment
EMF	Environmental Management Framework
EPA	Environmental Protection Agency
ESC	Environmental Supervision Consultant
ESIA	Environmental and Social Impact Assessment
ESMMP	Environmental and Social Mitigation and Monitoring Plan
ESMP	Environmental and Social Management Plan
GBV	Gender Based Violence
GIS	Geographic Information System
GFP	Grievance Focal Point
GoS	Government of Sindh
GRC	Grievance Redress Committee GRC
GRM	Grievance redress mechanism
HDPE	High Density Poly Ethylene
HIV	Human Immunodeficiency Virus
HSE	Health Safety Environment
HTM	Hub Trunk Main
IEE	Initial Environmental Examination
KCD	Karachi Civil Division
KMC	Karachi Metropolitan Corporation
KWSB	Karachi Water and Sewerage Board
KWSSIP	Karachi Water & Sewerage Services Improvement Project

LAR	Land Acquisition and Resettlement
LMP	Labor Management Plan
MC	Municipal Corporation
M&E	Monitoring and Evaluation
MS	Mild Steel
NEP	National Environmental Policy
NEQS	National Environmental Quality Standards
NESPAK	National Engineering Services Pakistan
NRW	Non-Revenue Water
O&M	Operation and Maintenance
OHS	Occupational Health & Safety
OP	Operational Policy
OPEX	Operational Expenditure
PAPC	Project Affected Persons Committee
PAPs	Project Affected Persons
PCR	Physical Cultural Resource
PEPA	Pakistan Environmental Protection Act
PIU	Project Implementation Unit
PKR	Pakistan Rupee
PM	Project Manager
POM	Project Operations Manual
PPE	Personal Protective Equipment
PRCC	Pre-stressed Reinforced Cement Concrete
RAP	Resettlement Action Plan
RPF	Resettlement Policy Framework
ROW	Right of Way
SC	Supervision Consultant
SCADA	Supervisory Control and Data Acquisition
SDS	Social Development Specialist
SE	Superintendent Engineer
SEPA	Sindh Environmental Protection Act
SEPA	Sindh Environmental Protection Agency
SLGA	Sindh Local Governments Act
SMF	Social Management Framework
SOP	Series of Projects
STI	Sexually Transmitted Infection
TOR	Terms of Reference
TP	Treatment Plant
US	Upstream
USD	United States Dollar
WB	World Bank
WTM	Water Trunk Main
XEN	Executive Engineer

## 1. INTRODUCTION

### 1.1 Overview

The Karachi Water and Sewerage Services Improvement Project (KWSSIP), funded by World Bank (WB) and Asian Infrastructure Investment Bank (AIIB), is an initiative of Government of Sindh (GoS) through Karachi Water and Sewerage Board (KWSB) to improve water and sewerage services in Karachi.

In compliance with the local regulations and WB safeguard policies, this Screening Report has been prepared to assess potentially adverse environmental and social impacts of a subproject under KWSSIP comprising provision of bulk flow meters and chlorination stations to be installed on bulk water supply lines in Karachi.

KWSB has conceived KWSSIP in the form of a series of projects (SOPs), which form a long-term program to address the serious water and sewerage service gaps in the rapidly growing city of Karachi. The following SOPs have been planned under KWSSIP:

SOP-1: Focuses on reforms, maintenance and rehabilitation

SOP-2: To scale-up investments

SOP-3: Will focus on increasing water production and financing investments to ensure the additional wastewater created can be treated

SOP-4: Will focus on improving services in informal settlements based on experience gained under the previous projects

Currently, SOP-1 (or KWSSIP-1) is under implementation, whereas the SOP-2 is under preparation.

The SOP1 of KWSSIP has the following three components:

- Component 1- Operational and enabling environment reforms in KWSB
- Component 2- Infrastructure investments
- Component 3 - Project Management and Studies.

Three sub-projects are included under Components 2 of SOP-1 as given in **Table 1.1** below:

**Table 1. 1: Sub-projects Under Components 2 of SOP-1**

Sr. No.	Assignment	Project	Target
1	A	Rehabilitation of water supply and sewerage in three low-income areas in Karachi	Provision of water supply and sewerage networks in three low-income communities/ katchi abadis

Sr. No.	Assignment	Project	Target
2	B	Priority water network rehabilitation including operation and maintenance (O&M) Equipment, meters and district metered areas (DMAs) to Reduce non-revenue water (NRW)	Installation of Bulk Flow Meters and intermittent chlorination stations, use of leakage detection equipment and priority water network rehabilitation
3	C	Priority Sewer Network Rehabilitation	Provision of sewerage networks in priority schemes

### 1.1.1 Purpose of the document

The current report presents findings of environmental and social screening for Bulk Flow Meters, and Intermittent Chlorination Stations, to be installed at bulk water lines and water pumping stations respectively, under Assignment B (Component 2) of SOP-I, KWSSIP. The remaining part of the Assignment B - priority water networks, has not been finalized yet for which a separate E&S instrument will be prepared. This Screening Report has been prepared in accordance with the requirements and procedures detailed as per the following guiding documents:

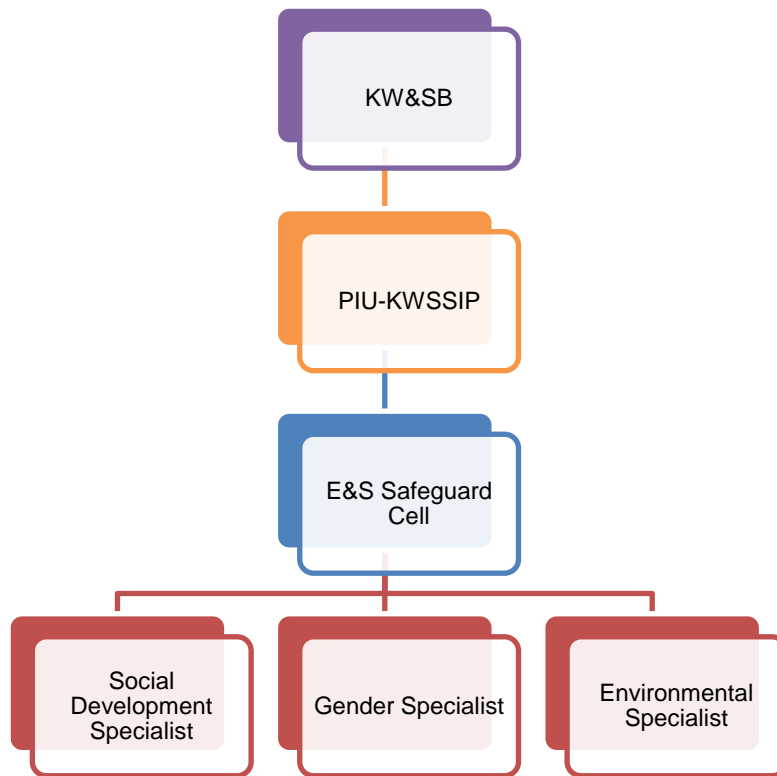
### 1.1.2 Environmental Management Framework and Social Management Framework

An Environmental Management Framework (EMF) was prepared for KWSSIP-1 in 2019 with the purpose to establish principles, rules, guidelines and procedures to ensure compliance of the Project with the environmental safeguard requirements of the national laws and World Bank's safeguard policies. The EMF sets out the policies, strategies, procedures and institutional requirements to screen the project activities, and also identifies the environmental documents required for these activities and the approval and clearance procedures to be followed.

Similarly, a Social Management Framework (SMF) including a Resettlement Policy Framework (RPF) was prepared for the KWSSIP-1 in 2019 with the aim to assess potential adverse social impacts of the envisaged subprojects to be financed under the project and ways to avoid, minimize or mitigate them through the establishment of clear procedures and methodologies for planning, screening, review, approval and implementation of subprojects. SMF policy principles include transparency, inclusion, participation, social accountability and social safeguards that will be mainstreamed by adopting appropriate processes for social impact assessment and mitigation.

### 1.1.3 Institutional Responsibility

A Project Implementation Unit (PIU) has been established under KWSSB which is headed by Project Director. The PIU has an Environmental and Social Safeguard Cell that is responsible for the environmental and social management of the project and compliance with the regulatory and WB requirements. Organization chart of PIU is given in **Figure 1.1**.



**Figure 1: PIU Organization**

#### **1.1.4 Sub-project Location**

The proposed Bulk Flow Meters and Intermittent Chlorination Stations will be located in different districts of Karachi. The location plans of proposed Bulk Flow Meters and Intermittent Chlorination Stations are described later in the document (see **Section 3**).

#### **1.1.5 Objectives of Environmental & Social Safeguard Screening**

Following are the objectives of E&S Screening:

- Assessment/ identification of environmental, social, land acquisition and resettlement (LAR) issues;
- Categorization of sub-projects;
- Recommendation of further studies; and
- Efforts to minimize E&S impacts.

## 2. REGULATORY REVIEW

### 2.1 Overview

Three sets of laws, policies and strategies i.e., national, provincial, and World Bank Operational Policies (OPs) are applicable for the project. **Table 2.1** presents a list of these laws, policies and strategies.

**Table 2.1: Applicable Laws, Policies, Standards and Strategies**

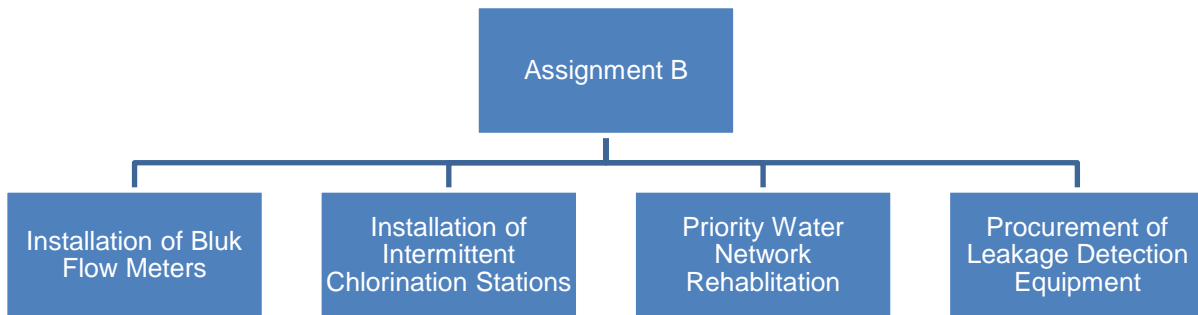
<b>Key National Laws, Regulations and Policies</b>	1.	National Conservation Strategy 1992
	2.	National Forest Policy 2015
	3.	Pakistan Climate Change Act, 2016
	4.	Pakistan Penal Code 1860
	5.	Canal and Drainage Act 1873
	6.	Land Acquisition Act, 1894 (Including Later Amendments)
	7.	Protection of Trees and Brushwood Act, 1949
	8.	Antiquities Act 1975
	9.	Pakistan Labor laws
	10.	Fatal Accidents Act 1855
<b>Key Provincial Laws, Regulations and Policies</b>	1.	Sindh Environmental Protection Agency (Environmental Assessment) Regulations, 2021
	2.	Factories Act, 1934 and The Sindh Factories (Second Amendment) Act, 2021
	3.	Sindh Wildlife Protection, Preservation, Conservation and Management Act, 2020
	4.	Karachi Strategic Development Plan, 2020
	5.	The Sindh Occupational Safety and Health Act, 2017
	6.	Sindh Sanitation Policy, 2017
	7.	Sindh Drinking Water Policy, 2017
	8.	The Sindh Prohibition of Employment of Children Act, 2017
	9.	Sindh Environmental Quality Standards, 2016
	10.	Sindh Minimum Wages Act, 2015 (Sindh Act No. VIII of 2016)
	11.	The Sindh Bonded Labor System (Abolition) Act, 2015

	<b>12.</b>	Sindh Workers Compensation Act, 2015
	<b>13.</b>	Sindh Environmental Protection Act (SEPA), 2014
	<b>14.</b>	The Sindh Industrial Relations Act, 2013
	<b>15.</b>	Sindh Local Governments Act (SLGA), 2013
	<b>16.</b>	The Protection Against Harassment of Women at the Workplace Act, 2010
	<b>17.</b>	Sindh Cultural Heritage (Preservation) Act 1994
	<b>18.</b>	Sindh Solid Waste Management Board Act 2014
	<b>19.</b>	The Sindh Transparency and Right to Information Act, 2016
	<b>20.</b>	Sindh Payment of Wages Act 2015
	<b>21.</b>	Sindh Minimum wages Act, 2015
	<b>22.</b>	The Sindh Commission on the status of Women Act, 2015
	<b>23.</b>	The Sindh Differently Able Persons Act, 2017
	<b>24.</b>	Forest Act (1927) and the Forest Act (Sindh amendment) Act, 2012
	<b>25.</b>	Sindh Public Property Act, 2010
<b>26.</b>	Sindh Plantation, Maintenance of Trees and Public Parks Ordinance, 2002	
<b>Applicable World Bank Policies/ Framework</b>	<b>1.</b>	World Bank Operational Policies <i>Environmental Assessment (OP 4.01)</i> <i>Natural Habitat (OP 4.04)</i> <i>Physical Cultural Resources (OP 4.11)</i> <i>Involuntary Resettlement (OP 4.12)</i> <i>Gender Policy (OP 4.20)</i> <i>Access to Information (BP 17.50)</i>
	<b>2.</b>	Managing the Risks of Adverse Impacts on Communities from Temporary Sub-project Induced Labor Influx
	<b>3.</b>	Environmental, Health & Safety Guidelines

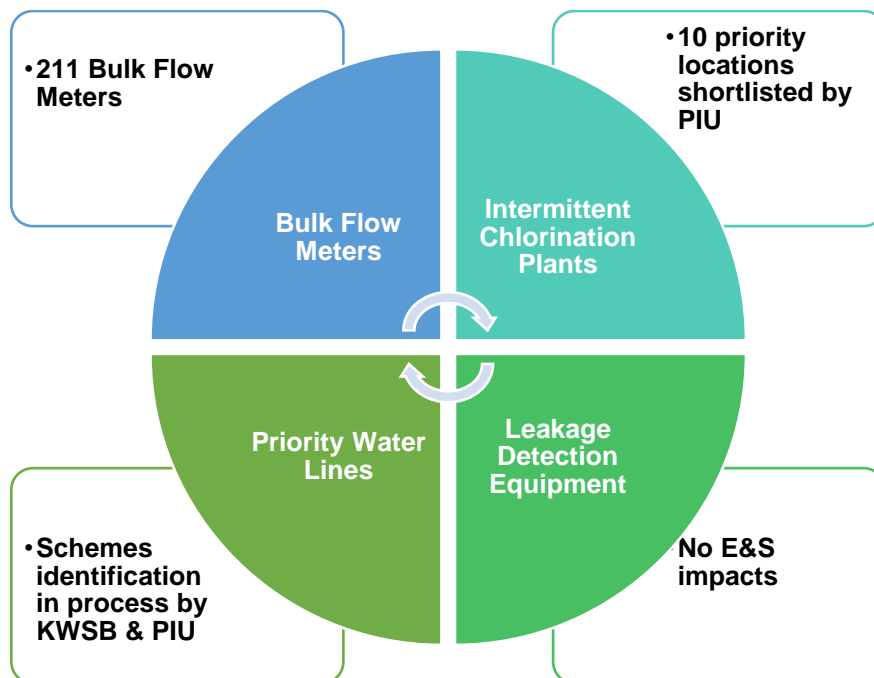
### 3. DESCRIPTION OF SUB- PROJECT

#### 3.1 Components of Sub-Project

The Assignment-B (Component 2) of SOP-I under KWSSIP involves following four components:



The status of activities under Assignment B is summarized in **Figure 3.1**.

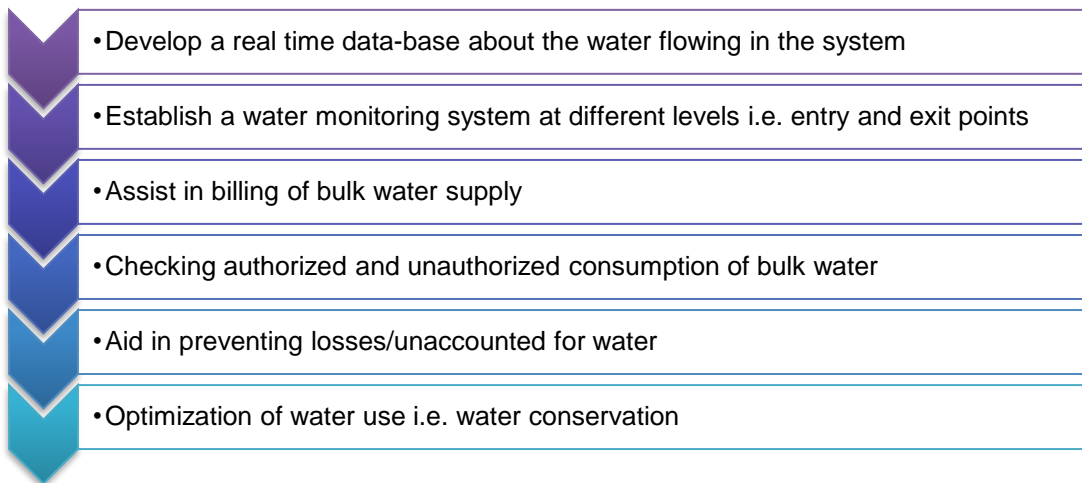


**Figure 3. 1: Status of Activities under Assignment B**

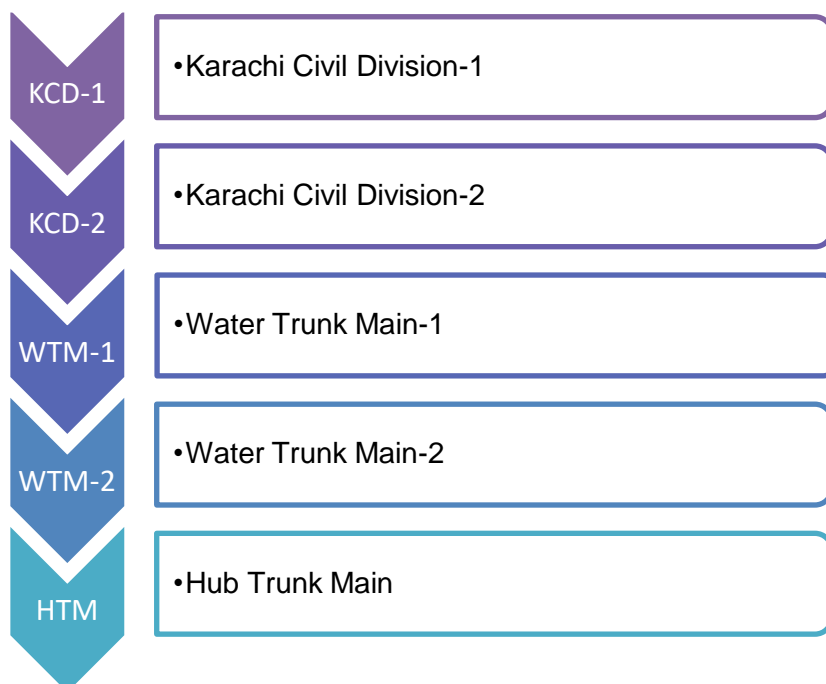
The present Screening Report covers the installation and operation of bulk flow meters and chlorination stations. The priority water networks have not been identified at this stage, for which separate E&S instruments will be prepared once the technical details become available.

### 3.1.1 Bulk Flow Meters

One of the best methods to estimate unaccounted for water, assess presence of water leakage and optimize/conserves water consumption is to install water meters. Bulk Flow Meters installation is intended by PIU-KWSSIP helping KWSB as follows:



The water supply system of Karachi has following five (05) major divisions:

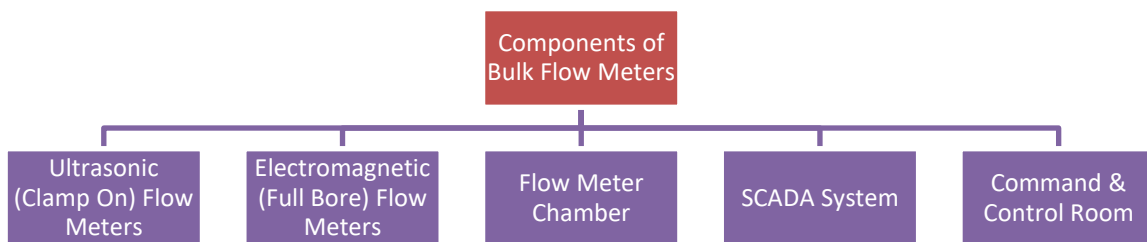


Each division is fed by Bulk Water Lines. Further, there are distribution lines for each town as well. The Bulk Flow Meters will be installed at bulk/ trunk water lines to assess the amount of water supplied to each division and detect the leakages/ losses in the system. A total of 211 Bulk Flow Meters will be installed according to feasibility study and approval of the Client and World Bank.

As mentioned, the bulk flow meters shall be installed at bulk water lines serving all five water divisions in Karachi. The bulk water lines are serving the whole city; therefore, the bulk flow meters are spread over the entire city. About eighty-five (85) flow meters will be installed at bulk water lines within premises of existing KWSB facilities including water filtration plants, reservoirs, and water pumping stations etc. The locations of the rest of the meters have been carefully selected in liaison with the design team and the field staff of KWSB to avoid any environmental, social as well as technical issues. The proposed locations of the bulk flow meters outside the premises of existing water filtration plants/pumping stations are mostly along the main roads. Technically, there was adequate cushion available in the selection of the locations, therefore some flow meters are either placed along the road median or on the traffic islands to avoid resettlement as well as other social issues including business losses. There are no environmental or eco-sensitive features present near the proposed locations as well as no physical or cultural resources are present nearby.

The location plan of proposed Bulk Flow Meters is given in **Figure 3.2** and district-wise list of Bulk Flow Meters, site specific information along with diameters and numbers is attached as **Annex – I**.

Following are the components of Bulk Flow Meters:



#### **A. Activities Involved in Installation of Bulk Flow Meters**

Following activities shall be performed for the installation of Bulk Flow Meters:

### Demolition Works/ Dismantling

- The existing structures i.e. roads and pavements shall be demolished/ dismantled. The demolished/ rejected debris materials shall be broken to pieces not larger than 25mm (1 inch) to 75mm (3 Inches). All materials resulting from demolition shall be disposed of out of Municipal limits preferably at the dumping site of S-3 project.

### Earthwork

- Earthwork shall include site preparation, excavation of soil, disposal of excess excavated material, shoring and protection work, backfill, surface reinstatement etc. Total quantity of excavation required for all the Bulk Flow Meters shall be about 1,397,926 cubic feet (CFT).

### Concrete Work

- Small concrete chambers shall be constructed to house the Bulk Flow Meters

### Installation

- The Bulk Flow Meters shall be installed on the existing bulk water lines.

The sizes of chambers and quantities of excavation are given in **Table 3.1** below while typical layout of chamber is shown in **Figure 3.3**.

**Table 3. 1: Sizes of Chambers and Excavation Quantity**

Sr. No	Description	No. of Chambers	Length (L)	Width (W)	Total Depth	Excavation
			(ft)	(ft)	(ft)	(Cft)
<b>ELECTROMEGNETIC CHAMBERS</b>						
1	4" Pipe	1	8.00	9.00	9.75	3968.25
2	6" Pipe	2	8.00	9.00	10.00	8116.88
3	8" Pipe	1	8.50	10.00	10.25	4479.25
4	10" Pipe	2	8.50	10.00	10.25	8958.50
5	12" Pipe	4	8.50	10.00	10.50	18306.50
6	15" Pipe		9.00	9.50	10.75	0.00
7	18" Pipe		9.00	9.50	11.25	0.00
<b>ULTRA SONIC CHAMBERS</b>						
1	6" Pipe	1	6.00	5.00	10.00	2877.19
2	12" Pipe	17	6.00	5.00	10.50	51086.06
3	14" Pipe	1	6.00	5.00	10.75	15549.00

Sr. No	Description	No. of Chambers	Length (L)	Width (W)	Total Depth	Excavation
			(ft)	(ft)	(ft)	(Cft)
4	15" Pipe	6	6.00	6.00	10.75	19602.00
5	18" Pipe	13	6.00	6.00	11.25	47901.75
6	21" Pipe	1	6.00	6.00	11.75	3829.25
7	24" Pipe	32	6.00	6.00	12.00	124848.00
8	30" Pipe	1	6.00	7.00	14.50	4896.00
9	32" Pipe	1	6.00	7.00	14.75	4972.50
10	33" Pipe	36	6.00	7.00	14.75	192307.50
11	36" Pipe	7	6.00	7.00	15.00	35343.00
12	42" Pipe	2	8.00	8.00	15.75	12454.50
13	48" Pipe	42	8.00	8.00	16.25	287469.00
14	54" Pipe	12	8.00	9.00	21.75	112729.50
15	60" Pipe	5	8.00	9.00	22.50	48469.69
16	66" Pipe	7	8.00	10.00	23.00	73368.75
17	72" Pipe	11	8.00	10.00	23.50	116446.69
18	84" Pipe	6	8.00	12.00	24.75	72861.75
<b>Total</b>		<b>211</b>				<b>1,270,842</b>
<b>Total (after addition @10% for unforeseen)</b>						<b>1,397,926</b>

## B. Manpower Requirement

It is proposed that the construction work shall be executed at around five different sites simultaneously for installation of bulk flow meters. A total of fifty (50) skilled and semi-skilled labors/workers shall be required for all the sites i.e., ten (10) labors/workers per site.

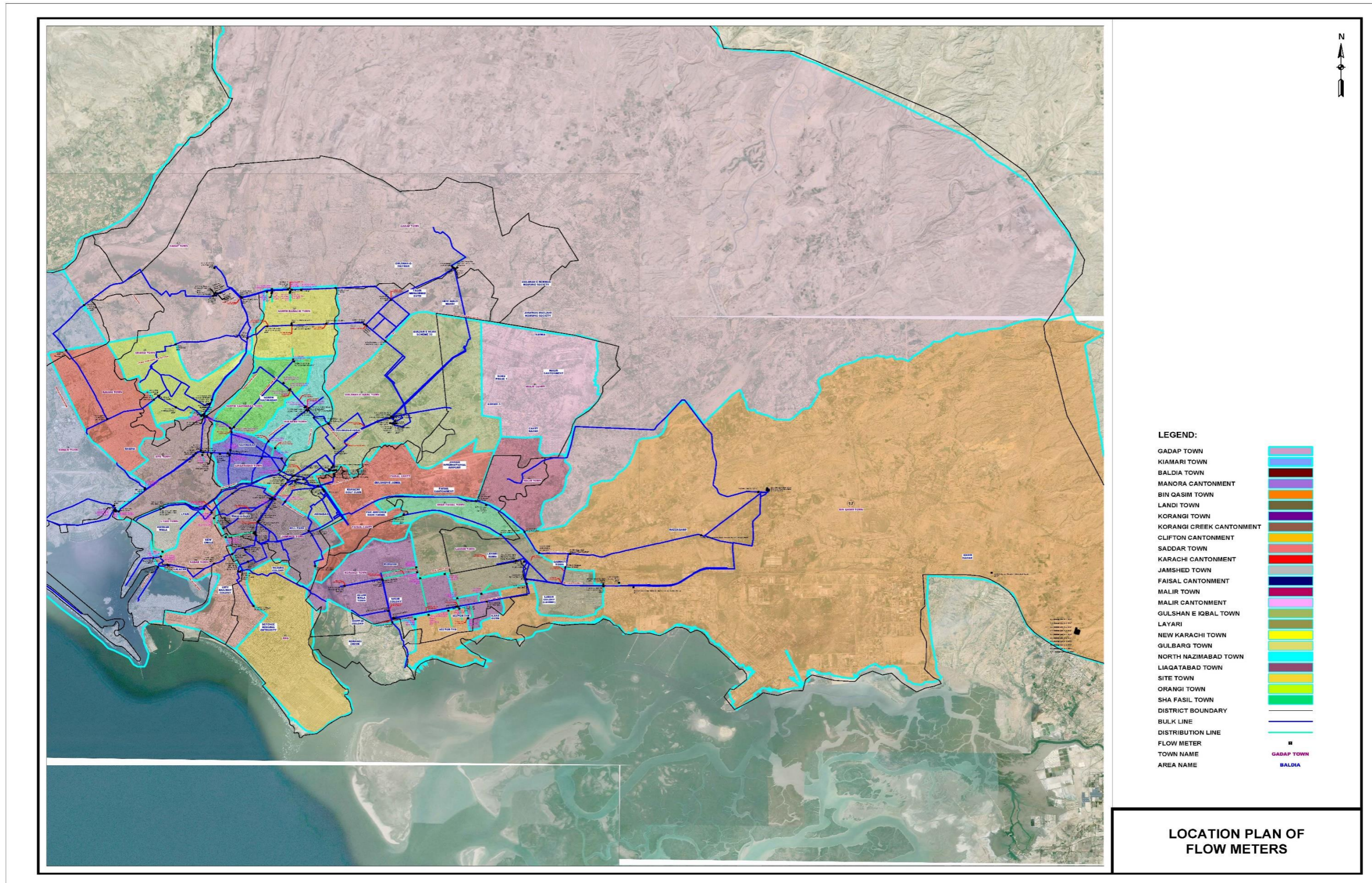
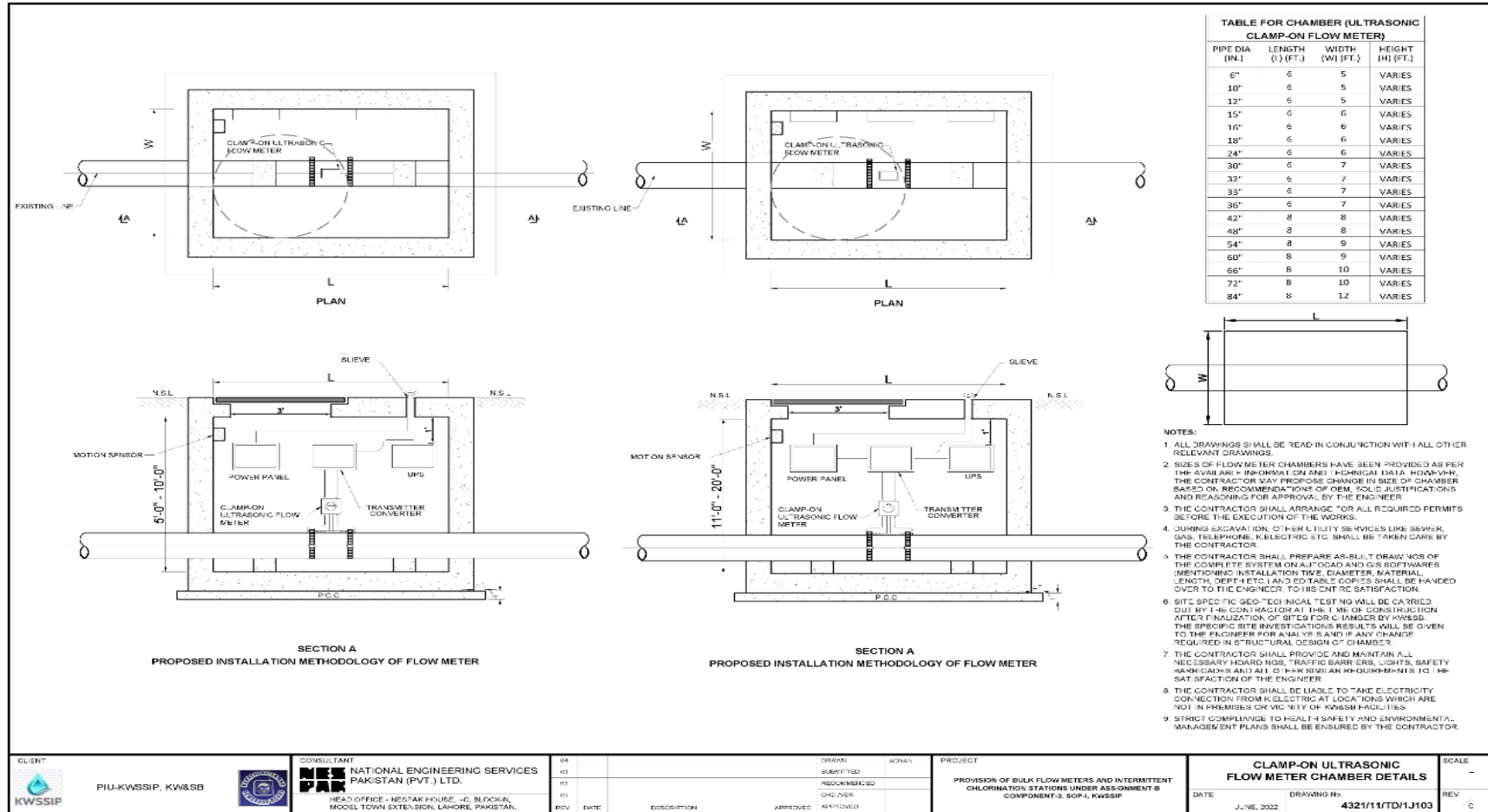


Figure 3. 2: Location Plan of Flow Meters



**Figure 3.3: Typical Layout Plan of Flow Meters Chamber**

### C. Technical Details of Bulk Flow Meters

Two types of Bulk Flow Meters (i.e., Full bore electromagnetic and Clamp-on ultrasonic flow meters) are proposed for the sub-project. Technical details are given in **Tables 3.2, 3.3** and **3.4**:

**Table 3. 2: Technology of Proposed Flow Meters**

Type of Flow Meter	Quantity
Electromagnetic Full Bore	18
Ultrasonic clamp-on Except Cement Pipe	52
Ultrasonic clamp-on for Cement Pipe	141
<b>Total Flow Meters</b>	<b>211</b>

**Table 3. 3: Diameters of Proposed Flow Meters**

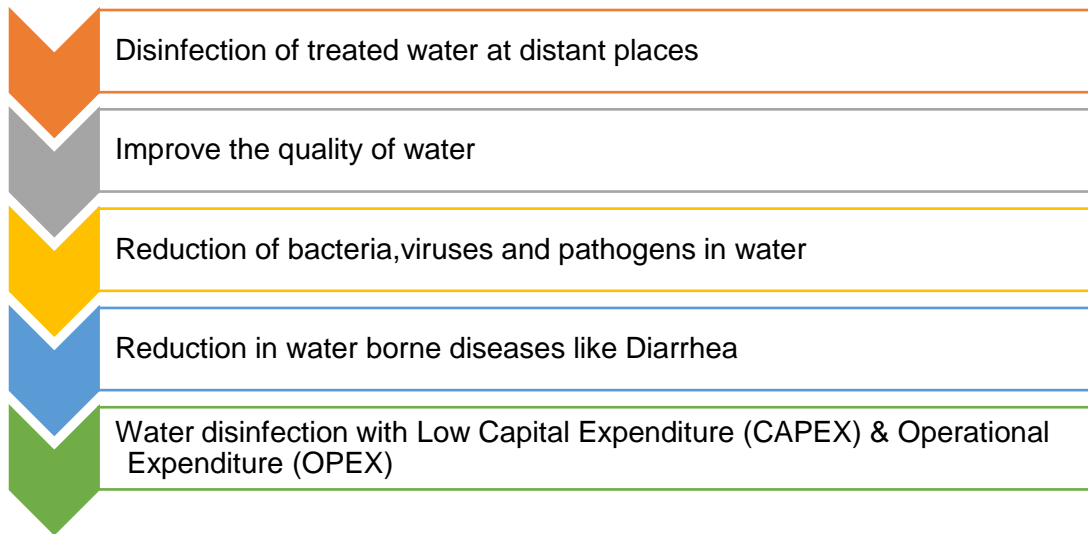
Pipe Diameter	No. of Flow Meter	Pipe Diameter	Quantity
4"	1	32"	1
6"	3	33"	36
8"	1	36"	7
10"	2	42"	2
12"	21	48"	42
14"	1	54"	12
15"	6	60"	5
18"	13	66"	7
21"	1	72"	11
24"	32	84"	6
30"	1		

**Table 3. 4: Pipe Material of Proposed Flow Meters**

Pipe Material	Quantity
Cast Iron (CI)	7
High Density Poly Ethylene (HDPE)	5
Mild Steel (MS)	58
Pre-stressed Reinforced Cement Concrete (PRCC)	141
<b>Total</b>	<b>211 Nos.</b>

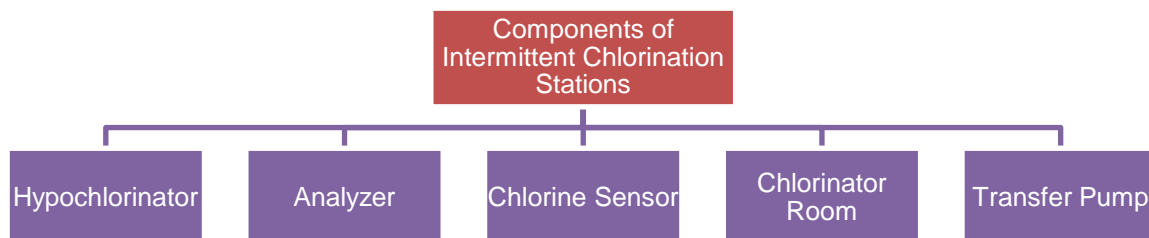
#### 3.1.2 Intermittent Chlorination Stations

For disinfection of drinking water, a commonly used method is utilization of reactive chemical agents such as chlorine. Installation of intermittent Chlorination Stations in the water supply network at the prescribed locations to maintain the residual chlorine to the end user level has been proposed under KWSSIP-1. It will aid KWSB as follows:



A study was conducted by KWSB in past which found that the residual chlorine and water pressure reduces at the end user. Therefore, intermittent pumping stations were proposed within the system. To meet the requirement of minimum residual chlorine at the end user, Intermittent Chlorination Stations have been proposed at the Intermittent Pumping Stations. As of now, 10 pumping stations have been finalized. Location of intermittent chlorination is given in **Table 3.5**.

The components of Intermittent Chlorination Stations are given below:



**Table 3. 5: Finalized Locations for Intermittent Chlorination Stations by PIU**

Sr. No.	Name of Pump Houses	Sr. No.	Name of Pump Houses
1	Feature Pump House	6	Shaheed Chowk Pump House
2	Bilal Colony Pump House	7	Cattle Colony Pump House No.8
3	Shah Faisal Colony No.05 Pump house	8	Cattle Colony Pump House No.5
4	Gulabi Pump House	9	Zia Pump House (4/10-A) Orangi Town
5	Model Colony Pump house	10	New Zia Pump House behind Metrovil, Orangi

The location plan of the proposed Intermittent Chlorination Stations within pumping stations boundaries is shown in **Figure 3.4** and schematic of chlorination system is given in **Figure 3.5** below:

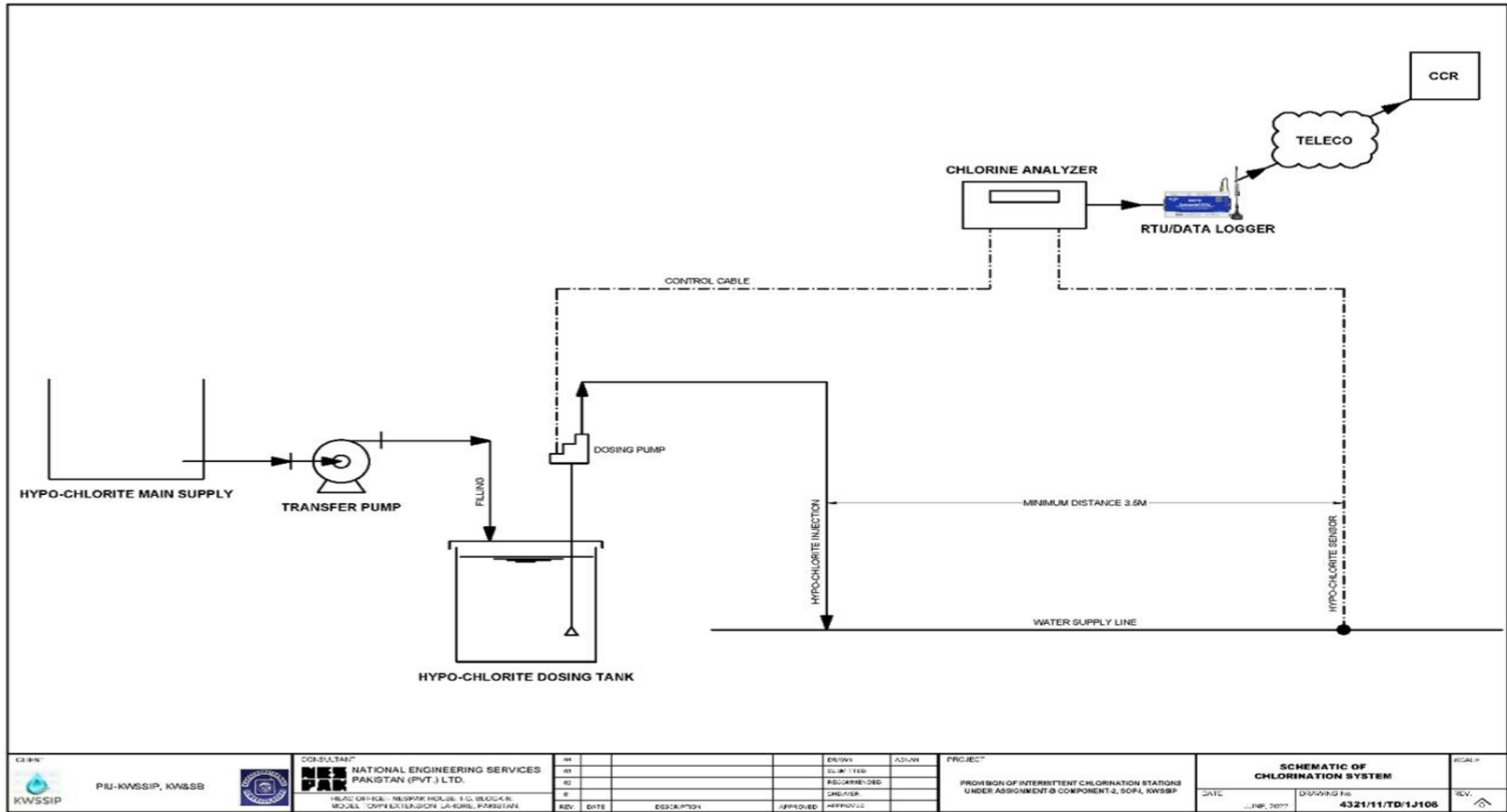
**A. Activities Involved in Installation of Intermittent Chlorination Stations**

Following activities shall be performed for the installation of Intermittent Chlorination Stations:

The proposed Intermittent Chlorination Stations shall be installed within the premises of existing water pumping stations. A small room (prefabricated/ block masonry), having approximate dimension of about 13.5 feet (4.1 m) x 13.5 feet (4.1 m), will be constructed to house the disinfectant dozer and the disinfectant storage tank. Following activities shall be involved:





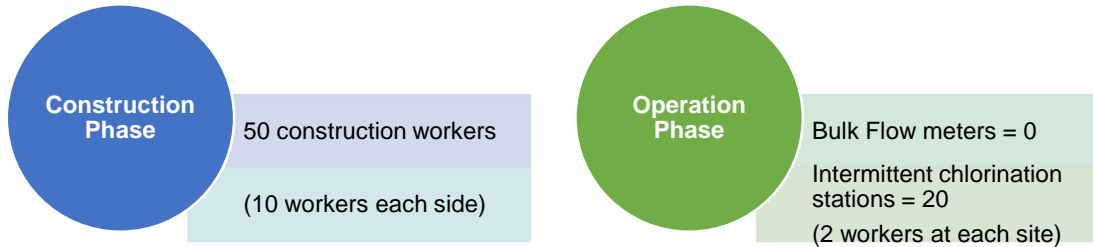


**Figure 3. 5: Schematic of Intermittent Chlorination Stations**

	PIU-KWSSIP, KW&SB		CONSULTANT <b>NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD.</b> <small>HEAD OFFICE: REGISTRY HOLDING, 11-C, BLOCK-N, MODEL COMPLEX EXTENSION LAHORE, PAKISTAN</small>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="font-size: 8px;">REV</td><td style="font-size: 8px;">DATE</td><td style="font-size: 8px;">DESCRIPTION</td><td style="font-size: 8px;">APPROVED</td><td style="font-size: 8px;">APPROVAL</td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </table>	REV	DATE	DESCRIPTION	APPROVED	APPROVAL																DESIGNER SLASH/TEED RECOMMENDED CHECKER APPROVAL	AS/INR APPROVAL	PROJECT PROVISION OF INTERMITTENT CHLORINATION STATIONS UNDER ASSIGNMENT 8 COMPONENT-2, SOPI, KW&SB	<b>SCHEMATIC OF CHLORINATION SYSTEM</b>	DATE .../.../2011	DRAWING No. <b>4321/11/TD/1/J108</b>	REV. 1
REV	DATE	DESCRIPTION	APPROVED	APPROVAL																											

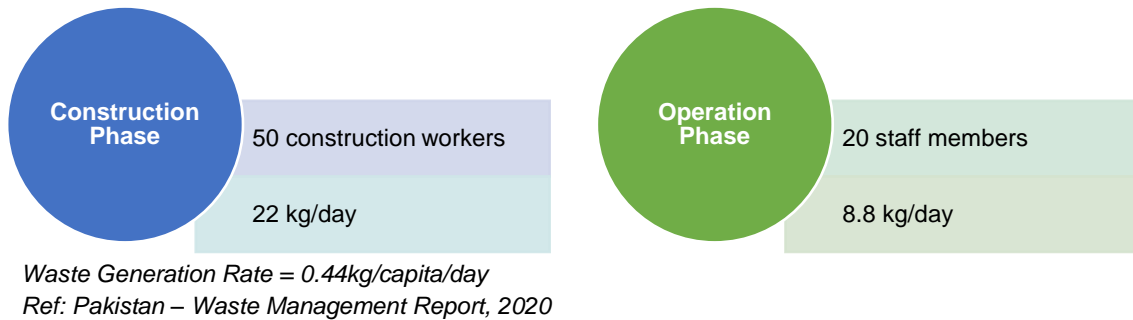
### 3.1.3 Workforce Requirement

Manpower requirement during construction and operation phase is give as under:



### 3.1.4 Solid Waste Generation

Solid waste generation during construction and operation phases is given as under;



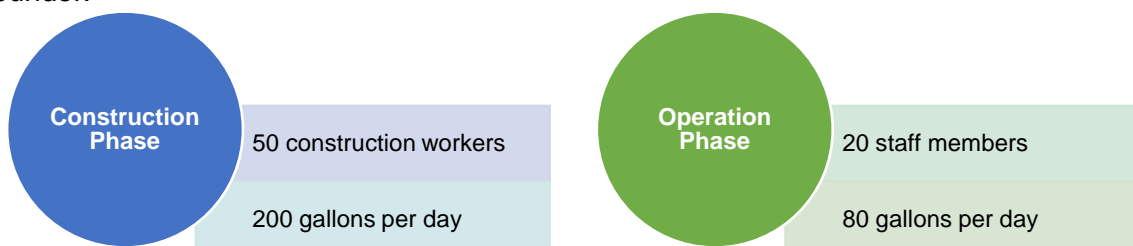
### 3.1.5 Water requirement

The water requirement for the proposed project activities is summarized hereunder:



### 3.1.6 Wastewater Generation

The wastewater generation during construction and operation phases is summarized hereunder:



### **3.1.7 Construction Camps**

As stated earlier that the project activities are spread over the entire city, therefore a centralized construction camp will not be required. The installation of Bulk Flow Meters shall be carried out at five locations simultaneously. The contractor shall set up temporary tent facilities for provision of clean drinking water and sanitation facilities for the minimum of 10 workers at each site. As intermittent chlorination stations will be installed within premises of existing water pumping stations which already have drinking water and sanitation facilities, therefore, even tent facilities would not be needed.

## 4. STAKEHOLDER ENGAGEMENT

### 4.1 Stakeholders Consultation

The stakeholder's engagement and consultations has been carried out for the proposed sub-project by following the methodological steps, guidelines and procedures for environmental and social screening defined in the Environmental Management Framework (EMF) and Social Management Framework (SMF).

In order to meet the criteria of meaningful stakeholder consultation process, the consultation was started in November 2021. The consultations were conducted with various potential stakeholders to assess their views and recommendations. For the latest information dissemination and field planning, consultation meetings were held in Additional Commissioner – II Office, Karachi and in Geographic Information System (GIS) cell at Commissioner's Office. The public consultations were held with local community and others in different times starting from November 2021 to April 2022.

The overall objective of the consultation was that stakeholders are kept informed about the sub-project related activities and to identify any contextual issues by obtaining their views and inputs about any sub-project related issue. Henceforth, the feedback obtained/PMU responses to the issues raised, are directly included as part of the sub-project planning and decision-making process.

#### 4.1.1 Identification of Stakeholders

The main sub-project stakeholders identified are affectees who reside or own businesses or land subject to expropriation (if any) under KWSSIP. All stakeholders have different types of stakes according to their occupations and involvements in various aspects of the sub-project. The consultant contacted with all the stakeholders at different stages of the sub-project and shared their views and concerns with respect to implementation of the sub-project.

#### A. List of Departments Consulted

Following departments were consulted during screening of the sub project:

- Commissioner's Office
- Sindh Environmental Protection Agency (SEPA)
- KWSB
- Parks & Horticulture Department, Karachi Metropolitan Corporation (KMC)
- Sindh Forest & Wild Life Department
- Urban Resource Center
- K-Electric
- Local Govt. & Housing Town Planning Department

#### 4.1.2 Objectives of the Public Consultation

The objectives of the public consultation are as follows;

- To share full information with the stakeholders about the sub-project, its components and activities, interventions in the project development;
- To obtain feedback/responses about the installation of bulk flow meters and intermittent chlorination stations;
- To identify the urgency and severity of issues and problems in sub-project; and
- To acquire responses about the needs, preferences/priorities of the stakeholders regarding proposed systems.

#### 4.1.3 Information Disseminated

Following issues were discussed with the affectees during the consultation meetings:

- Introduction of the sub-project;
- Description of various sub-project components;
- Information on perceived benefits from the proposed sub-project; and
- Needs, priorities and reactions of the affected people regarding the proposed sub-project.

#### 4.1.4 Common Concerns/ Issues of the Respondents

For public consultations, around 23 meetings were held with local community during the social and environmental screening. Details of the sub-project and related activities were explained to the local community and their responses were listened and addressed. Overall, the general public appeared to be convinced about the associated benefits of the sub-project. The schedule of meeting is given **Table 4.1**. As a whole, public has very positive views about the Sub-project and they are in support of it. However, they also raised some concerns during the consultation sessions. Concerns/issues raised by the participants and its responses were presented in **Table 4.2** below:

**Table 4. 1: Schedule of Consultations**

Sr. No.	Location	Date	Venue	No of Participants
1	Gulberg Town	27-10-2021	Shareefabad, Gulberg Town	5
2	Liaquatabad Town	28-10-2021	Eidgah Ground Nazimabad, Liaquatabad Town	6
3	North Nazimabad Town	29-10-2021	Baba More, North Nazimabad Town	4
4	SITE Town	01-11-2021	Banaras Chowk, SITE Town	7
5	Gulshan e Iqbal Town	05-11-2021	University Main, Gulshan e Iqbal Town	6
6	Gulshan e Iqbal Town	26-11-2021	COD Filter Plant, Gulshan e Iqbal Town	8
7	Jamshed Town	29-11-2021	Baloch Colony Bridge, Jamshed Town	5
8	Jamshed Town	01-12-2021	Jail Road Chowrangi, Jamshed Town	7
9	Jamshed Town	05-12-2021	Lasbella Bridge, Jamshed Town	5
10	Lyari Town	07-12-2021	Main at Peoples Ground, Lyari Town	6
11	Lyari Town	01-03-2022	Lyari Main at Mirza Adam Khan Road, Lyari Town	6
12	Lyari Town	02-03-2022	New SBL Bakra Peri, Lyari Town	4
13	Sadar Town	03-03-2022	Main KPT-Link (At G. Alana Road), Sadar Town	8
14	Kemari Town	04-03-2022	PIC Tower (Dockyard), Kemari Town	9
15	Baldia Town	07-04-2022	Near Jama Ziaul Madaras, Baldia Town	5
16	Orangi Town	08-04-2022	H-1B) Banaras Pump House, Orangi Town	7
17	Orangi Town	10-04-2022	T&T Exchange, Orangi Town	5
18	Bin Qasim Town	12-04-2022	Char Poll Chorwangi, Bin Qasim Town	8
19	Korangi Town	13-04-2022	Near Eid Gah Qadria Rizvia, Korangi Town	6
20	Korangi Town	18-04-2022	Shan Chowrangi, Korangi Town	9
21	Bin Qasim Town	19-04-2022	Malir Main (Murghi Khana), Bin Qasim Town	5
22	Gadap Town	20-04-2022	Chungi Naka (Surjani), Gadap Town	7

Sr. No.	Location	Date	Venue	No of Participants
23	Gadap Town	22-04-2022	Sindhu Chowk	5

**Table 4. 2: Issues/ Feedback of Stakeholders**

Sr. No	Issues/ Feedback of Stakeholders	PIU Response
1	The locals emphasized that installation of Bulk Flow Meters should be completed in a timely manner to avoid inconvenience.	The construction activities will be completed in the specified period of time and penalty shall be imposed to the contractor in case of unnecessary delays.
2	Locals demanded priority for jobs during the construction phase.	Local community shall be preferred for skilled and semi-skilled jobs during execution of the sub-project
3	The stakeholders expressed their concerns regarding Health and Safety of the residents, especially during construction phase of the sub-project.	Any disturbance to local residents will be minimized by ensuring implementation of Health and Safety Protocols.
4	Noise problem issue for the residents during the construction phase was also highlighted.	The construction activities will be planned in a manner to avoid disruption to the community due to noise specially in prayer and night time.
5	People enquired where to contact in case of any complaint/objection.	Grievance redress mechanism (GRM) has been devised specifically for the sub-project. People may lodge their complaints at site, by post, by telephone or through mobile application prepared by PIU.
6	The residents will face disturbance due to construction activities.	The construction work should start in different phases to ensure minimum disturbance to the community.

During the consultation people were generally willing to extend all types of support during the execution of the sub-project as their major difficulty i.e., access to clean water would be addressed after completion of the sub-project.

## A. Outcomes of Institutional Consultations

Following are the points of discussion during institutional consultation meetings. The consultation pictures are attached as **Annex – II**.

**Table 4. 3: Summary of Consultations with Government Stakeholders**

Sr. No.	Agency / Department / Stakeholder	Representatives of Departments	Consultant / Client Team	Points of Discussion	Dated
1	Commissioner's Office	Additional Commissioner - II  Assistant Commissioner	(Gender Expert - PIU) ( <u>Env. Specialist KWSSIP</u> ) Social Safeguard Expert – NESPAK Environmental Engineer - NESPAK	<ul style="list-style-type: none"> <li>• Coordination with Karachi Metropolitan Corporation (KMC), District Municipal Corporation (DMC), Municipal Corporation (MC) and other departments for support in the field activities.</li> <li>• Appointment of focal persons in different districts to support PIU.</li> <li>• Identification of AED affected areas.</li> <li>• Coordination with DMCs and KMC for appointment of focal persons.</li> <li>• Involvement of GIS Cell of Commissioner's office to collect AED related data.</li> </ul>	28.02.2022
2	Sindh Environmental Protection Agency (SEPA)	<u>Deputy Director Technical</u>	<u>Env. Specialist KWSSIP</u> ( <u>Team Leader</u> ) <u>Sr. Environmental Engr.</u>	<ul style="list-style-type: none"> <li>• Scoping sessions and Individual interviews should be conducted with all stakeholders.</li> <li>• All the flow meters should be installed away from environmental and social sensitive features</li> </ul>	12.04.2022
3	KWSB	<u>Superintendent Engineer (SE)- Flow Meters</u>	<u>Sr. Engineer</u> <u>Sr. Engineer</u>	<ul style="list-style-type: none"> <li>• Locations, quantities, types, technologies and various other technical details of bulk flow meters were discussed.</li> </ul>	03.11.2022

Sr. No.	Agency / Department / Stakeholder	Representatives of Departments	Consultant / Client Team	Points of Discussion	Dated
		(Executive Engineer-XEN)			
4	Parks & Horticulture Department, Karachi Metropolitan Corporation (KMC)	<u>Director General Parks,</u> <u>Deputy Director Parks</u>	<u>Team Leader</u> <u>Sr. Engineer</u> <u>Sr. Engineer</u>	<ul style="list-style-type: none"> <li>• Efforts should be espoused to save existing plantation;</li> <li>• Plant five (5) trees in the replacement of one (1) tree which will be cut down. Height of new trees must be around 6-8 ft.</li> </ul>	13.04.2022
5	Sindh Forest & Wild Life Department	<u>Conservator Wild Life</u>	<u>Team Leader</u> <u>Sr. Engineer</u>	<ul style="list-style-type: none"> <li>• Efforts should be espoused to save wild life;</li> <li>• All relevant departments should be taken onboard at various forums and for different activities like tree plantation</li> </ul>	13.04.2022
6	Urban Resource Center		<u>Team Leader</u> <u>Sr. Engineer</u>	<ul style="list-style-type: none"> <li>• Stakeholders who have a direct or indirect impact in the project development should be involved in the consultation process</li> </ul>	14.04.2022
7	K-Electric	<u>Public Relation Officer</u>	<u>Team Leader</u> <u>Sr. Engineer</u> <u>Sr. Engineer</u>	<ul style="list-style-type: none"> <li>• Construction is not allowed under the transmission lines.</li> <li>• The utilities to be disturbed (if any) should be restored/ rehabilitated on priority basis to minimize the impacts.</li> </ul>	15.04.2022
8	Local Govt. & Housing Town Planning Department	<u>Project Director</u>	<u>Team Leader</u> <u>Sr. Engineer</u> <u>Sr. Engineer</u>	<ul style="list-style-type: none"> <li>• The department should be informed about the finalized locations of the Bulk Flow Meters prior to commencement of construction activities</li> </ul>	15.04.2022

## 5. SCREENING OF SUBPROJECT

### 5.1 Environmental and Social Screening

Environmental and Social Screening of the sub-project was carried out to categorize it based on perceived environmental and social impacts. The proposed sub-project activities are minor in nature. The only significant part of the Assignment B is Priority Water Lines which are in the process of finalization by PIU, therefore, this component is not covered in this document and separate E&S instruments will be prepared for it.

Installation of Bulk Flow Meters have minor impacts which are temporary, reversible and localized in nature. Intermittent Chlorination Stations are also small units which would be installed within the premises of existing water pumping stations which are not anticipated to cause any considerable environmental and social impacts.

Sub-projects under KWSSIP have a prior requirement of screening which is based on three categories; viz., nature of the sub-project, size of the sub-project and location of the sub-project. Based on this assessment, sub-projects with potentially significant environmental/social issues are identified at an early stage for detailed environmental and social impacts assessment.

#### 5.1.1 Methodology of Environment and Social Screening

Following methodology was adopted for environmental and social screening:

- Review of literature, policies and sub-project related documents;
- Public consultations;
- Site visits
- Assessment of potential environmental and social impacts.

#### A. Efforts to Minimize E&S Impacts

As discussed earlier, eighty-five (85) flow meters will be installed within the premises of existing KWSSB facilities and will not pose any significant social/resettlement issues except labor and occupational health and safety (OHS) issues. The locations of the bulk flow meters outside the boundaries of existing filtration plants/pumping stations were selected with the joint efforts of design team, E&S team as well as the field staff of KWSSB to avoid disturbance to any environmental and social sensitive receptors. Due attention was given to minimize the social issues including loss of businesses due to restricted access during execution of the subproject.

During initial design planning, it was identified that around twenty-six (26) proposed locations of bulk flow meters may have some E&S issues during construction phase as these were located near vegetable market, commercial markets, intersection of roads and areas with high volume of traffic. To avoid E&S issues, these locations of bulk flow meters were changed in

consultation with design team and PIU and KWSB and have been shifted to some other locations with no or minimum E&S issues.

## **B. Environment and Social Issues**

### **i. Environmental Issues**

The sub-project will have limited, site-specific impacts reversible in nature. However, in this sub-project, most of environmental impacts are expected during construction phase. Small chambers will be excavated to install bulk water flow meters on bulk water lines. Base slab, walls and roof of the chambers will be constructed with concrete. Due to excavation work, it is anticipated that health and safety of contractor's staff (labors) as well as of local community would be a serious concern. During construction, there would also be a slight increase in air pollution due to excavation. It is estimated that small amount of excavated material would be used as back filling and remaining excavated material would be disposed of at disposal site.

The intermediate chlorination stations will be installed within the premises of the existing water pumping stations. Installation of chlorination stations will involve the construction of a small room to house disinfectant dozer and dosing tank. As construction activities will be carried out on a very small scale as well as within the premises of existing pumping stations, therefore, it is anticipated that the sub-project activities will have only a few limited site-specific impacts which would be reversible and will not pose any adverse environmental impacts. However, storage and handling of chemical (disinfectant) may cause health and safety issues during the operation phase.

The proposed location of flow meters is mostly at the main roads which is the property of state and a few flow meters will be installed within premises of water filtration plants/pumping stations. The construction activities for installation of bulk flow meters may cause traffic disruption on the main roads as traffic volume on the roads varies from low to high during various hours of the day. However, the impact will be minor and limited and hence will not create major traffic issues.

There are no protected areas or threatened or endangered endemic species in the sub-project area. However, churches, schools, mosques and basic medical facilities are present in abundance, which will not face direct impact due to construction activities of the sub-project.

The execution of sub-project does not involve any tree cutting.

### ***Presence of Eco-Sensitive Features/ Natural Habitats***

No eco-sensitive features or natural habitats were identified in the sub-project area.

### ***Clearance of Vegetation***

The sub-project activities do not involve clearance of vegetation. No direct impact on flora is envisaged however due to movement of machinery and piling of excavated material and other

construction material, the native flora may be affected. Therefore, the contractor should remain confined to the sub-project area and take due care in movement of machinery and storing of material.

### ***Flooding***

The sub-project activities will not create flooding in the sub-project area.

### ***Disruption to Traffic and Visitors***

The sub-project activities will create minor disruption for traffic hence a traffic management plan will be required to ensure smooth flow of traffic. A Traffic Management Plan is already given in Figure 6.2. However, the Construction Contractor shall prepare the site-specific plan in liaison with the traffic police/relevant authorities.

### ***Noise and Dust***

Noise and dust will be generated due to sub-project activities and will require regular sprinkling of water. However, no sensitive receptors are present in close vicinity of the flow meter locations.

### ***Health and Safety of Workers and Communities***

The construction activities pose occupational and community health and safety (OCHS) risks. The OCHS issues are also associated with the operation of construction machinery and equipment, which may cause minor and severe injuries to workers. Accidental contact of workers with underground electrical cables during excavation will also be a major concern. It will be a long term and severe negative impact.

The community will also be exposed to accidental risks due to open trenches, electrical cables, construction machinery as well as dust and noise.

The workforce involved in the operation of intermittent chlorination stations may get exposed to the chemicals involved in the chlorination.

## **ii. Social Issues**

### ***Availability of Land***

The proposed subproject does not involve any land acquisition. The proposed subproject involves installation of bulk flow meters on existing bulk water lines along the main roads, which are the properties of the state whereas chlorination station will be installed within premises of existing water pumping stations.

### ***Impact on Livelihood***

No adverse impacts on the livelihood are envisaged due to sub-project activities. Maximum efforts have been made to avoid the loss of livelihood by adjusting the locations of bulk flow meters in a manner to ensure minimum restriction in access.

Positive impacts in terms of employment opportunities are anticipated as many skilled, semi-skilled and un-skilled personnel will get direct and indirect employment during construction phase. Wider, flow-on economic impacts will be experienced in other sectors of economy as a result of purchase of construction materials and the payment of wages and salaries.

### **Women Harassment**

Women may face harassment issues during construction due to labor influx. The impact is minor and low adverse in nature since the number of workers involved in the project are very low and the project locations are widespread.

### **Anti-Encroachment Drive (AED)**

In accordance with the SMF of KWSSIP, no project works can be undertaken in areas that have been impacted by the AED. In compliance with this requirement, an AED related screening of the sub project was conducted with the involvement of Commissioner Karachi office and concerned Deputy Commissioner (DC) office. It was established that no AED has been conducted in the sub-project area since October, 2018. A no-objection certificate (NOC) was issued by the concerned DC office for this purpose. AED screening report along with NOC issued by concerned DC office is attached as **Annex - III**.

## **C. Findings of Environmental Screening**

Summary of findings of Environmental Screening of Bulk Flow Meters and Intermittent Chlorination Stations are given in **Table 5.1**. For detailed checklists please refer to **Annex – IV (IV-A, IV-B, IV-C)**.

**Table 5.1: Findings of Environmental Screening**

Screening Parameters	Bulk Flow Meters		Intermittent Chlorination Stations	
	Construction	Operation	Construction	Operation
Presence of Eco Sensitive Receptors	x	x	x	x
Clearance of Trees/ Vegetation	x	x	x	x
Water Pollution	x	x	x	x
Flooding	x	x	x	x
Soil Contamination	✓	x	✓	x
Noise & Dust	✓	x	✓	x
Disruption to Traffic and Visitors	✓	x	x	x
Disturbance to Existing Infrastructure	✓	x	x	x
Health & Safety Issues	✓	✓	✓	✓

**Legend:**

- ✓ = Impact triggers due to sub-project activities
- ✗ = Impact does not trigger due to sub-project activities

All the aspects marked as ‘✓’ may get triggered during the execution of the sub-project, however, they will have very low significance and can be easily mitigated by adopting the basic mitigation measures. The contamination of soil may occur during concrete work, minor noise for limited time period will be generated, smaller quantities of dust will be generated during excavation works for the trenches, minor disruption to the localized traffic as well as minor health and safety issues including minor injuries may take place.

Before execution of work at each site (bulk flow meter/intermediate chlorination station), the construction contractor (CC) shall prepare site specific environmental checklists and will get it approved from the PIU and WB. These checklists will include site photographs, the layout of the area, and mitigation measures. This activity shall jointly be carried out by the supervision consultants (SC) and the construction contractor (CC). Sample environmental screening checklist is attached as Annex - XII.

**D. Categorization Based on Environmental Screening**

The impacts identified during the screening process are envisaged to be minor, low adverse, and reversible in nature. The quantum of work and the related activities shall not create significant changes. Therefore, the sub-project is categorized as Category C sub-project as given in **Table 5.2**.

**Table 5.2: Categorization Based on Environmental Screening**

Sub-Project	Categorization	Further Studies Required
Bulk Flow Meters	C	None
Intermittent Chlorination Stations	C	None

**E. Findings of Social Screening**

Summary of findings of Social Screening of Bulk Flow Meters and Intermittent Chlorination Stations are given in **Table 5.3**. for detailed checklists please refer to **Annex – V (V-A, V-B, V-C)**.

**Table 5.3: Initial Findings of Social Screening**

Screening Parameters	Bulk Flow Meters		Intermittent Chlorination Stations	
	Construction	Operation	Construction	Operation
Land Acquisition	✗	✗	✗	✗
Loss of Shelter	✗	✗	✗	✗

Screening Parameters	Bulk Flow Meters		Intermittent Chlorination Stations	
	Construction	Operation	Construction	Operation
Loss of Agriculture	x	x	x	x
Loss of crops, trees and fixed assets	x	x	x	x
Loss of Business/Livelihood (Temporary)	x	x	x	x
Loss of Business/Livelihood (Permanent)	x	x	x	x
Loss of Sources of Income	x	x	x	x
Dislocation of People	x	x	x	x
Disturbance to traffic	✓	x	x	x
Indigenous Peoples	x	x	x	x
Anti-Encroachment Drive	x	x	x	x
Labour influx	✓	x	✓	x
Gender issues	✓	x	x	x
Community Health and Safety	✓	x	x	x

**Legend:**

- ✓ = Impact triggers due to sub-project activities
- x = Impact does not trigger due to sub-project activities

Before execution of work at each site (bulk flow meter/intermediate chlorination station), the construction contractor (CC) shall prepare site specific social checklists and will get it approved from the PIU and WB. These checklists will include site photographs, the layout of the area, and mitigation measures. This activity shall jointly be carried out by the supervision consultants (SC) and the construction contractor (CC). Sample social screening checklist is attached as Annex - XII.

**F. Categorization Based on Social Screening**

It is envisaged that the proposed sub-project will pose minimal social impacts and no resettlement impacts. Therefore, the sub-project is categorized as Category C project as given in **Table 5.4** based on the findings of social screening:

**Table 5.4: Categorization Based on Social Screening**

<b>Sub-Project</b>	<b>Categorization</b>	<b>Further Studies Required</b>
Bulk Flow Meters	C	None
Intermittent Chlorination Stations	C	None
<p><b><i>Social/ Resettlement Screening Categorization:</i></b></p> <p><i>Number of PAPs ≥ 200, Category A</i>  <i>Number of PAPs &lt; 200, Category B</i>  <i>Number of PAPs = 0, Category C</i></p>		

## 6. ENVIRONMENTAL AND SOCIAL MITIGATION and MONITORING PLAN

To ensure environmental and social compliance with regulations and guidelines, a brief Environmental and Social Mitigation and Monitoring Plan has been prepared.

The objective of the Environmental and Social Mitigation and Monitoring Plan (ESMMP) is to ensure implementation of the proposed mitigation measures during design, construction and operational phases of the proposed sub-project. The ESMMP defines roles and responsibilities, reporting mechanism, training needs and schedules and budget to implement the ESMMP.

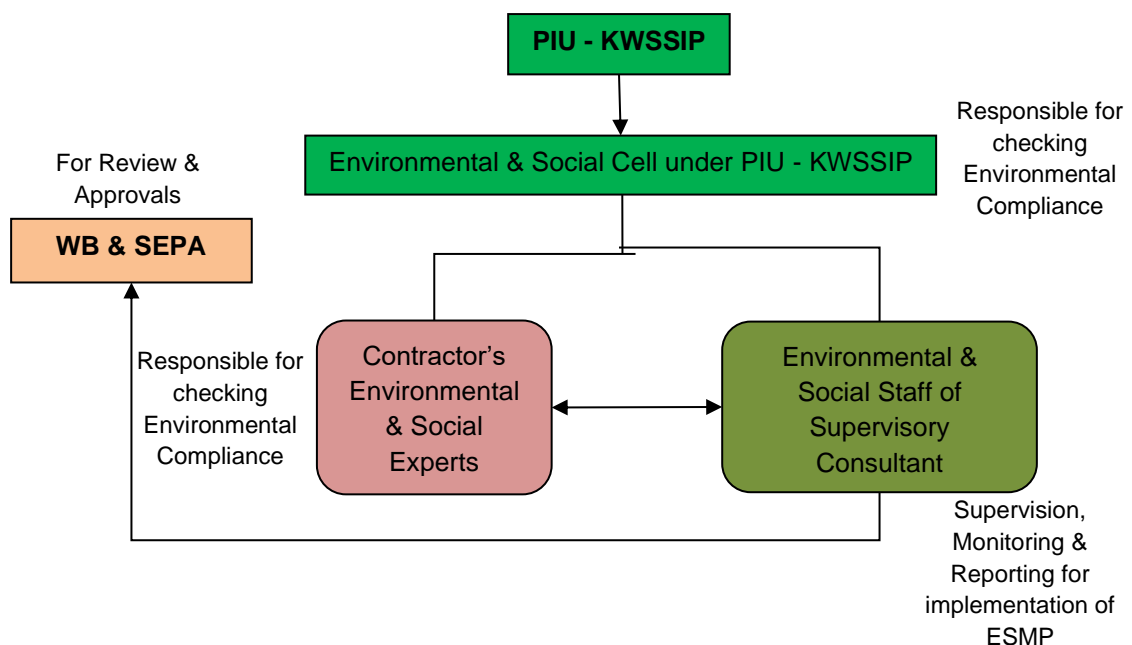
\*

The current screening report shall be the part of bidding documents and its implementation will be the legal binding on the construction contractor (CC).

### 6.1 Implementation of ESMMP

The institutional arrangement for the implementation of ESMMP for the subproject is presented in **Figure 6.1**. The proponent PIU-KWSSIP will be responsible for the compliance of environmental and social safeguard requirements of the KWSSIP.

The project activities will be monitored and managed by the PIU-KWSSIP. The Environmental and Social Cell (ESC) staffed by qualified environmental and social specialist has already been established under PIU-KWSSIP. The Environmental & Social Cell (ESC) will be the custodian of the ESMMP. ESC will submit progress reports for the implementation of the ESMMP to WB and SEPA as per environmental approval/ NOC conditions for the KWSSIP.



**Figure 6. 1: Organizational Setup for implementation of ESMMP**

### **6.1.1 Roles and Responsibilities of the Functionaries involved in ESMMP Implementation**

#### **A. SEPA**

As per Sindh Environmental Protection Act, 2014, SEPA is responsible for the approval of the Environmental Assessment reports.

#### **B. PIU-KWSSIP and ESC**

The Project Director of PIU-KWSSIP is in-charge for the financial and technical matters related to KWSSIP project. The PIU responsibilities for monitoring the ESMMP will consist of:

- Ensuring that the required environmental and social training are provided to the concerned PIU staff;
- To carrying out random visits to the construction sites to review the environmental and social performance of the Contractor;
- Review monitoring reports for the progress of environment and social management of the sub-project;
- Make sure that the Contractor is implementing the additional measures suggested by the Supervision Consultant (SC) in environmental and social monitoring reports;
- To assist Contractor for obtaining necessary approvals from the concerned departments;
- Maintaining interface with the other line departments/ stakeholders; and
- Reporting to the SEPA on status of ESMMP implementation.
- Make sure that all the contractual obligations related to the environmental and social compliance are met;
- Monitor the progress regarding implementation of environmental and social safeguards as provided in the ESMMP;
- Oversee the compliance of all the monitoring programs as given in ESMMP;
- Check randomly whether monitoring of the environmental aspects of the Project during construction and operational phases is being properly carried out;
- Document and disclose monitoring results and identify necessary corrective and preventive actions in the periodic monitoring reports, and make follow-up on these actions to ensure progress toward the desired outcomes;
- Make sure that the Contractor implements the additional measures suggested by the M&E Contractor; and
- Report the status of ESMMP compliance to Project Director, PIU-KWSSIP.

#### **C. Supervision Consultant (SC)**

Roles and responsibilities of SC will be:

- To oversee the performance of the Contractor to make sure that the Contractor is complying with ESMMP;
- Ensuring that the day-to-day construction activities are carried out in an environmentally

and socially sound and sustainable manner;

- Strong coordination with the Contractor and PIU-KWSSIP;
- Preparing E&S training materials and implementing programs;
- Ensure the implementation of the mitigation measures suggested in ESMMP;
- To supervise and monitor environmental and social activities being performed at site;
- To organize periodic environmental and social training programs and workshops for the consultant's and contractor's staff;
- Periodic reporting as mentioned in ESMMP; and
- Suggest any additional mitigation measures (if required).

#### **D. Construction Contractor (CC)**

The contractor will be primarily responsible for ensuring implementation of the mitigation measures proposed in the ESMMP, which will be part of the contract documents and its implementation will be a contractual binding for the contractors. The provision of the environmental and social mitigation cost will be made in the total cost of project. However, if the contractor fails to comply with the implementation of ESMMP and submission of the monthly compliance reports, deductions will be made from the payments to the Contractor claimed under the heads of environmental and social components.

Contractors will be bound to carry out following activities:

- Implementation of the mitigation measures as detailed in ESMMP at construction site;
- Contractor will be bound through contract to take actions against all the special and general provisions of the contract document;
- Contractor will make sure the compliance of ESMMP requirements related with construction;
- 
- Implementation of OCHS control measures including provision of proper Personal Protective Equipment (PPE) to the workers and train them for their proper use;
- Compliance with international best SOPs for COVID 19;
- To conduct the environmental and health and safety training to the workers/labour; and
- To assess the site-specific issues and implement mitigation measures accordingly

The contractor shall prepare a site specific ESMMP based on the current ESMMP and will get it approved from SC. This will ensure the implementation of the ESMMP based on the site conditions at the time of execution, by the contractor

**Table 6. 1: Environmental and Social Mitigation and Monitoring Plan**

Sr. No	Activity	Impacts	Mitigation	Implementation Responsibility	Monitoring Parameter	Monitoring Frequency	Monitoring Responsibility	Cost
<b>A: Design/ Pre-Construction Phase</b>								
1.	Engineering Design	▪ Earthquake	▪ Ensure Seismic provision in all engineering and structural design as per Seismic Building Code of Pakistan (2007). i.e., structures of bulk flow meter chambers and rooms for intermittent chlorination stations (including walls, slabs and columns) etc. will be designed with seismic provisions.	DC, PIU-KWSSIP	Design Parameters as defined by Seismic Building Code	Once (after completion of Detailed Design)	PIU	N/A
		▪ Flood	▪ Avoid construction through flood prone area, if not possible, provide flood protection embankment/ RCC Retaining wall and design measures on the basis of 100 year flood data	DC, PIU-KWSSIP	Design provisions	Once (after completion of Detailed Design)	PIU	N/A
2.	Site Selection	▪ Resettlement issues of local people, disturbance to properties/ businesses	▪ Selection of the location with minimum resettlement of the structures/ people/ businesses	DC, PIU-KWSSIP	Sub-project site	Once (after completion of Detailed Design)	PIU	N/A
		▪ Tree cutting	▪ Assure minimum tree cutting and vegetation clearance during alignment selection	DC, PIU-KWSSIP	Sub-project site	Once (after completion of Detailed Design)	PIU	N/A

Sr. No	Activity	Impacts	Mitigation	Implementation Responsibility	Monitoring Parameter	Monitoring Frequency	Monitoring Responsibility	Cost
		<ul style="list-style-type: none"> <li>Vehicle and road accident</li> </ul>	<ul style="list-style-type: none"> <li>Selection of locations with minimum disturbance to traffic.</li> <li>Designing of traffic management plan. (See <b>Figure 6.2</b> below)</li> </ul>	DC, PIU-KWSSIP	Design provisions	Once (after completion of Detailed Design)	PIU	N/A
3.	Public and Cultural Properties	<ul style="list-style-type: none"> <li>Disturbance to people visiting public properties i.e., mosque, schools, shrines, and graveyards etc.</li> </ul>	<ul style="list-style-type: none"> <li>Incorporate technical design features to minimize the sub-project construction activities result in disturbance/interference with cultural site and public property as far as possible</li> </ul>	DC, PIU-KWSSIP	Sub-project Site	Once (after completion of Detailed Design)	PIU	N/A
4.	Shifting of Public Utilities	<ul style="list-style-type: none"> <li>Possible disturbance to the public and existing infrastructure</li> </ul>	<ul style="list-style-type: none"> <li>Incorporate technical design features to minimize effect on public utilities.</li> <li>All public utilities likely to be affected by the proposed sub-project need to be relocated well ahead of the commencement of construction work.</li> </ul>	DC, PIU-KWSSIP	Design provisions	Once (after completion of Detailed Design)	PIU	N/A
				DC, PIU-KWSSIP	Relocation of utilities	Once (after completion of Detailed Design)	PIU	N/A
5.	Land Acquisition	<ul style="list-style-type: none"> <li>no impacts are envisaged</li> </ul>	<ul style="list-style-type: none"> <li>No mitigation measures will be required</li> </ul>	DC, PIU-KWSSIP	Sub-project site	Once (after completion of Detailed Design)	PIU	N/A
6	E&S Screening	<ul style="list-style-type: none"> <li></li> </ul>	<ul style="list-style-type: none"> <li>A screening checklist will be filled for each Flow Meter and Chlorination</li> </ul>	SC/PIU	Filled checklist for each site	Once before the construction works	SC	N/A

Sr. No	Activity	Impacts	Mitigation	Implementation Responsibility	Monitoring Parameter	Monitoring Frequency	Monitoring Responsibility	Cost
			site before commencing the construction works					
<b>B: Construction Phase</b>								
1.	Site clearing or Leveling	▪ Loss of vegetation may occur	▪ Ensure minimum disturbance to native flora during construction by remaining confined to the sub-project area and taking due care in movement of machinery and storing of material.	CC, SC and PIU-KWSSIP	Visual Observation	Daily	CC, SC & PIU	Cost of all these mitigation measures will be included in the sub-project estimate
		▪ Soil erosion	▪ Minimize the amount of clearing. Clear small areas for active work, one at a time;		Visual Observation	Daily	CC, SC & PIU	
			▪ Install temporary erosion control features when permanent ones will be delayed. Use erosion control measures such as hay bales, berms, straw, or fabric barriers;		Visual Observation	Daily	CC, SC & PIU	
2.	Establishment of construction camp	▪ Conflict due to use of private land for camp construction	▪ The centralized construction camp will not be required. However, tent facilities may be provided at open spaces away from residential areas to avoid conflicts with the community.	CC, SC and PIU-KWSSIP	Report of issue	Once (at the time of establishment of construction camps i.e., tents)		N/A

Sr. No	Activity	Impacts	Mitigation	Implementation Responsibility	Monitoring Parameter	Monitoring Frequency	Monitoring Responsibility	Cost
			<ul style="list-style-type: none"> <li>▪ Provide septic tanks for treating sewage from toilets before discharging through soakage pit.</li> <li>▪ The contractor shall adopt environmental code of practices (ECOPs) as <b>Annex – VIII</b></li> </ul>					
		<ul style="list-style-type: none"> <li>▪ Social conflicts due to influx of external workforce</li> </ul>	<ul style="list-style-type: none"> <li>▪ Labour camp(s) will be established away from residential population;</li> <li>▪ Preference will be given to the local people to work with contractor, and contractor should hire maximum labour force from the project area because this will reduce the labour influx;</li> <li>▪ Awareness will be created among the work force to ensure respect for local customs;</li> <li>▪ Construction work should be completed within the stipulated time to move workers to next location;</li> <li>▪ Labor force should be shuffled with the time;</li> <li>▪ An effective GRM has been established for the project to resolve all issues related to the community. Thus, progress regarding</li> </ul>		Report of issue	Daily	CC, SC & PIU	

Sr. No	Activity	Impacts	Mitigation	Implementation Responsibility	Monitoring Parameter	Monitoring Frequency	Monitoring Responsibility	Cost
			<p>resolving the issues should be monitored closely.</p> <ul style="list-style-type: none"> <li>▪ Create awareness among workers on proper sanitation and hygiene practices to endorse proper health and maintain good housekeeping practices at all project sites;</li> <li>▪ Provide adequate personal hygiene facilities in good condition with adequate supply of clean water;</li> <li>▪ Make arrangements to treat the affected workers on time to control the movement of vectors disease;</li> <li>▪ Sensitize workers and surrounding communities on awareness and prevention of human immunodeficiency virus (HIV)/ acquired immunodeficiency syndrome (AIDS) and sexually transmitted infections (STI) through training, awareness campaigns and</li> </ul>					

Sr. No	Activity	Impacts	Mitigation	Implementation Responsibility	Monitoring Parameter	Monitoring Frequency	Monitoring Responsibility	Cost
			<p>workshops during community meetings;</p> <ul style="list-style-type: none"> <li>▪ Provide proper and free HIV/AIDS and STI health screening and counselling for site workers and community members;</li> <li>▪ Strictly enforce the workers' code of conduct (attached as Annex- X) to regulate behavior in the local communities;</li> <li>▪ Prohibiting drugs, alcohol, weapons, and ammunition on the worksite among personnel;</li> <li>▪ Site security preparations must be contained within the Bills of Quantities (BOQs) to avoid any delays which might be caused due to insecurity;</li> <li>▪ Appropriate fencing, security check points, gates and security guards should be provided at the construction sites to ensure the security of all plant, equipment, machinery and materials, as well as to secure the safety of site staff; and</li> </ul>					

Sr. No	Activity	Impacts	Mitigation	Implementation Responsibility	Monitoring Parameter	Monitoring Frequency	Monitoring Responsibility	Cost
			<ul style="list-style-type: none"> <li>The Contractor must guarantee that good relations are maintained with local communities and their leaders to help reduce the risk of vandalism and theft.</li> </ul>					
		<ul style="list-style-type: none"> <li>Health issues in workers due to contaminated drinking water.</li> </ul>	<ul style="list-style-type: none"> <li>Contractor shall ensure provision of safe drinking water to the workers.</li> </ul>		Visual observation	Daily	CC, SC & PIU	
		<ul style="list-style-type: none"> <li>Low aesthetic value if camp site is not restored to its original landscape</li> </ul>	<ul style="list-style-type: none"> <li>The site shall be restored to its original conditions as far as possible.</li> </ul>		Visual observation	Once (after completion of construction activities)	CC, SC & PIU	
3.	Excavation of Earth	<ul style="list-style-type: none"> <li>Loss of fertile top layer of soil</li> <li>Air quality may also deteriorate</li> </ul>	<ul style="list-style-type: none"> <li>Excavation should be confined as per approved engineering drawings.</li> <li>Water sprinkling must be done to suppress the dust.</li> </ul>	DC, Contractor	Design provisions	Once (after completion of Detailed Design)	PIU	N/A
4.	Transportation of construction material	<ul style="list-style-type: none"> <li>Smoke and dust generation;</li> <li>Spillage of material;</li> <li>Air pollution</li> <li>Water pollution</li> <li>Noise pollution</li> <li>Occupational, Health and Safety issues</li> </ul>	<ul style="list-style-type: none"> <li>Regular inspection, tuning and maintenance of transport vehicles;</li> <li>Material transport in closed vehicle or covered with canvas/ plastic sheets.;</li> </ul>	CC, SC and PIU-KWSSIP	Visual observation	Daily	CC, SC & PIU	

Sr. No	Activity	Impacts	Mitigation	Implementation Responsibility	Monitoring Parameter	Monitoring Frequency	Monitoring Responsibility	Cost
			<ul style="list-style-type: none"> <li>▪ Sprinkling of water on site and on routes near communities;</li> <li>▪ Selection of up-to-date and well-tuned vehicles or equipment with reduced noise levels ensured by suitable in-built damping techniques or appropriate muffling devices;</li> <li>▪ Avoiding movement of vehicles at night near communities.</li> <li>▪ Use of sign board at construction site;</li> <li>▪ Use of PPE; give awareness to the drivers; Avoid over speeding near communities; Training of construction workers.</li> </ul>					Cost of PPEs is already included in Table 6.6
5.	Construction Works	<ul style="list-style-type: none"> <li>▪ Soil erosion and contamination</li> <li>▪ Accident risks</li> <li>▪ Loss of natural vegetation and associated fauna</li> <li>▪ Damage to infrastructure</li> <li>▪ Noise pollution</li> <li>▪ Air pollution</li> <li>▪ Land degradation; soil erosion; pooling of water and</li> </ul>	<ul style="list-style-type: none"> <li>▪ Proper compaction to minimize wind and water erosion;</li> <li>▪ Machinery and equipment will not be repaired and maintained at the site;</li> <li>▪ Usage of PPEs;</li> <li>▪ Provision of first aid kits and emergency vehicle;</li> <li>▪ Trained drivers will be hired to operate machinery safely;</li> <li>▪ Availability of trained operator to operate machinery;</li> </ul>	<ul style="list-style-type: none"> <li>▪ CC, SC and PIU-KWSSIP</li> </ul>	Visual observation	Daily	CC, SC & PIU	Cost of PPEs and first aid kits is already included in Table 6.6

Sr. No	Activity	Impacts	Mitigation	Implementation Responsibility	Monitoring Parameter	Monitoring Frequency	Monitoring Responsibility	Cost
		<ul style="list-style-type: none"> <li>drainage problem</li> <li>▪ Residual wastes; construction material waste</li> </ul>	<ul style="list-style-type: none"> <li>▪ Restoration/ rehabilitation of damaged infrastructure with entire satisfaction of the affected persons</li> <li>▪ Use of noise reduction devices;</li> <li>▪ Regular inspection, maintenance and lubrication of the construction vehicle and equipment;</li> <li>▪ Avoid night time activity.</li> <li>▪ Water sprinkling particularly at work sites near the communities;</li> <li>▪ Remove any left-over construction material/wastes from the construction sites;</li> <li>▪ The contractor shall adopt environmental code of practices (ECOPs) as <b>Annex - VIII</b></li> </ul>					
6.	Community Health & Safety (CHS)	<ul style="list-style-type: none"> <li>▪ Accident risks, particularly for local population living within/near the subproject especially women, children and elderly people;</li> <li>▪ Deterioration of health due to dust.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Preparation and implementation of CHS Management Plan</li> <li>▪ Barricading work areas to avoid entry of any unauthorized person in the construction site</li> <li>▪ Public awareness campaigns through displaying sign board at site and haulage routes;</li> </ul>	<ul style="list-style-type: none"> <li>▪ CC, SC, PIU-KWSSIP</li> </ul>	Visual observation & reporting of accident	Daily	CC, SC & PIU	Cost of first aid box is already included in Table 6.6

Sr. No	Activity	Impacts	Mitigation	Implementation Responsibility	Monitoring Parameter	Monitoring Frequency	Monitoring Responsibility	Cost
			<ul style="list-style-type: none"> <li>▪ Interaction with community;</li> <li>▪ Availability of first aid box for locals;</li> <li>▪ Strict enforcement keeping non-working persons, particularly children, away from work sites by cordoning off the sites with the barricade</li> <li>▪ Adequate signage to manage traffic at sites, haulage and access roads;</li> <li>▪ Ensure water sprinkling.</li> <li>▪ Maintain a complaint register on site and it must be communicated to the internal staff and the public.</li> <li>▪ Close consultation with local communities to identify optimal solutions where needed</li> <li>▪ Community grievances will be recorded and responded to on an urgent basis.</li> <li>▪ No Hazardous and non-hazardous waste will be dumped outside any community.</li> </ul>					

Sr. No	Activity	Impacts	Mitigation	Implementation Responsibility	Monitoring Parameter	Monitoring Frequency	Monitoring Responsibility	Cost
7.	Handling of solid waste	Solid waste may be generated from the active construction sites and also from the camp sites	<ul style="list-style-type: none"> <li>▪ Training of site personnel in waste management,</li> <li>▪ Recording system for the amount of waste generated, recycled and disposed,</li> <li>▪ Proper storage and site practices to minimize the potential for damage or contamination of construction material,</li> <li>▪ General refuse should be stored in enclosed bins to separate from construction material, and</li> <li>▪ Contractor shall safely remove the general refuse from the site.</li> <li>▪ The contractor shall adopt environmental code of practices (ECOPs) as <b>Annex – VIII.</b></li> </ul>	CC, SC and PIU-KWSSIP	Visual observation	Daily	CC, SC & PIU	PKR 250,000/- (5 containers @ PKR 50,000)
8.	Excavation, cutting, and filling	<ul style="list-style-type: none"> <li>▪ The excavated areas are a hazard to community and workers.</li> <li>▪ The storing or excavated material at site would add on to the access and traffic congestion</li> </ul>	<ul style="list-style-type: none"> <li>▪ Place fence around excavation;</li> <li>▪ Have construction crews and supervisors be alert for buried historic, religious, and cultural objects and provide them with procedures to follow if such objects are discovered. Provide incentives for recovery of</li> </ul>	CC, SC and PIU-KWSSIP	Visual observation	Daily	CC, SC & PIU	

Sr. No	Activity	Impacts	Mitigation	Implementation Responsibility	Monitoring Parameter	Monitoring Frequency	Monitoring Responsibility	Cost
		<p>issues.</p> <ul style="list-style-type: none"> <li>▪ Soil erosion may occur at the site where excavation will be done</li> <li>▪ Soil un-stability and surface water contamination may also occur.</li> </ul>	<p>objects and disincentives for their destruction; and</p> <ul style="list-style-type: none"> <li>▪ The Chance Find Procedure attached as <b>Annex-VI</b> shall be adopted if any physical cultural resource (PCR) is encountered during construction activities.</li> <li>▪ Water sprinkling should be carried out at the temporary access road and all the areas prone to dust generation.</li> </ul>					
9.	Traffic control	<ul style="list-style-type: none"> <li>▪ Traffic jams and congestion may take place and cause inconvenience to the people where the construction of interchanges will take place</li> </ul>	<ul style="list-style-type: none"> <li>▪ The contractor will prepare site specific traffic management plan in consultation with traffic police/relevant authorities in the light of traffic diversion plan attached as <b>Figure 6.2</b></li> <li>▪ Provision of signboards directing the drivers about the diversion;</li> <li>▪ Providing and maintaining traffic management comprising diversion warning, guiding and regulatory signage, channelizes and delineators, lightening etc.;</li> </ul>	CC, SC and PIU-KWSSIP	Visual observation	Daily	CC, SC & PIU	

Sr. No	Activity	Impacts	Mitigation	Implementation Responsibility	Monitoring Parameter	Monitoring Frequency	Monitoring Responsibility	Cost
			<ul style="list-style-type: none"> <li>▪ Movement of vehicles carrying construction material should be restricted;</li> <li>▪ Availability of continuous services of the police in the diversion and control of traffic.</li> </ul>					
10.	Occupational Health & Safety (OHS)	<ul style="list-style-type: none"> <li>▪ Chances of contact with underground electrical cables during excavations;</li> <li>▪ Chances of roadside accidents during construction;</li> <li>▪ Slip and fall hazard of construction workers</li> <li>▪ Risks associated with working in confined spaces</li> </ul>	<ul style="list-style-type: none"> <li>▪ Preparation and implementation of OHS Management Plan</li> <li>▪ Regular OHS training</li> <li>▪ Obtain as built drawings of existing infrastructure from concerned departments and plan accordingly Ensure prior shifting/ relocation of existing amenities;</li> <li>▪ Barricade excavated sites;</li> <li>▪ Provision of PPEs to workers;</li> <li>▪ Implementation of HSE protocols at site;</li> <li>▪ The labor having transmittable diseases should not be allowed on the construction site;</li> <li>▪ The contractor will ensure and strictly implement the SOPs regarding COVID-19 (see <b>Annex – VII</b>), including daily body</li> </ul>	CC, SC and PIU-KWSSIP	Visual observation & reporting of accident	Daily	CC, SC & PIU	<p>PKR 505,000/- (for 50 workers)</p> <p>PKR 20,000/- (assuming construction activities at 5 locations at a time)</p> <p>Cost of PPEs is included in Table 6.6.</p> <p>PKR 67,500/- (5 DCP and 5 CO<sub>2</sub> fire extinguishers)</p>

Sr. No	Activity	Impacts	Mitigation	Implementation Responsibility	Monitoring Parameter	Monitoring Frequency	Monitoring Responsibility	Cost
			<p>temperature check, daily disinfection, quarantine management, area access management, PPEs, emergency response, and drills;</p> <ul style="list-style-type: none"> <li>▪ The proposed area is congested, there should be sufficient signage to warn of dangers and hazards on a construction or worksite. Signs should be clear and accompanied by ropes, cones, and other equipment to cordon off dangerous areas.</li> <li>▪ Conduct worksite inspections daily to identify any potential dangers or hazards. Dangers and hazards should be cordoned off immediately. Properly cordon off the construction area and unauthorized entry should not be allowed, please.</li> <li>▪ Only skilled workers will be allowed to work at the construction site;</li> <li>▪ Provision of first aid facilities for workers at site for meeting the</li> </ul>					

Sr. No	Activity	Impacts	Mitigation	Implementation Responsibility	Monitoring Parameter	Monitoring Frequency	Monitoring Responsibility	Cost
			<p>emergency needs of workers, and providing basic medical training to specified work staff and basic medical service and supplies to workers;</p> <ul style="list-style-type: none"> <li>▪ Observe and maintain standards of Health and Safety towards all employees in line with WB EHS Guidelines along with Sindh Occupational Health and Safety Law</li> <li>▪ The contractor will follow Environmental Code of Practice (ECOPs) attached as <b>Annex – VIII</b>.</li> <li>▪ The contractor will ensure that hazards associated with manual lifting are controlled by proper lifting techniques, Work rotation system will reduce the chances of being exposed to work- related stress associated with construction activities.</li> <li>▪ Unauthorized personnel will not be allowed to access the proposed sub-project site without permission and safety permits.</li> </ul>					

Sr. No	Activity	Impacts	Mitigation	Implementation Responsibility	Monitoring Parameter	Monitoring Frequency	Monitoring Responsibility	Cost
			<ul style="list-style-type: none"> <li>▪ Workers should be facilitated by providing appropriate work specific personal protective equipment (PPE's).</li> <li>▪ Health and Safety Management Plan attached as <b>Annex – IX</b> must be adopted.</li> </ul>					
11.	Labor Living and Working Conditions	<ul style="list-style-type: none"> <li>▪ Provision of inadequate facilities to labour and workforce may arise grievances among them.</li> <li>▪ Issues related to labor influx</li> <li>▪ Gender Based Violence (GBV)</li> </ul>	<ul style="list-style-type: none"> <li>▪ The worker's Grievance redressal mechanism must be developed and communicated among workers to lodge complains;</li> <li>▪ Workers should be provided with clean drinking water and hygienic food for free;</li> <li>▪ Avoiding Gender Based Violence. Contractor will prepare and implement robust measures to address the risk of gender-based violence that include (i) mandatory and repeated training and awareness raising for the workforce about refraining from unacceptable conduct toward local community members, specifically women; (ii) informing</li> </ul>	CC, SC and PIU-KWSSIP	Visual observation	Daily	CC, SC & PIU	

Sr. No	Activity	Impacts	Mitigation	Implementation Responsibility	Monitoring Parameter	Monitoring Frequency	Monitoring Responsibility	Cost
			<p>workers about national laws that make sexual harassment and gender-based violence a punishable offence which is prosecuted; (iii) Introducing a Worker Code of Conduct as part of the employment contract, and including sanctions for noncompliance (e.g., termination), and (iv) contractors adopting a policy to cooperate with law enforcement agencies in investigating complaints about gender based violence.</p> <ul style="list-style-type: none"> <li>▪ The contractor shall pay equal wages to both male and female workers;</li> <li>▪ Use of child and forced labor will be strictly prohibited.;</li> <li>▪ Implement the Labor Management Plan (LMP) that has been prepared for KWSSIP-1.</li> <li>▪ The contractor shall adopt environmental code of practices (ECOPs) as <b>Annex – VIII.</b></li> </ul>					

Sr. No	Activity	Impacts	Mitigation	Implementation Responsibility	Monitoring Parameter	Monitoring Frequency	Monitoring Responsibility	Cost
12.	Socio-culture & Cultural Heritage	<ul style="list-style-type: none"> <li>Effect to cultural heritage sites and social norms of the sub-project area (the works will not be carried out in the immediate vicinity of any such sites/buildings)</li> </ul>	<ul style="list-style-type: none"> <li>Contractor will not cause any damage or harm to cultural heritage around the sub-project area. In case of any finding of PCR, Chance Find Procedure will be followed</li> <li>Pollution such as noise and dust generation will be avoided while working close to religious and ancient site. Contractors would be trained to address privacy issues behave ethically. The contractor's staff must be trained enough to respect local norms.</li> </ul>	CC, SC and PIU-KWSSIP	Visual observation	Daily	CC, SC & PIU	
13.	Site Restoration	<ul style="list-style-type: none"> <li>The excavated sites may not be restored to original</li> </ul>	<ul style="list-style-type: none"> <li>Contractor will obtain approval for excavation and submit the plan of rehabilitating the site after construction.</li> <li>Site restoration will be completed immediately after completion of the sub-project.</li> </ul>	CC, SC and PIU-KWSSIP	Visual observation	Once (after completion of construction activities)	CC, SC & PIU	
14.	Construction activities	<ul style="list-style-type: none"> <li>labor issues</li> </ul>	<ul style="list-style-type: none"> <li>The worker's Grievance redress mechanism will be developed and communicated among workers to lodge complains;</li> </ul>	CC, SC and PIU-KWSSIP	Visual inspection GRM Register Employment	During construction phase of the sub-project (Weekly basis)	CC, SC & PIU	

Sr. No	Activity	Impacts	Mitigation	Implementation Responsibility	Monitoring Parameter	Monitoring Frequency	Monitoring Responsibility	Cost
			<ul style="list-style-type: none"> <li>Workers will be provided with clean drinking water and hygienic food and safe &amp; healthy environment to work.</li> <li>Project workers will be paid on a regular basis as required by national law and labor management procedures such as Sindh Minimum Wages Act and Sindh Payment of Wages Act 2015.</li> <li>Where required by national law or the labor management procedures, project workers will receive written notice of termination of employment and details of severance payments in a timely manner.</li> <li>A child under the minimum age established in accordance with Employment of Child Act (1991) and no child will be employed or engaged in connection with the project.</li> <li>Use of child and forced labor will be strictly prohibited.</li> </ul>		Documents of Workers			

Sr. No	Activity	Impacts	Mitigation	Implementation Responsibility	Monitoring Parameter	Monitoring Frequency	Monitoring Responsibility	Cost
15.	Gender Based Violence (GBV)	<ul style="list-style-type: none"> <li>▪ Possible gender related issues due to construction activities</li> </ul>	<ul style="list-style-type: none"> <li>• Workers' code of conduct (CoC) (attached as Annex – X) shall be strictly implemented</li> <li>• Contractor must ensure that workers should not be allowed to accumulate or gather in the residential communities within the site.</li> <li>• Alternative routes/ pathways for pedestrian should be provided to avoid mixing of women with workers.</li> <li>• Raise awareness among the stakeholders specifically the resident communities and the labor of the potential risks of GBV, and establish response services in the nearby communities that can respond to instances of GBV (particularly those related to issues of labor inflow).</li> <li>• Provisions of gender disaggregated bathing, changing, and sanitation facilities; and Contractor should take proper measures to address and resolve issues relating to</li> </ul>	CC, SC and PIU-KWSSIP	Visual inspection GRM Register	During construction phase of the sub-project (Weekly basis)	CC, SC & PIU	

Sr. No	Activity	Impacts	Mitigation	Implementation Responsibility	Monitoring Parameter	Monitoring Frequency	Monitoring Responsibility	Cost
			<p>harassment, intimidation, and exploitation, especially in relation to women.</p> <ul style="list-style-type: none"> <li>• Develop and implement proper Labor Management Plan including a code of conduct for workers providing guidance on allowable behavior.</li> <li>• Preference will be given to the local people to work with contractor, and contractor should hire maximum labor force from the sub-project area, this will reduce the labor inflow.</li> <li>• Awareness will be created among the work force to ensure respect for local customs, norms and traditions.</li> <li>• Construction work will be completed in stipulated period of time.</li> </ul>					
<b>C: Operational Phase</b>								
1.	Maintenance & Repair	<ul style="list-style-type: none"> <li>▪ Deterioration/ wear &amp; tear would be caused with the passage of time</li> </ul>	<ul style="list-style-type: none"> <li>▪ The chambers should be made with removable covers to ease the maintenance</li> </ul>	KWSB	Visual observation	Periodically	KWSB	

Sr. No	Activity	Impacts	Mitigation	Implementation Responsibility	Monitoring Parameter	Monitoring Frequency	Monitoring Responsibility	Cost
		that requires regular maintenance						
2.	Occupational Health & safety (OHS)	<ul style="list-style-type: none"> <li>▪ In intermittent chlorination stations, eye contact with mild disinfectant solutions may cause short-term mild irritation, but solutions that are more powerful cause severe eye injuries</li> <li>▪ Exposure to sodium hypochlorite by inhalation of aerosols.</li> <li>▪ Ingestion of hypochlorite solutions leads to regurgitating and destructive injury of the gastrointestinal tract</li> </ul>	<ul style="list-style-type: none"> <li>▪ Proper use of PPEs while handling of these chemicals in intermittent chlorination stations.</li> <li>▪ Material Safety Data Sheets (MSDS) shall be readily available on site.</li> <li>▪ All the chemicals should be stored keeping in view the hazards associated to them</li> <li>▪ Eye wash station &amp; ventilation system shall be installed at storage room or work site.</li> <li>▪ Store away from public places.</li> <li>▪ Only authorized persons should be allowed to enter the site.</li> <li>▪ Storage area shall be used for separate item (for ease of identification).</li> <li>▪ Certain materials and substances shall be segregated during storage</li> </ul>	KWSB	Report of accident	Occasional	KWSB	PKR. 700,000/- (10 nos. @ PKR 70,000/-)

Sr. No	Activity	Impacts	Mitigation	Implementation Responsibility	Monitoring Parameter	Monitoring Frequency	Monitoring Responsibility	Cost
		<ul style="list-style-type: none"> <li>▪ Direct contact with hypochlorite solutions, powder, or concentrated fume causes extreme chemical burns, prompting cell demise and ulceration</li> <li>▪ Chlorine is heavier than air and may cause suffocation in ineffectively ventilated, encased, or low-lying regions.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Area shall be kept clean and tidy and routinely inspected</li> <li>▪ Appropriate warning signs shall be displayed where necessary e.g., flammable</li> <li>▪ Storage area shall not be used for other work activities</li> <li>▪ Firefighting equipment shall be provided at storage area.</li> <li>▪ Training shall be provided to workers for handling of chemicals</li> <li>▪ First aid facility shall be provided in such areas</li> <li>▪ Proper ventilation system shall be provided</li> </ul>					
3	Community Health & Safety (CHS)	<ul style="list-style-type: none"> <li>▪ Minor issues to local community during maintenance of bulk flow meters (i.e, removal of slabs/manhole covers of chambers of bulk flow</li> </ul>	<ul style="list-style-type: none"> <li>▪ The sites must be properly barricaded to avoid CHS issues during maintenance works</li> </ul>	KWSB	Visual observation	During maintenance	KWSB	

Sr. No	Activity	Impacts	Mitigation	Implementation Responsibility	Monitoring Parameter	Monitoring Frequency	Monitoring Responsibility	Cost
		meters for maintenance purposes etc.)						
4	Traffic Issues	<ul style="list-style-type: none"> <li>▪ Minor traffic issues may arise during maintenance</li> </ul>	<ul style="list-style-type: none"> <li>▪ Diversion of traffic using diversion cones and barricade the sites</li> </ul>	KWSB	Visual observation	During maintenance	KWSB	

**Legend:**

DC	Design Consultant	SC	Supervision Consultant
CC	Construction Contractor	PIU	Project Implementation Unit
KWSB	Karachi Water and Sewerage Board		

## 6.2 Monitoring

The overall objectives of the monitoring activities are to:

- Ensure regulatory requirements are met;
- Check that impacts do not exceed sub-project standards and other environmental standards;
- Verify that mitigation measures are effective and implemented in the manner described in **Table 6.1**;
- Provide early warning of potential environmental impacts; and
- Inform future operations and contribute to continuous improvement in the management of environmental and social issues related to the sub-project.

### 6.2.1 Monitoring Approach

Monitoring will be carried out by the Supervision Consultants (SC) and Project Implementation Unit (PIU), and its contractors pursuant to their contractual obligations to undertake inspections, monitoring and reporting. The following four types of inspections and monitoring will be employed.

- **Inspections** planned and conducted on a regular basis to ensure that mitigation measures and commitments are properly maintained and implemented, and that specific management procedures are being following (e.g., practices on waste storage and disposal).
- **Receptor monitoring** undertaken to verify predictions made in the screening report and to confirm that the activities at the site are not resulting in an unacceptable deterioration in the quality of habitats or infrastructure (e.g., monitoring disturbance to affected residents through a grievance mechanism).
- **Compliance monitoring** involving periodic sampling or continuous recording of specific environmental quality indicators or discharge levels to ensure compliance of discharges and emissions with project standards (e.g. produced water discharges and air emissions).

The frequency of inspections, monitoring and audits and subsequent reporting will be based on the sub-project risks. The outputs will be used in the following ways.

- To provide early warning for site management and to adjust mitigation measures on a day-to-day basis to cater evolving conditions.
- To enable contractors to demonstrate that mitigation measures and procedures laid down in mitigation plans are being followed and operations are being conducted within compliance limits.
- To provide formal assurance to PIU that the sub-project is compliant with regulations and agreed limits and that relevant mitigation / enhancement measures are being adhered to.

The monitoring checklist is attached as **Annex – XI**.

### 6.3 Reporting

The contractor shall prepare and submit monitoring reports for compliance of implementation to supervision consultant environmental team. The distribution of periodic reports is given in **Table 6.2**.

**Table 6. 2: Distribution of Periodic Reports**

Report	Prepared by	Reviewed by	Distribution
<b>Monthly</b>	Contractor	Reviewed by PIU-Environmental Unit; KWSSIP	The Engineer and Project Implementation Unit
<b>Quarterly</b>	1. Contractor 2. PIU Environmental Unit; KWSSIP	1. Reviewed by PIU-Environmental Unit; KWSSIP 2. Reviewed by PD KWSSIP	The Engineer, Project Implementation Unit and The World Bank
<b>Annual</b>	1. Contractor 2. PIU Environmental Unit; KWSSIP	1. Reviewed by PIU-Environmental Unit; KWSSIP 2. Reviewed by PD KWSSIP	The Engineer, Project Implementation Unit and The World Bank
<b>Final</b>	Contractor	Reviewed by PIU-KWSSIP-Environmental Unit; KWSSIP	The Engineer, Project Implementation Unit and The World Bank

### 6.4 Grievance Redress Mechanism (GRM)

This Section outlines the policy and procedure for documenting, addressing, responding and employing methods to resolve project grievances and complaints that may be raised by the project affectees or community members arising from environmental and social performance, the engagement process, resettlement and/or unanticipated environmental or social impacts resulting from project activities that are performed and/or undertaken by PIU. The Section describes the scope and procedural steps and specifies roles and responsibilities of the parties involved. The purpose of the Grievance Redress Committee (GRM) is to receive, review and resolve grievances from project affectees or community members and ensure smooth and fair implementation of subproject activities. The Grievance Redress Committee (GRC) and Gender Based Violence Committee (GBV) has been established in PIU-KWSSIP through a notification attached as **Annex-XII**.

#### 6.4.1 GRM Principles

A GRM is established to address any complaints or grievances arising during the implementation period of the projects. People of the project area may perceive risks to themselves or their property or their legal rights or have concerns about the possible adverse environmental and social impact that a project may have. Any concerns or grievances will be addressed quickly and transparently, and without retribution to the project affectees or community members or complainant.

The primary principle of GRM is that all complaints or grievances are resolved as quickly as possible in a fair and transparent manner. All minor complaints regarding E&S issues, land or property issues or business/livelihood losses will be addressed immediately at community level Grievance Redress Committee (GRC) through involvement of project affectees and community members. In case the grievances cannot be resolved at the community GRC, the project affectees or community members may make a complaint to the sub-project GRC and afterward at PIU-GRC, the details of which are provided under sub-sections. The focus of the GRM is to resolve issues in a customarily appropriate fashion and record details of the complaint, the complainant and the resolution.

#### **6.4.2 Objectives**

The objectives of the GRM are to:

- develop an organizational framework to address and resolve the grievances of individual(s) or community(s), fairly and equitably;
- provide enhanced level of satisfaction to the aggrieved;
- provide easy accessibility to the aggrieved/affected individual or community for immediate grievance redress;
- ensure that the targeted communities and individuals are treated fairly at all times;
- identify systemic flaws in the operational functions of the project and suggest corrective measures; and
- ensure that the operation of the project is in line with its conception and transparently to achieve the goals for sustainability of the project.

#### **6.4.3 Type of Complaints**

The major complaints that may arise during the execution of the proposed project at site include but not limited to:

- Resettlement issues including loss of livelihood;
- Issues related to compensation of resettlement impacts;
- Environment and social issues (dust, noise, air pollution, social and cultural issues);
- Damage and blockage of public utilities;
- Traffic inconvenience; and
- GBV and harassment.

#### **6.4.4 Disclosure of GRM**

The GRM shall be disclosed at PIU-KWSSIP, KWSB head offices, and concerned Executive Engineer (XEN) and Superintendent Engineer (SE) offices, KWSSIP website as well as on sub-project sites.

#### 6.4.5 Structure of Grievance Redress Mechanism

The project will establish a three-tier GRM comprising Community GRC, sub-project GRC; and PIU-GRC. These tiers are described below.

##### A. Community GRC (Tier-1)

The community-GRC will provide a platform for project affectees or community members to raise and discuss their concerns, resolve the E&S issues at the community level and coordinate with project management to communicate these E&S issues and concerns. Community-GRC will be established to maintain a close rapport and coordination with affected persons and community members throughout the project implementation. The Social Development Specialist (SDS) of PIU will facilitate for the establishment of community-GRC that is representative of the ethno-cultural and gender diversity within the community. The community-GRC will comprise the following six members with one as the committee convener:

- Three female members (from the project affectees or community members); and
- Three male members (from project affectees or community members).

The project E&S and engineering staff will coordinate with community-GRC to review and resolve the E&S issue or concern related to resettlement planning or implementation as well as environmental and social concerns preferably within five (05) working days from receipt of the grievance. Any complaints that cannot be resolved at community-GRC will be forwarded to the next tier.

##### B. Sub-Project GRC (Tier-2)

Sub-project will constitute a GRC headed by concerned Project Manager (PM) to resolve all grievances and complaints of the project affectees or community members. Sub-project GRC will comprise of the following members:

- Project Manager (PM), as head/convener of sub-project GRC;
- Environment, SDS and Gender specialists of PIU;
- E&S specialists of Supervision Consultant (SC)
- Resident Engineer of supervision consultant;
- A representative (E&S specialist) of contractor will act as focal point; and
- A representative of local community.

**Note:** Representative from any other district government department may be called as and when required by the sub-project GRC. Environmental Specialist of PIU and SC will join sub-project GRC meeting related to environmental issues only.

Sub-project GRC will meet once a month and when the need arises. The sub-project GRC will review grievances involving all E&S issues that may arise due to project implementation. Sub-project GRC will perform following functions:

- Record, categorize and prioritize the grievances that need to be resolved by the committee and resolve them within ten (10) working days;
- Invite and hear aggrieved persons/parties to produce evidence of their claims and record their view point;
- Communicate its decisions and recommendations on all resolved issues to project executors and the aggrieved persons for smooth implementation;
- Forward the unresolved cases/ complaints to PIU-GRC within an appropriate time frame with reasons recorded and its recommendations;
- Develop an information dissemination system and acknowledge the aggrieved persons/parties about the development regarding their grievance;
- Maintain a complaint register accessible to the project affectees or community members with brief information about complaints and sub-project GRC decision with status report; and,
- Maintain complete record of all complaints received by the sub-project GRC with actions taken.

Any complaint that cannot be resolved by the sub-project GRC, will be forwarded to the next tier – the PIU-GRC.

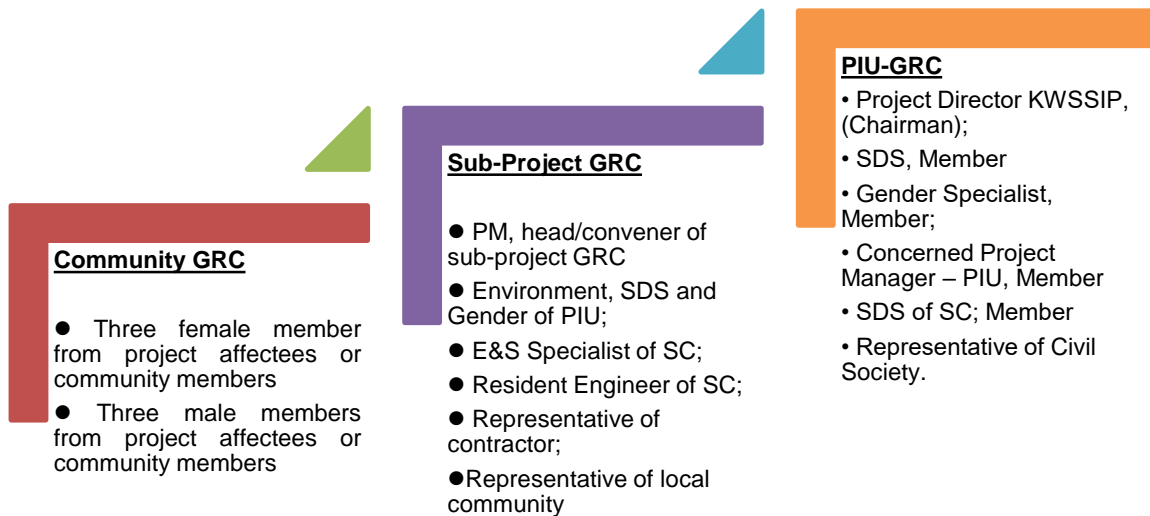
### **C. PIU-GRC (Tier-3)**

At the third tier, the PIU has constituted a GRC (PIU-GRC). The committee has the following composition:

- Project Director KWSSIP, (Chairman of PIU-GRC);
- SDS, Member
- Gender Specialist, Member;
- Concerned Project Manager – PIU, Member;
- SDS of SC, Member; and
- Representative of Civil Society.

**Note:** Representative from any other district government department may be called as and when required by the PIU-GRC. Environmental Specialist of PIU and SC will join PIU-GRC meeting related to environmental issues only.

The PIU-GRC through authorized representative, will acknowledge the complainant about his/her complaint, scrutinize the record, investigate the remedies available and request the complainant to produce any record in favour of his/her claim. After thorough review and scrutiny of the available record on the complaint, field visit will be conducted to collect additional information, if required. Once the investigations are completed, the PIU-GRC will give decision within twenty (20) working days of receipt of the complaint. If the complainant is still dissatisfied with the decision, he/she can go to the court of law, if he/she wishes so. Organization of the GRM is shown in **Figure 1**.



**Figure 5.1: Organogram for GRM**

Gender representation will be ensured by inducting a female member in all GRCs. The mechanism will ensure the access of project affectees or community members to a GRM that openly and transparently deals with the grievances and makes decision in consultation with all concerned that are consistent with the WB requirements.

#### **D. Gender Based Violence (GBV) Committee**

Besides PIU-GRC, GBV committee has also been established and notified consisting of the following members;

- Concerned Project Manager, Head/ Convener of GBV Committee
- Gender Expert KWSSIP, Secretary
- SDP KWSSIP, Member

GBV Committee will address the gender related issues due to project activities during implementation.

#### **6.4.6 Grievance Redress Procedure**

The intention of GRM is to resolve a complaint as quickly and at as low a level as possible to avoid a minor issue becoming a significant grievance. Irrespective of the stage of the process, a complainant has the option to pursue the grievance through the court as is his/her legal right in accordance with law.

The GRCs will work at site, sub-project and PIU levels. The E&S and engineering staff of PIU, in coordination with site staff will inform the project affectees and community members about the GRCs and its mechanism through consultations and by posting at prominent places. The complaints received through any media will be screened by type & category and registered in Community Complaints Register (CCR), where the name and address of complainant, date, description of complaint and action taken will be recorded. The Following procedure will be considered to redress the grievances:

- First, complaint resolution will be attempted to be addressed at community-GRC through the involvement of the field E&S/engineering staff. The community-GRC shall give decision within 05 working days of receipt of the complaint. If unsettled, grievance can be lodged to the sub-project GRC by the complainant to proceed under law and communicate decision in least possible time.
- Sub-project GRC will acknowledge the receipt within 02 working days of lodging of complaint. Initial review and consultation with the sub-project GRC will be conducted within 05 working days of receipt of complaint. If required, sub-project GRC will advise the E&S/engineering specialists to conduct field visits in consultation with the aggrieved persons/parties and local community and submit a fact-finding report. Preferably, the fact finding will be completed within 08 working days from receipt of complaints. subproject GRC shall give decision within 10 working days of receipt of the complaint. If unresolved, a grievance will be lodged to the (PIU-GRC) by the complainant.
- The PIU-GRC shall give decision within 20 working days of receipt of the complaint. If the complainant is still not satisfied, he/she can pursue further by submitting to the appropriate court of law.

All the E&S issues will be dealt according to the above GRM procedures. GRC will clarify the legal course of action and guide aggrieved persons/parties to approach appropriate legal forum. The GRCs will hear and clarify with the complainant (if required so) about the E&S issue and shall conclude and communicate its recommendations for further implementation in due course of time. Complainant will be kept informed during the process and the GRC decision will be communicated accordingly. In case of any delay, the complainants will be informed on the progress and process about their grievances. The GRC proceedings will be documented step by step and all records will be maintained and summarized in the project progress and internal monitoring reports.

#### **6.4.7 Lodging of Complaint**

The complainant(s) can lodge their grievances by online, mail, phone, WhatsApp, e-mail and complaint box. Moreover, PIU has established E-Portal for filing and tracking progress of the application online the detail has been provided below:

- An electronic complaint lodging system (application) that will be accessible through a link on the PIU KWSSIP website;
- The focus of the e-portal is the quick complaint lodging for all types of primary stakeholders;
- Any project affectee or community member with internet access can lodge a complaint with option for anonymous complaints. Uploading of photos for better understanding of the problem will also be an option;
- Each complainant will get a unique Grievance Number to track their complaints through the e-portal;
- Each complaint will go through a quick resolution mechanism being managed by a dedicated team at the PIU. Each complainant will be contacted to ensure that his/her issue is resolved;

- The portal will differentiate between types of complaints for targeted decision-making and action on behalf of PIU; and
- The portal will allow a quick and easy method for monitoring of the entire complaint lodging and resolution mechanism.

**Direct workers' GRM structure:** To mitigate the risks related to direct workers a GRM for Direct Workers will be established. GRM structure for KWSSIP:

- **First level.** The Project Coordinator/Human Resources of PIU-KWSSIP depending on the nature of the issue raised will be responsible to receive, consider and address in a timely manner the grievances, including the concerns on unaccounted working hours and lack of compensation for overtime, delay in/nonpayment of salaries. If the issue cannot be resolved at the first level within 7 working days, then it will be escalated to the next level.
- **Second level.** The Project Director of KWSSIP is a second-level GRM for direct workers if there is a situation in which there is no response from HR or if the response is not satisfactory then complainants and feedback providers have the option to appeal directly to the Project Director to follow up on the issue. The complaints should be considered and feedback provided within the next 7 working days.

**Contracted worker's GM structure:** To mitigate the risks related to direct workers a GM for Contracted Workers will also be established:

- **Contractor's level.** Contractors should develop their own GRM and resolve the grievances of contracted workers. Grievance Focal Point (GFP) assigned by the Contractor will file the grievances and appeals of contracted workers and will be responsible to facilitate addressing the grievances. If the issue cannot be resolved at the contractor's level within 7 working days, then it will be escalated to the PIU of the KWSSIP local level.
- **Local level.** The Social Specialist of PIU local level in Karachi will serve as Grievance Focal Point (GFP) to file the grievances and appeals of the project workers. He/She will be responsible to coordinate with relevant departments/organizations and persons to facilitate addressing these grievances. If the issue cannot be resolved at the PIU level within 7 working days, then it will be escalated to the Agency level.
- **Central level:** If there is a situation in which there is no response from the PIU Local level, or if the response is not satisfactory then complainants and feedback providers have the option to contact the Project Director of KWSSIP or Focal Person in KWSB Central Office directly to follow up on the issue.

## 6.5 Training Program

The primary responsibility of providing the E&S trainings to all project personnel will be that of the contractor and ESC. The trainings will be provided to different professional groups separately such as managers, skilled personnel, unskilled labors, and camp staff. Capacity building will be aimed at strengthening the ESC, and operational staff in the

field of environmental management and social development. **Table 6.3** provides detail of trainings required for implementation of ESMMP during construction and operational phase.

**Table 6. 3 Training Program**

Training Activity	Participants	Content	Scheduling	Cost Estimates
				PKR
Environment Code of Practice	Contractor Staff	Awareness & applicability of environmental code of practices	Once	100,000
Awareness workshop regarding Covid 19 and other vector borne diseases	Contractor Staff	Risk, Prevention and available treatment	Once	100,000
Waste Management	Contractor Staff	Awareness associated with waste Storage, collection and safe disposal	Once	100,000
Workshop on Emergency Response	Contractor Staff	Potential natural and other hazard/emergencies and dealing with emergency to minimize damage	Once	250,000
Workshop on Community/ Occupational Health and Safety	Contractor Staff	Awareness on EHS Guidelines	Once	300,000
Gender Aspects	Contractor Staff	Awareness on gender inequalities/GBV OP 4.20	Biannually	150,000
<b>Total</b>				<b>1,000,000</b>

## 6.6 Capacity Building & Institutional Strengthening

In order to ensure that the ESMMP provisions are implemented efficiently and effectively, capacity building/ strengthening of the implementing parties are required. Therefore, based on the assessment of the institutional capacities of the parties involved in the implementation of the ESMMP, the following broad areas of capacity building/ strengthening have been identified and recommended for effective implementation of the ESMMP.

**Table 6.4** shows the positions proposed for institutional strengthening for an effective implementation of environmental and social mitigation measures along with their responsibilities while **Table 6.4** presents cost of institutional strengthening.

**Table 6. 4: Institutional Strengthening**

<b>Institutional strengthening</b>	<b>Position</b>	<b>Scheduling (Months)</b>	<b>Responsibility</b>
Contractor	Environmental/ HSE Expert	18	<ul style="list-style-type: none"> <li>▪ Complete understanding of WB, local and federal environmental regulations.</li> <li>▪ Implement environmental guidelines and practices.</li> <li>▪ Review and recommend improvements to existing environmental programs for compliance assurance.</li> <li>▪ Generate environmental reports as requested by regulatory agencies.</li> <li>▪ Provide guidance and direction to management for ensuring environmental compliance.</li> <li>▪ Prepare permit applications and agreements as needed by regulatory agencies.</li> <li>▪ Obtain, maintain, modify and renew environmental permits and licenses.</li> <li>▪ Work with emergency response team to address environmental incidents such as chemical leaks and spills.</li> <li>▪ Identify and solve environmental violations.</li> <li>▪ Conduct regular environmental inspections to determine pollution level.</li> <li>▪ Investigate environmental accidents and propose corrective actions.</li> <li>▪ Educate workers on environmental health and safety procedures.</li> </ul>

	Social / Gender Specialist	18	<ul style="list-style-type: none"> <li>▪ Collect baseline social data to assess the social impacts associated with the alternatives.</li> <li>▪ Conduct and document surveys, group discussions and interviews with stakeholders and local people.</li> <li>▪ Identify social negative impacts and benefits likely to result from the construction and operation of the project.</li> <li>▪ Based on the available information, prepare the Initial ESMP/ESIA based on the prefeasibility designs and determine in respect of each alternative whether the impacts of the proposed project are likely to be significant.</li> <li>▪ Provide input into the feasibility design of the project based on the preferred option, proposing measures to minimize social impacts during construction and operation. Propose measures to mitigate negative impacts.</li> <li>▪ Guide the preparation of and ensure quality assurance for the following: social impact assessment,</li> <li>▪ Identify compensation and mitigation measures according to national and international standard.</li> <li>▪ Identify all impacts on resettlement (physical/ economic) in proposed project and develop plan for resettlement as per World Bank Policies and local regulations.</li> <li>▪ Formulate plan towards land acquisition as appropriate and resettlement of communities affected under project</li> </ul>
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Institutional strengthening	Position	Scheduling (Months)	Responsibility
			<ul style="list-style-type: none"> <li>▪ Assist Team Leader and the implementing agencies on matters related to land acquisition and resettlement at multiple locations.</li> <li>▪ Analyze country's gender policies</li> <li>▪ Compilation, analysis and interpretation of gender issues</li> <li>▪ Provide advice and support to on gender issues.</li> <li>▪ Guidance for gender specific programming.</li> <li>▪ Develop, maintain and disseminate a plan addressing gender perspective in the project area and provide information as required for different purposes.</li> <li>▪ Participate in meetings with the client, project team and other key stakeholders</li> <li>▪ Analyze country's gender policies</li> <li>▪ Compilation, analysis and interpretation of gender issues</li> <li>▪ Provide advice and support to on gender issues.</li> <li>▪ Guidance for gender specific programming.</li> <li>▪ Develop, maintain and disseminate a plan addressing gender perspective in the project area and provide information as required for different purposes.</li> </ul>

**Table 6. 5: Cost of Institutional Strengthening**

Sr. No.	Position	Scheduling	Unit Cost (Rs.)	Cost Estimates
		(Months)		(PKR)
<b>A. Construction Phase - 18 months (for contractor)</b>				
1	Environmental Expert/ HSE Expert	18	250,000	4,500,000
2	Social / Gender Expert	18	250,000	4,500,000
<b>Total Cost</b>				<b>9,000,000</b>

## 6.7 Environmental Budget

The cost for the implementation of construction stage activities given in this screening report will be included within the civil works contract for this sub-project with total cost of **Rs. 16,200,000** PKR.

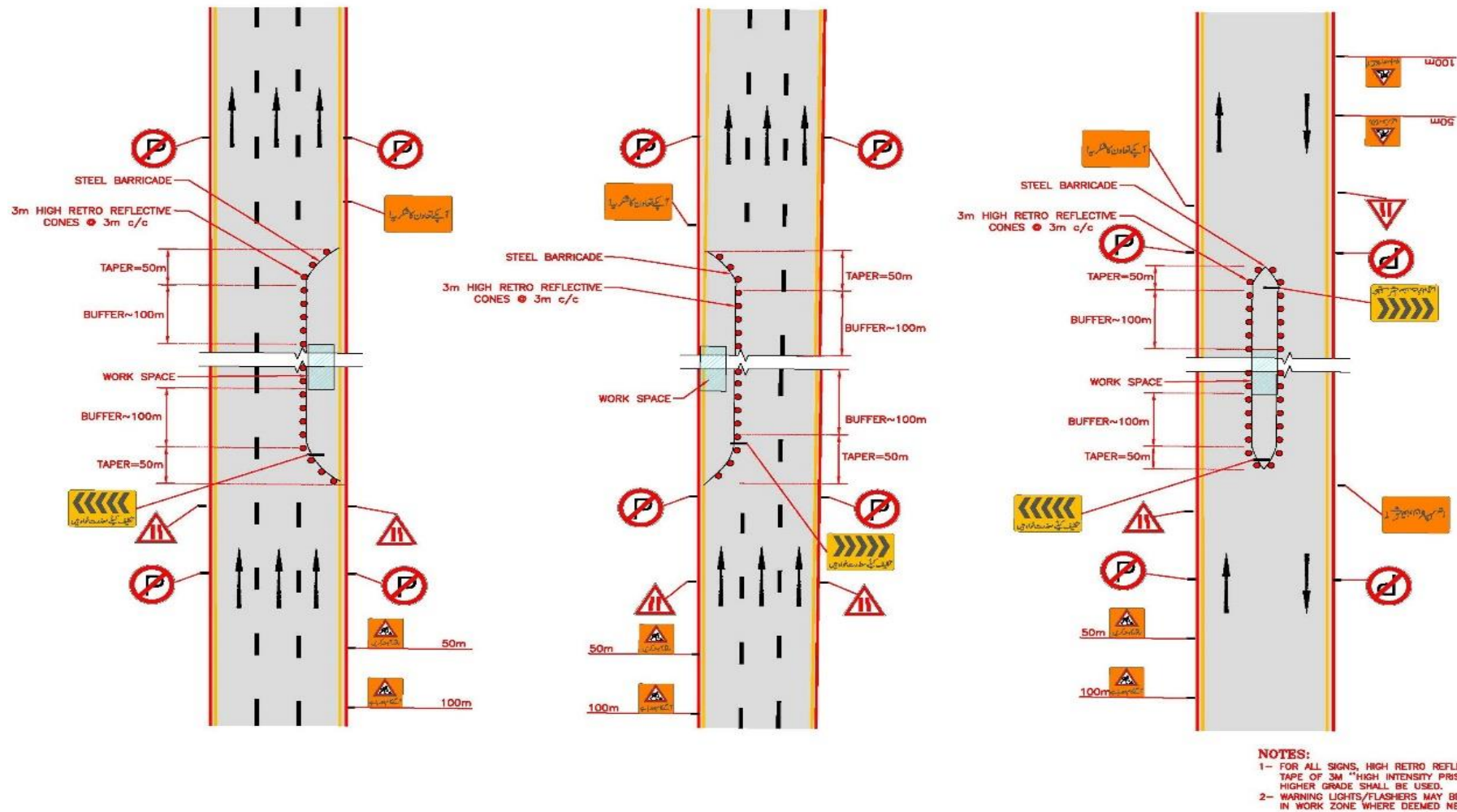
It is envisaged that five (05) nos. Bulk Flow Meters shall be installed simultaneously and each site will require ten (10) nos. workers. Therefore, the HSE cost has been worked out for fifty (50) nos. workers.

**Table 6. 6: HSE Cost**

Item No.	Description	Unit Price	Total Qty.	Amount
				(PKR)
1	Medical Screening of workers	5000	50	250,000
2	Water Sprinkling	Lump sum		500,000
3	First Aid Kit	4000	15	60,000
4	Traffic diversions	Lump sum		500,000
5	Worker's Health and Safety			
i).	Ear plugs	100	50	5,000
ii).	Helmets	1500	50	75,000
iii).	Safety shoes	3000	50	150,000
iv).	Protective goggles	2000	50	100,000
v).	Gloves	3500	50	175,000
6	Water Dispensers	30000	5	150,000
7	Waste management at camps			
i).	Portable Toilet	250000	5	1,250,000
ii).	Waste containers	50000	5	250,000
iii).	Plastic bins (0.1 m <sup>3</sup> )	3000	4	12,000
8	Plastic and tarpaulin sheets for covering material stock piles	3000	50	150,000
9	Fire/emergency equipment			
i).	Dicalcium Phosphate (DCP) fire extinguishers	3500	5	17,500
ii).	CO <sub>2</sub> fire extinguishers	10000	5	50,000
iii).	Emergency sirens	10000	5	50,000
iv).	Demarcation tapes (reels)	3000	50	150,000
<b>Total</b>				<b>3,894,500</b>
<b>Say</b>				<b>4,000,000/-</b>

### 6.7.1 Summary of Cost

i.	HSE Cost	=	4,000,000/-
ii.	Training Cost	=	1,000,000/-
iii.	Eye Wash Stations	=	700,000/-
iv.	Budget for COVID SOPs	=	1,000,000/- (lump sum)
v.	Institutional Strengthening	=	9,000,000/-
vi.	Contingencies	=	500,000/-
	<b>Total</b>	=	<b>PKR 16,200,000/-</b>




**Figure 6. 2: Traffic Diversion Plan**

## **Annex-I**

### **Bulk Flow meters proformas / List of BFM**

## **Bulk Flow Meter Proforma**


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	4K Chowrangi (NK Town)	
<b>Location:</b>		
Latitude:	25°0'23.65" N	
Longitude:	67°3'52.91" E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	33" PRCC	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	Gate Valve Chamber	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth = 10 ft.


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	4K Chowrangi (NK Town)	
<b>Location:</b>		
Latitude:	25°0'24.08" N	
Longitude:	67°3'52.83" E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	24" PRCC	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	Yes	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth = 7-8 ft.


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	4K Chowrangi (30" MS Grid)	
<b>Location:</b>		
Latitude:	25°0'23.87" N	
Longitude:	67°3'52.35" E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	30" PRCC	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	Yes	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth = 7-8 ft.


## WATER METER DATA SHEET

		
<b>Water Meter:</b>	5 C-4 (NN Town)	
<b>Location:</b>		
Latitude:	24°59'9.09" N	
Longitude:	67°3'56.88" E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	48" PRCC	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	Yes	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth = 5 ft.


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	7 No. Nazimabad (Mujahid Colony)	
<b>Location:</b>		
Latitude:	24°55'17.29" N	
Longitude:	67°1'52.91" E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	24" MS (New pics. Installed before C.I)	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	Difficult	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth = 6 ft.


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	33" for Landhi	
<b>Location:</b>		
Latitude:	24°50'59.65"N	
Longitude:	67° 12'16.66"E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	33" diameter PRCC	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	YES	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**


Depth=10 ft

## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Afghan Refuge Camp	
<b>Location:</b>		
Latitude:	25°1'14.75" N	
Longitude:	67°9'38.5" E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	6"	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	Yes	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Ahsanabad Chowrangi	
<b>Location:</b>		
Latitude:	25°0'6.45" N	
Longitude:	67°7'24.95" E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	12"	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	On Road	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth = 3 – 4 ft


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Air Port (Madam Apartment)	
<b>Location:</b>		
Latitude:	24°53'11.89"N	
Longitude:	67° 09'51.22"E	
<b>Conveyance Type:</b>	(Only six round open)	
<b>Pipe/Conduit Size:</b>	18" diameter PRCC	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	No	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

### **Overall Remarks:**

Depth = 8 ft.


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Scheme 33 to Gulistan Johar (New)	
<b>Location:</b>		
Latitude:	24°56'5.00" N	
Longitude:	67°8'0.13" E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	33" MS	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	Yes	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth = 8-10 ft.


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	At COD Filter Plant (Balancing Main)	
<b>Location:</b>		
Latitude:	24°54'9.97"N	
Longitude:	67° 5'33.09"E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	66"/PRCC	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	New Chamber Required	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth=10 ft


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	At COD Filter Plant (CTM)	
<b>Location:</b>		
Latitude:	24°54'9.57"N	
Longitude:	67° 5'33.26"E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	72" PRCC	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	Yes	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSSB.	

**Overall Remarks:**

Depth=10 ft


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	At COD Filter Plant (Gulshan Main)	
<b>Location:</b>		
Latitude:	24°54'10.42"N	
Longitude:	67° 5'33.32"E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	48"/PRCC	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	YES	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**


Depth=10 ft

## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	At COD Filter Plant (Lyari Main)	
<b>Location:</b>		
Latitude:	24°54'10.34"N	
Longitude:	67° 5'33.10"E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	24"/MS	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	YES	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	


**Overall Remarks:**

## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Azam Nagar Adjacent Lyari Expressway (CI-24)	
<b>Location:</b>		
Latitude:	24°53'52.70" N	
Longitude:	67°4'5.75" E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	24" PRCC	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	Close to Lyari Expressway	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	


**Overall Remarks:**

## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Azam Nagar Adjacent Lyari Expressway (FTM)	
<b>Location:</b>		
Latitude:	24°54'3.72" N	
Longitude:	67°3'39.04" E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	48" PRCC	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	E&SS Import	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

## **WATER METER DATA SHEET**


<b>Water Meter:</b>		Baba Moor (NK-Town) (12")	
<b>Location:</b>			
	Latitude:	25°0'20.55" N	
	Longitude:	67°3'14.6" E	
<b>Conveyance Type:</b>		Pipe	
<b>Pipe/Conduit Size:</b>		12"	
<b>Social Sensitive Receptor</b>		NO	
<b>Pipe Accessibility:</b>		YES	
<b>Eco-Sensitive Receptors</b>		NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.		

**Overall Remarks:**

Depth=10 ft




## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Baba Moor (NK-Town) Makkah 6"	
<b>Location:</b>		
Latitude:	25°0'20.97" N	
Longitude:	67°3'14.13" E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	6" PRCC	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	Easy	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth=10 ft


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Baba More (Gadap Town)	
<b>Location:</b>		
Latitude:	25° 0'20.94"N	
Longitude:	67° 3'15.20"E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	33"/PRCC	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	YES	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth = 8-10 ft.


## **WATER METER DATA SHEET**

<b>Water Meter:</b>		Baba More (NK-Town) (12")	
<b>Location:</b>			
	Latitude:	25° 0' 21.75" N	
	Longitude:	67° 3' 15.91" E	
<b>Conveyance Type:</b>		Pipe	
<b>Pipe/Conduit Size:</b>		12" PRCC	
<b>Social Sensitive Receptor</b>		NO	
<b>Pipe Accessibility:</b>		YES	
<b>Eco-Sensitive Receptors</b>		NO	
<b>Security Aspects:</b>		Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth = 5 ft.


## **WATER METER DATA SHEET**

<b>Water Meter:</b>		Baba More (NK-Town) 6"	
<b>Location:</b>			
	Latitude:	25° 0' 21.75" N	
	Longitude:	67° 3' 14.38" E	
<b>Conveyance Type:</b>		Pipe	
<b>Pipe/Conduit Size:</b>		6"	
<b>Social Sensitive Receptor</b>		NO	
<b>Pipe Accessibility:</b>		YES	
<b>Eco-Sensitive Receptors</b>		NO	
<b>Security Aspects:</b>		Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth = 8-10 ft.


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Balancing Main for North Nazimabad Town	
<b>Location:</b>		
Latitude:	24°57'8.56"N	
Longitude:	67°3'38.43"E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	48"/PRCC	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	Yes	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**


Depth = 5 ft.

## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Balancing Main for Gulberg Reverse Flow (Dental) (New)	
<b>Location:</b>		
Latitude:	24°56'12.27" N	
Longitude:	67°4'34.93" E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	48" MS, Infront Kaka Juice Corner	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	Yes	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

## **WATER METER DATA SHEET**


<b>Water Meter:</b>		Balancing Main	
<b>Location:</b>			
	Latitude:	24°55'58.29" N	
	Longitude:	67°7'33.98" E	
<b>Conveyance Type:</b>		Pipe	
<b>Pipe/Conduit Size:</b>		48" PRCC	
<b>Social Sensitive Receptor</b>		NO	
<b>Pipe Accessibility:</b>		Yes	
<b>Eco-Sensitive Receptors</b>		NO	
<b>Security Aspects:</b>		Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth = 8-10 ft.





## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Baloch Colony Bridge (2 <sup>nd</sup> Loops)	
<b>Location:</b>		
Latitude:	24°52'3.41" N	
Longitude:	67°5'0.09" E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	18" MS	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	YES	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth = 6 – 8 ft.


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Banaras (FTM Link)	
<b>Location:</b>		
Latitude:	24°55'58.17" N	
Longitude:	67°0'56.27" E	
<b>Conveyance Type:</b>	PRCC	
<b>Pipe/Conduit Size:</b>	48"	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	Gate Valve Chamber	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth= 10 ft.


## **WATER METER DATA SHEET**

<b>Water Meter:</b>		Banaras Pump House (Orangi)	
<b>Location:</b>			
Latitude:		24°55'59.92" N	
Longitude:		67°0'56.28" E	
<b>Conveyance Type:</b>		Pipe	
<b>Pipe/Conduit Size:</b>		48"	
<b>Social Sensitive Receptor</b>		NO	
<b>Pipe Accessibility:</b>		YES	
<b>Eco-Sensitive Receptors</b>		NO	
<b>Security Aspects:</b>		Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth = 8-10 ft


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Banari Chowk (N.N Town)	
<b>Location:</b>		
Latitude:	24°55'58.49"N	
Longitude:	67° 0'57.12"E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	33"	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	Valve Chamber present	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth = 8-10"


## **WATER METER DATA SHEET**

<b>Water Meter:</b>	Bilal Plaza Malir	
<b>Location:</b>		
Latitude:	24°52'8.60"N	
Longitude:	67° 12'5.23"E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	33" dia PRCC	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	Difficult	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth = 8 ft


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Board office (Ashraf Nagar)	
<b>Location:</b>		
Latitude:	24°55'29.95" N	
Longitude:	67°1'55.88" E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	16" MS	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	Yes	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth = 6-7 ft.


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Board office (Banaras)	
<b>Location:</b>		
Latitude:	24°55'30.03" N	
Longitude:	67°1'55.90" E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	33" MS	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	Yes	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth = Above Ground


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Cattle Colony Pump	
<b>Location:</b>	Additional	
Latitude:	24°50'11.42"N	
Longitude:	67° 15'26.72"E	
<b>Conveyance Type:</b>	New Pipri Main 48"	
<b>Pipe/Conduit Size:</b>	12" diameter	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	YES	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth= Above Ground


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Chakra Goth 33" diameter	
<b>Location:</b>		
Latitude:		
Longitude:		
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	33" diameter PRCC	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	YES	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth = 11 ft.


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Chakra Goth	
<b>Location:</b>		
Latitude:	24°48'56.94"N	
Longitude:	67° 7'36.09"E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	24" dia PRCC	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	No	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**


Depth = 11 ft.

## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Chamra Chowrangi Korangi Main	
<b>Location:</b>		
Latitude:	24°50'18.06"N	
Longitude:	67° 7'14.39"E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	24" diameter PRCC	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	YES	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Chippa Chowrangi	
<b>Location:</b>		
Latitude:	24°54'38.13" N	
Longitude:	67°1'47.17" E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	48"	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	On Chowk	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWWSB.	

**Overall Remarks:**

Depth=10 ft


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Chippa Chowrangi (To New Goli Maar)	
<b>Location:</b>		
Latitude:	24°52'32.89"N	
Longitude:	67°1'50.8"E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	24" PRCC	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	On Chipa Chowk	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

### **Overall Remarks:**

Depth = 11-12 ft.


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Chungi Naka (Surjani 33")	
<b>Location:</b>		
Latitude:	25°0'4.43" N	
Longitude:	67°2'10.26" E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	33" PRCC	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	YES	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth=10 ft

## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Darakhshan Society Kala Board Malir 16"	
<b>Location:</b>		
Latitude:	24°52'56.36"N	
Longitude:	67° 10'57.11"E	
<b>Conveyance Type:</b>	Connection	
<b>Pipe/Conduit Size:</b>	16" diameter AC	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	No	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

### **Overall Remarks:**

Depth = 6 ft.

## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Darakhshan Society Kala Board Malir 18"	
<b>Location:</b>		
Latitude:	24°52'56.27"N	
Longitude:	67° 10'57.14"E	
<b>Conveyance Type:</b>	Connection	
<b>Pipe/Conduit Size:</b>	18" diameter AC	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	No	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

### **Overall Remarks:**

Depth = 6 ft.


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Darakhshan Society Kala Board Malir	
<b>Location:</b>		
Latitude:	24°53'8.18"N	
Longitude:	67°10'11.17"E	
<b>Conveyance Type:</b>	Connection	
<b>Pipe/Conduit Size:</b>	24" dia PRCC	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	No	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

### **Overall Remarks:**


Depth = 6 ft.

## WATER METER DATA SHEET

<b>Water Meter:</b>	Delivery of Sakhi Hasan P.S	
<b>Location:</b>		
<b>Latitude:</b>	24°57'8.56"N	
<b>Longitude:</b>	67° 3'38.43"E	
<b>Conveyance Type:</b>	MS	
<b>Pipe/Conduit Size:</b>	36"	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	On Pipe	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Dildar Goth (Gadap) 12"	
<b>Location:</b>		
Latitude:	24°59'37.32"N	
Longitude:	67° 6'54.87"E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	12" MS	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	New Chamber Required	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

### **Overall Remarks:**

Depth = 10 ft.


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Dildar Goth (Gadap) 24	
<b>Location:</b>		
Latitude:	24°59'11.45"N	
Longitude:	67° 6'31.71"E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	24"/PRCC	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	YES	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth = 10 ft.


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Dildar Goth (Gadap)	
<b>Location:</b>		
Latitude:	24°59'37.32"N	
Longitude:	87	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	12" MS	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	YES	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth = 5 ft.

## **WATER METER DATA SHEET**


		
<b>Water Meter:</b>	Distribution Line	
<b>Location:</b>		
Latitude:	24°50'18.06"N	
Longitude:	67° 7'14.39"E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	33" dia PRCC	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	YES	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth = 13 ft.




## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	F.B Main Liaquatabad before Board Office P. S	
<b>Location:</b>		
Latitude:	24°55'29.39" N	
Longitude:	67°1'55.90" E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	24" MS as per list it is 48" dia	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	Easy	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**


Depth = 10 ft.

## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	F.B Mains for Liaquatabad Town (10 No. Chawrangji)	
<b>Location:</b>		
Latitude:	24°54'32.25" N	
Longitude:	67°2'59.96" E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	24" PRCC	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	Yes	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	


**Overall Remarks:**

## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Feature Pump House at Outlet of Manifold	
<b>Location:</b>		
<b>Latitude:</b>	24°50'58.71"N	
<b>Longitude:</b>	67° 12'17.48"E	
<b>Conveyance Type:</b>	MS	
<b>Pipe/Conduit Size:</b>	54"	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	Valve Chamber	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/hampering will be ensured by KWSB.	

**Overall Remarks:**

## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Fire Brigade Station	
<b>Location:</b>		
Latitude:	24°57'7.62"N	
Longitude:	67° 3'39.30"E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	24" PRCC	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	YES	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth = 7 ft.

## **WATER METER DATA SHEET**


		
<b>Water Meter:</b>	For Industrial Area Block 21 & 23	
<b>Location:</b>		
Latitude:	24°55'57.08"N	
Longitude:	67°5'8.06"E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	18" MS	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	Yes	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth = 4-5 ft.




## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	From CP Pump (Ghaas wala Valve)	
<b>Location:</b>		
Latitude:	24°54'38.6" N	
Longitude:	67°1'26.79" E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	33"	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	On Road	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.fe	

**Overall Remarks:**


Depth=10ft

## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	From CP Pump to Baldia	
<b>Location:</b>		
Latitude:	24°54'36.9" N	
Longitude:	67°1'32.8" E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	24" PRCC	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	YES	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**


## **WATER METER DATA SHEET**

<b>Water Meter:</b>		Garden Form CI-60 Old Supply	
<b>Location:</b>			
Latitude:		24°51'55.21" N	
Longitude:		67°1'29.78" E	
<b>Conveyance Type:</b>		Pipe	
<b>Pipe/Conduit Size:</b>		24" CI	
<b>Social Sensitive Receptor</b>		NO	
<b>Pipe Accessibility:</b>		YES	
<b>Eco-Sensitive Receptors</b>		NO	
<b>Security Aspects:</b>		Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth = 5 ft.


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Gharo F.P incoming	
<b>Location:</b>		
Latitude:	24°45'8.80" N	
Longitude:	67°34'15.75" E	
<b>Conveyance Type:</b>	Pipe MS CI	
<b>Pipe/Conduit Size:</b>	42"	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	YES	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth= Above Ground


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Gharo F.P incoming	
<b>Location:</b>		
Latitude:	24°46'14.8" N	
Longitude:	67°34'2.07" E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	36" pipe	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	YES	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Above Ground


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Ghulam Shah Dera (Baldia)	
<b>Location:</b>		
Latitude:	24°56'8.00" N	
Longitude:	66°58'39.55" E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	36"	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	Easy	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

### **Overall Remarks:**

Depth = 6-7 ft.


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Government Degree College (1600 Road)	
<b>Location:</b>		
Latitude:	24°49'29.65"N	
Longitude:	67° 10'28.77"E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	15" dia PRCC	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	No	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth = 8 ft.


## **WATER METER DATA SHEET**

<b>Water Meter:</b>		Gulbai Chowk (Manoora Main)	
<b>Location:</b>			
Latitude:	24°52'34.48"N		
Longitude:	66°57'56.59"E		
<b>Conveyance Type:</b>	Pipe		
<b>Pipe/Conduit Size:</b>	24" (thre divide 6" 2 to)		
<b>Social Sensitive Receptor</b>	NO		
<b>Pipe Accessibility:</b>	YES		
<b>Eco-Sensitive Receptors</b>	NO		
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSSB.		

**Overall Remarks:**

Depth = 8 ft


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Gulbai for GREX	
<b>Location:</b>		
Latitude:	24°52'34.62" N	
Longitude:	66°57'56.59" E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	10"	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	Yes	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

### **Overall Remarks:**

Above Ground


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Gulbai for Maripur	
<b>Location:</b>		
Latitude:	24°52'34.63" N	
Longitude:	66°57'56.63" E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	10" MDFE	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	Yes	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Above Ground


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Gulbai for Islands	
<b>Location:</b>		
Latitude:	24°52'34.02"N	
Longitude:	67°57'57.47"E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	18"	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	Yes	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth= Above Ground


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Gulbai for Maripur & Grex	
<b>Location:</b>		
Latitude:	24° 52'34.60"N	
Longitude:	66° 57'56.63"E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	24"/MS	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	YES	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth= Above Ground


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Gulbai for PAF (18 inches)	
<b>Location:</b>		
Latitude:	24°52'42.43" N	
Longitude:	66°57'48.67" E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	18"	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	Yes	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth=10 ft


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Gulbai for PAF	
<b>Location:</b>		
Latitude:	24°52'34.66" N	
Longitude:	66°57'56.45" E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	4"	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	Yes	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Above Ground


## **WATER METER DATA SHEET**

<b>Water Meter:</b>		Gulistan-e-Johar	
<b>Location:</b>			
Latitude:		24°55'58.64" N	
Longitude:		67°7'35.22" E	
<b>Conveyance Type:</b>		Pipe	
<b>Pipe/Conduit Size:</b>		36" MS	
<b>Social Sensitive Receptor</b>		NO	
<b>Pipe Accessibility:</b>		Yes	
<b>Eco-Sensitive Receptors</b>		NO	
<b>Security Aspects:</b>		Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth = 8-10 ft.

## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Habib Bank Chowrangi	
<b>Location:</b>		
Latitude:	24°54'39.69" N	
Longitude:	67°0'52.37" E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	33"	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	YES	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth = 10 ft

## **WATER METER DATA SHEET**

<b>Water Meter:</b>		Haleji Conduit (Jumma Goth) at Shah Faisal Colony # 4)
<b>Location:</b>		
	Latitude:	24°52'42.64"N
	Longitude:	67° 8'16.33"E
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	48" diameter PRCC Conduit	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	YES	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	



**Overall Remarks:**

## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Haleji Conduit (Jummo Goth)	
<b>Location:</b>		
Latitude:	24°51'56.53"N	
Longitude:	67° 11'18.48"E	
<b>Conveyance Type:</b>	Conduit Intermediate Point at Haleji.	
<b>Pipe/Conduit Size:</b>	33" diameter PRCC	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	YES	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Haleji Conduit (Labour square)	
<b>Location:</b>		
Latitude:	24°50'12.21"N	
Longitude:	67°14'46.81"E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	54" dia PRCC	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	YES	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

### **Overall Remarks:**

Depth=10 ft.


## **WATER METER DATA SHEET**

<b>Water Meter:</b>		Haleji Conduit (Salar Goth)	
<b>Location:</b>			
	Latitude:	24°50'30.20"N	
	Longitude:	67°29'36.76"E	
<b>Conveyance Type:</b>		Conduit	
<b>Pipe/Conduit Size:</b>		54" diameter PRCC	
<b>Social Sensitive Receptor</b>		NO	
<b>Pipe Accessibility:</b>		YES	
<b>Eco-Sensitive Receptors</b>		NO	
<b>Security Aspects:</b>		Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth = 5 ft.


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Haleji Conduit	
<b>Location:</b>		
Latitude:	24°50'11.24"N	
Longitude:	67°15'50.78"E	
<b>Conveyance Type:</b>	PRCC	
<b>Pipe/Conduit Size:</b>	18" diameter	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	YES	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth= Above Ground


## **WATER METER DATA SHEET**

<b>Water Meter:</b>		Haroonabad (BDM)	
<b>Location:</b>			
Latitude:	24°54'1.40" N		
Longitude:	66°59'55.31" E		
<b>Conveyance Type:</b>	Pipe		
<b>Pipe/Conduit Size:</b>	24"		
<b>Social Sensitive Receptor</b>	NO		
<b>Pipe Accessibility:</b>	On Island of Chwok		
<b>Eco-Sensitive Receptors</b>	NO		
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.		

**Overall Remarks:**


Depth= 10 ft

## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Haroonabad (FTM)	
<b>Location:</b>		
Latitude:	24°54'1.64" N	
Longitude:	66°59'55.27" E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	24"	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	Yes	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	


**Overall Remarks:**

## WATER METER DATA SHEET

<b>Water Meter:</b>	HSR (CI-24)	
<b>Location:</b>		
<b>Latitude:</b>	24°53'23.55"N	
<b>Longitude:</b>	67° 5'8.00"E	
<b>Conveyance Type:</b>	Cast Iron	
<b>Pipe/Conduit Size:</b>	24"	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	Gate Valve Chamber	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Hub Reservoir	
<b>Location:</b>		
Latitude:	24°1'4.00" N	
Longitude:	67°1'14.46" E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	66' MS	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	YES	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth=10 ft


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Hub Reservoir (treatment plant)	
<b>Location:</b>		
Latitude:	24°0'8.00" N	
Longitude:	67°1'18.80" E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	66"	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	YES	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth=10 ft


## WATER METER DATA SHEET

<b>Water Meter:</b>	Hub Reservoir Water Board Line	
<b>Location:</b>		
<b>Latitude:</b>	25°0'7.83"N	
<b>Longitude:</b>	67° 1'19.23"E	
<b>Conveyance Type:</b>	MS Pipe	
<b>Pipe/Conduit Size:</b>	12"	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	Gate Valve Chamber	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth = 10 – 15 ft


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Hub Reservoir-3	
<b>Location:</b>		
Latitude:	24°0'07.92" N	
Longitude:	67°1'18.33" E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	48" MS – Spiral Weld	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	YES	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Line depth = 10 ft.


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Hub Reservoir	
<b>Location:</b>		
Latitude:	24°0'7.65" N	
Longitude:	67°1'18.47" E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	24' MS	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	YES	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth = 5-8 ft


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Inside 5C-4 P.S for Nagan Chowrangji	
<b>Location:</b>		
Latitude:	24°59'8.42"N	
Longitude:	67° 3'56.08"E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	48" PRCC	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	Yes	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth = 6-7 ft.

## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Jail Road Chowrangi (CI-60)	
<b>Location:</b>		
Latitude:	24°53'41.08"N	
Longitude:	67° 4'6.72"E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	66"/Cast Iron	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	YES	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth = 8 ft

## **WATER METER DATA SHEET**



<b>Water Meter:</b>	Jail Road Chowrangi (CTM)	
<b>Location:</b>		
Latitude:	24°53'54.62"N	
Longitude:	67° 4'11.34"E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	54"/PRCC	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	On Main Road	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth = 8 ft




## **WATER METER DATA SHEET**

		 
<b>Water Meter:</b>	Jail Road Chowrangi (SBL)	
<b>Location:</b>		
Latitude:	24°53'14.30"N	
Longitude:	67° 3'29.76"E	
<b>Conveyance Type:</b>	RT	
<b>Pipe/Conduit Size:</b>	33" PRCC	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	YES	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

### **Overall Remarks:**

Depth=10 ft


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Jinnah Avenue Pump House Malir	
<b>Location:</b>		
Latitude:	24°53'8.25"N	
Longitude:	67° 10'31.68"E	
<b>Conveyance Type:</b>	Exit Point	
<b>Pipe/Conduit Size:</b>	33" dia PRCC	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	YES	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**


Depth = 6 ft.

## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Kareemabad (FBM) From Gulberg	
<b>Location:</b>		
Latitude:	24°56'12.61"N	
Longitude:	67° 4'33.33"E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	24" MS	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	Yes	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Kashmir Road (New CTM)	
<b>Location:</b>		
Latitude:	24°53'40.58"N	
Longitude:	67° 4'4.51"E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	60"	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	Gate Valve Chamber	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth= 8 ft


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Khalid Bin Waleed Road (1 <sup>st</sup> Loop)	
<b>Location:</b>		
Latitude:	24°52'52.04"N	
Longitude:	67°3'43.90"E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	18" MS	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	YES	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth = 6-8 ft.


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Korangi Main	
<b>Location:</b>		
Latitude:	24°50'22.13"N	
Longitude:	67° 12'16.52"E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	66" diameter PRCC	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	No	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth=10 ft.

## **WATER METER DATA SHEET**


		
<b>Water Meter:</b>	Kotangi Main at 5 1/2 Korangi Pump House	
<b>Location:</b>		
Latitude:	24°49'24.41"N	
Longitude:	67° 9'53.48"E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	33" diameter PRCC	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	No	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

### **Overall Remarks:**

Depth = 8 ft.



## **WATER METER DATA SHEET**


		
<b>Water Meter:</b>	Kotangi Main at 5 1/2 Korangi Pump House	
<b>Location:</b>		
Latitude:	24°49'24.20"N	
Longitude:	67° 9'54.60"E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	33" diameter PRCC	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	NO	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSSB.	

**Overall Remarks:**

Depth = 8 ft.





## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Kotangi Main at 5 1/2 Korangi Pump House	
<b>Location:</b>		
Latitude:	24°49'24.17"N	
Longitude:	67° 9'55.21"E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	33" diameter PRCC	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	NO	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

### **Overall Remarks:**

Depth = 8 ft.


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	LIA Pump House	
<b>Location:</b>		
Latitude:	24°50'16.57"N	
Longitude:	67° 12'57.74"E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	18" diameter	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	YES	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth=10 ft


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Lilly Bridge (End point)	
<b>Location:</b>		
Latitude:	24°49'12.49" N	
Longitude:	67°2'50.78" E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	18" PRCC	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	YES	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

### **Overall Remarks:**


Depth=10 ft

## WATER METER DATA SHEET

<b>Water Meter:</b>	Line No.1 Dhabeji Pumping Complex	
<b>Location:</b>		
<b>Latitude:</b>	24°46'31.47"N	
<b>Longitude:</b>	67° 30'37.74"E	
<b>Conveyance Type:</b>	MS	
<b>Pipe/Conduit Size:</b>	72"	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	within Pumping Station Boundary	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	


**Overall Remarks:**

## WATER METER DATA SHEET

<b>Water Meter:</b>	Line No.1 Dhabeji Pumping Complex	
<b>Location:</b>		
<b>Latitude:</b>	24°46'31.58"N	
<b>Longitude:</b>	67° 30'37.16"E	
<b>Conveyance Type:</b>	MS	
<b>Pipe/Conduit Size:</b>	72"	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	within Pumping Station Boundary	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	


**Overall Remarks:**

## WATER METER DATA SHEET

<b>Water Meter:</b>	Line No.1 Dhabeji Pumping Complex	
<b>Location:</b>		
<b>Latitude:</b>	24°46'31.61"N	
<b>Longitude:</b>	67° 30'35.55"E	
<b>Conveyance Type:</b>	MS	
<b>Pipe/Conduit Size:</b>	72"	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	within Pumping Station Boundary	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	


**Overall Remarks:**

## WATER METER DATA SHEET

<b>Water Meter:</b>	Line No.1 Dhabeji Pumping Complex	
<b>Location:</b>		
<b>Latitude:</b>	24°46'31.61"N	
<b>Longitude:</b>	67° 30'35.61"E	
<b>Conveyance Type:</b>	MS	
<b>Pipe/Conduit Size:</b>	72"	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	within Pumping Station Boundary	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	


**Overall Remarks:**

## WATER METER DATA SHEET

<b>Water Meter:</b>	Line No.1 Dhabeji Pumping Complex	
<b>Location:</b>		
<b>Latitude:</b>	24°46'32.29"N	
<b>Longitude:</b>	67° 30'31.61"E	
<b>Conveyance Type:</b>	MS	
<b>Pipe/Conduit Size:</b>	72"	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	within Pumping Station Boundary	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	


**Overall Remarks:**

## WATER METER DATA SHEET

<b>Water Meter:</b>	Line No.1 Dhabeji Pumping Complex	
<b>Location:</b>		
<b>Latitude:</b>	24°46'31.41"N	
<b>Longitude:</b>	67° 30'35.78"E	
<b>Conveyance Type:</b>	MS	
<b>Pipe/Conduit Size:</b>	72"	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	within Pumping Station Boundary	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	


**Overall Remarks:**

## WATER METER DATA SHEET

<b>Water Meter:</b>	Line No.1 Dhabeji Pumping Complex	
<b>Location:</b>		
<b>Latitude:</b>	24°46'34.38"N	
<b>Longitude:</b>	67° 30'32.43"E	
<b>Conveyance Type:</b>	MS	
<b>Pipe/Conduit Size:</b>	72"	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	Within Pumping Station Boundary	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	


**Overall Remarks:**

## WATER METER DATA SHEET

<b>Water Meter:</b>	Line No.1 Dhabeji Pumping Complex	
<b>Location:</b>		
<b>Latitude:</b>	24°46'35.62"N	
<b>Longitude:</b>	67° 30'32.41"E	
<b>Conveyance Type:</b>	MS	
<b>Pipe/Conduit Size:</b>	72"	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	Within Pumping Station Boundary	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Line No.1 Hub Pumping Station	
<b>Location:</b>		
Latitude:	24°1'4.032" N	
Longitude:	67°1'14.50" E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	66"	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	YES	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth=6 ft

## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Line No.2 Hub Pumping Station	
<b>Location:</b>		
Latitude:	24°1'4.00" N	
Longitude:	67°1'14.46" E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	66"	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	YES	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSSB.	

**Overall Remarks:**

Depth = 6 ft.


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Loop 1-Time Medicos	
<b>Location:</b>		
Latitude:	24°53'29.09" N	
Longitude:	67°4'50.26" E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	24"	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	YES	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

### **Overall Remarks:**

Depth = 4-6 ft.


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	LSR Rising Main	
<b>Location:</b>		
Latitude:	24°53'48.47" N	
Longitude:	67°4'26.66" E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	33" MSP	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	YES	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

### **Overall Remarks:**

Depth= Above Ground

## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Lyari Main at Mirza Adam Khan	
<b>Location:</b>		
Latitude:	24°52'47.6" N	
Longitude:	66°59'50.79" E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	24" PRCC	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	YES	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth = 6 ft.


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Lyari Nadi (Saba Cinema NEK)	
<b>Location:</b>		
Latitude:	24°59'12.20" N	
Longitude:	67°5'9.30" E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	54"	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	YES	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth = 6 ft.

## **WATER METER DATA SHEET**


		
<b>Water Meter:</b>	Main (New SBL) Bakra Peri	
<b>Location:</b>		
Latitude:	24°52'48.04"N	
Longitude:	66°59'50.88"E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	33" PRCC	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	YES	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

### **Overall Remarks:**

Existing Chamber = 8 x 8

Depth=8'


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Main (SBL) at Dhobi Ghaat	
<b>Location:</b>		
Latitude:	24°52'46.13" N	
Longitude:	67°1'2.86" E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	24" PRCC	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	YES	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**


Depth = 6 ft.

## WATER METER DATA SHEET

<b>Water Meter:</b>	Main at Hotel Regent (For Clifton)	
<b>Location:</b>		
<b>Latitude:</b>	24°51'20.45"N	
<b>Longitude:</b>	67° 2'25.43"E	
<b>Conveyance Type:</b>	PRCC	
<b>Pipe/Conduit Size:</b>	33"	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	Gate Valve Chamber	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	


**Overall Remarks:**

## WATER METER DATA SHEET

<b>Water Meter:</b>	Main at Kemari	
<b>Location:</b>		
<b>Latitude:</b>	24°51'21.37"N	
<b>Longitude:</b>	67° 2'25.48"E	
<b>Conveyance Type:</b>	PRCC	
<b>Pipe/Conduit Size:</b>	33"	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	Gate Valve Chamber	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Main at Lilly Bridge (towards Do Talwar)	
<b>Location:</b>		
Latitude:	24°50'22.24" N	
Longitude:	67°2'16.01" E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	24"	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	YES	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

### **Overall Remarks:**

Depth = 6 ft.

## **WATER METER DATA SHEET**


		
<b>Water Meter:</b>	Main at Lilly Bridge (towards Ghizvi PNS)	
<b>Location:</b>		
Latitude:	24°50'25.08" N	
Longitude:	67°2'8.46" E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	24"	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	YES	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

### **Overall Remarks:**

Existing Chamber 5 x 5


Depth = 9 ft.

## WATER METER DATA SHEET

<b>Water Meter:</b>	Main at Metropole	
<b>Location:</b>		
<b>Latitude:</b>	24°51'0.55"N	
<b>Longitude:</b>	67° 1'43.33"E	
<b>Conveyance Type:</b>	PRCC	
<b>Pipe/Conduit Size:</b>	33"	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	Road Breakage	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Main at Pahar Ganj	
<b>Location:</b>		
Latitude:	24°55'58.20" N	
Longitude:	67°0'56.65" E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	33"	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	Gate Valve Chamber	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth = 10 ft.

## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Main at People Ground (KPT Line)	
<b>Location:</b>		
Latitude:	24°51'7.38" N	
Longitude:	66°59'34.92" E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	12" AC	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	YES	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth=10ft



## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Main at Plaza Hotel (Dawood Pota Road)	
<b>Location:</b>		
Latitude:	24°50'51.98" N	
Longitude:	67°2'33.09" E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	33"	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	No Chamber	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth=10 ft


## **WATER METER DATA SHEET**

		 
<b>Water Meter:</b>	Main at Plaza Hotel (Dawood Pota Road)	
<b>Location:</b>		
Latitude:	24°50'41.63" N	
Longitude:	67°2'15.32" E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	24" PRCC	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	YES	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Bridge Depth=10 ft

## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Main at Saddiq Wahad Road (from C1-6) (from Tikon Park Islamia College	
<b>Location:</b>		
Latitude:	24°52'5.69"N	
Longitude:	67° 0'39.41"E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	18"	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	YES	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth=10 ft


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Main For Cantonment	
<b>Location:</b>		
Latitude:	24°50'40.98" N	
Longitude:	66°59'26.05" E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	33" PRCC	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	Gate Valve Chamber	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth=10 ft.


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Main KPT Line (At G-alana Road Agha Khan Jail Khana)	
<b>Location:</b>		
Latitude:	24°51'00.64" N	
Longitude:	66°59'30.11" E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	15" PRCC	
<b>Social Sensitive Receptor</b>	NO.	
<b>Pipe Accessibility:</b>	On Main Road	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSSB.	

**Overall Remarks:**

Depth=10 ft



## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Main Near Mazar-e-Quaid	
<b>Location:</b>		
Latitude:	24°52'36.38"N	
Longitude:	67° 2'36.01"E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	48" PRCC	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	YES	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth=10ft

## **WATER METER DATA SHEET**


		
<b>Water Meter:</b>	Malir City (Kala Board)	
<b>Location:</b>		
Latitude:	24°53'2.89"N	
Longitude:	67° 10'41.32"E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	18" diameter PRCC	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	YES	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth = 5 - 6 ft.




## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Malir City 15	
<b>Location:</b>		
Latitude:	24°52'30.67"N	
Longitude:	67° 11'37.63"E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	12" diameterAC	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	No	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth = 6 ft.


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Malir City Police Station	
<b>Location:</b>		
Latitude:	24°52'22.97"N	
Longitude:	67° 11'46.69"E	
<b>Conveyance Type:</b>	Connection	
<b>Pipe/Conduit Size:</b>	10" diameter PRCC	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	YES	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth = 8 ft.


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Malir Main (Murghi Khana)	
<b>Location:</b>		
Latitude:	24°51'36.15"N	
Longitude:	67° 12'27.20"E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	33" diameter PRCC	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	No	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth = 5 - 6 ft.


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Maymar (Gadap)	
<b>Location:</b>		
Latitude:	25° 0'19.57"N	
Longitude:	67° 7'54.81"E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	24" PRCC	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	New Chamber Required	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

### **Overall Remarks:**

Depth = 10 ft.

## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Maymar (Gadap)	
<b>Location:</b>		
Latitude:	25° 0'20.45"N	
Longitude:	67° 7'54.59"E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	18" PRCC	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	YES	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

### **Overall Remarks:**

Depth = 3-4 ft.


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Mubarak Shaheed Road	
<b>Location:</b>		
Latitude:	24°51'53.69"N	
Longitude:	67° 2'50.42"E	
<b>Conveyance Type:</b>	P1	
<b>Pipe/Conduit Size:</b>	54"	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	YES	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth=10 ft


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Nagan Chowrangi For Industrial Area	
<b>Location:</b>		
Latitude:	24°59'8.14"N	
Longitude:	67° 3'55.87"E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	48" MS	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	New Chamber	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth = 5 ft.


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Nagan Chowrangi	
<b>Location:</b>		
Latitude:	24°57'53.31"N	
Longitude:	67°4'4.36" E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	48" MS	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	Yes	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**


Depth = 4-5 ft.

## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Nasir Jump	
<b>Location:</b>		
Latitude:	24°49'31.25"N	
Longitude:	67° 7'25.80"E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	33" diameter PRCC	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	YES	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Near PTCL Exchange (1600 Road)	
<b>Location:</b>		
Latitude:	24°49'32.47"N	
Longitude:	67° 10'39.26"E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	12" diametermeter PRCC	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	No	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth=10 ft


## **WATER METER DATA SHEET**

<b>Water Meter:</b>		NEK Reservoir (66")	
<b>Location:</b>			
	Latitude:	25°1'11.05" N	
	Longitude:	67°9'34.28" E	
<b>Conveyance Type:</b>		Pipe	
<b>Pipe/Conduit Size:</b>		66"	
<b>Social Sensitive Receptor</b>		NO	
<b>Pipe Accessibility:</b>		YES	
<b>Eco-Sensitive Receptors</b>		NO	
<b>Security Aspects:</b>		Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth = 10 ft.


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	NEK Reservoir (84")	
<b>Location:</b>		
Latitude:	25°1'10.98" N	
Longitude:	67°9'34.26" E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	84" MS	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	YES	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth = 10 ft.


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	New Pipri Main (Labour Square)	
<b>Location:</b>		
Latitude:	24°50'12.33"N	
Longitude:	67° 14'29.51"E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	48" diameter PRCC	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	YES	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth=10 ft

## **WATER METER DATA SHEET**

<b>Water Meter:</b>		Old Chamman Cinema	
<b>Location:</b>			
	Latitude:	24°54'4.83" N	
	Longitude:	67°1'48.11" E	
<b>Conveyance Type:</b>		Pipe	
<b>Pipe/Conduit Size:</b>		15"	
<b>Social Sensitive Receptor</b>		NO	
<b>Pipe Accessibility:</b>		Yes	
<b>Eco-Sensitive Receptors</b>		NO	
<b>Security Aspects:</b>		Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth = 5 - 7 ft.


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Old Pipri Main (Feature Pump House)	
<b>Location:</b>		
Latitude:	24°50'58.71"N	
Longitude:	67° 12'17.48"E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	48" diameter PRCC	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	YES	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth=8-10 ft.


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Old Pipri Main	
<b>Location:</b>		
Latitude:	24°50'58.54" N	
Longitude:	67°12'17.36" E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	72" PRCC	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	within Pumping Station Boundary	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth = 10 ft.


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Old Regent Cinema	
<b>Location:</b>		
Latitude:	24°54'39.08" N	
Longitude:	67°1'18.79" E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	33" PRCC	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	On Road	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth=10 ft

## **WATER METER DATA SHEET**


		
<b>Water Meter:</b>	Old University Reservoir (Incoming Pipe)	
<b>Location:</b>		
Latitude:	24°55'50.57" N	
Longitude:	67°7'34.86" E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	33" PRCC	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	Difficult	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth = 8-10 ft.




## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Opp. Askari Park (Old Sabzi Mandi) (New SBL)	
<b>Location:</b>		
Latitude:	24°53'42.85"N	
Longitude:	67° 3'54.77"E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	33" PRCC	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	On Busy	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

### **Overall Remarks:**

Depth = 8"


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Opp. Gul Ahmed Textile (Sector H-T LIA)	
<b>Location:</b>		
Latitude:	24°51'39.35"N	
Longitude:	67° 16'47.11"E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	48" diameter PRCC	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	YES	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth = 8 ft.


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Outside Naval Boundary	
<b>Location:</b>		
Latitude:	24°49'34.96"N	
Longitude:	67° 10'54.42"E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	48" diameter PRCC	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	No	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

### **Overall Remarks:**

Depth = 8 ft.



## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Pak Colony (Zero Valve)	
<b>Location:</b>		
Latitude:	24°54'39.78" N	
Longitude:	66°59'26.16" E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	From 33" to 18"	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	On Road	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth = 8 ft.


## **WATER METER DATA SHEET**

<b>Water Meter:</b>	Pak Colony	 
<b>Location:</b>		
Latitude:	24°54'38.81" N	
Longitude:	67°0'52.38" E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	48"	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	Vendor EG's	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth = 9 – 10 ft



## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	PAP-I M.S for North Nazamabad	
<b>Location:</b>		
Latitude:	24°55'30.00"N	
Longitude:	67°1'56.54"E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	48" PRCC	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	Yes	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth=10 ft


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	PIC Tower (Dockyard)	
<b>Location:</b>		
Latitude:	24°50'40.99"N	
Longitude:	66°59'26.05"E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	24"	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	YES	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth = 5 ft.

## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	PIC Tower (Native Jetty Bridge)	
<b>Location:</b>		
Latitude:	24°50'41.07"N	
Longitude:	66°59'26.16"E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	24"	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	YES	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth = 5 ft.

## **WATER METER DATA SHEET**

		 
<b>Water Meter:</b>	PIDC Bridge	
<b>Location:</b>		
Latitude:	24°50'46.41"N	
Longitude:	67°1'23.38"E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	33"	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	YES	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth=10 ft


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Pipeline to Gharo Town	
<b>Location:</b>		
Latitude:	24°44'41.69"N	
Longitude:	67°34'59.14"E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	6" pipe	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	YES	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth=10 ft


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	PRCC Main (For Port Grand)	
<b>Location:</b>		
Latitude:	24°50'40.98" N	
Longitude:	66°59'26.05" E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	33" PRCC	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	Gate Valve Chamber	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth=10 ft


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Qasba Interconnection (SITE)	
<b>Location:</b>		
Latitude:	24°56'21.38"N	
Longitude:	67° 1'9.76"E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	33"	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	Valve Chamber present	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth = 10 ft


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Qasba More	
<b>Location:</b>		
Latitude:	24°56'20.49"N	
Longitude:	67° 1'8.53"E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	36"	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	Valve Chamber present	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth = 10 – 15 ft


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Qasba More Organi Line 32	
<b>Location:</b>		
Latitude:	24°56'20.68"N	
Longitude:	67° 1'8.46"E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	32"	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	Valve chamber is present	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth = 10 – 15 ft


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Qayyumabad	
<b>Location:</b>		
Latitude:	24°48'57.49"N	
Longitude:	67° 733.73"E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	33" diameter PRCC	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	YES	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth = 8 ft.


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Razzaqabad (Near Hascol Petrol Pump)	
<b>Location:</b>		
Latitude:	24°51'38.96"N	
Longitude:	67° 16'46.84"E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	48" diameter PRCC	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	YES	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth = 15 ft.


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Scheme 33 to Gulistan Johar (New)	
<b>Location:</b>		
Latitude:	24°56'5.00"N	
Longitude:	67°8'0.13"E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	33" MS	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	Yes	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth = 8-10 ft.


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Shareefabad for Gulberg	
<b>Location:</b>		
Latitude:	24°54'31.64" N	
Longitude:	67°3'11.90" E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	48" PRCC	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	Yes	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth = 8 ft.


## **WATER METER DATA SHEET**

<b>Water Meter:</b>	Shershah Chowk (Baldia Pump)	
<b>Location:</b>		
Latitude:	24°53'21.77"N	
Longitude:	66°58'58.63"E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	18" MS	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	Yes	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

### **Overall Remarks:**

Depth=10 ft


## **WATER METER DATA SHEET**

<b>Water Meter:</b>		Shershah P.S for Navy	
<b>Location:</b>			
	Latitude:	24°53'21.24" N	
	Longitude:	66°58'52.01" E	
<b>Conveyance Type:</b>		Pipe	
<b>Pipe/Conduit Size:</b>		12" MS	
<b>Social Sensitive Receptor</b>		NO	
<b>Pipe Accessibility:</b>		Yes	
<b>Eco-Sensitive Receptors</b>		NO	
<b>Security Aspects:</b>		Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth=12 ft

## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	T&C Reservoir For (Ferror Town)	
<b>Location:</b>		
Latitude:	24°51'50.27"N	
Longitude:	67° 2'47.12"E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	10'	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	YES	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth=10 ft


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	T&C Reservoir For (FTC Main)	
<b>Location:</b>		
Latitude:	24°51'47.09"N	
Longitude:	67° 2'48.72"E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	15" MS	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	New Chamber	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

### **Overall Remarks:**

Depth = 10 ft.


## **WATER METER DATA SHEET**

<b>Water Meter:</b>	T&C Reservoir For (Lines Area)	
<b>Location:</b>		
Latitude:	24°51'50.53"N	
Longitude:	67° 2'47.28"E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	12" PRCC	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	New Chamber	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**


Depth = 10 ft.

## WATER METER DATA SHEET

		
<b>Water Meter:</b>	T&C Reservoir For (Railway line)	
<b>Location:</b>		
<b>Latitude:</b>	24°51'46.93"N	
<b>Longitude:</b>	67° 2'48.94"E	
<b>Conveyance Type:</b>	PRCC Pipe	
<b>Pipe/Conduit Size:</b>	12"	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	New Chamber	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	T&T Exchange (Orangi)	
<b>Location:</b>		
Latitude:	24°56'13.41"N	
Longitude:	66°59'56.54"E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	48"	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	Gate Valve Chamber	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth=10 ft.


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Taj Medical Complex (M.A Jinah Road)	
<b>Location:</b>		
Latitude:	24°52'5.19"N	
Longitude:	67°1'48.76"E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	48"	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	Main road	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

### **Overall Remarks:**

Depth = 10 ft.


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	Towards 33" at 5 1/2 Landhi Korangi Pump House	
<b>Location:</b>		
Latitude:	24°49'23.50"N	
Longitude:	67° 9'55.62"E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	33" diameter PRCC	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	YES	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth= 8 ft.


## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	University Main (Scheme 33)	
<b>Location:</b>		
Latitude:	24°55'57.84" N	
Longitude:	67°7'33.81" E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	36" MS	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	Yes	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth = 8-10 ft.

## **WATER METER DATA SHEET**


		
<b>Water Meter:</b>	University Reservoir (54")	
<b>Location:</b>		
Latitude:	24°55'50.50" N	
Longitude:	67°7'34.5" E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	54" MS Two Nos.	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	Difficult, Recommend of Trees	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth = 6-8 ft.




## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	University Reservoir (Scour Pipe)	
<b>Location:</b>		
Latitude:	24°55'50.48" N	
Longitude:	67°7'34.6" Ess	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	12"	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	YES	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth = 7-8 ft.


## WATER METER DATA SHEET

<b>Water Meter:</b>	W-11 M.S For Gulbarg Town	
<b>Location:</b>		
<b>Latitude:</b>	24°55'52.86"N	
<b>Longitude:</b>	67° 7'34.58"E	
<b>Conveyance Type:</b>	MS	
<b>Pipe/Conduit Size:</b>	60"	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	Gate Valve Chamber	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**

Depth = 10 – 15ft

## **WATER METER DATA SHEET**

		
<b>Water Meter:</b>	W-II (Outer from University Reservoir)	
<b>Location:</b>		
Latitude:	24°55'52.86" N	
Longitude:	67°7'34.58" E	
<b>Conveyance Type:</b>	Pipe	
<b>Pipe/Conduit Size:</b>	66" MS	
<b>Social Sensitive Receptor</b>	NO	
<b>Pipe Accessibility:</b>	Difficult	
<b>Eco-Sensitive Receptors</b>	NO	
<b>Security Aspects:</b>	Best possible practices will be proposed however, security against theft/ hampering will be ensured by KWSB.	

**Overall Remarks:**



## List of Bulk Flow Meters

Sr.	Name/ Location	District	Town	Latitude	Longitude	Diameter
1	G.T-1) Shareefabad For Gulberg Ø18"	Karachi Central	Gulberg Town	24.913848	67.057403	18
2	U-5A.1) UBL Ground Ø18"	Karachi Central	Gulberg Town	24.932111	67.079669	18
3	G.T-2) Karimabad Chowrangi Ø24"	Karachi Central	Gulberg Town	24.91791	67.05347	24
4	U-5B.1) Kareemabad (FBM) From Gulberg Ø24"	Karachi Central	Gulberg Town	24.93629	67.075012	24
5	U-5B.2) For Industrial Area Block-21&22 Ø24"	Karachi Central	Gulberg Town	24.937516	67.076586	24
6	U-5B) W-11for Gulberg Ø48"	Karachi Central	Gulberg Town	24.936333	67.076445	48
7	U-5B.3) Balancing main for Gulberg Reverse Flow Ø48"	Karachi Central	Gulberg Town	24.935919	67.075882	48
8	N.N-1) Balancing Main for North Nazimabad Ø48"	Karachi Central	Gulberg Town	24.938384	67.074859	48
9	N.N-2) PAP-1 M.S For North Nazimabad Ø48"	Karachi Central	Gulberg Town	24.937895	67.074284	48
10	L.T-4) Eidgah Ground Nazimabad (To New Goli Maar) Ø18"	Karachi Central	Liaquatabad Town	24.909534	67.03091	18
11	L.T-1) Azam Nagar Adjacent Lyari Express Way Ø24"	Karachi Central	Liaquatabad Town	24.901113	67.060137	24
12	F.T-1A.1) From C Pump (To Baldia) Ø24"	Karachi Central	Liaquatabad Town	24.910102	67.025257	24
13	L.T-2) F.B. Mains for Liaquatabad Town Ø24"	Karachi Central	Liaquatabad Town	24.908124	67.049612	24
14	L.T-3) Eidgah Ground Nazimabad (To N.N) Ø24"	Karachi Central	Liaquatabad Town	24.912425	67.031419	24
15	F.T-1A) Eidgah Ground Nazimabad Ø33"	Karachi Central	Liaquatabad Town	24.910496	67.029777	33
16	F.T-1) FTM Ø48"	Karachi Central	Liaquatabad Town	24.907912	67.061291	48
17	N.K-1) Baba More 5A Ø6"	Karachi Central	North Karachi Town	25.005046	67.051115	6
18	N.K-6) Air valve Connection for 5D NK-Town Ø8"	Karachi Central	North Karachi Town	25.006457	67.071023	8
19	N.K-3) For Al Hameed PS Ø12"	Karachi Central	North Karachi Town	25.005098	67.054212	12
20	N.K-4) 4-K Chowrangi NK- Town Ø12"	Karachi Central	North Karachi Town	25.004599	67.064502	12
21	N.K-2) For Al Hameed PS Ø14"	Karachi Central	North Karachi Town	25.004324	67.05388	14
22	N.K-5) 4-K Chowrangi NK- Town Ø24"	Karachi Central	North Karachi Town	25.005337	67.064772	24
23	H-2B) 4-K Chowrangi Ø33"	Karachi Central	North Karachi Town	25.006455	67.065613	33
24	H-1.1) Ajmair Pump House (Site Town) Ø48"	Karachi Central	North Karachi Town	24.984952	67.051618	48
25	H-1.1A) Inside 5C-4 P.S for Nagan Chowrangi Ø48"	Karachi Central	North Karachi Town	24.985711	67.065818	48
26	N-2A.1A) Inside 5C-4 P.S Ø48"	Karachi Central	North Karachi Town	24.986594	67.06577	48
27	N-2A.1B) Saba Cinema Ø48"	Karachi Central	North Karachi Town	24.986781	67.086006	48
28	N-1A) Old Allah wali Pump Ø84"	Karachi Central	North Karachi Town	25.007687	67.091306	84

## Annex - I

Sr.	Name/ Location	District	Town	Latitude	Longitude	Diameter
29	N-1B) 4-K Chowrangi Surjani Ø84"	Karachi Central	North Karachi Town	25.006676	67.063278	84
30	N.N-5) 7-No Nazimabad (Mujahid Colony) Ø24"	Karachi Central	North Nazimabad Town	24.922935	67.031807	24
31	N.N-4) F.B Main Liaquatabad before Board Office Ø24"	Karachi Central	North Nazimabad Town	24.925893	67.033165	24
32	N.N-6) Board office (Banaras) Ø33"	Karachi Central	North Nazimabad Town	24.92534	67.030954	33
33	N.N-3) Delivery of Sakhi Hasan P.S Ø36"	Karachi Central	North Nazimabad Town	24.951939	67.061609	36
34	N.K-7) Nagan Chowrangi Ø48" For N.K Town	Karachi Central	North Nazimabad Town	24.9658	67.067079	48
35	N.N-1) Balancing Main for North Nazimabad Ø48"	Karachi Central	North Nazimabad Town	24.948353	67.065613	48
36	N.N-2) PAP-1 M.S For North Nazimabad Ø48"	Karachi Central	North Nazimabad Town	24.947864	67.065038	48
37	Nagan Chowrangi For Industrial Area Ø48"	Karachi Central	North Nazimabad Town	24.964603	67.067602	48
38	N.N-7) Banaras Chowk Ø33"	Karachi Central	SITE Town	24.932016	67.017157	33
39	F.T-1A.2) Old Regent Cinema (Orangabad PS) Ø33"	Karachi Central	SITE Town	24.91038	67.020233	33
40	H-1B.1) Banaras (FTM Link) Ø48"	Karachi Central	SITE Town	24.931946	67.015616	48
41	U-1) University Reservoir (Scour Pipe) Ø12"	Karachi East	Gulshan e Iqbal Town	24.929324	67.124314	12
42	C-1) COD Filter Plant (Lyari Main)/ Benazir Ø24"	Karachi East	Gulshan e Iqbal Town	24.904081	67.091331	24
43	H.S.R-1) Loop-1 Time Medicos Ø24"	Karachi East	Gulshan e Iqbal Town	24.89024	67.085577	24
44	H.S.R-2) Loop-2 Ø24"	Karachi East	Gulshan e Iqbal Town	24.889332	67.086215	24
45	L.S.R-2) Rising Main Towards HSR Ø33"	Karachi East	Gulshan e Iqbal Town	24.895906	67.074007	33
46	U-9) Old University Reservoir (Incoming) Ø33"	Karachi East	Gulshan e Iqbal Town	24.929301	67.127758	33
47	C-3.2.1) Old Subzi Mandi from W-12 (New SBL) Ø33"	Karachi East	Gulshan e Iqbal Town	24.89553	67.064918	33
48	C-5) COD Filter Plant (LSR Rising Main) Ø33"	Karachi East	Gulshan e Iqbal Town	24.901312	67.089537	33
49	U-2) Gulistan-e-Jauhar Ø36"	Karachi East	Gulshan e Iqbal Town	24.932178	67.1237	36
50	U-3) University Main (Scheme-33) Ø36"	Karachi East	Gulshan e Iqbal Town	24.933174	67.124773	36
51	C-6) COD Filter Plant (Kidney Main) Ø48"	Karachi East	Gulshan e Iqbal Town	24.897938	67.092107	48
52	C-2) COD Filter Plant (Gulshan) Ø48"	Karachi East	Gulshan e Iqbal Town	24.903067	67.090467	48
53	C-3.1) Shamshaad Wala Valve Ø48"	Karachi East	Gulshan e Iqbal Town	24.9144	67.091615	48
54	C-4.1) FTM Ø48"	Karachi East	Gulshan e Iqbal Town	24.892303	67.082593	48
55	U-4) Balancing Main Ø48"	Karachi East	Gulshan e Iqbal Town	24.932733	67.126058	48
56	C-3.3) At BZEEB Valve Balancing Main Ø54"	Karachi East	Gulshan e Iqbal Town	24.898039	67.068771	54
57	C-3.3A) Old Sabzi Mundi Balancing Main Ø54"	Karachi East	Gulshan e Iqbal Town	24.893268	67.0638	54

## Annex - I

Sr.	Name/ Location	District	Town	Latitude	Longitude	Diameter
58	U-7) Incoming University Reservoir Ø54"	Karachi East	Gulshan e Iqbal Town	24.929121	67.125527	54
59	U-8) Incoming University Reservoir Ø54"	Karachi East	Gulshan e Iqbal Town	24.929134	67.126537	54
60	L.S.R-1) CI Ø60"	Karachi East	Gulshan e Iqbal Town	24.895644	67.070543	60
61	C-4A) Old CTM Ø60"	Karachi East	Gulshan e Iqbal Town	24.894493	67.069315	60
62	U-5A) W-11 M.S For Gulberg Town Ø60"	Karachi East	Gulshan e Iqbal Town	24.928522	67.088312	60
63	C-3) COD Filter Plant (W-12) Ø66"	Karachi East	Gulshan e Iqbal Town	24.901915	67.089008	66
64	C-3.2) At BZEEB Valve W-12 Ø66"	Karachi East	Gulshan e Iqbal Town	24.89768	67.067845	66
65	U-5) W-11 Out from University Reservoir Ø66"	Karachi East	Gulshan e Iqbal Town	24.930495	67.126981	66
66	C-4) COD Filter Plant (OLD CTM) Ø72"	Karachi East	Gulshan e Iqbal Town	24.899219	67.091787	72
67	C-7) COD Filter Plant Incoming Ø84"	Karachi East	Gulshan e Iqbal Town	24.901237	67.091066	84
68	C-8) COD Filter Plant Incoming Ø84"	Karachi East	Gulshan e Iqbal Town	24.901414	67.092078	84
69	C-9) COD Filter Plant Incoming Ø84"	Karachi East	Gulshan e Iqbal Town	24.901581	67.093033	84
70	J.T-3)Khalid Bin Waleed Road (Loop-1) Ø18"	Karachi South	Jamshed Town	24.882929	67.063614	18
71	C-4A.2) For Awami P.S from Old CTM Ø12"	Karachi South	Jamshed Town	24.871023	67.047823	12
72	J.T-2) Khudad Colony Ø12"	Karachi South	Jamshed Town	24.884394	67.054854	12
73	T-2) T&C Reservoir For (Lines Area) Ø12"	Karachi South	Jamshed Town	24.864628	67.046	12
74	T-3) T&C Reservoir For (Ferror Town) Ø12"	Karachi South	Jamshed Town	24.864323	67.046389	12
75	T-4) T&C Reservoir (Railway line) Ø12"	Karachi South	Jamshed Town	24.864337	67.045639	12
76	T-5) For KPT Ø12"	Karachi South	Jamshed Town	24.864	67.046001	12
77	T-1) T&C Reservoir For (Chalesar goth) Ø15"	Karachi South	Jamshed Town	24.865023	67.046461	15
78	C-4A.3.1) For Defense Main from Old CTM Ø15"	Karachi South	Jamshed Town	24.863186	67.047029	15
79	J.T-1) Khudad Colony Ø15"	Karachi South	Jamshed Town	24.884184	67.057752	15
80	S.T-2) Empress Market Preedy Street for Sadar Ø21"	Karachi South	Jamshed Town	24.861784	67.029408	21
81	C-6B) Mahmood Abad P.S (Kidney Main) Ø24"	Karachi South	Jamshed Town	24.84561	67.08181	24
82	C-4A.1) Jail Road Chowrangi (SBL) Ø33"	Karachi South	Jamshed Town	24.885048	67.056136	33
83	C-4A.1.1) Lasbella Bridge Ø33"	Karachi South	Jamshed Town	24.887183	67.032866	33
84	C-4A.3.2) Main For Kemari Ø33"	Karachi South	Jamshed Town	24.855559	67.039342	33
85	C-4A.3.3) Regent Plaza Hotel (For Clifton) Ø33"	Karachi South	Jamshed Town	24.854776	67.040683	33
86	C-4A.3.3A) Askari III Ø33"	Karachi South	Jamshed Town	24.847691	67.042522	33

## Annex - I

Sr.	Name/ Location	District	Town	Latitude	Longitude	Diameter
87	L.S.R-1B) Taj Medical Complex (M.A. Jinnah Road) From CI 60 Ø48"	Karachi South	Jamshed Town	24.866839	67.028031	48
88	C-6A) Baloch Colony Bridge (Kidney Main) Ø48"	Karachi South	Jamshed Town	24.865976	67.077676	48
89	L.S.R-1A) From CI 60 Main Near Mazar-e-Quaid Ø48"	Karachi South	Jamshed Town	24.884309	67.05585	48
90	C-3.2A) Shahrah-e-Qaideen Ø54" W-12/ New CTM	Karachi South	Jamshed Town	24.871748	67.048794	54
91	C-4A.3) Shahrah-e-Qaideen Ø54" from Old CTM	Karachi South	Jamshed Town	24.870491	67.048122	54
92	L.T-1) Main at Peoples Ground (KPT-Link) Ø15"	Karachi South	Lyari Town	24.85279	66.992781	15
93	C-4A.1.2) Lyari Main at Mirza Adam Khan Road Ø24"	Karachi South	Lyari Town	24.87762	66.991051	24
94	C-3.2.1A) New SBL Bakra Peri Ø33"	Karachi South	Lyari Town	24.87852	66.992703	33
95	S.T-1) Main KPT-Link (At G. Alana Road) Ø15"	Karachi South	Sadar Town	24.849935	66.991789	15
96	S.T-5) Main at Siddiq Wahab Road Ø18"	Karachi South	Sadar Town	24.876061	67.020899	18
97	C-3.2B.1) Main at Lilly Bridge (towards Ghizvi PNS) Ø18"	Karachi South	Sadar Town	24.841748	67.038068	18
98	C-3.2C) Lilly Bridge (End point) Ø18"	Karachi South	Sadar Town	24.821779	67.046231	18
99	S.T-3) Main at Garden Old System (From CI 60) Ø24"	Karachi South	Sadar Town	24.872719	67.022403	24
100	S.T-4) Dhobi Ghaat, Mirza Adam Khan Road Ø24"	Karachi South	Sadar Town	24.878111	67.016542	24
101	C-3.2B) Main at Lilly Bridge (towards Do Talwar) Ø33"	Karachi South	Sadar Town	24.841979	67.036943	33
102	C-4A.3.2A) Main at Metropole Ø33"	Karachi South	Sadar Town	24.852003	67.03338	33
103	C-4A.3.2B) PIDC Bridge Ø33"	Karachi South	Sadar Town	24.846178	67.022882	33
104	C-4A.3.2C) Port Grand Ø33"	Karachi South	Sadar Town	24.844815	66.996075	33
105	H-3C) Football Ground 8 No. Baldia Ø33"	Karachi West	Baldia Town	24.929613	66.959211	33
106	H-1B.2A.1) Ghulam Shah Dera Baldia Ø36"	Karachi West	Baldia Town	24.941228	66.986194	36
107	H-3B) Near Jama Ziaul Madaras Ø48"	Karachi West	Baldia Town	24.969344	66.934569	48
108	Gulbai for PAF Ø4"	Karachi West	Kemari Town	24.876797	66.964634	4
109	K.T-1) Gulbai for GREX Ø10"	Karachi West	Kemari Town	24.876506	66.964273	10
110	K.T-3) Gulbai for Maripur Ø10"	Karachi West	Kemari Town	24.876492	66.965023	10
111	Gulbai for PAF Base Ø18"	Karachi West	Kemari Town	24.879364	66.964071	18
112	B.T-1) Shershah Chowk (Baldia Pump) Ø18"	Karachi West	Kemari Town	24.889735	66.981982	18
113	K.T-4) Gulbai for Islands Ø18"	Karachi West	Kemari Town	24.875949	66.965175	18
114	K.T-2) Gulbai for Manoora Ø24"	Karachi West	Kemari Town	24.876169	66.964636	24

## Annex - I

Sr.	Name/ Location	District	Town	Latitude	Longitude	Diameter
115	C-4A.3.2C.1)PIC Tower (Native Jetty Bridge) Ø24"	Karachi West	Kemari Town	24.843705	66.990185	24
116	C-4A.3.2C.2) PIC Tower (Dockyard) Ø24"	Karachi West	Kemari Town	24.849226	66.987408	24
117	H-1B.2A.2) Sabri PS Ø24"	Karachi West	Orangi Town	24.943218	66.989384	24
118	H-4B) Urdu Chowk Orangi Ø24"	Karachi West	Orangi Town	24.943565	66.988897	24
119	H-4A) German PS Ø24"	Karachi West	Orangi Town	24.9737	66.998491	24
120	H-1.3) Qasba More (Orangi) Ø32"	Karachi West	Orangi Town	24.939284	67.018879	32
121	H-1.2) Qasba Inter Connection (SITE) Ø33"	Karachi West	Orangi Town	24.941662	67.020049	33
122	H-1.4) Qasba More Ø36"	Karachi West	Orangi Town	24.939076	67.018011	36
123	H-1B) Banaras Pump House (Orangi) Ø48"	Karachi West	Orangi Town	24.933386	67.015661	48
124	H-1B.2A) T&T Exchange (Orangi) Ø48"	Karachi West	Orangi Town	24.936972	66.999138	48
125	Shershah P.S for Navy Ø12"	Karachi West	SITE Town	24.88883	66.981769	12
126	SITE-3) Main at Pahar Ganj Ø12"	Karachi West	SITE Town	24.932137	67.014051	12
127	SITE-1) Pak Colony (Zero Valve) Ø18"	Karachi West	SITE Town	24.909395	67.014994	18
128	F.T-1C) Haroonabad (FTM) Ø24"	Karachi West	SITE Town	24.908725	67.009844	24
129	H-1B.1B) Haroonabad (BDM) Ø24"	Karachi West	SITE Town	24.910429	67.011201	24
130	F.T-1D) Gulbai Chowk Ø24"	Karachi West	SITE Town	24.875866	66.966793	24
131	F.T-1B) Habib Bank Chowrangi Ø33"	Karachi West	SITE Town	24.91099	67.015575	33
132	H-1B.1A) Pak Colony Ø48"	Karachi West	SITE Town	24.911999	67.01406	48
133	H-1B.2) Banaras Chowk (SITE) Ø48"	Karachi West	SITE Town	24.932664	67.014708	48
134	B.Q-2) at Korangi 5 1/2 Ø12"	Korangi	Bin Qasim Town	24.821782	67.166092	12
135	B.Q-3) at Jamia Masjid Gulistan Ø12"	Korangi	Bin Qasim Town	24.820498	67.159697	12
136	B.Q-4) at Coast Gaurd Chowrangi Ø12"	Korangi	Bin Qasim Town	24.817951	67.148202	12
137	B.Q-1) at Char Poll Chorwangi Ø12"	Korangi	Bin Qasim Town	24.816257	67.171253	12
138	B.Q-5) Near Eid Gah Qadria Rizvia Ø12"	Korangi	Korangi Town	24.815419	67.140431	12
139	K.T-1) Near Jamia Darul Uloom Ø12"	Korangi	Korangi Town	24.841922	67.157257	12
140	K.T-2) Near Korangi GPO Ø12"	Korangi	Korangi Town	24.839251	67.142961	12
141	K.T-4) Near Bangali Fish Market Ø12"	Korangi	Korangi Town	24.845594	67.140647	12
142	L.T-1) Near Karbla P.S Ø15"	Korangi	Korangi Town	24.830608	67.178688	15
143	K.M-1A.1A.1) Chakra Goth Ø24"	Korangi	Korangi Town	24.813272	67.127154	24

## Annex - I

Sr.	Name/ Location	District	Town	Latitude	Longitude	Diameter
144	K.M-1A.1C) Brooks Chowrangi Korangi Main Ø24"	Korangi	Korangi Town	24.834292	67.09903	24
145	K.T-3) Near Bilal Chowrangi Ø24"	Korangi	Korangi Town	24.842683	67.141172	24
146	K.M-1A.1A.2) Qayyumabad Ø33"	Korangi	Korangi Town	24.819997	67.124741	33
147	K.M-1A.1A) UMDC Ø33"	Korangi	Korangi Town	24.815843	67.127664	33
148	K.M-1A.1B) Shan Chowrangi Ø33"	Korangi	Korangi Town	24.838317	67.120799	33
149	K.M-1A.2A) UMDC Ø33"	Korangi	Korangi Town	24.815677	67.128412	33
150	K.M-1A.2B) Shan Chowrangi Ø33"	Korangi	Korangi Town	24.837841	67.121198	33
151	L.T-2) At Korangi Model Park Ø33"	Korangi	Korangi Town	24.827859	67.164736	33
152	K.M-1A) Outside Naval Boundary Ø48"	Korangi	Korangi Town	24.826212	67.181924	48
153	K.M-1A.1) at Korangi 5 1/2 Ø48"	Korangi	Korangi Town	24.82288	67.165323	48
154	K.M-1A.2) at Korangi 5 1/2 Ø48"	Korangi	Korangi Town	24.823047	67.164575	48
155	P-2B) New Pipri Main before Y-Point Ø48"	Korangi	Landhi Town	24.839345	67.205007	48
156	P-1B.1A) Old Pipri Main after Feature Pump House Ø48"	Korangi	Landhi Town	24.850193	67.198682	48
157	P-2A) New Pipri Main (Labour Colony/ PMTF) Ø48"	Korangi	Landhi Town	24.835905	67.249792	48
158	Feature Pump House at Manifold Ø54"	Korangi	Landhi Town	24.849644	67.203434	54
159	K.M-1) Korangi Main Ø66"	Korangi	Landhi Town	24.836652	67.205041	66
160	S.F-1) Airport Madam Apartment Ø18"	Korangi	Shah Faisal Town	24.882422	67.180832	18
161	H.C-1B) Haleji Conduit (Juma Goth) Ø33"	Korangi	Shah Faisal Town	24.865216	67.189563	33
162	P-1B.2B) Jinnah Avenue Pump House Malir Ø33"	Korangi	Shah Faisal Town	24.884669	67.174714	33
163	H.C-1C) Haleji Conduit at Shah Faisal Colony No.4 Ø54"	Korangi	Shah Faisal Town	24.876035	67.132846	54
164	H.C-1.2) Cattle Colony Pump Ø12"	Malir	Bin Qasim Town	24.837927	67.258846	12
165	H.C-1.1) Line from Haleji Conduit for Cattle Colony Pump Ø18"	Malir	Bin Qasim Town	24.835516	67.267246	18
166	P-3) MDA Ø24"	Malir	Bin Qasim Town	24.892881	67.345275	24
167	P-1B.2) Malir Main (Murghi Khana) Ø33"	Malir	Bin Qasim Town	24.854849	67.211991	33
168	P-4) Saudabad P.S Ø36"	Malir	Bin Qasim Town	24.891845	67.339175	36
169	P-1A) Razzaqabad (Near Hascol Petrol Pump) Ø48"	Malir	Bin Qasim Town	24.866257	67.306228	48
170	P-1B) Opp. Gul Ahmed Textile Ø48"	Malir	Bin Qasim Town	24.854567	67.23004	48
171	P-1B.1) Younus Textile Ø48"	Malir	Bin Qasim Town	24.846386	67.227446	48
172	H.C-1) Haleji Conduit (Marshal Yard) Ø54"	Malir	Bin Qasim Town	24.846166	67.475794	54

## Annex - I

Sr.	Name/ Location	District	Town	Latitude	Longitude	Diameter
173	H.C-1A) Haleji Conduit (Labour Colony/PMTF) Ø54"	Malir	Bin Qasim Town	24.836948	67.249681	54
174	P-1) Old Pipri Main Ø54"	Malir	Bin Qasim Town	24.894055	67.344357	54
175	P-2) New Pipri Main Ø54"	Malir	Bin Qasim Town	24.892952	67.344136	54
176	D-10) Dhabeji Line No.10 Ø60"	Malir	Bin Qasim Town	24.814262	67.525426	60
177	D-9) Dhabeji Line No.9 Ø60"	Malir	Bin Qasim Town	24.813387	67.5252	60
178	D-1) Dhabeji Line No.1 Ø72"	Malir	Bin Qasim Town	24.811653	67.524667	72
179	D-2) Dhabeji Line No.2 Ø72"	Malir	Bin Qasim Town	24.812508	67.524938	72
180	D-3) Dhabeji Line No.3 Ø72"	Malir	Bin Qasim Town	24.813116	67.526174	72
181	D-4) Dhabeji Line No.4 Ø72"	Malir	Bin Qasim Town	24.812186	67.525904	72
182	D-5) Dhabeji Line No.5 Ø72"	Malir	Bin Qasim Town	24.811273	67.525661	72
183	D-6) Dhabeji Line No.6 Ø72"	Malir	Bin Qasim Town	24.812925	67.527203	72
184	D-7) Dhabeji Line No.7 Ø72"	Malir	Bin Qasim Town	24.811996	67.526933	72
185	D-8) Dhabeji Line No.8 Ø72"	Malir	Bin Qasim Town	24.811083	67.526689	72
186	N-3) Afghan Refugee Ø6"	Malir	Gadap Town	25.021037	67.159041	6
187	H-6) Hub Reservoir Water Board Line Ø12"	Malir	Gadap Town	25.004033	67.021185	12
188	H-4) Hub Reservoir for German P.S Ø24"	Malir	Gadap Town	25.00251	67.02121	24
189	H-5) Hub Reservoir at Present Dead Line Ø24"	Malir	Gadap Town	25.003207	67.020497	24
190	G.T-2) 4-K Chowrangi Surjani Ø30"	Malir	Gadap Town	25.007293	67.064377	30
191	G.T-1) Baba More (Gadap Town) Ø33"	Malir	Gadap Town	25.006638	67.054	33
192	H-2A) Chungi Naka (Surjani) Ø33"	Malir	Gadap Town	25.001343	67.036576	33
193	N-2A.2) Sindhu Chowk Ø33"	Malir	Gadap Town	24.98601	67.109577	33
194	N-2A.2A) Scheme 33 to Gulistan-e-Jauhar Ø33"	Malir	Gadap Town	24.977016	67.120694	33
195	H-3) Hub Reservoir for Baldia Ø48"	Malir	Gadap Town	25.002186	67.019739	48
196	H-3A) City Waste Incinerator Ø48"	Malir	Gadap Town	24.995803	66.94468	48
197	N-4) NEK Reservoir Ø48" For Tenes Town Proposed	Malir	Gadap Town	25.0206	67.161853	48
198	H-1A) In front Dadex Factory Ø48"	Malir	Gadap Town	24.97781	67.040115	48
199	H-2) Hub Reservoir Surjani Ø48"	Malir	Gadap Town	25.003601	67.022306	48
200	N-2A.1) Sindhu Chowk Ø48"	Malir	Gadap Town	24.986839	67.108251	48
201	H-1) Hub Reservoir Banaras Ø66"	Malir	Gadap Town	25.004052	67.023989	66

**Annex - I**

<b>Sr.</b>	<b>Name/ Location</b>	<b>District</b>	<b>Town</b>	<b>Latitude</b>	<b>Longitude</b>	<b>Diameter</b>
202	N-2) NEK Reservoir Ø66"	Malir	Gadap Town	25.01975	67.16086	66
203	N-2A) Ahsanabad Chowrangi Ø66"	Malir	Gadap Town	25.001161	67.123423	66
204	N-1C) Chungi Naka (Hub PS) Ø72"	Malir	Gadap Town	25.001883	67.036092	72
205	N-1D) Incoming Line from NEK Ø72"	Malir	Gadap Town	25.018341	67.021237	72
206	N-1) NEK Reservoir Ø84"	Malir	Gadap Town	25.0202	67.159944	84
207	P-1B.2A) Bilal Plaza Malir Ø33"	Malir	Malir Town	24.866976	67.203361	33
208	G-3) Pipeline to Gharo Town Ø6"	Outside Area	Outside Area	24.745208	67.583638	6
209	G-1) Gharo F.P Incoming Ø36"	Outside Area	Outside Area	24.745228	67.58169	36
210	G-2) Gharo F.P Incoming Ø42"	Outside Area	Outside Area	24.770778	67.567242	42
211	G-4) Gharo F.P Outgoing Ø42"	Outside Area	Outside Area	24.770754	67.564785	42

**Annex-II**  
**Photolog of Consultation**

## Photolog of Institutional Consultations



**Meeting with GIS Section of Anti-Encroachment Cell (Commissioner's Office)**



**Meeting with Additional Commissioner – II**



**Meeting with Mr. Junaid Khan Director General Parks and Horticulture**



**Meeting with Prem Kumar (PD) Local Govt. Housing & Town Planning Department**



**Meeting with Mr. Sarmad Shah of K- Electric**



**Meeting with Mr. Imran Sabir of SEPA**



**Meeting with Mr. Javed Ahmad Mahar  
Director Wildlife of Sindh Forest & Wild Life  
Department**



**Meeting with Mr. Zahid Farooq of Urban  
Resource Center**

**Meeting with Government Departments**

### Photolog of Public Consultations









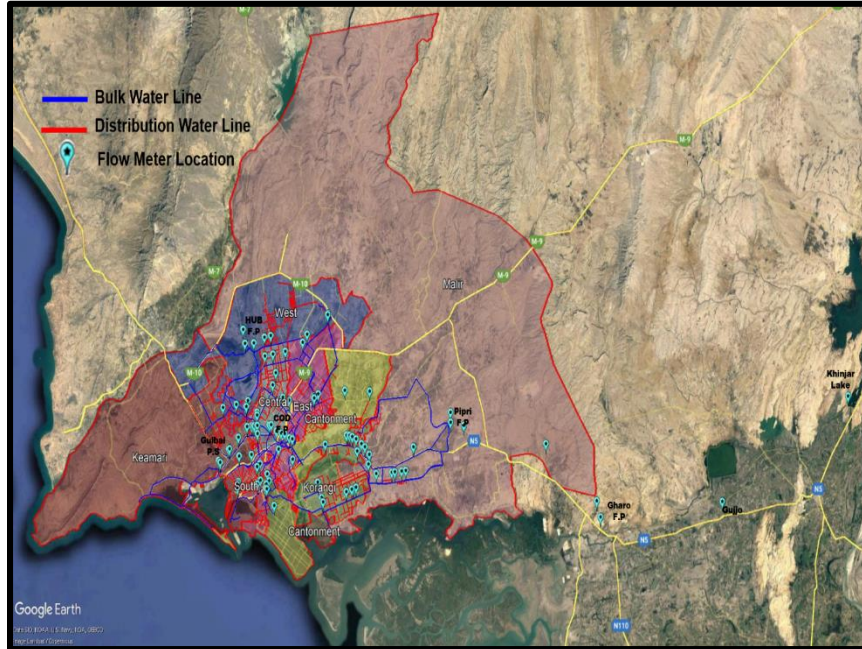




**Annex-III**  
**AED Screening Report**



# ANTI-ENCROACHMENT DRIVE (AED)



## SCREENING REPORT BULK FLOW METERS

March 2022



National Engineering Services Pakistan (Pvt) Limited  
1-C, Block N, Model Town Ext, Lahore 54700, Pakistan  
Phone: +92-42-99090000 Ext 458 Fax: +92-42-99231950  
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<http://www.nespak.com.pk>

Clearance Code		Doc No.		Rev No.	00
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## KARACHI WATER AND SEWERAGE SERVICES IMPROVEMENT PROJECT

### ANTI-ENCROACHMENT DRIVE (AED) RELATED SCREENING REPORT

#### Bulk Flow Meters

#### 1. Introduction

The Karachi Water & Sewerage Services Improvement Project (KWSSIP), funded by World Bank and AIB, is an initiative of Government of Sindh (GoS) and Karachi Water and Sewerage Board (KW&SB) to improve water and sewerage services in Karachi. This Project has been appraised to an indicative cost of USD 1.6 billion as a Reform Led Investment Program in 4 overlapping phases to be implemented in a span of 12 years. The Phase 1 of KWSSIP, which is named SOP 1 (Series of Projects 1) has an investment portfolio of USD 100 million. Its implementation is being undertaken by GoS/KW&SB commencing with a number of procurements likely to take place within a short period of time.

The SOP1 of KWSSIP has been designed in following three components:

**Component 1:** Reform in Karachi Water and Sewerage Board

**Component 2:** Securing Sustainable Water Supply & Sewerage (Infrastructure investments)

**Component 3:** Project Management and Studies

However, three sub-projects under Components 2 of SOP1 are included under the scope of the Consultant (NESPAK):

Sr. No.	Assignment	Project	Target
1	A	Rehabilitating Water Supply and/or Sewerage in three low-income areas	Provision of water supply and sewerage networks in 03 nos. Low-income Communities/ Katchi Abadis
2	B	Priority Water Network Rehabilitation including O&M Equipment, Meters & DMAs to Reduce NRW	Installation of Bulk Flow Meters and chlorination stations
3	C	Priority Sewer Network Rehabilitation	Provision of sewerage networks in priority schemes

#### 2. Anti-Encroachment Drive (AED)

Informal settlements and squatters are widespread in Karachi, including residential and commercial encroachers on vacant lands, sidewalks, public spaces etc. A major Anti-Encroachment Drive (AED) was initiated in Karachi in October 2018 on the order of the Supreme Court of Pakistan. The Court ordered to vacate public spaces (parks, footpaths, amenity plots, etc.) across the city from unauthorized uses and occupations. The order is currently under implementation by various civic and local agencies, including Karachi Municipal Corporation (KMC), who are required to report periodically to the Court on progress.



The focus of the AED is on commercial activities encroaching public spaces. Thousands of businesses, street vendors and hawkers have been affected, primarily in the most commercial districts. Acknowledging the adverse impacts of AED on the poor and vulnerable groups, the Government of Sindh (GoS) and local agencies like KMC are making efforts to relocate some affected businesses.

### **2.1 Types of Structures and/or Non-structures affected by AED Activities**

Types of structures removed or affected by AED activities are listed below:

- Illegal shops/cabins
- Sunshades
- Illegal walls and wall fixtures
- Extended portions (of shops, hotels, cabins, marriage halls)
- Marriage halls/fitness centers/buildings/illegal construction on green
- Belts and plots
- Chabootras (paved terrace, raised platform) and foot steps
- Thailay (pushcarts)/ patharay (selling on rug, or table counter)/counters, misc.

### **2.2 Zone of impact:**

In general, for sewer and water network refurbishment and rehabilitation (including in low-income communities), the zone of impact for each subproject, individual sewer or water rehabilitation schemes, is defined as the trench for the placement of the sewer or water supply pipe in the street and any additional area required for construction related activities (construction camp, parking of machinery, stocking of materials, debris, backfill, area used by construction labor, or any other temporary use etc.); and, any areas impacted temporarily by the construction (e.g. due to reduced access). Bank policies (OP 4.12) and the screening mechanism applies to the subproject zone of impact.

### **2.3 Project's Policy on AED**

According to Project Appraisal Document (PAD) of the current study *“Potential subproject sites (including proposed construction sites and associated zones of impact) located within areas already impacted by the AED on or after October 27, 2018 will not be eligible for financing under the project”*.

### **2.4 Project's Planning in view of AED**

The Bulk Flow Meters are planned to be installed at bulk water lines of the city at multiple locations. The installation of these meters would have minimal construction-related impacts, as the area of influence/ zone of impact would not exceed 6' x 6' trench work. However, in view of encroachment issues and current AED activities in the city, only those locations have selected where currently there are no encroachment and social issues specially in terms of loss of income and businesses.

### 3. Project Risk Reduction Procedure (PRRP)

Each subproject was first assessed to determine if it is located in an area affected by AED. The assessment also determined the extent to which surrounding areas of the proposed subproject were also affected by AED. Only subprojects whose construction sites plus associated zones of impact are located in areas that have not been impacted by the AED will be eligible for financing. Zones of impact for different typologies of subprojects were determined, on a case-by-case basis, following procedures outlined in the project's SMF/RPF. These screening criteria are summarized below as a step-wise process and are described in detail in the project's SMF and RPF.

**Step 1:** KWSB prepared a list of subprojects for renewal, rehabilitation, and replacement of the sewerage and water supply networks rehabilitation during early project implementation. These lists of subprojects will be matched with the lists of areas where the AED activities have taken place in Karachi – available with the Commissioner Karachi Division - to identify if any of the subprojects lie in any of these areas. This 'matching' will enable the current AED status of each subproject to be identified. Only subprojects with no AED will be eligible for Bank financing and their preparation will continue in accordance with safeguards frameworks and other Bank policies.

**Step 2:** While KWSSIP will ensure exclusion of areas where AED has already happened in the past (under Step 1), there may be unforeseen cases in which government agencies need to carry out AED activities, under Supreme Court orders, in KWSSIP subproject areas while construction is underway. In order to address such unforeseen cases, KWSB will develop a working arrangement with the Commissioner Karachi Division (the office tasked by the GoS to co-ordinate AED activities in Karachi) to ensure compliance with the KWSSIP RPF during subproject construction.

**Step 3:** KWSB will prepare a screening report for each subproject- including evidence of no AED in the subproject area; photographic record and baseline information documentation for each subproject; letter of agreement with the Commissioner Karachi Division – and share it with the third-party monitor for verification. The verified report will be submitted to the Bank for clearance and no objection.

### 4. Screening of AED Affected Areas

Commissioner's office was approached to collect previous data available with the department with reference to AED. Unfortunately, no past data is available in this regard, therefore, AED related screening of subproject sites was carried out in different districts of Karachi with the help of focal persons of District Municipal Corporations (DMCs), Municipal Corporations (MCs) and District Councils nominated by concerned Deputy Commissioners' offices.

Joint visits of focal persons from civic agencies, Environmental and Gender (Social) Experts of KWSSIP (Client) and the Consultants of SOP-1 were conducted to screen out the subprojects affected by AED in a week-long activity starting from 28.02.2022 to 04.03.2022.

Summary of Meetings held with Additional Commissioner – II and Assistant Commissioner is given in **Table 1** below:

### Summary of Meetings

Sr. No.	Venue	Date	Time	Participants			Points Discussed
				Name	Department	Designation	
01.	<u>Commissioner's Office</u>	21-02-22	11:00 am	Miss Sara	Commissioner's Office	Assistant Commissioner	<ul style="list-style-type: none"> <li>AC Miss Sara informed that 30 focal persons from different DMCs and KMC have been trained to collect AED related data through a mobile app named Kobo Collect for CLICK project.</li> <li>It was suggested by the participants to nominate already trained personnel for collecting AED data for KWSSIP.</li> <li>It was decided that a field plan will be shared with the AC office which will be forwarded to the concerned DC offices for nomination of focal persons.</li> </ul>
				Miss Hameeda Kaleem	KWSSIP	Social (Gender) Expert	
				Miss Kiran Bano	KWSSIP	Environmental Expert	
				Mr. Syed Zeeshan Abbas	NESPAK	Senior Engineer	
				Mr. Asad Iqbal	Anti-Encroachment Cell	GIS Expert	
02.	<u>Commissioner's Office</u>	24-02-22	01:00 pm	Mr. Jawad Muzaffar	Commissioner's Office	<u>Additional Commissioner - II</u>	

Sr. No.	Venue	Date	Time	Participants			Points Discussed
				Name	Department	Designation	
				Miss Sara	Commissioner's Office	Assistant Commissioner	<ul style="list-style-type: none"> <li>• The Project background and its components were briefly discussed</li> <li>• Clarity and identification of SOPs</li> <li>• Discussion on AED related activities in Karachi</li> <li>• Current status of AED was also discussed</li> <li>• Discussion of WB's policy on AED</li> <li>• Planning for Physical Verification, Community Involvement</li> <li>• Planning for joint surveys</li> <li>• Development of Time schedule/ work plan to communicate with other Departments</li> </ul>
				Miss Hameeda Kaleem	KWSSIP	Social (Gender) Expert	
				Miss Kiran Bano	KWSSIP	Environmental Expert	
				Saeed Hussain	NESPAK	Social and Resettlement Expert	
				Mr. Syed Zeeshan Abbas	NESPAK	Environmental Engineer	



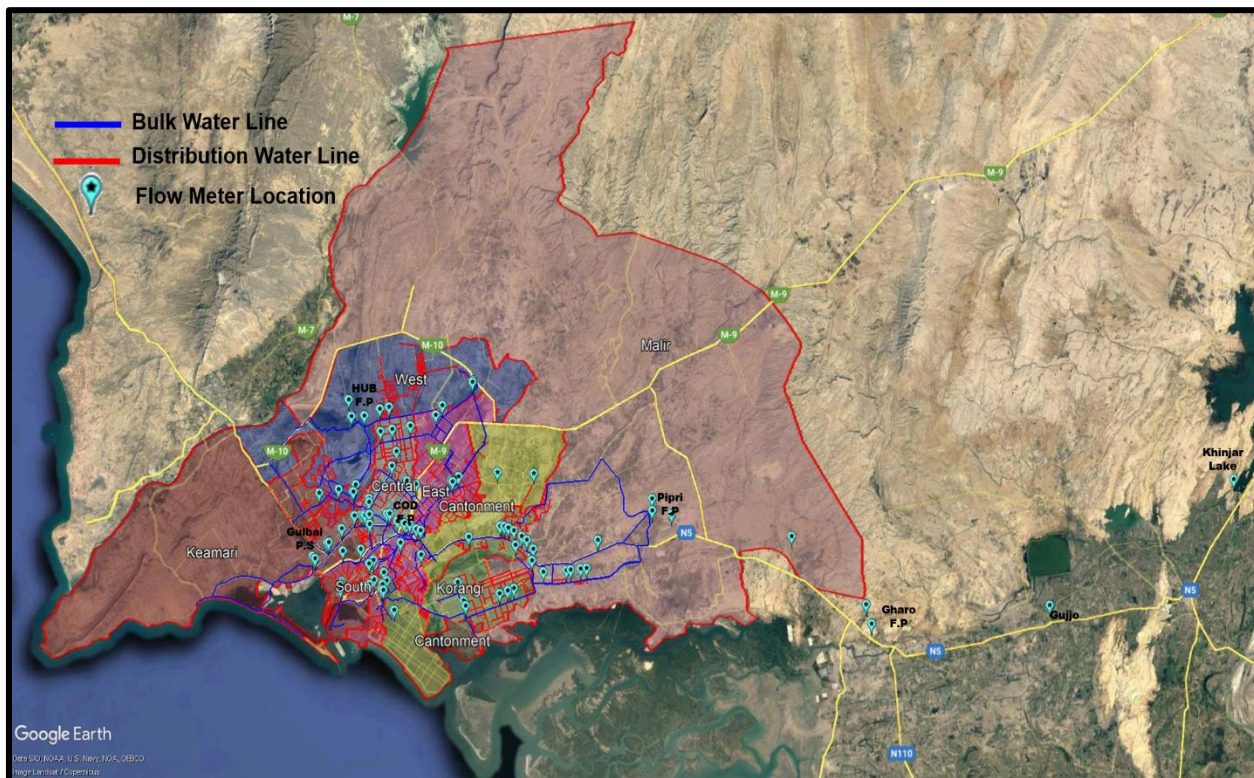
**Meeting with Additional Commissioner – II**



**GIS Section of Anti-Encroachment Cell  
(Commissioner's Office)**

## 4.1 Bulk Flow Meters

The Bulk Flow Meters shall be installed at bulk water lines. A total of 175 Bulk Flow Meters shall be installed according to feasibility study and approval of the Client and World Bank. Most of these will be at the incoming and outgoing water lines of water filtration plants and some are within their premises. The locations of rest of the meters have been adjusted by avoiding any social safeguard issues i.e., hindrance/ restriction to livelihood and loss of business etc. The location map and list of the proposed Bulk Flow Meters is given below:



Sr. No.	Description	Diameter	Nos. of Meters	District
1	Gulbai for PAF	4"	1	Keamari
2	Afghan Refugee	6"	1	West
3	Pipeline to Gharo Town	6"	1	
4	Baba More (NK-Town)	6"	1	West
5	Baba More (NK-Town)	6"	1	
6	Malir City Police Station	10"	1	Malir
7	Gulbai for Maripur	10"	1	Keamari
8	Gulbai for GREX	10"	1	Keamari
9	Shershah P.S for Navy	12"	1	Keamari
10	T&C Reservoir (Railway line)	12"	1	East
11	Near PTCL Exchange (1600 Road)	12"	1	Korangi



Sr. No.	Description	Diameter	Nos. of Meters	District
12	Main at Pahar Ganj	12"	1	West
13	Ahsanabad Chowrangi	12"	1	East
14	Dildar Goth (Gadap)	12"	1	East
15	Malir City 15	12"	1	Korangi
16	Hub Reservoir Water Board Line	12"	1	East
17	T&C Reservoir For (Lines Area)	12"	1	East
18	T&C Reservoir For (Ferror Town)	12"	1	East
19	University Reservoir (Scour Pipe)	12"	1	East
20	Baba More (NK-Town)	12"	1	Central
21	Baba More (NK-Town)	12"	1	West
22	Cattle Colony Pump	12"	1	
23	Old Chaman Cinema	15"	1	Central
24	T&C Reservoir For (FTC Main)	15"	1	East
25	Government Degree College (1600 Road)	15"	1	Korangi
26	Main KPT-Link (At G. Alana Road, Agha Khan Jamaat Khana)	15"	1	Keamari
27	Main at Peoples Ground (KPT-Link)	15"	1	South
28	Darakhshan Society Kala Board Malir	16"	1	Korangi
29	Board office (Ashraf Nagar)	16"	1	Central
30	Shershah Chowk (Baldia Pump)	18"	1	Keamari
31	Gulbai for PAF	18"	1	Keamari
32	Khalid Bin Waleed Road (1st Loop)	18"	1	East
33	Baloch Colony Bridge (2nd Loop)	18"	1	East
34	Malir City (Kala Board)	18"	1	Korangi
35	For Industrial Area Block-21&22	18"	1	Central
36	Shareefabad For Gulberg	18"	1	Central
37	Darakhshan Society Kala Board Malir	18"	1	Korangi
38	LIA Pump House	18"	1	Malir
39	Main at Lilly Bridge (towards Ghizvi PNS)	18"	1	South
40	Lilly Bridge (End point)	18"	1	Cantonment
41	Main at Siddiq Wahab Road From CI-60	18"	1	South
42	Gulbai for Islands	18"	1	Keamari
43	Pak Colony (Zero Valve)	18"	1	Keamari
44	Air Port (Madam Apartment)	18"	1	Cantonment
45	Maymar (Gadap)	18"	1	East
46	Haleji Conduit	18"	1	Malir
47	Haronabad (FTM)	24"	1	Keamari
48	Haronabad (BDM)	24"	1	Keamari
49	Gulbai Chowk (Manoora Main)	24"	1	Keamari
50	PIC Tower (Native Jetty Bridge)	24"	1	Keamari



Sr. No.	Description	Diameter	Nos. of Meters	District
51	PIC Tower (Dockyard)	24"	1	Keamari
52	Hub Reservoir	24"	1	West
53	Chippa Chowrangi (To New Goli Maar)	24"	1	Central
54	HSR (CI-24)	24"	1	Cantonment
55	Loop-1 After Injection (Time Medica)	24"	1	East
56	Chakra Goth	24"	1	Korangi
57	Chamra Chowrangi Korangi Main	24"	1	Korangi
58	Fire Brigade Station	24"	1	Central
59	F.B Main Liaquatabad before Board Office P.S	24"	1	Central
60	Dildar Goth (Gadap)	24"	1	East
61	4-K Chowrangi (NK-Town)	24"	1	West
62	F.B. Mains for Liaquatabad Town	24"	1	Central
63	Azam Nagar Adjacent Lyari Express Way (CI-24)	24"	1	East
64	7-No Nazimabad (Mujahid Colony)	24"	1	Central
65	Kareemabad (FBM) From Gulberg	24"	1	Central
66	Darakhshan Society Kala Board Malir	24"	1	Korangi
67	Main at Plaza Hotel (Dawood Pota Road)	24"	1	Cantonment
68	Main at Lilly Bridge (towards Do Talwar)	24"	1	South
69	Main (SBL) at Dhobi Ghaat, Mirza Adam Khan Road	24"	1	South
70	Main at Garden Old System (From CI-60)	24"	1	South
71	Lyari Main at Mirza Adam Khan Road	24"	1	South
72	Gulbai for Maripur & Grex	24"	1	Keamari
73	From CP Pump (To baldia)	24"	1	Central
74	At COD Filter Plant (Lyari Main)	24"	1	East
75	Maymar (Gadap)	24"	1	East
76	4-K Chowrangi (30")	30"	1	West
77	Qasba More (Orangli Line 32")	32"	1	West
78	Old Regent Cenima	33"	1	Central
79	Habib Bank Chowrangi	33"	1	Keamari
80	PIDC Bridge	33"	1	South
81	Qasba Inter Connection (SITE)	33"	1	West
82	Banaras Chowk (N.N. Town)	33"	1	West
83	From CP Pump (Ghaas wala Valve)	33"	1	Central
84	Chippa Chowrangi (33" from 48")	33"	1	Central
85	Chungi Naka (Surjani 33")	33"	1	West
86	Jail Road Chowrangi (SBL)	33"	1	East
87	Opp. Askari Park (Old Subzi Mandi) (New SBL)	33"	1	East
88	Scheme 33 to Gulistan-e-Jauhar	33"	1	East
89	Haleji Conduit (Juma Goth)	33"	1	Korangi



Sr. No.	Description	Diameter	Nos. of Meters	District
90	33" for Landhi	33"	1	Malir
91	Towards 33" at 5 ½ Korangi Pump House	33"	1	Korangi
92	Nasir Jump	33"	1	Korangi
93	Chakra Goth	33"	1	Korangi
94	Distribution Line	33"	1	Korangi
95	Qayyumabad	33"	1	Korangi
96	Board office (Banaras)	33"	1	Central
97	Baba More (Gadap Town)	33"	1	Central
98	4-K Chowrangi (NK-Town)	33"	1	West
99	Bilal Plaza Malir	33"	1	Malir
100	Jinnah Avenue Pump House Malir	33"	1	Cantonment
101	Malir Main (Murghi Khana)	33"	1	Malir
102	Main at Metropole	33"	1	South
103	Main For Kemari	33"	1	Cantonment
104	Main For Cantonment	33"	1	Keamari
105	Main at Hotel Regent (For Clifton)	33"	1	Cantonment
106	PRCC Main (For Port Grand)	33"	1	Keamari
107	Main at Plaza Hotel (Dawood Pota Road)	33"	1	South
108	Main (New SBL) Bakra Peri	33"	1	South
109	LSR (Rising Main)	33"	1	East
110	Old University Reservoir (Incoming Pipe)	33"	1	East
111	Dildar Goth (Gadap)	33"	1	East
112	Qasba More	36"	1	West
113	Ghulam Shah Dera (Baldia)	36"	1	Keamari
114	Gulistan-e-Jauhar	36"	1	East
115	University Main (Scheme-33)	36"	1	East
116	Delivery of Shakhi Hasan P.S	36"	1	Central
117	Gharo F.P incoming	36"	1	
118	Gharo F.P incoming	42"	1	
119	Banaras (FTM Link)	48"	1	West
120	Hub Reservoir	48"	1	West
121	Banaras Pump House (Orangi)	48"	1	West
122	T&T Exchange (Orangi)	48"	1	West
123	Pak Colony	48"	1	Keamari
124	Balancing Main	48"	1	East
125	Old Pipri Main (Feature Pump House)	48"	1	Malir
126	Outside Naval Boundary	48"	1	Korangi
127	Korangi Main at 5 1/2 Korangi Pump House	48"	1	Korangi
128	Korangi Main at 5 1/2 Korangi Pump House	48"	1	Korangi



Sr. No.	Description	Diameter	Nos. of Meters	District
129	Korangi Main at 5 1/2 Korangi Pump House	48"	1	Korangi
130	Inside 5C-4 P.S for Nagan Chowrangi	48"	1	Central
131	Nagan Chowrangi For Industrial Area	48"	1	Central
132	Balancing main for Gulberg Reverse Flow (Dental)	48"	1	Central
133	5C-4 (NN-Town)	48"	1	Central
134	Ajmair Pump House (Site Town)	48"	1	Central
135	PAP-1 M.S For North Nazimabad Town	48"	1	Central
136	Balancing Main for North Nazimabad Town	48"	1	Central
137	Azam Nagar Adjacent Lyari Express Way (FTM)	48"	1	Central
138	New Pipri Main (Labour Square)	48"	1	Malir
139	Razzaqabad (Near Hascol Petrol Pump)	48"	1	Malir
140	Opp. Gul Ahmed Textile (Sector H-T LIA)	48"	1	Malir
141	Taj Medical Complex (M.A. Jinnah Road)	48"	1	East
142	Main Near Mazar-e-Quaid	48"	1	East
143	At COD Filter Plant (Gulshan Main)	48"	1	East
144	Nagan Chowrangi	48"	1	Central
145	Mubarak Shaheed Road)	54"	1	East
146	Haleji Conduit (Juma Goth) at Shah Faisal Colony No.4	54"	1	Korangi
147	Feature Pump House at Outlet of Manifold	54"	1	Malir
148	Haleji Conduit (Labour Square)	54"	1	Malir
149	Jail Road Chowrangi (CTM)	54"	1	East
150	University Reservoir (54")	54"	2	East
151	Haleji Conduit (Salar Goth)	54"	1	Malir
152	Lyari Nadi (Saba Cinema-NEK)	54"	1	Central
153	Jail Road Chowrangi (CI-60)	60"	1	East
154	Kashmir Road (New CTM)	60"	1	East
155	W-11 M.S For Gulbarg Town	60"	1	East
156	W-11 at Outer from University Reservoir	66"	1	East
157	Korangi Main	66"	1	Malir
158	At COD Filter Plant (Balancing Main)	66"	1	East
159	NEK Reservoir	66"	1	West
160	Line No.1 Hub Pumping Station	66"	1	West
161	Line No.2 Hub Pumping Station	66"	1	West
162	Hub Reservoir	66"	1	West
163	Hub Reservoir	66"	1	West
164	At COD Filter Plant (CTM)	72"	1	East
165	Old Pipri Main	72"	1	Malir
166	Line No.1 Dhabeji Pumping Complex	72"	1	
167	Line No.2 Dhabeji Pumping Complex	72"	1	

Sr. No.	Description	Diameter	Nos. of Meters	District
168	Line No.3 Dhabeji Pumping Complex	72"	1	
169	Line No.4 Dhabeji Pumping Complex	72"	1	
170	Line No.5 Dhabeji Pumping Complex	72"	1	
171	Line No.6 Dhabeji Pumping Complex	72"	1	
172	Line No.7 Dhabeji Pumping Complex	72"	1	
173	Line No.8 Dhabeji Pumping Complex	72"	1	
174	NEK Reservoir	84"	1	West
<b>Total</b>			<b>175</b>	

#### No. of Proposed Flow Meters w.r.t Technology

TYPE OF FLOW METER	Nos
Full Bore Electromagnetic Flow Meter	33
Clamp-on Ultrasonic Flow Meter	142
<b>TOTAL FLOW METERS</b>	<b>175</b>

#### No. of Proposed Flow Meters w.r.t Diameter

Pipe Diameter	No. of Flow Meter	Pipe Diameter	No. of Flow Meter
4"	1	33"	34
6"	4	36"	6
10"	3	42"	1
12"	14	48"	26
15"	5	54"	9
16"	2	60"	3
18"	17	66"	8
24"	29	72"	10
30"	1	84"	1
32"	1	<b>Total</b>	<b>175 Nos</b>

#### 4.2 Team Composition

AED related screening was carried out by following Team:

Sr. No.	Name	Designation	Department
1	Ms. Hameeda Kaleem	Gender/Social Expert	KWSSIP
2	Ms. Kiran Bano	Environmental Expert	KWSSIP
3	Mr. Ali Hamid	Group Leader-E&SS	NESPAK
4	Mr. Syed Zeeshan Abbas	Senior Engineer	NESPAK
5	Mr. Aftab Ali Talib	Senior Engineer	NESPAK

Sr. No.	Name	Designation	Department
6	Mr. Shahzad Ahmad	Deputy Director	DMC Central
7	Mr. Syed Shariq Ali	Incharge Anti-Encroachment	DMC East
8	Mr. Sharjeel Khan	Field Assistant	Dist. Council Malir
9	Mr. Safdar	Assistant Director	DMC South
10	Rughu Raja	Patwari	DMC Kemari

### 4.3 Date of AED Related Screening

AED related screening for Bulk Flow Meters was conducted from 01.03.2022 to 04.03.2022.

### 4.4 Methodology Adopted for AED Related Screening

AED related screening was assessed through following means:

- Information from focal person of concerned district; and
- Visual observations of focal persons, Consultants and KWSSIP experts at the time of screening survey.

### 4.5 Findings

Based on the information provided by the focal person, and visual observations, it is derived that no AED has been conducted in at Bulk Flow Meters locations since October 2018. The screening proforma duly signed by the focal persons, KWSSIP experts and Consultant's representative is attached as **Annex - I**:

Sr. No.	Representative	Observations
1	DMC, DC	No AED
2	KWSSIP	No AED
3	NESPAK	No AED

### 4.6 Photolog





#### **4.7 Conclusions**

Following are the conclusions of AED related screening of Bulk Flow Meters:

- No AED has been done within zone of impact of Bulk Flow Meters;
- No Objection Certificate (NOC) is requested from Commissioner's office in this regard.

**Annex – 1**  
**AED Screening Proforma**

**KWSSIP**

**CHECKLIST FOR AED SCREENING OF SUB-PROJECTS (KACHI ABADIS AND SEWERAGE SCHEMES)**

Date: 3-3-22 Location/Town/District: Dist Central Name of subproject: Bulk Flow Meters

Length of Sewerage Scheme: \_\_\_\_\_ Start Point (Coordinates): \_\_\_\_\_ End Point (Coordinates): \_\_\_\_\_

1-Since how long are you doing business/running shop here: \_\_\_\_\_

2-WAS AED done in this Area: No

3-If yes, when was AED done in this area: \_\_\_\_\_

4- AED Details:

ANTI ENCROACHMENT DRIVE DATA TEMPLATE					LAND OWNING AGENCY -					
Nature of Encroachment	Details (numbers, typology, function & dimensions of built structures/trad e & typology of movable encroachments - vendors)	Location			Time of AED operation (D/M/Y)	Impacted Person/s Details				
		UC	Neighborhood	GPS Coordinates		Name	Gender	Age	CNIC#	Contact#
<b>HARD/IMMOVABLE ENCROACHMENS</b>										
Built Structures	Residential									
	Commercial									
Extensions	Residential									



ANTI ENCROACHMENT DRIVE DATA TEMPLATE					LAND OWNING AGENCY -					
Nature of Encroachment	Details (numbers, typology, function & dimensions of built structures/trade & typology of movable encroachments - vendors)	Location			Time of AED operation (D/M/Y)	Impacted Person/s Details				
		UC	Neighborhood	GPS Coordinates		Name	Gender	Age	CNIC#	Contact#
spillovers/ extensions	Auto parts				/					
	Chabotra (example naan ovens)									
	Grills									
	Cages (example poultry)									
Huts/shacks	Residential									
	Commercial (example eateries)									
Cattle pans										

5- Key Informants Contacted and key minutes: Name: Maik Yasin Cell No. 0313-2708570

TEAM MEMBERS:			
	PIU-KWSSIP	Focal Person-KMC DMC	NESPAK-Rep
	Name: <u>Kiran Bano</u>	Name: <u>Shahzad Ahmed Usman</u>	Name: <u>Zeeshan</u>
	Signature: <u>[Signature]</u>	Signature: <u>[Signature]</u>	Signature: <u>[Signature]</u>

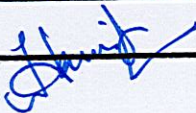

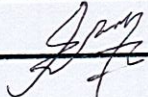
DEPUTY DIRECTOR  
ANTI-ENCROACHMENT  
DEPARTMENT GULBERG ZONE  
DMC CENTRAL





ANTI ENCROACHMENT DRIVE DATA TEMPLATE					LAND OWNING AGENCY -					
Nature of Encroachment	Details (numbers, typology, function & dimensions of built structures/trade & typology of movable encroachments - vendors)	Location			Time of AED operation (D/M/Y)	Impacted Person/s Details				
		UC	Neighborhood	GPS Coordinates		Name	Gender	Age	CNIC#	Contact#
spillovers/ extensions	Auto parts				↗					
	Chabotra (example naan ovens)									
	Grills									
	Cages (example poultry)									
Huts/shacks	Residential									
	Commercial (example eateries)									
Cattle pans										

5- Key Informants Contacted and key minutes: Name: \_\_\_\_\_ Cell No. \_\_\_\_\_

TEAM MEMBERS:			
	PIU-KWSSIP	Focal Person-KMG-DMC East	NESPAK-Rep
	Name: <u>Hameeda Kaleem</u>	Name: <u>Mehul Wahi</u>	Name: <u>Zeeshaan</u>
	Signature: 	Signature: 	Signature: 

KWSSIP

CHECKLIST FOR AED SCREENING OF SUB-PROJECTS (KACHI ABADIS AND SEWERAGE SCHEMES)

Date: 3-3-22 Location/Town/District: Dist. Keamari Name of subproject: Bulk Flow Meters

Length of Sewerage Scheme: \_\_\_\_\_ Start Point (Coordinates): \_\_\_\_\_ End Point (Coordinates): \_\_\_\_\_

1-Since how long are you doing business/running shop here: \_\_\_\_\_

2-WAS AED done in this Area: No

3-If yes, when was AED done in this area: \_\_\_\_\_

4- AED Details:

ANTI ENCROACHMENT DRIVE DATA TEMPLATE					LAND OWNING AGENCY -					
Nature of Encroachment	Details (numbers, typology, function & dimensions of built structures/trade & typology of movable encroachments - vendors)	Location			Time of AED operation (D/M/Y)	Impacted Person/s Details				
		UC	Neighborhood	GPS Coordinates		Name	Gender	Age	CNIC#	Contact#
<b>HARD/IMMOVABLE ENCROACHMENTS</b>										
Built Structures	Residential									
	Commercial									
Extensions	Residential									



ANTI ENCROACHMENT DRIVE DATA TEMPLATE				LAND OWNING AGENCY -						
Nature of Encroachment	Details (numbers, typology, function & dimensions of built structures/trade & typology of movable encroachments - vendors)	Location			Time of AED operation (D/M/Y)	Impacted Person/s Details				
		UC	Neighborhood	GPS Coordinates		Name	Gender	Age	CNIC#	Contact#
spillovers/ extensions	Auto parts									
	Chabotra (example naan ovens)									
	Grills									
	Cages (example poultry)									
Huts/shacks	Residential									
	Commercial (example eateries)									
Cattle pans										

5- Key Informants Contacted and key minutes: Name: M. Rafiq Cell No. 0348-2390639  
- No AED in many years

TEAM MEMBERS:			
	PIU-KWSSIP	Focal Person-KMC Revenue Dept. Kerm.	NESPAK-Rep
	Name: <u>Kiran Bano</u>	Name: <u>Tapedat Rugh</u>	Name: <u>Zeesha</u>
	Signature: <u>[Signature]</u>	Signature: <u>[Signature]</u>	Signature: <u>[Signature]</u>





ANTI ENCROACHMENT DRIVE DATA TEMPLATE					LAND OWNING AGENCY -					
Nature of Encroachment	Details (numbers, typology, function & dimensions of built structures/trade & typology of movable encroachments - vendors)	Location			Time of AED operation (D/M/Y)	Impacted Person/s Details				
		UC	Neighborhood	GPS Coordinates		Name	Gender	Age	CNIC#	Contact#
spillovers/ extensions	Auto parts									
	Chabotra (example naan ovens)									
	Grills									
Huts/shacks	Cages (example poultry)									
	Residential									
	Commercial (example eateries)									
Cattle pans										

5- Key Informants Contacted and key minutes: Name: \_\_\_\_\_ Cell No. \_\_\_\_\_

No AED at project locations.

<b>TEAM MEMBERS:</b>		Dist. Council Karachi	
	PIU-KWSSIP	Focal Person-KMC <i>OK</i>	NESPAK-Rep
	Name: <u>Hameed Kaleem</u>	Name: <u>Mo. Shezeel Khan</u>	Name: <u>Zeeshan</u>
	Signature: <i>[Signature]</i>	Signature: <i>[Signature]</i>	Signature: <i>[Signature]</i>

0312-2877040

KWSSIP

CHECKLIST FOR AED SCREENING OF SUB-PROJECTS (KACHI ABADIS AND SEWERAGE SCHEMES)

Date: 2-3-22 Location/Town/District: Dist South Name of subproject: Bulk Flow Meters

Length of Sewerage Scheme: \_\_\_\_\_ Start Point (Coordinates): \_\_\_\_\_ End Point (Coordinates): \_\_\_\_\_

- 1-Since how long are you doing business/running shop here: \_\_\_\_\_
- 2-WAS AED done in this Area: No
- 3-If yes, when was AED done in this area: \_\_\_\_\_
- 4- AED Details:

ANTI ENCROACHMENT DRIVE DATA TEMPLATE					LAND OWNING AGENCY -					
Nature of Encroachment	Details (numbers, typology, function & dimensions of built structures/trade & typology of movable encroachments - vendors)	Location			Time of AED operation (D/M/Y)	Impacted Person/s Details				
		UC	Neighborhood	GPS Coordinates		Name	Gender	Age	CNIC#	Contact#
<b>HARD/IMMOVABLE ENCROACHMENTS</b>										
Built Structures	Residential									
	Commercial									
Extensions	Residential									



ANTI ENCROACHMENT DRIVE DATA TEMPLATE					LAND OWNING AGENCY -					
Nature of Encroachment	Details (numbers, typology, function & dimensions of built structures/trade & typology of movable encroachments - vendors)	Location			Time of AED operation (D/M/Y)	Impacted Person/s Details				
		UC	Neighborhood	GPS Coordinates		Name	Gender	Age	CNIC#	Contact#
spillovers/ extensions	Auto parts				/					
	Chabotra (example naan ovens)									
	Grills									
Cages (example poultry)										
Huts/shacks	Residential									
	Commercial (example eateries)									
Cattle pans										

5- Key Informants Contacted and key minutes: No AED in the area. Name: Riasat Cell No. 0306-4746017

TEAM MEMBERS:			
	PIU-KWSSIP	Focal Person-KMC DMC South	NESPAK-Rep
	Name: <u>Hameed Kaleem</u>	Name: <u>SAFAR ASST. DIR</u>	Name: <u>Zeesan</u>
	Signature: <u>[Signature]</u>	Signature: <u>[Signature]</u>	Signature: <u>[Signature]</u>

## **Annex-IV**

### **(A, B, C)- Environmental Screening Checklist**

**Annex – IV**  
**Environmental Screening Checklists**

**Annex – IV (A)**

**Environmental Screening Checklists Bulk Flow Meters**

## A. ENVIRONMENTAL AND SOCIAL SCREENING CHECKLIST

<b>Project Name: Karachi Water and Sewerage Services Improvement Project (KWSSIP)</b>				
Subproject location (area/district/site):				
Subproject scope of work: <b>Installation of Bulk Flow Meters:</b> A total of 211 Bulk Flow Meters shall be installed at Bulk Water Lines. The project sites were visited and it was conceived that the project will create impacts of similar nature therefore a combined checklist has been prepared for all.				
Implementing Agency: <b>PIU - KWSSIP</b>				
Date of screening: 25.11.2021 to 06.12.2021				
Responsible agency: KWSB				
Sr. No.	Screening Criteria	Assessment of Impact	Explanation	Mitigation Measures
<b>ENVIRONMENT</b>				
1	Will the subproject create significant/limited/no environmental impacts?	Limited	Bulk Flow Meters shall be installed at Bulk Water Lines. The installation would involve minor excavation works which may have very limited, temporary and reversible environmental impacts.	<ul style="list-style-type: none"> <li>• The excavated material must be kept confined and covered;</li> <li>• The excavated material must be backfilled immediately after the installation of Bulk Flow Meters;</li> <li>• Excavation works must be confined as per approved engineering drawings; and</li> <li>• Excavated areas must be barricaded.</li> </ul>
2	Is there any likelihood that the impacts are beyond the site boundary, or the impacts occurring during project implementation are beyond the planning area? Are such significant adverse environmental impacts considered irreversible? Please briefly describe:	No	The impacts will be localized in nature and will not cross the boundary of project area. The impacts are perceived to be temporary and reversible in nature.	N.A
3	Does the sub-project involve any significant change or degradation to the critical/ non-critical natural habitats?	No	No critical/ non critical natural habitats are present within and near the project area.	N.A
4	Is the subproject in an eco-sensitive area or adjoining an eco-sensitive area or monument? (Yes/No) If Yes, which is	No	The project area lies in Metropolitan city away from eco-sensitive areas and environmental hotspots.	N.A

	the area? Elaborate impact accordingly.			
5	Will the proposed project result in significant greenhouse gas emissions?	Limited	The excavation works will result in emission of fugitive dust. However, the use of excavators may cause release of greenhouse gases into the atmosphere.	<ul style="list-style-type: none"> <li>Regular sprinkling of water on excavated material;</li> <li>Idling of vehicles/ machinery should not be allowed;</li> <li>Properly tuned and well-maintained equipment and vehicles must be used</li> </ul>
6	Is the proposed project likely to directly or indirectly increase environmental and social vulnerability to climate change now or in the future (also known as maladaptive practices)?	No	There will be some minor environmental issues during construction, however, if proper mitigations are provided, the impacts can be controlled. Overall, any of the project activities will not be vulnerable to climate change.	N.A
7	Will the sub-project cause			
	<ul style="list-style-type: none"> <li>Clearance of vegetation/ tree-cover/other</li> </ul>	No	No vegetation or tree cover is present in the project area.	N.A
	<ul style="list-style-type: none"> <li>Direct discharge of construction run-off, improper storage and disposal of excavation spoils, wastes and other construction materials adversely affecting water quality and flow regimes.</li> </ul>	No	<p>The groundwater table in most of the cases is deeper than excavation depth therefore construction activities will not pollute ground water.</p> <p>However, Construction activities may pollute surface water bodies (Lyari &amp; Malir Rivers) due to improper solid waste management (SWM)</p>	Contractor will implement the SWM under his supervision in accordance to avoid any solid waste deposition in construction area.
	<ul style="list-style-type: none"> <li>Flooding of adjacent areas.</li> </ul>	No		N.A
	<ul style="list-style-type: none"> <li>Improper storage and handling of substances leading to contamination of soil and water.</li> </ul>	No	No hazardous substances are envisaged to be used for the proposed construction activity.	N.A

	<ul style="list-style-type: none"> <li>Elevated noise and dust emission.</li> </ul>	Limited	The scope of construction activities is very limited. However, noise and dust are envisaged to be generated during installation of Bulk Flow Meters. The impact would be localized and temporary in nature.	<ul style="list-style-type: none"> <li>Muffling devices must be used in vehicles and machinery to reduce noise</li> <li>Noise generating activities should be limited at prayers and night time</li> <li>Water sprinkling must be done over to lose soil to control dust emissions</li> </ul>
	<ul style="list-style-type: none"> <li>Disruption to traffic and visitor's movements.</li> </ul>	Limited	Traffic will be disturbed During construction activities; however, the impact would be temporary and localized in nature.	<ul style="list-style-type: none"> <li>Alternate traffic routes and traffic diversion plan must be provided</li> <li>In most congested areas, where it is difficult to manage the traffic, construction activities must be conducted at night or low traffic hours</li> </ul>
	<ul style="list-style-type: none"> <li>Gas emissions</li> </ul>	No	No gases emissions are Envisaged to be emitted during operation of the sub-project. However, some hazardous gases may also be emitted from construction machinery and vehicles.	Safety equipment should be used by workers during construction
	<ul style="list-style-type: none"> <li>Other, specify.</li> </ul>			
8	Does the subproject involve any prior clearance from the State Forest Department for either the conversion of forest land or for tree-cutting? (Yes/ No). If yes, which?	No	The project area is not the property of state forest land and it does not house any natural or manmade forest.	N.A
<b>CULTURAL HERITAGE</b>				
9	Will the subproject create significant/limited/no cultural properties impacts	No	No cultural properties shall be damaged due to proposed project activities.	N.A
	<ul style="list-style-type: none"> <li>Involve significant excavations, demolition, movement of earth, flooding or other major environmental damages.</li> </ul>	No	No project activity shall cause demolition and damage to any of the cultural property	N.A

	<ul style="list-style-type: none"> <li>Is located within or in the vicinity of a recognized cultural property conservation area or heritage site.</li> </ul>	No	No recognized heritage site is available in the project area.	N.A
	<ul style="list-style-type: none"> <li>Is designed to support the management or conservation of a cultural property.</li> </ul>	No	The project does not support the management and conservation of any cultural property.	N.A
	<ul style="list-style-type: none"> <li>Other, specify.</li> </ul>			
10	Does the subproject involve any prior clearance from the Archeology Department for either the conservation or management of heritage sites or vicinities? (Yes/ No). If yes, which?	No	No recognized heritage or Archeological site is present in the project area.	N.A
<b>HEALTH AND SAFETY</b>				
11	Does the sub-project involve siting sanitation treatment facilities close to human settlements	No	No treatment facilities are Required for proposed project.	N.A
12	Would the proposed project be susceptible to or lead to increased vulnerability to earthquakes, subsidence, landslides, erosion, flooding or extreme climatic conditions?	No	Any of the project activity shall not increase the vulnerability to earthquakes, subsidence, landslides, erosion, flooding or extreme climatic conditions.	N.A
13	Would the project cause increase in public health risks to contagious diseases or transmission (e.g. HIV/AIDS, Malaria, etc.) for project workers or communities in the project area, as a result of a change in living and working conditions?	No	Small scale construction camps shall be established and very few workers shall be employed. The interaction between community and labors would be very less.	N.A

14	Will the proposed project require additional health services?	No	The project activities will be limited in an area and only require basic first aid facilities at the contractors' camps.	N.A
15	Discharge of hazardous material into sewers, resulting in damage to sewer system and danger to workers	No	No hazardous material and chemicals shall be used.	N.A
<b>SOCIAL</b>				
16	Will the subproject create significant/limited/no social impacts?	No	The locations of Bulk Flow Meters have been selected keeping in view the social issues. The proposed locations of Bulk Flow Meters would have negligible/ no social issues.	N.A
	<ul style="list-style-type: none"> <li>Land acquisition resulting in loss of income from agricultural land, plantation or other existing land.</li> </ul>	No	The project does not involve land acquisition.	N.A
	<ul style="list-style-type: none"> <li>Impact on livelihood and economic activity.</li> </ul>	No	The locations of Bulk Flow Meters have been selected keeping in view the social issues. The proposed locations of Bulk Flow Meters would have negligible/ no social issues.	N.A
	<ul style="list-style-type: none"> <li>Land acquisition resulting in relocation of households.</li> </ul>	No	No households shall be relocated.	N.A
	<ul style="list-style-type: none"> <li>Any reduction of access to traditional dependent communities (to areas where they earn for their primary or substantial livelihood).</li> </ul>	No	The project activities will not restrict access of the community.	N.A
	<ul style="list-style-type: none"> <li>Any displacement or adverse impact on tribal settlement(s).</li> </ul>	No	No tribal community is present in the project area.	N.A
	<ul style="list-style-type: none"> <li>Adverse impacts to women, including</li> </ul>	yes	Women may face harassment issues during	Contractor shall ensure that such incidents are not occurred by

	economic and safety concerns.		construction due to labor influx.	developing awareness among the labours.
	<ul style="list-style-type: none"> <li>Impact on infrastructure (roads, water supply, any other type of infrastructure)</li> </ul>	Limited	Installation of Bulk Flow Meters may cause damage to existing infrastructure and amenities i.e., roads.	<ul style="list-style-type: none"> <li>Careful selection of Bulk Flow Meter locations</li> <li>Relocation of the public utilities shall be planned and approved before project commencement, to avoid inconvenience to the public and their budget must be included in the project cost</li> <li>If existing water supply house connections are damaged, they should be rectified on the priority basis</li> <li>Construction contractor should be directed to prepare a contingency plan to include actions to be done in case of unintentional interruption of services. In case of disruption of water supply, alternative supply, through tankers, may be provided; and</li> <li>A sanitation plan should be adopted to avoid sanitation related issues.</li> </ul>
	<ul style="list-style-type: none"> <li>Possible conflicts with and/or disruption to local community and/or visitors.</li> </ul>	Limited	Issues may arise between that locals, contractors' workforce and visitors due to construction activities in narrow streets as well as due to disruption in movement.	<ul style="list-style-type: none"> <li>Local workers should be preferred to work in the streets</li> <li>Contractor shall ensure good behavior of the workforce</li> </ul>
	<ul style="list-style-type: none"> <li>Health risks due to unhygienic conditions at workers 'camps.</li> </ul>	No	Minor construction camps may be established with very few workforce.	<ul style="list-style-type: none"> <li>COVID-19 SOPs must be strictly followed</li> <li>Sanitation plan must be devised and implemented to ensure cleanliness</li> <li>Waste products must not be dumped openly to avoid attraction of mosquitoes and disease vectors</li> </ul>
	<ul style="list-style-type: none"> <li>Safety hazards during construction.</li> </ul>	Yes	Improper fencing and barricading of deep excavations may cause safety concerns for workers and community.	<ul style="list-style-type: none"> <li>The excavated places must be barricaded</li> <li>Children must be kept away from deep excavations</li> </ul>
	<ul style="list-style-type: none"> <li>Other, specify.</li> </ul>			

<b>OVERALL ASSESSMENT</b>	
o Subproject is declined	
o Subproject is accepted	The project is accepted.
o Subproject is classified as environmental Category A and requires an in-depth Environmental and Social Impact Assessment.	
o Subproject is classified as environmental Category B and requires an Environmental and Social Management Plan.	
o Subproject is classified as environmental Category C and does not require any further studies.	The subproject is categorized as Category C

**Annex – IV (B)**  
**Environmental Screening Checklists Intermittent**  
**Chlorination Stations**

## B. ENVIRONMENTAL AND SOCIAL SCREENING CHECKLIST

<b>Project Name: Karachi Water and Sewerage Services Improvement Project (KWSSIP)</b>				
Subproject location (area/district/site):				
Subproject scope of work: <b>Intermittent Chlorination Stations:</b> 10 Nos. chlorination stations shall be installed. The project nature and impacts are similar therefore a combined checklist has been prepared.				
Implementing Agency: <b>PIU - KWSSIP</b>				
Date of screening: 27.11.2021 to 04.11.2021				
Responsible agency: KWSB				
Sr. No.	Screening Criteria	Assessment of Impact	Explanation	Mitigation Measures
<b>ENVIRONMENT</b>				
1	Will the subproject create significant/limited/no environmental impacts?	No	The intermittent chlorination stations shall be installed within the premises of existing water pumping stations.	N.A
2	Is there any likelihood that the impacts are beyond the site boundary, or the impacts occurring during project implementation are beyond the planning area? Are such significant adverse environmental impacts considered irreversible? Please briefly describe:	No	The project influence will be localized in nature and will not cross the boundary of project area.	N.A
3	Does the sub-project involve any significant change or degradation to the critical/ non-critical natural habitats?	No	No critical/ non critical natural habitats are present within and near the project area.	N.A
4	Is the subproject in an eco-sensitive area or adjoining an eco-sensitive area or monument? (Yes/No) If Yes, which is the area? Elaborate impact accordingly.	No	The sub project activities will be executed within the boundary of existing water pumping stations.	N.A
5	Will the proposed project result in significant greenhouse gas emissions?	No	The installation of intermittent chlorination stations will not result in greenhouse emissions.	N.A

6	Is the proposed project likely to directly or indirectly increase environmental and social vulnerability to climate change now or in the future (also known as maladaptive practices)?	No	Any of the project activities will not be vulnerable to climate change.	N.A
7	Will the sub-project cause			
	<ul style="list-style-type: none"> <li>• Clearance of vegetation/ tree-cover/other</li> </ul>	No	No vegetation or tree cover is present in the project area.	N.A
	<ul style="list-style-type: none"> <li>• Direct discharge of construction run-off, improper storage and disposal of excavation spoils, wastes and other construction materials adversely affecting water quality and flow regimes.</li> </ul>	No	No construction run-off shall be generated.	N.A
	<ul style="list-style-type: none"> <li>• Flooding of adjacent areas.</li> </ul>	No	The sub project activities will not cause flooding of adjacent areas.	N.A
	<ul style="list-style-type: none"> <li>• Improper storage and handling of substances leading to contamination of soil and water.</li> </ul>	Limited	Mishandling of chemicals for chlorination may result in contamination of water and soil within project area boundary.	<ul style="list-style-type: none"> <li>• Use of MSDS</li> <li>• Personnel should be trained to use chemicals</li> </ul>
	<ul style="list-style-type: none"> <li>• Elevated noise and dust emission.</li> </ul>	No	Project activities will not cause noise and dust emissions.	N.A
	<ul style="list-style-type: none"> <li>• Disruption to traffic and visitor's movements.</li> </ul>	No	Sub project activities will be executed within the boundaries of existing water pumping stations.	N.A
	<ul style="list-style-type: none"> <li>• Gas emissions</li> </ul>	No	No gases emissions are envisaged to be emitted during construction and operation of the sub-project.	N.A
	<ul style="list-style-type: none"> <li>• Other, specify.</li> </ul>			
8	Does the subproject involve any prior clearance from the State Forest	No	The project area is not the property of state forest land and it does not house	N.A

	Department for either the conversion of forest land or for tree-cutting? (Yes/ No). If yes, which?		any natural or manmade forest.	
<b>CULTURAL HERITAGE</b>				
9	Will the subproject create significant/limited/no cultural properties impacts	No	No cultural properties shall be damaged due to proposed project activities.	N.A
	<ul style="list-style-type: none"> <li>Involve significant excavations, demolition, movement of earth, flooding or other major environmental damages.</li> </ul>	No	No project activity shall cause demolition and damage to any of the cultural property	N.A
	<ul style="list-style-type: none"> <li>Is located within or in the vicinity of a recognized cultural property conservation area or heritage site.</li> </ul>	No	No recognized heritage site is available in the project area.	N.A
	<ul style="list-style-type: none"> <li>Is designed to support the management or conservation of a cultural property.</li> </ul>	No	The project does not support the management and conservation of any cultural property.	N.A
	<ul style="list-style-type: none"> <li>Other, specify.</li> </ul>			
10	Does the subproject involve any prior clearance from the Archeology Department for either the conservation or management of heritage sites or vicinities? (Yes/ No). If yes, which?	No	No recognized heritage or Archeological site is present in the project area.	N.A
<b>HEALTH AND SAFETY</b>				
11	Does the sub-project involve siting sanitation treatment facilities close to human settlements	No	No treatment facilities are Required for proposed project.	N.A

12	Would the proposed project be susceptible to or lead to increased vulnerability to earthquakes, subsidence, landslides, erosion, flooding or extreme climatic conditions?	No	Any of the project activity shall not increase the vulnerability to earthquakes, subsidence, landslides, erosion, flooding or extreme climatic conditions.	N.A
13	Would the project cause increase in public health risks to contagious diseases or transmission (e.g. HIV/AIDS, Malaria, etc.) for project workers or communities in the project area, as a result of a change in living and working conditions?	No	There would be no interactions among the community and workforce as the project activities shall be executed within the boundaries of existing water filtration plants.	N.A
14	Will the proposed project require additional health services?	No	The project activities will be limited in an area and only require basic first aid facilities at the contractors' camps.	N.A
<b>SOCIAL</b>				
16	Will the subproject create significant/limited/no social impacts?	No	The project activities will be limited in an area and only require basic first aid facilities at the contractors' camps.	N.A
	<ul style="list-style-type: none"> <li>Land acquisition resulting in loss of income from agricultural land, plantation or other existing land.</li> </ul>	No	The project does not involve land acquisition.	N.A
	<ul style="list-style-type: none"> <li>Impact on livelihood and economic activity.</li> </ul>	No	The project activities shall be executed within the boundaries of existing water filtration plants.	N.A
	<ul style="list-style-type: none"> <li>Land acquisition resulting in relocation of households.</li> </ul>	No	No households shall be relocated.	N.A
	<ul style="list-style-type: none"> <li>Any reduction of access to traditional dependent communities (to areas where they earn for their</li> </ul>	No	The project activities will not restrict access of the community.	N.A

	primary or substantial livelihood).			
	<ul style="list-style-type: none"> <li>Any displacement or adverse impact on tribal settlement(s).</li> </ul>	No	No tribal community is present in the project area.	N.A
	<ul style="list-style-type: none"> <li>Adverse impacts to women, including economic and safety concerns.</li> </ul>	Yes	The women may face harassment issues during construction due to labor influx.	Contractor shall ensure that such incidents are not occurred by developing awareness among the labours.
	<ul style="list-style-type: none"> <li>Impact on infrastructure (roads, water supply, any other type of infrastructure)</li> </ul>	No	No infrastructure shall be affected.	N.A
	<ul style="list-style-type: none"> <li>Possible conflicts with and/or disruption to local community and/or visitors.</li> </ul>	No	No interactions with the community.	N.A
	<ul style="list-style-type: none"> <li>Health risks due to unhygienic conditions at workers 'camps.</li> </ul>	No	Minor construction camps may be established with very few workforce.	<ul style="list-style-type: none"> <li>COVID-19 SOPs must be strictly followed</li> <li>Sanitation plan must be devised and implemented to ensure cleanliness</li> <li>Waste products must not be dumped openly to avoid attraction of mosquitoes and disease vectors</li> </ul>
	<ul style="list-style-type: none"> <li>Safety hazards during construction.</li> </ul>	No	The construction activities are minor and does not involve dangerous activities.	N.A
	<ul style="list-style-type: none"> <li>Other, specify.</li> </ul>			
<b>OVERALL ASSESSMENT</b>				
<input type="radio"/> Subproject is declined				
<input type="radio"/> Subproject is accepted				
<input type="radio"/> Subproject is classified as environmental Category A and requires an in-depth Environmental and Social Impact Assessment.				
<input type="radio"/> Subproject is classified as environmental Category B and requires an Environmental and Social Management Plan.				
<input type="radio"/> Subproject is classified as environmental Category C and does not require any further studies.				
				The project is accepted.
				The subproject is categorized as <b>Category C</b>

**Annex – IV (C)**  
**Environmental Screening Checklists**  
**Leakage Detection Equipment**

### C. ENVIRONMENTAL AND SOCIAL SCREENING CHECKLIST

<b>Project Name: : Karachi Water and Sewerage Services Improvement Project (KWSSIP)</b>				
Subproject location (area/district/site): Different areas of the city				
Subproject scope of work: <b>Leakage Detection Equipment</b> shall be used in different areas of the city to detect leakage in water lines.				
Implementing Agency: <b>PIU - KWSSIP</b>				
Date of screening: 27.11.2021 to 04.11.2021				
Responsible agency: KWSB				
Sr. No.	Screening Criteria	Assessment of Impact	Explanation	Mitigation Measures
<b>ENVIRONMENT</b>				
1	Will the subproject create significant/limited/no environmental impacts?	No	Leakage detection equipment are small portable devices and do not need installation through intensive construction activities and therefore do not pose environmental and social impacts.	N.A
2	Is there any likelihood that the impacts are beyond the site boundary, or the impacts occurring during project implementation are beyond the planning area? Are such significant adverse environmental impacts considered irreversible? Please briefly describe:	No	Leakage detection equipment are small portable devices and do not need installation through intensive construction activities and therefore do not pose environmental and social impacts.	N.A
3	Does the sub-project involve any significant change or degradation to the critical/ non-critical natural habitats?	No	The use of water detection equipment is not envisaged to affect natural habitats.	NA
4	Is the subproject in an eco-sensitive area or adjoining an eco-sensitive area or monument? (Yes/No) If Yes, which is the area? Elaborate impact accordingly.	No	The use of water detection equipment is not envisaged to affect eco-system.	NA

5	Will the proposed project result in significant greenhouse gas emissions?	No	The use of leakage detection equipment will not result in emission of greenhouse gases.	N.A
6	Is the proposed project likely to directly or indirectly increase environmental and social vulnerability to climate change now or in the future (also known as maladaptive practices)?	No	Any of the project activities will not be vulnerable to climate change. As the device is portable which do not emit any kind of gaseous emission.	N.A
7	Will the sub-project cause			
	<ul style="list-style-type: none"> <li>Clearance of vegetation/ tree-cover/other</li> </ul>	No	No vegetation or tree cover will be clear in the project area as the devise is portable as discussed earlier.	N.A
	<ul style="list-style-type: none"> <li>Direct discharge of construction run-off, improper storage and disposal of excavation spoils, wastes and other construction materials adversely affecting water quality and flow regimes.</li> </ul>	No	No construction run-off shall be generated.	N.A
	<ul style="list-style-type: none"> <li>Flooding of adjacent areas.</li> </ul>	No	The sub project activities will not cause flooding of adjacent areas.	
	<ul style="list-style-type: none"> <li>Improper storage and handling of substances leading to contamination of soil and water.</li> </ul>	No	No chemical will be used in leakage detection.	N.A
	<ul style="list-style-type: none"> <li>Elevated noise and dust emission.</li> </ul>	No	The leakage detection Equipment does not generate noise.	N.A
	<ul style="list-style-type: none"> <li>Disruption to traffic and visitor's movements.</li> </ul>	No	The leakage detection equipment will not create hindrance to traffic and visitor's movement.	N.A
	<ul style="list-style-type: none"> <li>Gas emissions</li> </ul>	No	Because the devise is Built-in devise so, no gases emissions are envisaged to	N.A

			be emitted during construction and operation of the sub-project.	
	• Other, specify.			
8	Does the subproject involve any prior clearance from the State Forest Department for either the conversion of forest land or for tree-cutting? (Yes/ No). If yes, which?	No	The leakage detection Equipment does not involve forest and tree cutting.	N.A
<b>CULTURAL HERITAGE</b>				
9	Will the subproject create significant/limited/no cultural properties impacts	No	No cultural properties shall be damaged due to proposed project activities.	N.A
	• Involve significant excavations, demolition, movement of earth, flooding or other major environmental damages.	No	The leakage detection equipment will not create environmental damage	N.A
	• Is located within or in the vicinity of a recognized cultural property conservation area or heritage site.	No	No recognized heritage site is available in the project area.	N.A
	• Is designed to support the management or conservation of a cultural property.	No	The project does not support the management and conservation of any cultural property.	N.A
	• Other, specify.			
10	Does the subproject involve any prior clearance from the Archeology Department for either the conservation or management of heritage sites or vicinities? (Yes/ No). If yes, which?	No	No recognized heritage or Archeological site is present in the project area.	N.A

<b>HEALTH AND SAFETY</b>				
11	Does the sub-project involve siting sanitation treatment facilities close to human settlements	No	No treatment facilities are Required for proposed project.	N.A
12	Would the proposed project be susceptible to or lead to increased vulnerability to earthquakes, subsidence, landslides, erosion, flooding or extreme climatic conditions?	No	Project activity shall not increase the vulnerability to earthquakes, subsidence, landslides, erosion, flooding or extreme climatic conditions.	N.A
13	Would the project cause increase in public health risks to contagious diseases or transmission (e.g. HIV/AIDS, Malaria, etc.) for project workers or communities in the project area, as a result of a change in living and working conditions?	No	There would be no Interactions among the community and workforce.	N.A
14	Will the proposed project require additional health services?	No	The project activities will be limited in an area and only require basic first aid facilities.	N.A
15	Discharge of hazardous material into sewers, resulting in damage to sewer system and danger to workers	No	No hazardous material and chemicals shall be used.	N.A
<b>SOCIAL</b>				
16	Will the subproject create significant/limited/no social impacts?	No	The use of leakage detection equipment will not produce noise or dust.	N.A
	<ul style="list-style-type: none"> <li>Land acquisition resulting in loss of income from agricultural land, plantation or other existing land.</li> </ul>	No	The project does not involve land acquisition.	N.A
	<ul style="list-style-type: none"> <li>Impact on livelihood and economic activity.</li> </ul>	No	No loss of business and livelihood is envisaged.	N.A
	<ul style="list-style-type: none"> <li>Land acquisition</li> </ul>	No	No households shall be relocated.	N.A

	resulting in relocation of households.			
	<ul style="list-style-type: none"> <li>Any reduction of access to traditional dependent communities (to areas where they earn for their primary or substantial livelihood).</li> </ul>	No	The project activities will not restrict access of the community.	N.A
	<ul style="list-style-type: none"> <li>Any displacement or adverse impact on tribal settlement(s).</li> </ul>	No	No tribal community is present in the project area.	N.A
	<ul style="list-style-type: none"> <li>Adverse impacts to women, including economic and safety concerns.</li> </ul>	Yes	The women may face harassment issues during construction due to labor influx.	Contractor shall ensure that such incidents are not occurred by developing awareness among the labours.
	<ul style="list-style-type: none"> <li>Impact on infrastructure (roads, water supply, any other type of infrastructure)</li> </ul>	No	No infrastructure shall be affected.	N.A
	<ul style="list-style-type: none"> <li>Possible conflicts with and/or disruption to local community and/or visitors.</li> </ul>	No	No interactions with the community.	N.A
	<ul style="list-style-type: none"> <li>Health risks due to unhygienic conditions at workers 'camps.</li> </ul>	No	No construction camps be established.	N.A
	<ul style="list-style-type: none"> <li>Safety hazards during construction.</li> </ul>	No	The construction activities are minor and does not involve dangerous activities.	N.A
	<ul style="list-style-type: none"> <li>Other, specify.</li> </ul>			
<b>OVERALL ASSESSMENT</b>				
o Subproject is declined				
o Subproject is accepted				
o Subproject is classified as environmental Category A and requires an in-depth Environmental and Social Impact Assessment.				
o Subproject is classified as environmental Category B and requires an Environmental and Social Management Plan.				
o Subproject is classified as environmental Category C and does not require any further studies.				
				The project is accepted.
				The subproject is categorized as <b>Category C</b>

**Annex-V**  
**(A, B, C)- Social Screening Checklist**

**Annex – V**  
**Social Screening Checklists**

**Annex – V (A)**

**Social Screening Checklists Bulk Flow Meters**

**Karachi Water and Sewerage Services Improvement Project (KWSSIP)**

**Social Screening & Categorization Form (SSCF)**

1. **Project Name:** Karachi Water and Sewerage Services Improvement Project (KWSSIP)

2. **Sub-Project Area:** Bulk Flow Meters

3. **Project Scope of Work (list the major interventions:** The project involves provision of Bulk Flow meters at Bulk Water Lines.

4. **Project Location /Administrative Boundary:** Karachi

5. **Will any land acquisition be required for the proposed project activity?**

YES \_\_\_ NO ✓

If YES, please provide the following information:

(i) **Is the site known?** YES \_\_\_\_\_ NO \_\_\_\_\_

If YES, please provide details:

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(ii) **Is ownership status and current usage of land to be acquired known?**

YES ✓ NO \_\_\_

If YES, please provide details

The proposed land is state land

(iii) **Will the existing Right of Way be used for the project works?**

YES ✓ NO \_\_\_\_\_

If YES, please provide details: GIS Map is attached

(iv) **Please state the type of losses expected due to the project development:**

Loss of shelter and residential land?	Yes _____	No <u>✓</u>
Loss of Agricultural and other productive assets?	Yes _____	No <u>✓</u>
Losses of crops, trees and fixed assets?	Yes _____	No <u>✓</u>
Loss of Livelihood?	Yes _____	No <u>✓</u>
Loss of sources of income and means of livelihood?	Yes _____	No <u>✓</u>

**Please provide details based on the responses provided above.**

No structures, businesses/ livelihood, crops, trees and sources of income shall be affected by the proposed project activities.

**6. Will the proposed project activity require dislocation of people?**

YES \_\_\_ NO

If YES, please mention the estimated number of people to be displaced and provide details of whether they are poor, female headed households or vulnerable to poverty risks?

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**7. Will the project activity cause the people to lose or restrict access to communal facilities?**

YES \_\_\_ NO

If YES, please provide details

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**8. Will access to land and resources owned communally or by the state be restricted?**

\_\_\_ No

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**9. Is the sub-project area being affected by the Anti-Encroachment Drive in Karachi?**

YES \_\_\_ NO

**10. Will any indigenous people be impacted by the project activity?**

YES \_\_\_ NO

**11. Any estimate of the likely number of persons that will be affected by the Project?**

Yes  No

If yes, approximately how many? \_\_\_\_\_ 0 \_\_\_\_\_

**Project Category Recommendation**

It is recommended that based on the available project information and subsequent analysis, the project should be placed in (please tick one):

Category 'A' \_\_\_\_\_ Category 'B' \_\_\_ Category 'C'

**Please provide an explanation to justify the Categorization above.**

The project activities do not have social issues and no PAPs have been identified within the project area of influence.

***Social Screening Categorization:***

*Number of PAPs  $\geq$  200, Category A*

*Number of PAPs  $<$  200, Category B*

*Number of PAPs = 0, Category C*

**Annex – V (B)**  
**Social Screening Checklists Intermittent Chlorination**  
**Stations**

**Karachi Water and Sewerage Services Improvement Project (KWSSIP)**

**Social Screening & Categorization Form (SSCF)**

1. **Project Name:** Karachi Water and Sewerage Services Improvement Project (KWSSIP)

2. **Sub-Project Area:** **Intermittent Chlorination Stations**

3. **Project Scope of Work (list the major interventions:** The project involves Installation of Chlorination Stations.

4. **Project Location /Administrative Boundary:** Karachi

5. **Will any land acquisition be required for the proposed project activity?**

YES \_\_\_\_\_ NO ✓ \_\_\_\_\_

If YES, please provide the following information:

(i) **Is the site known?** YES \_\_\_\_\_ NO \_\_\_\_\_

If YES, please provide details:

\_\_\_\_\_

(ii) **Is ownership status and current usage of land to be acquired known?**

YES ✓ NO \_\_\_\_\_

If YES, please provide details

The proposed land is state land

(iii) **Will the existing Right of Way be used for the project works?**

YES ✓ NO \_\_\_\_\_

If YES, please provide details: The Chlorination stations will be installed within the boundaries of existing water pumping stations.

(iv) **Please state the type of losses expected due to the project development: Please provide details based on the responses provided above.**

<b>Loss of shelter and residential land?</b>	Yes _____	No <u>✓</u>
<b>Loss of Agricultural and other productive assets?</b>	Yes _____	No <u>✓</u>
<b>Losses of crops, trees and fixed assets?</b>	Yes _____	No <u>✓</u>

<b>Loss of Livelihood?</b>	Yes _____	No <input checked="" type="checkbox"/>
<b>Loss of sources of income and means of livelihood?</b>	Yes _____	No <input checked="" type="checkbox"/> —

Please provide details based on the responses provided above.

No structures, businesses/ livelihood, crops, trees and sources of income shall be affected by the proposed project activities.

6. Will the proposed project activity require dislocation of people?

YES \_\_\_ NO

If YES, please mention the estimated number of people to be displaced and provide details of whether they are poor, female headed households or vulnerable to poverty risks?

7. Will the project activity cause the people to lose or restrict access to communal facilities?

YES \_\_\_ NO

If YES, please provide details

8. Will access to land and resources owned communally or by the state be restricted?

No \_\_\_\_\_

9. Is the sub-project area being affected by the Anti-Encroachment Drive in Karachi?

YES \_\_\_ NO

10. Will any indigenous people be impacted by the project activity?

YES \_\_\_ NO

11. Any estimate of the likely number of persons that will be affected by the Project?

Yes  No

If yes, approximately how many? \_\_\_\_\_ 0 \_\_\_\_\_

**Project Category Recommendation**

It is recommended that based on the available project information and subsequent analysis, the project should be placed in (please tick one):

Category 'A' \_\_\_\_\_ Category 'B' \_\_\_\_\_ Category 'C'

Please provide an explanation to justify the Categorization above.

The project activities do not have social issues and no PAPs have been identified within the project area of influence.

***Social Screening Categorization:***

*Number of PAPs  $\geq$  200, Category A*

*Number of PAPs  $<$  200, Category B*

*Number of PAPs = 0, Category C*

**Annex – V (C)**  
**Social Screening Checklists Leakage Detection Equipment**

**Karachi Water and Sewerage Services Improvement Project (KWSSIP)**

**Social Screening & Categorization Form (SSCF)**

1. **Project Name:** Karachi Water and Sewerage Services Improvement Project (KWSSIP)

2. **Sub-Project Area:** Leakage detection Equipment

3. **Project Scope of Work (list the major interventions:** The project involves use of leakage detection equipment.

4. **Project Location /Administrative Boundary:** Karachi

5. **Will any land acquisition be required for the proposed project activity?**

YES \_\_\_ NO ✓

If YES, please provide the following information:

(i) **Is the site known?** YES \_\_\_\_\_ NO \_\_\_\_\_

If YES, please provide details:

---

(ii) **Is ownership status and current usage of land to be acquired known?**

YES ✓ NO \_\_\_

If YES, please provide details

The proposed land is state land

(iii) **Will the existing Right of Way be used for the project works?**

YES ✓ NO \_\_\_\_\_

If YES, please provide details:

---

(iv) **Please state the type of losses expected due to the project development:**

Loss of shelter and residential land?	Yes _____	No <u>✓</u>
Loss of Agricultural and other productive assets?	Yes _____	No <u>✓</u>
Losses of crops, trees and fixed assets?	Yes _____	No <u>✓</u>
Loss of Livelihood?	Yes _____	No <u>✓</u>

<b>Loss of sources of income and means of livelihood?</b>	Yes _____	No <input checked="" type="checkbox"/>
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Please provide details based on the responses provided above.

No structures, businesses/ livelihood, crops, trees and sources of income shall be affected by the proposed project activities.

**6. Will the proposed project activity require dislocation of people?**

YES \_\_\_ NO

If YES, please mention the estimated number of people to be displaced and provide details of whether they are poor, female headed households or vulnerable to poverty risks?

---

**7. Will the project activity cause the people to lose or restrict access to communal facilities?**

YES \_\_\_ NO

If YES, please provide details

---



---

**8. Will access to land and resources owned communally or by the state be restricted?**

No

---

**9. Is the sub-project area being affected by the Anti-Encroachment Drive in Karachi?**

YES \_\_\_ NO

**10. Will any indigenous people be impacted by the project activity?**

YES \_\_\_ NO

**11. Any estimate of the likely number of persons that will be affected by the Project?**

Yes  No

If yes, approximately how many? 0

**Project Category Recommendation**

It is recommended that based on the available project information and subsequent analysis, the project should be placed in (please tick one):

Category 'A' \_\_\_\_\_ Category 'B' ü Category 'C' ✓

**Please provide an explanation to justify the Categorization above.**

The leakage detection equipment are small portable devices and their use does not pose and environmental or social impacts.

***Social Screening Categorization:***

*Number of PAPs  $\geq$  200, Category A*

*Number of PAPs  $<$  200, Category B*

*Number of PAPs = 0, Category C*

**Annex-VI**  
**Chance Find Procedure**

## CHANCE FIND PROCEDURES

Project may involve deep excavation. Therefore, the possibility of chance find is not ignorable. In case of any chance find, the contractor will immediately report through Supervision Consultant to Directorate General (DG) of Antiquities & Archaeology, Government of Sindh to take further suitable action to preserve those antique or sensitive remains. Representative of the "Director Archaeology and Museum (DAM)" will visit the site and observed the significance of the antique, artifact and Cultural (religious) properties and significance of the project. The documentation will be completed and if required suitable action will be taken to preserve those antiques and sensitive remains.

In case any artifact, antiques and sensitive remains are discovered, chance find procedures should be adopted by contractor workers as follows:

- Stop the construction activities in the areas of chance find;
- Delineate the discovered site or area;
- Consult with the local community and provincial Archeological Department
- The suggestion of the local communities and the concerned authorities will be suitably incorporated during taking the preventive measures to conserve the antique, artifact and cultural (religious) properties
- Secure the site to prevent any damage or loss of removable objects. In case of removable antiquities or sensitive remain, a night guard shall be arranged until the responsible local authorities take over;
- After stopping work, the contractor must immediately report the discovery to the Supervision Engineer.

The contact Address of Directorate General of Antiquities & Archaeology is given below:

Antiquities House. C/82, Block-2,  
Near Bilal Masjid, Clifton, Karachi,  
Sindh 75600

Tel: 021-99212126  
021-99212127

**Annex-VII**  
**COVID-19 SOPs**

# **STANDARD OPERATING PROCEDURES (SOPs) FOR COVID-19**

## **(Based on World Bank Guidelines)**

### **1 Introduction**

The COVID-19 pandemic presents Governments with unprecedented challenges. Addressing COVID-19 related issues in both existing and new operations starts with recognizing that this is not business as usual and that circumstances require a highly adaptive responsive management design to avoid, minimize and manage what may be a rapidly evolving situation. In many cases, reasonable efforts must be put in during the circumstances, recognizing that what may be possible today may be different next week (both positively, because more supplies and guidance may be available, and negatively, because the spread of the virus may have accelerated).

### **2 Challenges with Construction/ Civil Works**

Projects involving construction/ civil works frequently involve a large work force, together with suppliers and supporting functions and services at the designated location. The work force may comprise workers from local areas more specifically. They may need to live in on-site accommodation, lodge within communities close to work sites or return to their homes after work. There may be different contractors permanently present on site, carrying out different activities, each with their own dedicated workers.

Given the complexity and the concentrated number of workers, the potential for the spread of infectious disease in projects involving construction is extremely serious, as are the implications of such a spread. Projects may experience large numbers of the work force becoming ill, which will strain the project's health facilities, have implications for local emergency and health services and may jeopardize the progress of the construction work and the schedule of the project. Such impacts will be exacerbated where a work force is large and/or the project is in remote or under-serviced areas. In such circumstances, relationships with the community can be strained or difficult and conflict can arise, particularly if people feel they are being exposed to disease by the project or are having to compete for scarce resources. The project must also exercise appropriate precautions against introducing the infection to local communities.

### **3 Responsibility/ Planning of the PIU of KWSSIP**

PIU shall ensure that sub projects (i) are taking adequate precautions to prevent or minimize an outbreak of COVID-19, and (ii) have identified what to do in the event of an outbreak.

### **4 Contractor cover**

The Contractor should identify measures to address the COVID-19 situation. What will be possible will depend on the context of the project: the location, existing project resources, availability of supplies, capacity of local emergency/ health services, the extent to which the virus already exist in the area. A systematic approach to planning, recognizing the challenges associated with rapidly changing circumstances, will help the project put in place the best measures possible to address the situation. As discussed above, measures to address COVID-19 may be presented in different ways (as a contingency plan, as an extension of the existing project emergency and preparedness plan or as standalone procedures). PIU and contractor should refer to guidance issued by relevant authorities, both national and international (e.g., WHO).

Addressing COVID-19 at a project site goes beyond occupational health and safety, and is a broader project issue which will require the involvement of different members of a project management team in all selected areas where **Bulk Flow meters** and **Intermittent Chlorination Stations** are to be installed. In many cases, the most effective approach will be to establish procedures to address the issues, and then to ensure that these procedures are implemented systematically. Where appropriate given the project context, a designated team should be established to address COVID-19 issues, including PIU representatives, the Supervising Engineer, management (e.g. the project manager) of the contractor and sub-contractors, security, and medical and OHS professionals. Procedures should be clear and straightforward, improved as necessary, and supervised and monitored by the COVID-19 focal point(s). Procedures should be documented, distributed to all contractors, and discussed at regular meetings to facilitate adaptive management. The issues set out below include a number that represent expected good workplace management but are especially pertinent in preparing the project response to COVID-19.

#### **(a) Assessing Workforce Characteristics**

Many construction sites will have a mix of workers e.g., workers from the local communities specifically; workers from a different part of the country. Workers will be employed under different terms and conditions and be accommodated in different ways. Assessing these different aspects of the workforce will help in identifying appropriate mitigation measures:

- The Contractor should prepare a detailed profile of the project work force, key work activities, schedule for carrying out such activities, different durations of contract and rotations (e.g., 4 weeks on, 4 weeks off).
- This should include a breakdown of workers who reside at home (i.e., workers from the community), workers who lodge within the local community and workers in on-site accommodation. Where possible, it should also identify workers that may be more at risk from COVID-19, those with underlying health issues or who may be otherwise at risk.
- Consideration should be given to ways in which to minimize movement in and out of site. This could include lengthening the term of existing contracts, to avoid workers returning home to affected areas, or returning to site from affected areas.
- Workers accommodated on site should be required to minimize contact with people near the site, and in certain cases be prohibited from leaving the site for the duration of their contract, so that contact with local communities is avoided.
- Consideration should be given to requiring workers lodging in the local community to move to site accommodation (subject to availability) where they would be subject to the same restrictions.
- Workers from local communities, who return home daily, weekly or monthly, will be more difficult to manage. They should be subject to health checks at entry to the site (as set out above) and at some point, circumstances may make it necessary to require them to either use accommodation on site or not to come to work.

#### **(b) Entry/ Exit to the Work Site and Checks on Commencement of Work**

Entry/ exit to the work site should be controlled and documented for both workers and other parties, including support staff and suppliers. Possible measures may include:

Establishing a system for controlling entry/ exit to the site, securing the boundaries of the site, and establishing designating entry/ exit points (if they do not already exist). Entry/ exit to the site should be documented.

- Training security staff on the (enhanced) system that has been put in place for securing the site and controlling entry and exit, the behaviors required of them in enforcing such system and any COVID -19 specific considerations.
- Training staff who will be monitoring entry to the site, providing them with the resources they need to document entry of workers, conducting temperature checks and recording details of any worker that is denied entry.
- Confirming that workers are fit for work before they enter the site or start work. While procedures should already be in place for this, special attention should be paid to workers with underlying health issues or who may be otherwise at risk. Consideration should be given to demobilization of staff with underlying health issues.
- Checking and recording temperatures of workers and other people entering the site or requiring self-reporting prior to or on entering the site.
- Providing daily briefings to workers prior to commencing work, focusing on COVID-19 specific considerations including cough etiquette, hand hygiene and distancing measures, using demonstrations and participatory methods.
- During the daily briefings, reminding workers to self-monitor for possible symptoms (fever, cough) and to report to their supervisor or the COVID-19 focal point if they have symptoms or are feeling unwell.
- Preventing a worker from an affected area or who has been in contact with an infected person from returning to the site for 14 days or (if that is not possible) isolating such worker for 14 days.
- Preventing a sick worker from entering the site, referring them to local health facilities if necessary or requiring them to isolate at home for 14 days.

### **(c) General Hygiene**

Requirements on general hygiene should be communicated and monitored, to include:

- Training workers and staff on site on the signs and symptoms of COVID-19, how it is spread, how to protect themselves (including regular handwashing and social distancing) and what to do if they or other people have symptoms (for further information see WHO COVID-19 advice for the public).
- Placing posters and signs around the site, with images and text in local languages.
- Ensuring handwashing facilities supplied with soap, disposable paper towels and closed waste bins exist at key places throughout site, including at entrances/exits to work areas; where there is a toilet, canteen or food distribution, or provision of drinking water; in worker accommodation; at waste stations; at stores; and in common spaces. Where handwashing facilities do not exist or are not adequate, arrangements should be made to set them up. Alcohol based sanitizer (if available, 60-95% alcohol) can also be used.
- Review worker accommodations, and assess them in light of the requirements set out in IFC/EBRD guidance on Workers' Accommodation: processes and standards, which provides valuable guidance as to good practice for accommodation.
- Setting aside part of worker accommodation for precautionary self-quarantine as well as more formal isolation of staff who may be infected (see paragraph (f)).

#### **(d) Cleaning and Waste Disposal**

Conduct regular and thorough cleaning of all site facilities. Review cleaning protocols for key construction equipment (particularly if it is being operated by different workers). This should include:

- Providing cleaning staff with adequate cleaning equipment, materials and disinfectant.
- Review general cleaning systems, training cleaning staff on appropriate cleaning procedures and appropriate frequency in high use or high-risk areas.
- Where it is anticipated that cleaners will be required to clean areas that have been or are suspected to have been contaminated with COVID-19, providing them with appropriate PPE: gowns or aprons, gloves, eye protection (masks, goggles or face screens) and boots or closed work shoes. If appropriate PPE is not available, cleaners should be provided with best available alternatives.
- Training cleaners in proper hygiene (including handwashing) prior to, during and after conducting cleaning activities; how to safely use PPE (where required); in waste control (including for used PPE and cleaning materials).

#### **(e) Adjusting Work Practices**

Consider changes to work processes and timings to reduce or minimize contact between workers, recognizing that this is likely to impact the project schedule. Such measures could include:

- Decreasing the size of work teams.
- Limiting the number of workers on site at any one time.
- Adapting or redesigning work processes for specific work activities and tasks to enable social distancing, and training workers on these processes.
- Continuing with the usual safety trainings, adding COVID-19 specific considerations. Training should include proper use of normal PPE. While as of the date of this note, general advice is that construction workers do not require COVID-19 specific PPE, this should be kept under review (for further information see WHO interim guidance on rational use of personal protective equipment (PPE) for COVID-19).
- Reviewing work methods to reduce use of construction PPE, in case supplies become scarce or the PPE is needed for medical workers or cleaners. This could include, e.g. trying to reduce the need for dust masks by checking that water sprinkling systems are in good working order and are maintained or reducing the speed limit for haul trucks.
- Arranging (where possible) for work breaks to be taken in outdoor areas within the site.

At some point, it may be necessary to review the overall project schedule, to assess the extent to which it needs to be adjusted (or work stopped completely) to reflect prudent work practices, potential exposure of both workers and the community and availability of supplies, taking into account Government advice and instructions.

#### **(f) Project Medical Services**

- Training medical staff, which should include current WHO advice on COVID-19 and recommendations on the specifics of COVID-19. Where COVID-19 infection is suspected, medical providers on site should follow WHO interim guidance on infection prevention and control during health care when novel coronavirus (nCoV) infection is suspected.

- Training medical staff in testing, if testing is available.
- Assessing the current stock of equipment, supplies and medicines on site, and obtaining additional stock, where required and possible. This could include medical PPE, such as gowns, aprons, medical masks, gloves, and eye protection. Refer to WHO guidance as to what is advised (for further information see WHO interim guidance on rational use of personal protective equipment (PPE) for COVID-19).
- If PPE items are unavailable due to world-wide shortages, medical staff on the project should agree on alternatives and try to procure them. Alternatives that may commonly be found on construction sites include dust masks, construction gloves and eye goggles. While these items are not recommended, they should be used as a last resort if no medical PPE is available.
- Ventilators will not normally be available on work sites, and in any event, intubation should only be conducted by experienced medical staff. If a worker is extremely ill and unable to breathe properly on his or her own, they should be referred immediately to the local hospital (see (g) below).
- Review existing methods for dealing with medical waste, including systems for storage and disposal (for further information see WHO interim guidance on water, sanitation and waste management for COVID-19, and WHO guidance on safe management of wastes from health-care activities).

#### **(g) Local Medical and Other Services**

Given the limited scope of project medical services, the project may need to refer sick workers to local medical services. Preparation for this includes:

- Obtaining information as to the resources and capacity of local medical services (e.g. number of beds, availability of trained staff and essential supplies).
- Conducting preliminary discussions with specific medical facilities, to agree what should be done in the event of ill workers needing to be referred.
- Considering ways in which the project may be able to support local medical services in preparing for members of the community becoming ill, recognizing that the elderly or those with pre-existing medical conditions require additional support to access appropriate treatment if they become ill.
- Clarifying the way in which an ill worker will be transported to the medical facility, and checking availability of such transportation.
- Establishing an agreed protocol for communications with local emergency/medical services.
- Agreeing with the local medical services/specific medical facilities the scope of services to be provided, the procedure for in-take of patients and (where relevant) any costs or payments that may be involved.
- A procedure should also be prepared so that project management knows what to do in the unfortunate event that a worker ill with COVID-19 dies. While normal project procedures will continue to apply, COVID-19 may raise other issues because of the infectious nature of the disease. The project should liaise with the relevant local authorities to coordinate what should be done, including any reporting or other requirements under national law.

#### **(h) Instances or Spread of The Virus**

- If a worker has symptoms of COVID-19 (e.g. fever, dry cough, fatigue) the worker should be removed immediately from work activities and isolated on site.
- If testing is available on site, the worker should be tested on site. If a test is not available at site, the worker should be transported to the local health facilities to be tested (if testing is available).
- If the test is positive for COVID-19 or no testing is available, the worker should continue to be isolated. This will either be at the work site or at home. If at home, the worker should be transported to their home in transportation provided by the project.
- Extensive cleaning procedures with high-alcohol content disinfectant should be undertaken in the area where the worker was present, prior to any further work being undertaken in that area. Tools used by the worker should be cleaned using disinfectant and PPE disposed of.
- Co-workers (i.e. workers with whom the sick worker was in close contact) should be required to stop work, and be required to quarantine themselves for 14 days, even if they have no symptoms.
- Family and other close contacts of the worker should be required to quarantine themselves for 14 days, even if they have no symptoms.
- If a case of COVID-19 is confirmed in a worker on the site, visitors should be restricted from entering the site and worker groups should be isolated from each other as much as possible.
- If workers live at home and has a family member who has a confirmed or suspected case of COVID-19, the worker should quarantine themselves and not be allowed on the project site for 14 days, even if they have no symptoms.

**(i) Training and Communication with Workers**

- Training of workers should be conducted regularly, as discussed in the sections above, providing workers with a clear understanding of how they are expected to behave and carry out their work duties.
- Training should address issues of discrimination or prejudice if a worker becomes ill and provide an understanding of the trajectory of the virus, where workers return to work.
- Training should cover all issues that would normally be required on the work site, including use of safety procedures, use of construction PPE, occupational health and safety issues, and code of conduct, taking into account that work practices may have been adjusted.
- Communications should be clear, based on fact and designed to be easily understood by workers, for example by displaying posters on handwashing and social distancing, and what to do if a worker displays symptoms.

**Annex-VIII**  
**ECOPs**

## **Environmental Codes of Practice**

### **1. Rationale of this ECOPs**

This Environmental Codes of Practice (ECOPs) sets out standards and procedures for managing the potential environmental impacts associating with the minor construction activities for Installation of Bulk Flow Meters and Intermittent Chlorination Stations under Assignment-B, Component-2 of SOP-1 for KWSSIP. The environmental impacts associated with this small civil work are considered to be minor, temporary and reversible, and readily managed with good practices during implementation. The ECOPs lay out outline simple rules and procedures regarding identification, monitoring and mitigation of those environmental impacts. The ECOPs shall be included in all relevant contracts.

### **2. Environmental Screening and Assessment**

During construction, the potential impacts include dust and solid waste generation associated with minor civil work activities. These impacts are small, localized and can be mitigated by incorporating good civil work practices, including proper housekeeping measures, proper material storage and disposal of solid waste and pollution control.

In addition, to ensure the environmental sanitation and safety during operation, it is requested that design for chlorination stations shall be in line with the quality standards including appropriate ventilation, trash bin, lighting, fire extinguisher, eye-wash facilities and toilet facilities etc.

### **3. Project ECOP Implementation Arrangements**

#### **a. The Project Implementation Unit (PIU) – KWSSIP**

The PIU-KWSSIP will be responsible for over-sighting the implementation of project. During implementation, the PIU is responsible for ensuring that the ECOPs will be incorporated in the bidding document and complied by contractors. The PIU has ultimate responsibility in the event of non-compliance with the ECOP during construction.

#### **b. The Contractor**

The Contractor, has the responsibility of establishing and maintaining contact with the PIU or delegated agencies and local residents and keeping them informed of construction matters likely to affect them. The Contractor and any agents or Sub-Contractors will be contractually required to comply with the requirements as specified in the ECOPs. The Contractor will responsible for implementation of the ECOPs, including workplace safety, and will ensure adequate resources are available for the implementation of the ECOPs throughout the construction period.

The Contractor has a duty to inform local residents likely to be affected by such activities at least 14 days prior to undertaking the works, as well as applying for the appropriate permits and licenses.

#### **4. Construction Activities and Environmental Rules for Contractors**

##### **a. Management of Construction Site**

This part describes basic requirements for all Contractors carrying out minor construction activities. It will be included in all construction contracts of the civil works. The Contractor is required to minimize, as far as reasonably practicable, any adverse environmental impact of their construction activities.

##### ***Prohibitions***

The following activities are prohibited on or near the project site:

- (a) Cutting of trees for any reason outside the approved construction area;
- (b) Illegal dumping of demolition material and debris.
- (c) Use of unapproved toxic materials, including lead-based paints, asbestos, etc.;
- (d) Disturbance to anything with architectural or historical value;
- (e) No burning of waste
- (f) Use of alcohol by workers.

***Working hours:*** Core working hours will be from 0800 to 1800 on weekdays and 0800 to 1300 on weekend. Individual site requirements which differ from the above will be considered on a site-by-site basis. Noisy operations shall not take place outside these hours without prior approval from the PIU and/or delegated agencies and local authorities.

***Good housekeeping:*** The Contractor will follow a 'good housekeeping' policy at all times. This will include, but not necessarily be limited to the following: Ensure considerate site behavior of the Contractor's staff; Prohibit open fires; Ensure that appropriate provisions for dust control and road cleanliness are implemented; Remove rubbish at frequent intervals, leaving the site clean and tidy; Remove food waste; Frequently inspect, repair and re-paint as necessary all site hoardings to comply with the local conditions and local regulations, all flying post/ board is to be removed as soon as reasonably practicable and within 24 hours of notice; Maintain toilet facilities and other welfare facilities for its staff;

***Public information and site access:*** As a minimum, the Contractor will provide public information on the site program (start and finish dates), plus the telephone for public contacts and/or requests especially during the school year. Any un-authorized entry to or exit from the sites should be control as much as possible.

***Site layout and facilities:*** Location of site huts, office accommodation, toilets and welfare facilities should be accommodated within the boundaries of the site.

***Emergency Procedures:*** The Contractor will ensure that emergency procedures are developed to facilitate effective actions in case of medical/fire emergency as well as environmental pollution (major spillage of gasoline, used oil, and/or toxic chemicals, etc.). The emergency procedure will contain emergency phone numbers and the method of notifying the statutory authorities. Contact numbers for the key staff of the contractor will also be included.

**Fire prevention and control:** All construction sites and associated accommodation or welfare facilities will have in place appropriate plans and management controls to prevent fires. The site fire plans will be prepared and will have due regard to the GoS regulations. During operation and maintenance of equipment and vehicles, the Contractor will ensure that its workers are well aware of the procedures and have enough knowledge to comply with them. The specification of non-combustible materials, products and packaging will be pursued wherever reasonably practicable. The project will also have to comply with GoS requirements as may be appropriate at specific sites.

**Operation of equipment:** The Contractor must take all reasonable precautions to ensure that equipment is operated in a manner so as not to cause safety risk and/or nuisance to surrounding residents and occupiers. Operations of crane and other large equipment will have to be closely supervised. Permission may be required as per GoS regulations.

**Clearance of the construction site after completion:** On completion of the works the Contractor will clear away and remove all materials and rubbish and temporary works of every kind. The site will be left clean and in a condition to the satisfaction of the PIU and/or delegated agencies.

## **5. Management of Environment and Sanitation**

### ***Nuisance, Dust and Noise Control***

To control nuisance, dust and noise in the construction sites the Contractor should:

- (a) To the extent possible, maintain noise levels associated with all machinery and equipment at or below 90 db.
- (b) In sensitive areas (including residential neighborhoods, hospitals, etc.) more strict measures may need to be implemented to prevent undesirable noise levels. Minimize production of dust and particulate materials at all times, to avoid impacts on surrounding families and businesses, and especially to vulnerable people (children, elders).
- (c) Place dust screens around construction areas, fencing should be provided along the boundary so that the emissions do not affect the immediate neighbors, paying particular attention to areas close to housing, commercial areas, and recreational areas.
- (d) Spray water periodically as needed on construction areas, especially at site located near residential area
- (e) Apply proper measures to minimize disruptions from vibration or noise coming from construction activities.

### ***Disposal of Construction Waste***

The Contractor shall establish and enforce daily site clean-up procedures, including maintenance of adequate disposal facilities for construction debris.

Debris generated due to the demolition of the existing structures shall be suitably reused, to the extent feasible. The disposal of remaining debris shall be carried out only at sites identified and approved by local authorities. The contractor should ensure that these disposal sites: (a) are not located within designated forest areas; (b) do not impact natural drainage courses; Under no circumstances shall the contractor dispose of any material in environmentally sensitive areas. Dispose in authorized areas all of garbage, metals, used oils, and excess material generated during construction, incorporating recycling systems and the separation of materials. In the event

any debris or silt from the sites is deposited on adjacent land, the Contractor shall immediately remove such debris and restore the affected area to its original state to the satisfaction of the PIU and/or delegated agencies and local communities.

### ***Water quality***

The Contractor must take all the efforts to prevent wastes (solid and liquid) discharge into all rivers and canals and to protect surface and groundwater from pollution and other adverse impacts including changes to water levels, flows and general water quality. Whenever possible, the Contractor must minimize the amounts of wastewater that need to be discharged and find alternative means of disposal. Liquid spills of lubricant, fuel and oil within the site should be attended at the earliest in order to minimize land & groundwater contamination. The Contractor will ensure that any seepage and wastewater arising from the works must be collected and discharged via a settlement tank. Water drainage must be designed to avoid stagnant conditions that could create bad smell and unsanitary condition in the construction area and surrounding environment.

### ***Workforce and Workers; Sanitation***

The Contractor should whenever possible locally recruit the majority of the workforce and shall provide appropriate training as necessary.

The Contractor shall not allow the use of fuel wood for cooking or heating at the construction site or surrounding area.

The Contractor shall ensure that site offices, depots, and workshops are located in appropriate areas. Clean and well-maintained toilets should be made available.

Clean water shall be adequately provided for workers by the Contractor.

### ***Safety during Construction***

The Contractor's responsibilities include the protection of every person and nearby property from construction accidents. The Contractor shall be responsible for complying with all government safety requirements and any other measures necessary to avoid accidents, including the following:

- (a) Notice signs/board shall properly be installed at the construction sites
- (b) If school children are in the vicinity, include traffic safety personnel to direct traffic during school hours;
- (c) Conduct safety training for construction workers prior to beginning work;
- (d) Provide necessary personal protective equipment and clothing (goggles, gloves, respirators, dust masks, hard hats, steel-toed and –shanked boots, etc.,) for construction workers and enforce their use;
- (e) During emergencies of any kind, suspend all work.

### ***Community Relations***

To enhance adequate community relations the Contractor shall:

- (a) Inform the local authorities and community about construction and work schedules, interruption of services, traffic detour routes and provisional bus routes, as appropriate.

- (b) Limit construction activities at night. When necessary, ensure that night work is carefully scheduled and the community is properly informed so they can take necessary measures.

### ***Physical Cultural Property Chance-finds Procedures***

If the Contractor discovers archeological sites, historical sites, remains and objects the Contractor shall:

- (c) Stop the construction activities in the area of the chance find;
- (d) Delineate the discovered site or area;
- (e) Secure the site to prevent any damage or loss of removable objects. In cases of removable antiquities or sensitive remains, a night guard shall be arranged until the responsible local authorities or the Directorate of Archeology take over;
- (f) Notify the supervisory Engineer who in turn will notify the responsible local authorities immediately (within 24 hours or less);
- (g) Responsible local authorities, would be in charge of protecting and preserving the site before deciding on subsequent appropriate procedures. The significance and importance of the findings should be assessed according to the various criteria relevant to cultural heritage; those include the aesthetic, historic, scientific or research, social and economic values;
- (h) Decisions on how to handle the finding shall be taken by the responsible authorities. This could include changes in the layout (such as when finding an irremovable remain of cultural or archeological importance) conservation, preservation, restoration and salvage;
- (i) Implementation for the authority decision concerning the management of the finding shall be communicated in writing by relevant local authorities; and
- (j) Construction work could resume only after permission is given from the responsible local authorities concerning safeguard of the heritage.

**Annex-IX**  
**Health & Safety Plan**

## **Health & Safety Management Plan (HSMP)**

### **1.0 Introduction**

This health and safety management plan has been prepared to identify and outline the manner in which construction site health and safety aspects will be managed to ensure the safe and efficient performance of the construction phase activities and to minimize adverse effects on the existing community and workers arising from construction activities.

This plan is designed to identify, evaluate, and control health and safety hazards for the purpose of protecting employees. The plan provides for emergency response activities at the job site as well as covering site hazard analysis, training requirements, engineering controls, materials handling, and safe construction operations. This plan is intended to provide guidance and information in dealing with the hazards that may be faced on the construction site by the contractor and its workers.

The consultant as a third-party validator will monitor the compliance of the plan by the contractor and its workers on each construction site.

The purpose of this plan is to illustrate safety issues specific to the KWSSIP. This plan is intended to maintain a safe work environment and effectively reduce the number of accidents resulting in personal injury, property damage, and damage to construction equipment.

### **2.0 Scope of Project**

#### **2.1 Scope of Work**

KWSB has conceived KWSSIP in the form of a series of projects (SOPs), which form a long-term program to address the serious water and sewerage service gaps in the rapidly growing city of Karachi. The following SOPs have been planned under KWSSIP:

SOP-1: Focuses on reforms, maintenance and rehabilitation

SOP-2: To scale-up investments

SOP-3: Will focus on increasing water production and financing investments to ensure the additional wastewater created can be treated

SOP-4: Will focus on improving services in informal settlements based on experience gained under the previous projects

Currently, SOP-1 (or KWSSIP-1) is under implementation, whereas the SOP-2 is under preparation.

#### **SOP -1**

The SOP1 of KWSSIP has the following three components:

- Component 1- Operational and enabling environment reforms in KWSB
- Component 2- Infrastructure investments
- Component 3 - Project Management and Studies.

Three sub-projects are included under Components 2 of SOP-1 as given in **Table 1.1** below:

**Table 1. 1: Sub-projects Under Components 2 of SOP-1**

<b>Sr. No.</b>	<b>Assignment</b>	<b>Project</b>	<b>Target</b>
1	A	Rehabilitation of water supply and sewerage in three low-income areas in Karachi	Provision of water supply and sewerage networks in three low-income communities/ katchi abadis
2	B	Priority water network rehabilitation including operation and maintenance (O&M) Equipment, meters & district metered areas (DMAs) to Reduce non-revenue water (NRW)	Installation of Bulk Flow Meters and intermittent chlorination stations, use of leakage detection equipment and priority water network rehabilitation
3	C	Priority Sewer Network Rehabilitation	Provision of sewerage networks in priority schemes

This HSMP focuses on the activities related to Assignment B of SOP1.

## **2.2 Site Location**

Around 211 Bulk Flow Meters and 10 Intermittent Chlorination Stations shall be installed at bulk water lines and existing water pumping stations respectively. The locations of Bulk Flow Meters are spread throughout the entire city of Karachi.

## **3.0 Health and Safety Responsibilities**

The effectiveness and success of the safety plan implementation depend upon the active participation and cooperation of all employees. The duties and responsibilities of all employees under this policy are the following:

### **3.1 Project Engineer**

- Prepare the Site-Specific Safety Plan.
- Direct and coordinate health and safety regulations related to the construction site.
- Participate in post-accident investigations.
- Assist in formulating policy matters.
- Implement contractor Safety Program and Policy

### **3.2 Foremen/Supervisors**

- Be familiar with, explain, and enforce health and safety plan under his jurisdiction.
- Direct and coordinate health and safety activities within the area or responsibility
- Ensure safety devices and proper PPE are used by employees under supervision.
- Instruct and train all employees within the area of responsibility in job health and safety requirements, including (but, not limited to) hazard recognition and avoidance. Also, foreman/front-line supervisors must require compliance by employees with the established safety rules.
- Direct the correction of unsafe conditions.
- Ensure safety equipment is available, maintained, used, and stored correctly.
- Ensure injuries are treated promptly and reported properly.
- Participate in post-accident investigations.
- Coordinate daily job site inspection.
- Implement health and safety plan at each site as per required.

### **3.3 Construction Workers**

The main responsibility of every worker at the construction site will be to follow the health and safety instructions and procedures.

- Be familiar with and comply with proper health and safety practices.
- Use the required safety devices and proper PPE.
- Notify the supervisor immediately of unsafe conditions/- acts, accidents, and injuries.
- Implement the health and safety plan

### **3.4 Subcontractors**

By the contract, the subcontractors will have to comply with and ensure the compliance of their employees with the provisions of health and safety policy as well as their own safety program. Failure to fulfill this requirement is a failure to meet the conditions of the subcontract.

### **3.5 Supervision Consultant (SC)**

SC will validate the effective implementation of the health and safety plan at the site. PIU-KWSSIP will be overall responsible for the safe construction work at each site.

## **4.0 General Health and Safety Procedures**

### **4.1 Personal Protective Equipment (PPE)**

The contractor provides Personal Protective Equipment (PPE) to all employees. Hard hats, safety glasses, and safety work boots are required to be worn at all times when on the job site. Reflective vests are required when working outside around equipment or traffic. Exceptions may be made

to this PPE requirement only under an approved contractor work plan. Employees learn where to get PPE during their new-hire orientation and are responsible for wearing and maintaining the required PPE. Additional PPE may be required depending on the task and if there is a potential for exposure to hazardous conditions. PPE requirements are reviewed by the foreman. Employees are expected to use reasonable judgment regarding whether additional PPE (beyond the required) is necessary for certain tasks. If employees are unsure of the type of PPE required for a specific task or job, they should ask the supervisor.

## **4.2 Equipment Use and Operation**

Equipment is used only for its intended use and as recommended by the manufacturer. Using equipment for purposes other than what it is designed for is prohibited. Employees are prohibited from operating a vehicle in a reckless manner or at a speed greater than is reasonable and proper, with due regard for weather, traffic, the character of roadway, load, type of vehicle, and any other conditions which may affect the safe operation of the vehicle. The vehicle must be kept under control at all times and special care is exercised when transporting personnel.

Employees may only ride equipment if there are seats or equal protection available for each person. Seatbelts are worn at all times while operating equipment with seats. No cell phone or earbud is used while operating equipment.

## **4.3 Repair**

Employees are prohibited from making repairs, alterations, or attachments to equipment in the field except with the permission of the superintendent, foreman, or equipment mechanic. Only qualified personnel will perform repairs on equipment. Such repairs, alterations, or attachments are documented on the appropriate shop forms.

Employees are prohibited from removing a guard, safety device, or appliance from equipment or machinery except to make repairs. While making repairs, employees use appropriate lockout/tag-out procedures. When repairs are complete, the guard, safety device, or appliance is replaced immediately.

## **4.4 Conduct**

The following conduct is prohibited and may result in discipline up to and including termination:

- Horseplay and scuffling on the job.
- Making a false report or misrepresentation.
- Fighting.
- Use of alcohol or any other drugs
- Dishonesty and theft of the property.
- Deliberate misuse of the equipment.
- Unnecessary risk-taking.

- Violating or disobeying any instruction given by a supervisor

## **5.0 General Jobsite Procedures**

### **5.1 New Hire Orientation**

New-hire orientation may consist of, but is not limited to, the following:

- Have the employee read the health and safety plan and other safety requirements, guidelines etc. Answer any questions the new hire may have about these policies and request a signature on the Statement of Understanding.
- Orient the employee to the job site indicating the location of the emergency facilities, portable fire extinguishers, first-aid station, emergency phone numbers, public notices, and any job site-specific information.
- Explain the injury and accident policy.
- Review the written hazard communication program. Discuss hazards, container labeling, and the use of protective equipment.
- Explain the emergency response plan for catastrophic events such as fire, explosion, etc.
- Issue PPE as required for the job

### **5.2 Training**

Training and education are necessary for the success of this policy. Employees are trained to recognize job site hazards and the procedures to follow to minimize these hazards. Training may consist of (but is not limited to) the following:

- Weekly job site safety meetings.
- Orientation training for new hires.
- Individual job/task training, including the applicable regulations/standards for the specific job/task.

Supervisors and management receive ongoing safety training throughout the year.

### **5.3 Safety Meetings**

Weekly safety meetings are held on the job site. All employees and subcontractors are required to attend. The meetings may cover a range of safety-related topics. The format and content of the meetings are up to the discretion of the superintendent. Monthly safety meetings are held for all foremen, superintendents, project managers, project engineers, contractors, and other management personnel. These meetings are for the purpose of discussing companywide safety issues and providing continued safety training and education.

## **5.4 Safety Inspections**

The superintendent and foreman conduct an initial safety inspection at the beginning of each project. In addition, a daily safety inspection of the job site is conducted by the contractor employees, employees of a subcontractor, or some combination thereof. The inspection is rotated between all workers on the job site. Any safety concern found during the inspection is reported. If a worker is unclear about any safety aspect, the foreman or project Engineer helps. If the area being inspected requires a *competent person*, the employee conducts the inspection with the competent person. Also, if time allows, the foreman for the worker conducting the inspection is encouraged to walk through it with them.

## **5.5 Hazard Communication**

The contractor needs to develop a written hazard communication plan. It will be explained to each employee during the new-hire orientation. The purpose of the hazard communication plan is to provide employees with information on the chemical and physical hazards that may be present at the job site. Safety Data Sheets for all chemicals will be kept on site.

## **5.6 Job Hazard Analysis**

A job hazard analysis may be developed covering the major activities of construction, the hazards associated with these activities, and ways to mitigate these hazards.

## **5.7 Housekeeping**

Housekeeping is one of the most important factors for a safe job site. Form material should be scraped and all protruding nails pounded down. All other debris is cleared from work areas, passageways, and stairs. Excess materials are stacked neatly out of the way. Tools should be stored in the toolbox so these are available for all employees to use.

Combustible scrap and debris are removed at regular intervals during the course of construction. Containers with covers are provided for the collection and separation of waste, trash, oily and used rags, and other such refuse, which is removed safely and on a regular basis.

Foreign object and debris (FOD) is a significant concern in nearby occupied spaces and construction areas. It is extremely important to keep all trash and debris contained at this site. Housekeeping will be strictly enforced

## **5.8 Fall Protection**

The contractor provides fall protection when employees are exposed to fall hazards.

Fall protection may consist of, but is not limited to, the following:

- A stairway or ladder is provided at any point of access where there is a break in elevation of 19 inches or more.
- Guardrails are installed for all leading-edge work. For loading bay locations fall-arrest systems or fall-restraint systems are used.
- Safety harnesses with approved lanyards and tie-off points are used for all other fall protection unless an appropriate procedure or device was approved in advance by a competent person.
- Stilts may be used on job sites but work area floors must be clean/clear of all debris, materials, and equipment.

## **5.9 Electrical Safety**

Electrical safety may consist of, but is not limited to, the following:

- Live electrical parts are guarded against accidental contact by cabinets, enclosure, location, or guarding.
- Extension cords are kept in safe, working condition.
- All lamps for general illumination have the bulbs protected against breakage. All light sockets are filled with a working bulb.
- Employees will not work in such close (able to contact) proximity to any part of an electric power circuit unless the circuit is de-energized, grounded, or guarded by insulation.
- De-energized equipment or circuits are locked out and tagged out. The tags identify the equipment or circuits being worked on.
- All generators used for temporary power shall be grounded according to manufacturers' specifications.
- Equipment shall not be operated closer than 10 feet from power lines less than 50kV. Safe distance will increase near higher voltage power lines, (over 50kV)

## **5.10 Tools**

The contractor provides tools for employees to use. Only trained employees are allowed to use such tools. The safe use of tools may consist of, but is not limited to the following:

- Unsafe or defective tools are removed from service and tagged out.
- Power tools are turned off and motion stopped before setting down.
- Tools are disconnected from the power source before changing drills, blades, or bits and before any repair or adjustment is made. Running tools are not left unattended.
- Portable abrasive grinders have guards installed covering the upper and back portions of the abrasive wheel.

## **5.11 Scaffolds**

Scaffolds are erected, moved, dismantled, or altered under the supervision of a competent person for scaffolding. Scaffold use consists of, but is not limited to, the following procedures:

- Standard guardrails are installed on all open sides and ends of scaffold platforms and/or work levels more than ten feet below the ground.
- Scaffolds four to ten feet in height with a minimum horizontal dimension in any direction less than 45 inches have standard railings installed on all open sides/ends.
- Platforms at all working levels are fully planked. Planking is laid tight with no more than one inch space between them, overlap at least 12 inches, and extends over end supports 6-12 inches unless cleats are used.
- The front edge of all platforms is no more than 14 inches from the face of the work, except plastering/lathing may be 18 inches.
- Mobile scaffolds are erected no more than a maximum height of four times their minimum base dimension.
- Scaffold casters/wheels are locked whenever the platform is occupied.
- Scaffolds are not overloaded beyond their design loadings.
- Scaffold components are not used as tie-off/anchor points for fall-protection devices.
- Portable ladders, hook-on ladders, attachable ladders, integral prefabricated scaffold frames, walkways, or direct access from another scaffold or structure are used for access when platforms are more than two feet above or below a point of access.
- Cross braces are not used as a means of access to scaffolds.
- Scaffolds are not erected, used, dismantled, altered, or moved such that they or any conductive material handled on them might come close to exposed and energized power lines than the following:
  - Three feet from insulated lines of less than 300 volts;
  - Ten feet plus for any other insulated or uninsulated Lines

## **5.12 Excavation and Trenches**

Excavation and trenching are done in the presence of a competent person and in compliance with, but not limited to, the following procedures:

- Any excavation or trench five feet or more in-depth is provided cave-in protection through shoring, sloping, benching, or the use of hydraulic shoring, trench shields, or trench boxes. Trenches less than five feet in depth and showing potential of cave-in are also provided cave-in protection. Specific requirements of each system are dependent upon the soil classification as determined by a competent person.
- A competent person inspects each excavation/trench daily prior to the start of work, after every rainstorm or other hazard-increasing occurrence, and as needed throughout the shift.
- Any material and equipment are kept at least two feet from the edge of the trench or excavation.

## **5.13 Ladders**

Ladders are inspected during the weekly inspections to identify any unsafe conditions. Any ladders found to be unsafe are taken out of service. Extension ladders extend three feet above

the work surface and are 100 percent tied off. Step ladders are only used in the open position. Ladders are stored lying down. No standing on the top step or first rung below the top of a step ladder.

#### **5.14 Illumination**

Construction areas and storage areas where work is in progress are lighted with either natural or artificial illumination.

#### **5.15 Motor Vehicles and Mechanized Equipment**

Vehicles and equipment are only operated by qualified persons (training or experience). All equipment operators are responsible for checking, on a daily basis, all fluid levels, drive components, and hydraulics. In addition, operators visually inspect the engine and look for structural breaks and cracks on the machine. Any and all deficiencies must be reported to a supervisor immediately.

When equipment is stopped or parked, parking brakes are set and other safety precautions are taken as required for the type of equipment such as placing the forks flat on the ground. Keys shall be removed from equipment at the end of each shift.

#### **5.16 Severe Weather**

Outside construction operations including, but not limited to site work, and concrete work are suspended if severe wind or rain conditions present safety hazards at the worksite. Rain and wind storm hazards are evaluated and appropriate measures are taken to abate potential hazards.

#### **5.17 Accident**

All accidents and near misses must be reported immediately to the foreman or superintendent. An accident report is then filled out by the employee and the supervisor. Filling out an accident report does not require the delay of medical attention. Any injury is treated first. Employees file such reports without fear of reprisal by management. The accident or incident may be discussed at weekly safety meetings to avoid that sort of accident in the future.

#### **5.18 First Aid**

First-aid kits are available in the project office, at the appropriate and accessible locations as indicated during orientation. In addition, foremen and superintendents maintain current first aid boxes at the site.

### **5.19 Fire Protection**

The contractor maintains appropriate fire extinguishers at the fire-prone areas of the construction site. All equipment is fitted with portable fire extinguishers. Employees are instructed on the location and usage of these fire extinguishers. Emergency telephone numbers for fire protection and emergency medical services are posted on the field office bulletin board.

### **5.20 Emergency Action Plan**

Each job site develops an emergency action plan that is reviewed with each employee during orientation. The emergency action plan covers emergency escape procedures, procedures followed by employees remaining to operate critical operations before they evacuate, procedures to account for all employees, rescue and medical duties, and how to report emergencies.

### **5.21 Environmental Protection Plan**

This health and safety plan also contains an Environmental Protection Plan for the control, prevention, management, containment, cleanup, and disposal of petroleum products or other hazardous substances which may be generated on each project site. The Project Engineer directs measures to control and prevent accidental discharge of petroleum products or other hazardous substances during storage and transfer on all job sites. Any onsite storage is in approved containers. Absorbent pads and other recovery equipment shall be available to contain and recover any fuel accidentally spilled. Any spills and contaminated soils are cleaned and disposed of in accordance with applicable requirements.

### **5.22 Traffic and Pedestrian Control**

A traffic control plan will be developed and put in place prior to beginning work on the project for the protection of workers and the general public. Barricades and signage must be placed around job site areas to reroute vehicle traffic and keep pedestrians out of the job site.

Project Engineers and Superintendents will evaluate the site before work starts to plan site control. Fencing, signage, and barricades shall be erected and secured as to keep pedestrians out.

Any time while performing work near or on a roadway and a worker has a sense of traffic patterns not being controlled properly or speeds too extreme for conditions, the worker should remove himself from the area and notify Supervisor. The Project Engineer shall stress and discuss, at weekly meetings, for all workers to be aware of traffic hazards and pedestrians.

### **5.24 Concrete Work**

The project involves concrete work. There are many hazards associated with this work including but not limited to; Slips Trips, Falls, Strains and Sprains, Eye Injuries, Chemical Burns, and Silica

Exposure. The risk assessment shall be performed for all concrete work to minimize the associated hazards

## **6.0 Monitoring and Reporting**

Monitoring the implementation of the health and safety plan and progress reporting will be very important for the effective enforcement of the plan. PIU project team along with the supervision consultant will validate effective reinforcement of HSMP. The supervision consultant will frequently visit the construction sites and monitor the effectiveness of the plan implementation. The status of implementation will be reported to the PIU fortnightly.

**Annex-X**  
**Code of Conduct**

## **Annex - X**

### **Workers' Code of Conduct**

I, \_\_\_\_\_, acknowledge that preventing any misconduct as stipulated in this code of conduct, including sexual exploitation and abuse (SEA), sexual harassment (SH), and child abuse/exploitation are important. Any activity, which constitute acts of gross misconduct are therefore grounds for sanctions, penalties or even termination of employment. All forms of misconduct are unacceptable be it on the work site, the work site surroundings, or at worker's camps. Prosecution of those who commit any such misconduct will be pursued as appropriate. I agree that while working on this project, I will:

1. Consent to security background check;
2. Treat women, children (persons under the age of 18) and persons with disability with respect regardless of race, colour, language, religion, political or other opinion, national, ethnic or social origin, property, birth or other status;
3. Not use language or behaviour towards men, women or children/learners that is inappropriate, harassing, abusive, sexually provocative, demeaning or culturally inappropriate;
4. Carry out his/her duties competently and diligently;
5. Comply with this Code of Conduct and all applicable laws, regulations and other requirements, including requirements to protect the health, safety and well-being of other Contractor's Personnel and any other person;
6. Maintain a safe working environment including by:
  - a. Ensuring that workplaces, machinery, equipment and processes under each person's control are safe and without risk to health;
  - b. Wearing required personal protective equipment;
  - c. Using appropriate measures relating to chemical, physical and biological substances and agents; and
  - d. Following applicable emergency operating procedures.
7. Report work situations that he/she believes are not safe or healthy and remove himself/herself from a work situation which he/she reasonably believes presents an imminent and danger to his/her life or health;
8. Treat other people with respect, and not discriminate against specific groups such as women, people with disabilities, migrant workers or children;
9. Not engage in any form of sexual harassment including unwelcome sexual advances, requests for sexual favours, and other unwanted verbal or physical conduct of a sexual nature with other Contractor's or Employer's Personnel;
10. Not participate in sexual activity with children/learners—including grooming or through digital media. Mistaken belief regarding the age of a child and consent from the child is not a defence;
11. Not exchange money, employment, goods, or services for sex, with community members including sexual favours or other forms of humiliating, degrading or exploitative behaviour;
12. Attend trainings related to HIV and AIDS, SAE/SH, occupational health and any other relevant courses on safety as requested by my employer;

13. Report to the relevant committee any situation where I may have concerns or suspicions regarding acts of misconduct by a fellow worker, whether in my company or not, or any breaches of this code of conduct provided it is done in good faith;
14. Regarding children (under the age of 18):
  - a) Refrain from hiring children for domestic or other labour, which is inappropriate given their age, or developmental stage, which interferes with their time available for education and recreational activities, or which places them at significant risk of injury.
  - b) Comply with all relevant local legislation, including labour laws in relation to child labour.
15. Refrain from any form of theft for assets and facilities including from surrounding communities.
16. Remain in designated working area during working hours;
17. Refrain from possession of alcohol and illegal drugs and other controlled substances in the workplace and being under influence of these substances on the job and during working hours;
18. Follow prescribed environmental occupation health and safety standards;
19. Channel grievances through the established grievance redress mechanism.

I understand that the onus is on me to use common sense and avoid actions or behaviours that could be construed as misconduct or breach this code of conduct.

I acknowledge that I have read and understand this Code of Conduct, and the implications have been explained with regard to sanctions on-going employment should I not comply.

Signed by: \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

For the Employer/Contractor

Signed by: \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

**Annex-XI**  
**Monitoring Checklist**

## Monitoring and Supervision Checklist

Project					
Site Location					
Current Status					
Supervision Date					
Supervised By					
Inspection Items	Implementation			Remarks (i.e., specify location, good practices, problem observed, possible cause of nonconformity, and/or proposed corrective/preventative actions)	
	Yes	No*	N/A		
<b>1. Air Pollution Control</b>					
1.1. Vehicle loads covered with any suitable material while transporting construction material?					
1.2. Are stockpiles of dusty materials covered or watered?					
1.3. Does the Construction Contractor (CC) have the proper material handling practices at the site?					
1.4. Others (please specify)					
<b>2. Surface and Ground Water Pollution Control</b>					
2.1. Are chemicals or hazardous material stored at designated places?					
2.2. Are effluents from the construction sites released to drinking water sources, cultivation fields, irrigation channels, and critical habitats?					
2.3. Does the CC have tarpaulin sheets available at the site?					
2.4. Others (please specify)					
<b>3. Noise Control</b>					
3.1. Are machinery operations and high noise activities carefully planned and scheduled?					
3.2. Are high noise activities ceased between 20:00 and 06:00hrs?					
3.3. Is the noise level monitoring carried out periodically? And is the monitoring register maintained?					
3.4. Others (please specify)					
<b>4. Solid Waste Management</b>					
4.1. Is recycling of solid waste carried out?					
4.2. Are the construction sites equipped with temporary refuse bins?					
4.3. Is the waste dumped or thrown?					

around the project site?				
4.4. Is the waste tracking register maintained at the site?				
4.5. Is the waste properly disposed of in designated areas and not affecting the drinking water sources, cultivation fields, irrigation channels, natural drainage paths, the existing waste management system in the area, local routes, and the general aesthetic value of the area?				
4.6 Is Covid 19 prevention waste being handled and stored properly?				
4.7. Others (please specify)				
<b>5. Occupational Health and Safety</b>				
5.1. Are WB Group's Environment, Health, and Safety(EHS) Guidelines implemented in letter and spirit?				
5.2. Are appropriate personal protective equipment (PPE) provided to minimize risks, such as appropriate outerwear, boots, and gloves; safety helmets as well as per COVID-19 requirements?				
5.3. Are first-aid equipment at works provided?				
5.4. Is water stagnation observed near the construction site?				
5.5 Are protocols for slips and trips being followed?				
5.6. Are protocols for work at height being followed?				
5.7. Is training for workers for the use of PPE provided?				
5.8. Are procedures for documenting and reporting accidents, diseases, and incidents implemented at the site?				
5.9. Others (please specify)				
<b>6. Labor Issues</b>				
6.1. Are labor locally procured for the construction activities?				
6.2. Is there any child working?				
6.3. Others (please specify)				
<b>7. Project Exclusions</b>				
7.1. Is the GRM implemented for the amicable resolution of disputes or conflicts?				
7.2. Others (please specify)				

**Annex-XII**  
**Sample Environmental & Social**  
**Screening Checklists**

### ENVIRONMENTAL AND SOCIAL SCREENING CHECKLIST

<b>Project Name:</b>				
Subproject location (area/district/site):				
Subproject scope of work:				
Implementing Agency:				
Date of screening:				
Responsible agency:				
Sr. No.	Screening Criteria	Assessment of Impact	Explanation	Mitigation Measures
<b>ENVIRONMENT</b>				
1	Will the subproject create significant/limited/no environmental impacts?			
2	Is there any likelihood that the impacts are beyond the site boundary, or the impacts occurring during project implementation are beyond the planning area? Are such significant adverse environmental impacts considered irreversible? Please briefly describe:			
3	Does the sub-project involve any significant change or degradation to the critical/ non-critical natural habitats?			
4	Is the subproject in an eco-sensitive area or adjoining an eco-sensitive area or monument? (Yes/No) If Yes, which is the area? Elaborate impact accordingly.			
5	Will the proposed project result in significant greenhouse gas emissions?			
6	Is the proposed project likely to directly or indirectly increase environmental and social vulnerability to climate change now or in the future (also known as maladaptive practices)?			

7	Will the sub-project cause			
	<ul style="list-style-type: none"> <li>• Clearance of vegetation/ tree-cover/other</li> </ul>			
	<ul style="list-style-type: none"> <li>• Direct discharge of construction run-off, improper storage and disposal of excavation spoils, wastes and other construction materials adversely affecting water quality and flow regimes.</li> </ul>			
	<ul style="list-style-type: none"> <li>• Flooding of adjacent areas.</li> </ul>			
	<ul style="list-style-type: none"> <li>• Improper storage and handling of substances leading to contamination of soil and water.</li> </ul>			
	<ul style="list-style-type: none"> <li>• Elevated noise and dust emission.</li> </ul>			
	<ul style="list-style-type: none"> <li>• Disruption to traffic and visitor's movements.</li> </ul>			
	<ul style="list-style-type: none"> <li>• Damage to existing infrastructure, public utilities, and amenities.</li> </ul>			
	<ul style="list-style-type: none"> <li>• Failure to restore temporary construction sites.</li> </ul>			
	<ul style="list-style-type: none"> <li>• Possible conflicts with and/or disruption to local community and/or visitors</li> </ul>			
	<ul style="list-style-type: none"> <li>• Health risks due to unhygienic conditions at workers 'camps</li> </ul>			
	<ul style="list-style-type: none"> <li>• Safety hazards during construction</li> </ul>			
	<ul style="list-style-type: none"> <li>• Gas emissions</li> </ul>			
	<ul style="list-style-type: none"> <li>• Safety hazards</li> </ul>			
	<ul style="list-style-type: none"> <li>• Other, specify.</li> </ul>			
8	<p>Does the subproject involve any prior clearance from the State Forest Department for either the conversion of forest land or for tree-cutting? (Yes/ No).</p> <p>If yes, which?</p>			
<b>CULTURAL HERITAGE</b>				
9	Will the subproject create significant/limited/no cultural properties impacts			
	<ul style="list-style-type: none"> <li>• Involve significant excavations, demolition, movement of earth, flooding</li> </ul>			

	or other major environmental damages.			
	<ul style="list-style-type: none"> <li>Is located within or in the vicinity of a recognized cultural property conservation area or heritage site.</li> </ul>			
	<ul style="list-style-type: none"> <li>Is designed to support the management or conservation of a cultural property.</li> </ul>			
	<ul style="list-style-type: none"> <li>Other, specify.</li> </ul>			
10	<p>Does the subproject involve any prior clearance from the Archeology Department for either the conservation or management of heritage sites or vicinities? (Yes/ No).</p> <p>If yes, which?</p>			
<b>HEALTH AND SAFETY</b>				
11	Does the sub-project involve siting sanitation treatment facilities close to human settlements			
12	Would the proposed project be susceptible to or lead to increased vulnerability to earthquakes, subsidence, landslides, erosion, flooding or extreme climatic conditions?			
13	Would the project cause increase in public health risks to contagious diseases or transmission (e.g. HIV/AIDS, Malaria, etc.) for project workers or communities in the project area, as a result of a change in living and working conditions?			
14	Will the proposed project require additional health services?			
15	Discharge of hazardous material into sewers, resulting in damage to sewer system and danger to workers			
<b>SOCIAL</b>				
16	Will the subproject create significant/limited/no social impacts?			
	<ul style="list-style-type: none"> <li>Land acquisition resulting in loss of income from agricultural land, plantation or other existing land.</li> </ul>			

	<ul style="list-style-type: none"> <li>Impact on livelihood and economic activity.</li> </ul>			
	<ul style="list-style-type: none"> <li>Land acquisition resulting in relocation of households.</li> </ul>			
	<ul style="list-style-type: none"> <li>Any reduction of access to traditional dependent communities (to areas where they earn for their primary or substantial livelihood).</li> </ul>			
	<ul style="list-style-type: none"> <li>Any displacement or adverse impact on tribal settlement(s).</li> </ul>			
	<ul style="list-style-type: none"> <li>Adverse impacts to women, including economic and safety concerns.</li> </ul>			
	<ul style="list-style-type: none"> <li>Impact on infrastructure (roads, water supply, any other type of infrastructure)</li> </ul>			
	<ul style="list-style-type: none"> <li>Possible conflicts with and/or disruption to local community and/or visitors.</li> </ul>			
	<ul style="list-style-type: none"> <li>Health risks due to unhygienic conditions at workers 'camps.</li> </ul>			
	<ul style="list-style-type: none"> <li>Safety hazards during construction.</li> </ul>			
	<ul style="list-style-type: none"> <li>Other, specify.</li> </ul>			
<b>OVERALL ASSESSMENT</b>				
<input type="radio"/> Subproject is declined				
<input type="radio"/> Subproject is accepted				
<input type="radio"/> Subproject is classified as environmental Category A and requires an in-depth Environmental and Social Impact Assessment.				
<input type="radio"/> Subproject is classified as environmental Category B and requires an Environmental and Social Management Plan.				
<input type="radio"/> Subproject is classified as environmental Category C and does not require any further studies.				

Layout plan and photographs of site are attached as **Annex - I** and **II**.

**Karachi Water and Sewerage Services Improvement Project (KWSSIP)**

**Social Screening & Categorization Form (SSCF)**

**1. Project Name:** Karachi Water and Sewerage Services Improvement Project (KWSSIP)

**2. Sub-Project Area:** \_\_\_\_\_

**3. Project Scope of Work (list the major interventions:** The project involves provision of water and sanitation services in the selected Katchi Abadis, Sewage Lines in different schemes, installation of flow meters and chlorinators.

**4. Project Location /Administrative Boundary:** Karachi

**5. Will any land acquisition be required for the proposed project activity?**

YES \_\_\_ NO \_\_\_

**If YES, please provide the following information:**

(i) Is the site known? YES \_\_\_ NO \_\_\_

**If YES, please provide details:**

\_\_\_\_\_  
\_\_\_\_\_

(ii) Is ownership status and current usage of land to be acquired known?

YES \_\_\_ NO \_\_\_

**If YES, please provide details**

\_\_\_\_\_  
\_\_\_\_\_

(iii) Will the existing Right of Way be used for the project works?

YES \_\_\_ NO \_\_\_

**If YES, please provide details** \_\_\_\_\_  
\_\_\_\_\_

(iv) Please state the type of losses expected due to the project development:

Loss of shelter and residential land? YES \_\_\_ NO \_\_\_

Loss of Agricultural and other productive assets? YES \_\_\_ NO \_\_\_

Losses of crops, trees and fixed assets? YES \_\_\_ NO \_\_\_

Loss of businesses and enterprises? YES \_\_\_ NO \_\_\_

Loss of sources of income and means of livelihood? YES \_\_\_ NO \_\_\_

**Please provide details based on the responses provided above.**

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**6. Will the proposed project activity require dislocation of people?**

YES \_\_\_\_ NO \_\_\_\_

**If YES, please mention the estimated number of people to be displaced and provide details of whether they are poor, female headed households or vulnerable to poverty risks?**

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**7. Will the project activity cause the people to lose or restrict access to natural resources or communal facilities?**

YES \_\_\_\_ NO \_\_\_\_

**If YES, please provide details** \_\_\_\_\_

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**8. Will access to land and resources owned communally or by the state be restricted?**

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**9. Is the sub-project area being affected by the Anti Encroachment Drive in Karachi?**

YES \_\_\_\_ NO \_\_\_\_

**10. Will any indigenous people be impacted by the project activity?**

YES \_\_\_\_ NO \_\_\_\_

**11. Any estimate of the likely number of persons that will be affected by the Project?**

Yes \_\_\_\_ No \_\_\_\_

If yes, approximately how many? \_\_\_\_\_

**Project Category Recommendation**

**It is recommended that based on the available project information and subsequent analysis, the project should be placed in (please tick one):**

**Category 'A' \_\_\_\_**

**Category 'B' \_\_\_\_**

**Category 'C' \_\_\_\_**

**Please provide an explanation to justify the Categorization above.**

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**Signature of Expert \_\_\_\_\_**

**Note:**

This form is to be completed assuming the “without mitigation” case. The purpose is to identify potential impacts.

**Annex-XIII**  
**GRC Notification**



KARACHI WATER & SEWERAGE SERVICES IMPROVEMENT PROJECT  
Project Implementation Unit

Karachi Water & Sewerage Board  
40-G, Street 40, Block 6 PECHS, Karachi, Pakistan  
TELEPHONE: +92-21-34374081, +92-21-99330279



No: PD(KWSSIP)/KWSB/2021/288

Dated: 12<sup>th</sup> October, 2021.

### Notification

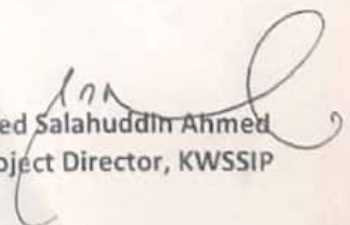
In order to redress the Grievances received at the Karachi Water and Sewerage Services Improvement Project, a Grievance Redressal Committee (GRC) is hereby constituted at the KWSSIP PIU with immediate effect with following composition.

- |  |                    |
|--|--------------------|
| 1. Project Director (PD) KWSSIP  | Chairman           |
| 2. Gender Specialist KWSSIP  | Member             |
| 3. Concerned Project Manager PIU-KWSSIP                                    | Member             |
| 4. Senior Social Safeguard Specialist (Consultant-Side)                    | Member             |
| ✓ 5. Ms. Malaka from Aurat Foundation<br>(Representative of Civil Society) | Member             |
| 6. Social Development Specialist KWSSIP                                    | Member / Secretary |

#### Terms of Reference (ToR's)

The GRC shall be responsible for:

- Allow stakeholders the opportunity to lodge complaints and raise concerns;
- Ensure that comments, responses, and grievances are handled in a fair and transparent manner, in line with the applicable framework;
- Mitigate or prevent adverse impacts on communities caused by the Project operations;
- Serve as an early alert system to project management of significant or recurring issues that might signal a systemic problem, and facilitate a resolution; and
- Achieve improved service delivery in water and sewerage sector whereby citizens have strong ownerships, participation and get fair benefits from the sustainable utilization of such services.

  
Syed Salahuddin Ahmed  
Project Director, KWSSIP

#### CC to:

1. Managing Director KW&SB
2. Director Investment KWSSIP, KW&SB
3. All Staff KWSSIP PIU

#### Copy for Kind Information to:

- Secretary Local Government Department, GoS.