



GOVERNMENT OF SINDH

**PROJECT MANAGEMENT TEAM
SINDH RESILIENCE PROJECT
(IRRIGATION COMPONENT)
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SINDH RESILIENCE PROJECT (IRRIGATION COMPONENT)



ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP)

Reconstruction of Soil Mechanics Laboratory and Office Building at Karachi

**Sindh Resilience Project
Sindh Irrigation Department
Government of Sindh**

DOCUMENT ISSUE AND REVISION RECORD

This document and its contents have been prepared and are intended solely for the information and use of the Government of Sindh, Irrigation Department concerning the **SINDH RESILIENCE PROJECT (SRP)**.

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Abbreviations

Acronym	Definition
ERP	Emergency Response Procedures
ECoPs	Environmental Code of Practices
EIA	Environmental Impact Assessment
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
ESMMP	Environmental and Social Management and Monitoring Plan
GoP	Government of Pakistan
GoS	Government of Sindh
GRC	Grievance Redress Committee
GRM	Grievance Redress Mechanism
IEE	Initial Environmental Examination
JICA	Japanese International Cooperation Agency
KW&SB	Karachi Water and Sewerage Board
PPE	Personal Protective Equipment
PIU	Project Implementation Unit
PISSC	Project Implementation Support and Supervision Consultant
PMT	Project Management Team
P&D	Planning and Development
PD	Project Director
OHS	Occupational Health and Safety
SID	Sindh Irrigation Department
SEMU	Social and Environmental Monitoring unit
PISSC	Project Implementation Support & Supervision Consultants
IAS	Impact Assessment Survey
SEPA	Sindh Environmental Protection Agency
SSWMB	Sindh Solid Waste Management Board
M&EC	Monitoring and Evaluation Consultants
WB	World Bank

Executive Summary

The Government of Sindh (GoS) has initiated World Bank financed Sindh Resilience Project (SRP) in various parts of Sindh Province, through the Sindh Irrigation Department (SID) and Provincial Disaster Management Authority (PDMA). Physical interventions under Irrigation Component of SRP includes: i) rehabilitation / improvement of existing protection earthen embankments along River Indus and ii) construction of small rainwater recharge/storage dams in the water-scarce areas of the province. Six dams were initiated during the first year of the SRP implementation and during the second year of the SRP implementation, nine small dams were procured which are under completion phase. Moreover, during third year of SRP implementation, Government of Sindh has planned to reconstruct the old structure of Soil Mechanics Laboratory in Karachi.

In line with prevailing legislation in the country (national and provincial), and to meet the World Bank safeguard policies requirements an ESMP document has been prepared for sub-project activity.

The proposed building is planned to enhance the lab testing capacity of the Soil Mechanics related testing and analysis within the department. The sub-project activities involve reconstruction of Soil Mechanics Laboratory. Reconstruction of Laboratory includes demolition of existing structure and building of new building at same plot location. The proposed sub-project is located within the boundary of Sindh Irrigation Department complex which comprises of offices block (Block-A) and residential area (Block-B). The residential area and offices block are bifurcated through existing boundary wall (Height of 6 ft). The irrigation complex administratively falls in Union Council Mehmoodabad No. 5, Jamshed Town District East Karachi. The proposed project is situated on Shaheed-e-Millat road opposite to Mahmoudabad flyover between Shahrah e Faisal and Korangi crossing road, District East Karachi. The plot area of proposed project is **791.8 sq. Yds.**

The initial social and environmental categorization of sub-project was carried out by using screening assessment checklist referred from ESMF, and according to criteria, the sub-project falls under medium sized category B project requiring to prepare ESMP.

The sub-project does not fall in social-environmental sensitive areas. The project is located on existing government land, construction and rehabilitation activities will be localized within the existing location of Soil Mechanics Laboratory. No additional landor resettlement issues are anticipated due to the project intervention. The anticipated construction related impacts are temporary and localized in nature within the project boundary. Therefore, subproject is likely to cause low level of environmental and social impacts.

This ESMP provides a set of mitigation measures, which will be implemented during construction and Operation phase to eliminate environmental and social safeguard issues or reduce them to acceptable level. This ESMP document also provides institutional arrangements, monitoring and reporting methodology, and documentation procedures for environmental and social safeguards compliance.

The construction-related impacts such as air pollution, waste management, pollution prevention, noise pollution, traffic management can be mitigated through the proper implementation of the mitigation measures provided in the ESMP. The occupational health and safety aspects during construction works will be ensured through continuous monitoring to prevent hazards and accidents and through awareness raising of labor, and community, preventive measures for COVID-19 among labors and community, sanitation arrangements, emergency rescue procedures, road safety, safe material transportation, provision of potable water, and garbage bins for workers. The anticipated operation phase related impacts are, solid waste management, and wastewater pollution, soil water contamination and any fire hazard. The subproject after implementing the mitigation measures detailed in this ESMP, will not have any significant and lasting negative impact on physical, biological or socio-economic environment of the area.

During execution phase, the contractor shall monitor compliance of this ESMP through suggested mitigation and monitoring plans. In addition, PISSC shall perform day-to-day supervising of the contractor's compliance with this ESMP and the PMT-SRP shall be responsible for the monitoring of environmental and social aspects.

Contractor shall submit monthly compliance report at end of each month. The Project Implementation Support and Supervision Consultant (PISSC) through a Site Environmental Officer will be responsible for the implementation of ESMP recommendations.

The overall cost for the construction of this sub-project is **PKR 28.859 Million**, while the cost for the implementation of ESMP during construction stage is **PKR 1.239 Million**. Cost of tree plantation has also been covered in this cost.

Table of Contents

1. Introduction	11
1.1 General.....	11
1.2 Sub-Project Screening	10
1.3 Sub-Project Justification	10
1.4 Sub-Project Categorization	10
1.5 Sub-Project Duration	10
1.1 Policy, Legal and Administrative Framework	11
1.1.1 National/ Provincial Legislation	11
1.1.2 The World Bank Operational Policies	12
1.2 Compliance with ESMP	14
1.3 Study Team.....	14
2. Description of Sub-Project	15
2.1. Background	15
2.2. Location of Sub-project	15
2.3. Project Components.....	17
2.4. Construction Details.....	22
3. Environment and Social Baseline	23
3.1 Environmental Baseline	23
3.1.1 Physical Environment.....	23
3.1.1.1. Current Land use	23
3.1.1.2. Water and Water Resources	24
3.1.1.3. Groundwater	24
3.1.1.4. Surface Drainage and Sewerage System	25
3.1.1.5. Solid Waste Management System	25
3.1.1.6. Health Facilities in Project Area.....	25
3.1.1.7. Metrology and Climate.....	26
3.1.2 Biological Environment.....	26
3.2 Socio-Economic Profile	27
3.1.2. Demography	27
4. Stakeholder Consultation and Information Disclosure.....	30
4.1. General.....	30
4.2. Purpose.....	30

4.3. Consultation Process	31
4.3.1. Identification and Classification of Stakeholders.....	31
4.3.2. Consultation and Participation	31
4.3.3. Methodology	31
4.3.4. Selection Criteria for the Consultations	32
5. GRIEVANCE REDRESS MECHANISM (GRM)	37
5.1. Public Complaints Centre (PCC).....	37
5.2. Role and Responsibilities of PCC.....	37
5.3. GRM Steps and Timeframe.....	38
5.4. Reporting	39
6. Impacts Management and Mitigation	41
6.1. Introduction	41
6.2. Environmental and Social Impacts and Mitigations.....	41
7. Environmental and Social Management and Monitoring	58
7.1. General.....	58
7.2. Institutional Arrangements.....	58
7.2.1. Project Management Responsibilities.....	58
7.2.2. Project Management Team (PMT).....	60
7.2.3. Project Implementation Support and Supervision Consultant (PISSC)	60
7.2.4. Environment and Social Monitoring & Evaluation Consultant	61
7.2.5. Contractor	61
7.3. Environmental Code of Practices (E.CoP).....	61
7.4. Contractor’s Plans	61
7.4.1. Corona Virus Management Plan.....	62
7.4.2. Pollution (Air, land, Noise and water) Control Plan	62
7.4.3. Waste Management Plan	62
7.4.4. Traffic Management Plan	62
7.4.5. Occupational Health and Safety	62
7.4.6. Environmental and Social Awareness Training Plan.....	63
7.5. Mitigation and Monitoring.....	63
7.5.1. Environmental Non-compliances and Corrective Measures	63
7.5.2. Communication Reporting and Documentation.....	64
7.5.3. Budget on Environmental and Social Management Plan	65
7.6. Objectives of the ECoPs	66
7.6.1. Management of Fuels & Hazardous Substances	66
7.6.2. Waste Management and Disposal	67



7.6.3. Management of Air Quality.....	68
7.6.4. Traffic Management	69
7.6.5. Management of Noise & Vibration	70
7.6.6. Health & Safety.....	71
7.6.7. Management and Monitoring of COVID-19	73
7.6.8. Management of Storage of Materials.....	77



Appendices:

Appendix A. Field Monitoring Checklist on Environmental, Social, Health and Safety

Appendix B. HSE Guidelines

Appendix C. Filled Environmental Screening Checklist

Appendix D. Pictorial View of Sub-Project Site

Appendix E. SOPs for COVID-19

Tables and Figures

Table 1: Applicability of the World Bank’s Safeguard Policies.....	13
Table 2: Study Team.....	14
Table 3 Details of building components	17
Table 4 Details of Health Facilities	25
Table 5 Fauna of the sub-project Area	27
Table 6 Details of Union Council	28
Table 7: List of Stakeholders Consulted in Block A.....	32
Table 8: List of Stakeholders Consulted Block-B.....	35
Table 8: Environmental and Social Impacts and Mitigation Plan	42
Table 9: Training Plan	63
Table 10: ESMP Implementation Cost.....	65
Table 11: ECoP for Management of Fuels & Used Oils.....	66
Table 12: ECoP for Waste Management.....	67
Table 13: ECoP for Air Quality	68
Table 14: ECoP for Traffic Management	69
Table 15: ECoP for Noise & Vibration	70
Table 16: ECoP for Health & Safety	71
Table 17: ECoP for Management and Monitoring of COVID-19.....	73
Table 18: ECoP for Management of Soil Quality.....	77
Figure 1: Location of Sub-Project.....	11
Figure 2: Sub-Project Location Map.....	16
Figure 3: Existing conditions of Soil Mechanics Laboratory	16
Figure 4: Another view of existing conditions of Soil Mechanics Laboratory	17
Figure 5: Layout plan of Ground Floor.....	19
Figure 6: Layout Plan of First Floor.....	21
Figure 7: Land use in Study Area	24
Figure 8: Map of Jamshed Town.....	28
Figure 9: Photographs of Stakeholder Consultations	34
Figure 10: Organizational Chart of Sindh Resilience Project.....	59

1. Introduction

1.1 General

The Government of Sindh (GoS) has initiated World Bank financed Sindh Resilience Project (SRP) in various parts of Sindh Province, through the Sindh Irrigation Department (SID) and Provincial Disaster Management Authority (PDMA). Physical interventions under Irrigation Component of SRP include: i) rehabilitation / improvement of existing protective earthen embankments along River Indus and ii) construction of small rainwater recharge/storage dams in the water-scarce areas of the province. Six dams were initiated during the first year of the SRP implementation and during the second year of the SRP implementation, nine small dams were procured which are now under construction phase. Moreover, during third year of SRP implementation, Sindh Resilience Project has planned to reconstruct the Soil Mechanics Laboratory in Karachi. Location map of proposed project is shown as **Figure-1**.

Environmental and Social Management Plan (ESMP) has been prepared for the Soil Mechanics Laboratory building works proposed to be carried out during the third year of SRP implementation. In compliance with the national/provincial regulatory requirements and in line with the World Bank safeguard policies, an environmental and social assessment has been carried out to address the potential negative impacts of the proposed interventions under SRP project.

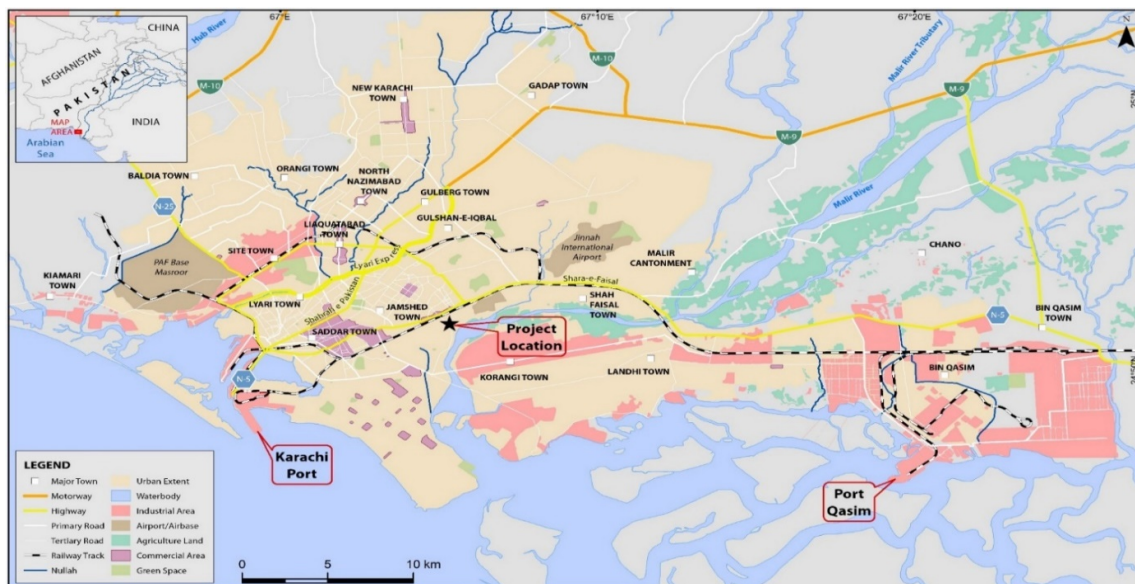


Figure 1: Location of Sub-Project

1.2 Sub-Project Screening

The site specific environmental and social screening has been carried out at sub-project location of Soil Mechanics Laboratory and office building by using screening checklist provided in Environmental and Social Management Framework and attached in **Appendix A**. To know the severity and extent of social and environmental impacts. It is evaluated that the aforesaid sub-project does not fall in environmental sensitive areas (i.e. protected area, wetlands, and mangrove). Therefore, the sub-project will not cause significant negative environmental and social implications.

However, some short-term minor impacts/issues during construction phase such as; health and safety, waste management, noise pollution, wastewater pollution are expected during construction phase which will be addressed through implementation of mitigation measures provided in this ESMP.

1.3 Sub-Project Justification

Sindh Irrigation Department intends to enhance the facility of soil mechanics within the department. In this regard SRP management has planned to reconstruct the existing laboratory which is currently defunct, after the reconstruction, this facility will be equipped with state-of-the-art laboratory equipment for better testing facility for irrigation sector.

1.4 Sub-Project Categorization

The categories are defined in the Sindh Environmental Protection Agency (SEPA) IEE and EIA Review of Regulations, 2014. The sub-project falls in the checklist category according to EIA/IEE review guidelines under schedule III section (a) "*offices and small commercial buildings (1-6 story), home industrial units, Warehouses, marriage / banquet facilities, large scale motor vehicles workshops, restaurants / food outlets, large baking unit*". Therefore, this sub-project of small building will require to prepare a checklist. However, an ESMP has been prepared to fulfill the requirements of the World Bank.

According to ESMF of SRP project, this sub-project falls in the Category-B sub-projects for rehabilitation of existing structures; potentially causing low to moderate level of impacts, temporary, reversible and localized impacts.

1.5 Sub-Project Duration

The execution works of sub-project are proposed to be complete in 270 days (9 months).

1.1 Policy, Legal and Administrative Framework

This section presents an over view of the policy and legal framework relevant to the environmental and social aspects of the subproject. Details of policy and legal framework requirements have already been provided in the ESMF prepared for SRP. However, only relevant sections details have been provided here.

1.1.1 National/ Provincial Legislation

Sindh Environmental Protection Act, 2014

The provisions of Article 270 AA (6), as amended by section 96 of the 18th Amendment, SEPA 2014, shall continue to remain in force until repealed or amended by the competent authority, which is now the Provincial Assembly in respect of the Sindh Province.

The first draft of the Sindh Environmental Protection Act 2013 was issued in October 2013 during a consultative meeting organized by the IUCN Pakistan in collaboration with the Sindh Environmental Protection Agency (SEPA). The Sindh Environmental Protection Bill, 2014 was passed by the Provincial Assembly of Sindh on 24th February, 2014 and assented to by the Governor of Sindh on 19th March, 2014 as an Act of the Legislature of Sindh.

The Act provides the framework for protection and conservation of species, wildlife habitats and biodiversity, conservation of renewable resources, establishment of standards for the quality of the ambient air, water and land, establishment of Environmental Tribunals, appointment of Environmental Magistrates, Initial Environmental Examination (IEE) and EIA approval. Penalties have been prescribed for those contravene the Act.

Sindh Wildlife Protection Ordinance, 2001

Sindh Wildlife Protection Ordinance 2001, provides for the Preservation, Protection, and Conservation of wildlife resources directly and specifies restrictions on hunting/poaching of wild fauna. While no any wildlife fauna observed in the project vicinity.

The Land Acquisition Act (LAA) 1894

The Land Acquisition Act (LAA) of 1894 is the key legislation that has direct relevance to resettlement and compensation in Pakistan. The LAA and its implementation rules require that before implementation of any development project the privately owned land and crops are compensated to titled landowners and/or registered tenants/users. The sub-project land is owned by Sindh Irrigation department, and located within the boundary of Irrigation department complex, hence no any resettlement / relocation is envisaged for the proposed project.

Sindh Forest Act, 2012

The sub-projects will be executed in accordance with the Forest Act, 2012 and no unauthorized tree cutting will be allowed to worker or labor. No tree cutting is envisaged during the project execution phase. However, Tree plantation will be made and for that purpose funds have been allocated in the contract under ESMP implementation cost bill.

1.1.2 The World Bank Operational Policies

The World Bank OP 4.01 Environmental Assessment EA. This policy defines the Environmental Assessment (EA) process and various types of the EA instruments. The impacts anticipated are only during the construction period and for less than one year. The sub-project have positive impacts in the long run. Therefore; an ESMP is prepared in accordance to the WB OP 4.01 and this policy is applicable for this sub-project.

Natural Habitat (OP 4.04): The conservation of natural habitats is essential for long-term sustainable development. The World Bank, therefore supports the protection, maintenance, and rehabilitation of natural habitats and their functions. The aim of the policy is to limit circumstances under which conversion or degradation of natural habitats can occur. The policy can prohibit projects which are likely to result in significant loss of critical natural habitats.

However, no interventions are likely to be carried out near important habitats. Therefore; this OP is not applicable for this sub-project.

Indigenous People (OP 4.10): For the purpose of this policy, the term “Indigenous People” is used in a generic sense to refer to a distinct, vulnerable, social and cultural group possessing the following characteristics in varying degrees.

- Self-identification as members of distinct indigenous group and recognition of the identity by others.
- Collective attachment to geographically ancestral territories in the project area and to the natural resources in these habitats and territories.
- Customary cultural, economic social or political institutions that are separate from those of the dominant society and culture.
- An indigenous language often different from the official language of the country or region.
- The OP defines the process to be followed if the project affects the indigenous people.

There are no known indigenous group as defined by OP 4.10 in the project area, therefore, this policy is not applicable for this sub-project.

Cultural Property (OP 4.11): The World Bank safeguards require full protection to physical cultural heritage on the World Bank financed project sites. As the sub-project area, does not have any site of cultural, archeological, historical or religious significance so, this policy is not applicable for this sub-project.

Involuntary Resettlement (OP 4.12): This policy protects the involuntary resettlement of the project affected persons. However, sub-project covered in this ESMP is to be constructed on government own land. Therefore; this OP 4.12 is not applicable for this sub-project.

World Bank Policy on Access to Information 2010: The World Bank’s disclosure policy requires the environmental and social assessment report to be disclosed to public, and a copy of the report to be sent to the Bank’s Info Shop, before the Bank commences the project appraisal. In accordance with this Policy, ESMF has been disclosed to public and has been placed on official website of the Sindh Irrigation Department. The applicability status of World Bank environmental and social safeguard policies is given in **Table-1**.

Table 1: Applicability of the World Bank’s Safeguard Policies

	Subject	Policy Reference	Triggered	Not Triggered	Remarks
1	Environmental Assessment	OP/BP/GP 4.01	✓		The minor impacts are anticipated only during the construction period for less than one year. The sub-project has positive impacts in the long run. Therefore; an ESMP is prepared in accordance with the WB OP 4.01 and this policy is triggered.
2	Natural Habitats	OP/BP4.04		✓	The ESMP includes a screening process for the subprojects, no interventions are likely to be carried out near important habitats. Therefore; this OP is not triggered.
3	Involuntary resettlement	OP/BP4.12		✓	There is no any involuntary resettlement resulting in relocation or adverse impact on livelihood and/or sources of a livelihood. Because sub-project is to be constructed on government owned land. Therefore; this OP 4.12 is not triggered for this sub-project,
4	Cultural Property	OP/BP4.11		✓	The sub-project area, does not have any site of cultural, archeological, historical or religious significance so, this policy is not triggered for this sub-project.
5	Indigenous People	OP/BP4.10		✓	The term “Indigenous People” is used in a generic sense to refer to a distinct, vulnerable, social and cultural group possessing unique recognition of identify by others. There is no known indigenous group as defined by OP 4.10 in the project area, therefore, this policy is not triggered for this sub-project.

1.2 Compliance with ESMP

This ESMP will be the part of the Bidding Documents and its compliance is mandatory. The contractor may request amendments in ESMP document to align it with ground realities and requirements for the subproject/site mentioned in this ESMP. These site specific ESMP will then be embedded into the civil works contract and therefore will be a legal binding upon the contractor. The amended Site Specific ESMP must be approved by PMT/Project Implementation Support and Supervision Consultants (PISSC).

The contractor will be required to prepare other sites plans as mentioned in Section 6 including traffic management plan, HSE plan, waste management plan, COVID-19 Management and monitoring plan, etc. The site-specific plans must be submitted to the PISSC/Supervising Engineer for review and clearance within 15 days of the signing of the contract or before mobilization on site, whichever date is earlier.

1.3 Study Team

The survey for environmental and social impact assessment was carried out for this sub-project during 11th to 15th May 2020. List of team members is given in **Table-2**.

Table 2: Study Team

S.NO	Name	Designation	Organization
1.	Arshad Hussain Memon	Environment Safeguard Consultant	ESMU-PMT
2.	Nasir Ali Panhwar	Social Safeguard Consultant	ESMU-PMT
3.	Taha Tariq Khokhar	Environment Officer	ESMU-PMT
4.	Sajid Memon	Social Safeguard Officer	ESMU-PMT
5.	Marvi Baloch	Social Safeguard Officer	ESMU-PMT

2. Description of Sub-Project

2.1. Background

Sindh Irrigation Department is planning to enhance the lab testing capacity of the Soil Mechanics related testing and analysis within the department. The existing laboratory is lacking the necessary testing facility and infrastructure for the Soil related testing. In this regard SRP management, after the reconstruction, this facility will be equipped with state-of-the-art laboratory equipment for better testing facility for irrigation sector. This laboratory will be equipped with advance equipment and will serve as backbone for analysis of soil related test in the irrigation sector.

Project description including area and project building details covered area. Waste demolition and generation of debris. Water demand

2.2. Location of Sub-project

The proposed sub-project is located within the boundary of Sindh Irrigation Department complex which comprises of offices block (Block-A) and residential area (Block-B). The residential area and offices block are bifurcated through existing boundary wall (Height of 6 ft). The irrigation complex administratively falls in Union Council Mehmoodabad No. 5, Jamshed Town District East Karachi. The proposed project is situated on Shaheed e Millat road opposite to Mahmoudabad flyover between Shahrah e Faisal and Korangi crossing road, District East Karachi.

The project neighborhood includes residential area located at the distance of 134 meters in the east which is bifurcated through the existing boundary wall. Other offices include Camp Office of the Minister Irrigation Department at the distance of 42 meters in west-north, Office of Deputy Director Soil Mechanic & Hydraulic Laboratory and Mosque at the distance of 20 meters in north, Sindh Barrages Improvement Project at the distance of 20 meters in the south-west, Electric Inspector Office, Energy Department Government of Sindh at the 43 meters in the south-west, while the compound wall of City School (PAF Chapter) is located at 40 meters in the north from the proposed construction site. Location map of the subproject is provided below in **Figure-2**. The existing condition of building is shown in **Figure-3, and Figure-4**.



Figure 2: Sub-Project Location Map



Figure 3: Existing conditions of Soil Mechanics Laboratory



Figure 4: Another view of existing conditions of Soil Mechanics Laboratory

For Reference: Sub-project sites photographs are provided in Appendix D.

2.3. Project Components

The proposed project is Ground+ 1 floor building, having the total plot area of 791.8 sq. yds. Ground floor is comprised of one hall for Laboratory, two office rooms with attached toilets, store room and lawn, whereas, first floor comprises of one laboratory hall, three offices, one room for Project Director, and one store room. The details of building covered area is given in below **Table-3** and layout plan is given as **Figure -5**.

Table 3 Details of building components

S. No	Building Components	Area (sq. Yds)
1	Covered area of Building	430
2	Parking Area	484.2
3	Lawn	156.88
4	Open Area	120.55
Total Area		791.8

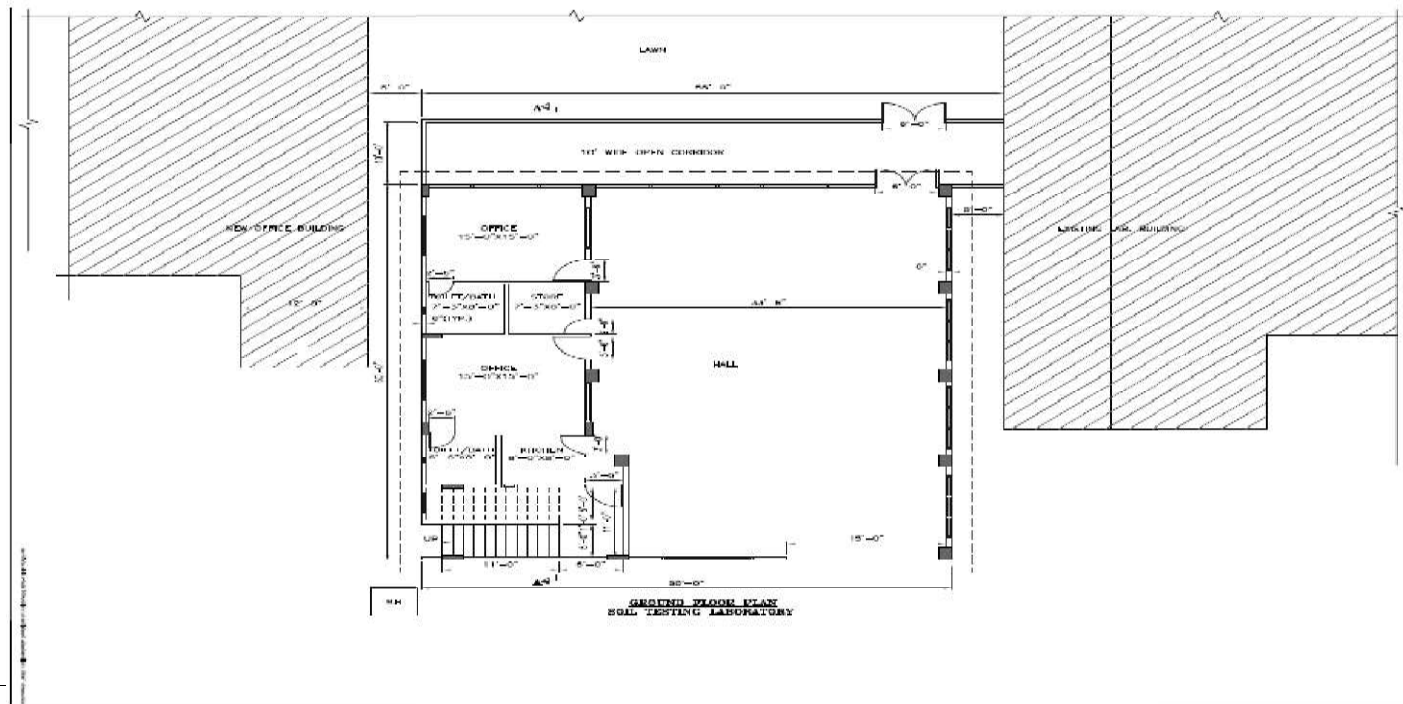


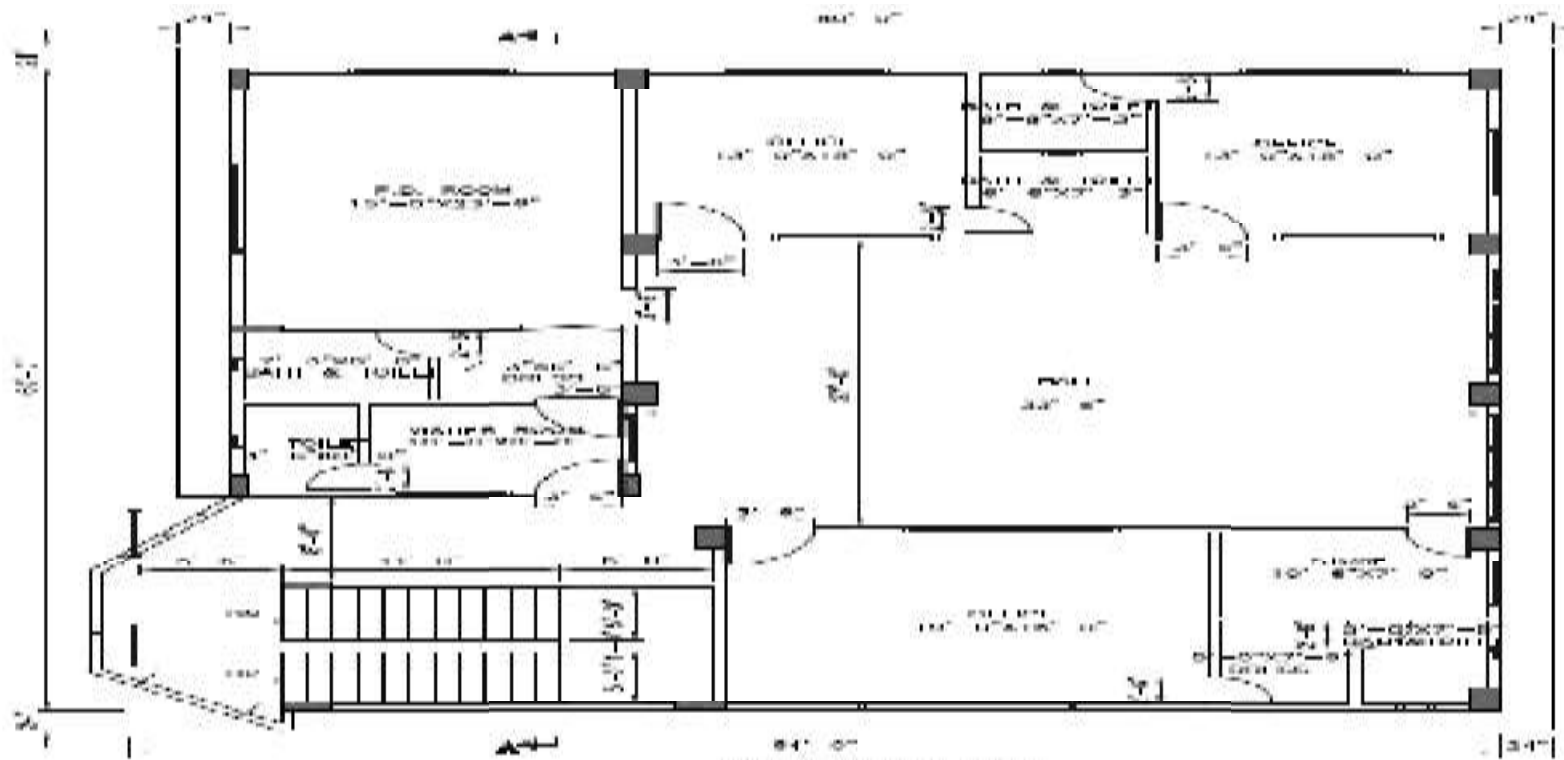


Figure 5: Layout plan of Ground Floor





Environmental and Social Management Plan
Sindh Resilience Project (SRP)



FIRST FLOOR PLAN
CELL INMATE LABORATORY



*Environmental and Social Management Plan
Sindh Resilience Project (SRP)*

Figure 6: Layout Plan of First Floor



2.4. Construction Details

The existing structure shall be dismantled and new structure of Soil Mechanics shall be reconstructed as per Sindh Building Control authority by-laws and building codes of Pakistan. Following construction activities are enlisted which are anticipated during construction stage;

- Site Barricading & posting of safety signs
- Site clearance
- Demolition of existing soil mechanics building
- Disposal of unused debris in near-by authorized disposal station of Sindh Solid Waste Management Board.
- Excavation of the foundation of proposed building
- Transportation of materials from quarries and market
- Steel cutting and fixing
- Concrete works
- Brick masonry work
- Plumbing works
- Flooring works
- Electrical fitting works

3. Environment and Social Baseline

3.1 Environmental Baseline

This section describes the existing environmental conditions of the sub-project area. During the field visit, information was collected on environmental sensitivities in the areas, existing roads, neighborhood, and public services, flora and fauna. The aim of the environmental and social baseline is to provide a specific intervention against which the project impacts can be measured. The potential impacts of the project and proposed mitigation measures have also been discussed in this section.

3.1.1 Physical Environment

3.1.1.1. Current Land use

The proposed project is located on Shaheed e Millat road opposite to Mahmoudabad flyover between Shahrah e Faisal and Korangi crossing Karachi.

AOI has been determined on the basis of guidance provided in ESMF, and the sensitive locations found in the area. While preparing the ESMP boundary of the subproject was defined as per guideline of ESMF. The primary impact receptors such as local community living in adjacent residential block may be directly affected by project actions e.g. construction of building, movement of vehicles, pollution, disposal areas, and presence of workers. Whereas Block -A has been considered as primary impact area and Block-B has been considered as secondary impact area.

Study area or Corridor of Impact COI, is based on ESMF guidelines and looking at the project activities. It was anticipated that project may extent up to a maximum of 255 meters ×78 meters. Therefore, the study area for the project has been delineated up to 255 meters ×78 meters.

Further details of distance from nearest sensitive locations are shown in Figure-2.

Land use of the sub-project area is highly urbanized, in which most of the area's infrastructure is commercial and residential at considerable distance from the sub-project area. The neighborhood includes residence colony located at the distance of 134 meters in east, camp office of Sindh Minister Irrigation Department at the distance of 42 meters in west-north, Office of Deputy Director Soil Mechanic & Hydraulic Laboratory and Mosque at the distance of 20 meters in North, Sindh Barrages Improvement Project at the distance of

20 meters in South, Electric Inspector office, Energy Department Government of Sindh at the 43 meters in south-west, while the compound wall of City School (PAF Chapter) is located at 40 meters in North from the proposed construction site. Residential colony and offices area bifurcated through existing boundary wall (Height of 6 ft).

The distribution of the land use within the Study Area is given in **Figure 7**.

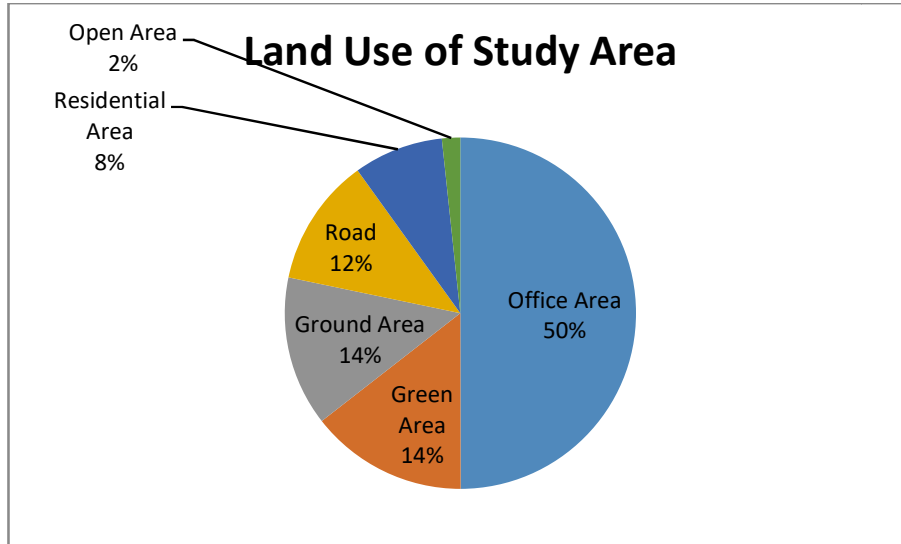


Figure 7: Land use in Study Area

3.1.1.2. Water and Water Resources

The primary water supply source is based on KWSB and the third-party water tanker are the interim source to supplement the water supply from KWSB. Currently KWSB water supply line is supplying water to irrigation department complex. Construction activities would not interfere the existing water resources because contractor shall make his own arrangements for supply of water for the purposes of construction works. Ready mix concrete from market shall be used for all type of concreting works.

3.1.1.3. Groundwater

The groundwater resources of Karachi Division are limited. The aquifers close to the coastal belt are mostly saline and unusable for domestic purposes. The groundwater data is being referred from published IEE report of Defense Skyline Building project conducted near to

study area, which states that, the aquifers in the project area are available at depths of 50 m to 100 m.¹

Since the area is intensely urbanized and groundwater resources are depleted in the region, no sampling was conducted due to unavailability of proper groundwater well in sub project area and its vicinity.

3.1.1.4. Surface Drainage and Sewerage System

Surface and drainage systems of the proposed sub-project area falls under the jurisdiction of District East Karachi as per KW&SB mapping and falls in the Zone-II-B. Surface water and sewerage water are being drained through existing sewerage system of the sub-project area, which ultimately merges in Mehmoodabad Nallah. The drainage facilities for Jamshed town is well served by a sewerage system².

3.1.1.5. Solid Waste Management System

The Sindh Solid Waste Management Board (SSWMB) is responsible for the collection and disposal of all types of waste in the Karachi City. Study area administratively managed by the SSWMB. All waste is being collected on daily basis from the study area. After collection, initially solid waste is being stored at collection point located near Malir River at distance of 2.0 kilometer from the project site, then finally disposed-off in Jam Chakro dump area /landfill site, which is located at the distance of 24 km from the study area.

3.1.1.6. Health Facilities in Project Area

There are several healthcare facilities located in the District East. While, the well-known health facilities include; the Aga Khan University Hospital, Liaquat National Hospital, and Jinnah Hospital. The government hospital provides free healthcare, whereas private health care Doctors charged Rs. 500 to 1000 per consultation. Distance of health facilities from study area is given in below Table -4. Moreover, there are some private clinics providing the health care services within in 1.0-kilometer radius of the project area.

Table 4 Details of Health Facilities

S. No	Name of Health Facilities	Distance
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¹ Initial Environment Examination for Defense Skyline Project 2018

² Study on Water Supply and Sewerage System in Karachi by JICA, 2007

1	Aga Khan University Hospital	6 KMs
2	Liaquat National Hospital	5 KMs
3	Jinnah Hospital	7 kms

3.1.1.7. Metrology and Climate

The proposed project is located on Shaheed-e-Millat Road and is well linked with Shara-e-Faisal. The Pakistan Meteorological Department (PMD) has a weather station at Jinnah Internal Airport, which is in the east, at the distance of approximately 07 Km from the sub-project area.

It has a typical climate of subtropical coastal zones lying in the monsoon region. The mean monthly temperature in the area varies from 13-36 °C and the annual average temperature is varying within 13-25°C. The maximum temperature reaches to above 39°C during summer and the minimum temperature reaches 9°C during winter season. The warm season lasts from March 25 to July 13 with an average daily high temperature above 34°C. The hottest day of the year is May 5, with an average high of 36°C and low of 26°C.

The cold season lasts from December 18 to February 7 with an average daily high temperature below 27°C. The coldest day of the year is January 10, with an average low of 13°C and a high of 25°C.

The air is driest around February 9, at which time the relative humidity drops below 33% (comfortable) three days out of four; It is most humid around August 2, exceeding 83% (humid) three days out of four.

Weather of Karachi city is characterized as pleasant due to the sea breeze, which blows all the year except during local disturbances experienced sometimes in winter and summer months. This wind has the highest velocities during the summer months when the direction is south-west to west. Over the course of the year, typical wind speeds vary from 0 m/s to 8 m/s (calm to fresh breeze), rarely exceeding 13 m/s (strong breeze).

3.1.2 Biological Environment

The sub-project lies within the premises of Jamshed Town, District East. The project area is well urbanized and the vicinity infrastructure includes commercial and residential buildings. The project area does not have any significant or endangered species, there is no unique vegetation observed within the project vicinity. The existing flora fauna are shown in below **Table 5**.

During the survey; the common fauna species were recorded are as follow:

Table 5 Fauna of the sub-project Area

Species Type			
Animal	Mammals	Bird	Reptiles
Street Dog	Indian Gerbil	Grey Quail	Lizard
Cat	Five-striped palm squirrel	Blue Rock Pigeon	-
-	-	Indian Myna	-
-	-	Rose-ringed parakeet	-
-	-	Sindh House Crow	-
-	-	Common babbler	-

Since the project is proposed in a well-urbanized environment. During the survey common flora species were recorded; which include Conocarpus, Ficus Religiosa (Pepul) and Azadirachta Indica (Neem).

3.2 Socio-Economic Profile

This section describes the socio-economic condition of the subproject area. The socio-economic survey was made by PMT team comprising of Social Safeguard Consultant, Environment Consultant, and social safeguard officers, as well as female sociologists during the months of May 2020. The main objectives of the consultations were to provide a platform to the stakeholders, to voice their concerns and suggestions to the project team and to develop a sense of collective ownership for the activities of sub project. The participants of the consultation meeting and Focus Group Discussion actively provided support in data collection and understanding the socio-economic fabric of the people living in the subproject area.

3.1.2. Demography

Karachi is the largest and the fastest-growing megacity of Pakistan with a population of 16,051,521 according to the 2017 national census. (Pakistan Bureau of Statistics) Currently, Karachi is reckoned as one of the largest megacities in the world.

The proposed Sub-Project is located in Union Council Mehmoodabad-5, Jamshed town District East Karachi. Total population of UC is 300,000 according to censuses 2017, details of union council are shown in **Table-6** given below. Map of Jamshed Town is given in **Figure-8**

Table 6 Details of Union Council

No	Union Council	Total population	Wards
1	Mehmoodabad-5	300000	4

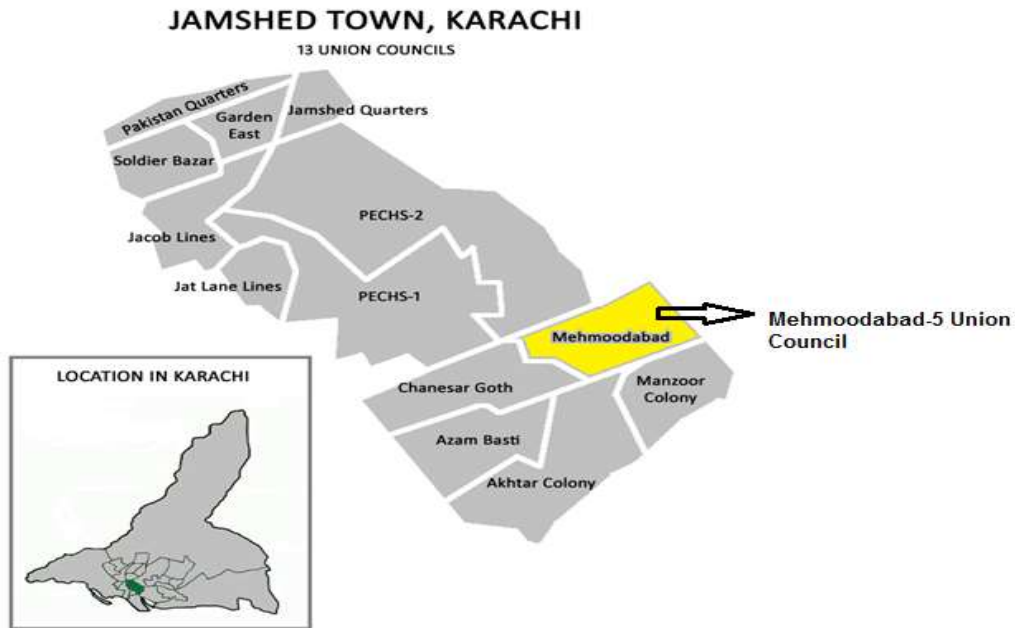


Figure 8: Map of Jamshed Town



4. Stakeholder Consultation and Information Disclosure

4.1. General

The participation of project stakeholders in project planning, design and implementation is now universally recognized as an integral part of environmental impact assessment. The World Bank guidelines on disclosure of information and stakeholder participation lay emphasis on enforcing the mechanism in every stage of project execution. The Pakistan Environmental Protection Act 1997 Section 12(3) highlights that “every review of an environmental impact assessment shall be carried out with public participation.” United Nations Conference on Environment and Development (UNCED) in 1992 endorsed the process of stakeholder participation and consultation as one of the key documents of the conference Agenda 21.

Stakeholders are groups and individuals that are affected by or can affect the outcome of a project. As part of the Environmental Assessment (EA) process, stakeholder consultations are undertaken with primary as well as secondary stakeholders.

4.2. Purpose

The purpose of stakeholder consultations is to ensure meaningful and adequate consultation with all affected or interested stakeholders in project planning processes. The ESMP preparation followed a participatory planning process with local inputs on decision-making and mitigation measures to ensure that stakeholders concerns are addressed at the project design stage.

In accordance with World Bank Guidelines, public consultations are essential to fulfill the following objectives:

- Exchange of information related to the project and its possible utilization in the project designing/planning and implementation;
- Establishing the most acceptable solutions and mitigation measures for possible issues which could arise during implementation of the project activities;
- Eliciting community comments and feedback on the proposed project;
- Facilitate and maintain dialogue with the stakeholders to gain consent on carrying out project activities in the area;

- Encourage transparency and inculcate trust among various stakeholders to gain cooperation and partnership from the communities, local leadership, and NGOs.
- Record concerns regarding the various aspects of the project, including the existing situation, project area/area of influence, construction works and the potential impacts of the construction-related activities and operation of the project.
- Incorporate mitigations measures to address concerns rose with project design and implementation.

4.3. Consultation Process

The consultation process followed for the project is detailed below:

4.3.1. Identification and Classification of Stakeholders

The identification of stakeholders is important for the sustainability of a development project and helps to evaluate and envisage the role of stakeholders. The Stakeholders Analysis refers to the Project Affected Personal (PAP's)/ local community, associated departments/agencies, Non-Governmental Organizations (NGOs) and others, whose assets/land, business, structures, installations, interests may be impacted due to the project activities. The influence or impact of stakeholders on the project is elaborated in the form of a matrix and the mitigation measures are proposed accordingly. The stakeholders that are likely to be influenced by the project activities or would like to participate in the project will include:

4.3.2. Consultation and Participation

This section provides the objectives, process and outcome of the stakeholder consultations conducted as part of the ESMF and ESMP. The primary objective of consultations was to disseminate the sub-project information and to incorporate recommendations concerns of the stakeholder's in the subproject design and implementation plan.

4.3.3. Methodology

Effective stakeholder consultations involve informing the stakeholders about the project plans, development activities, its potential consequences on the environment and surrounding communities and the proposed measures to mitigate the anticipated project impacts. As a result, confidence is established amongst the stakeholders that the project is being developed in a responsible manner.

Stakeholder consultations were carried out during the preparation of the subproject ESMP through stakeholder meetings and focused group discussion with the selected stakeholders.

4.3.4. Selection Criteria for the Consultations

As provided in section 2.2 location of sub-project, the subproject has a limited construction activity and involves construction of 5-6 average size rooms. The land required for the project is already owned by the executing agency. No direct or indirect impacts can be anticipated outside the Block A. The project activities will be confined to the boundary of the Sindh Irrigation Department Complex, and limited impacts may be felt within Block A. However, the consultations were held with the stakeholders located in Block-A and B within the complex boundary. The stakeholders within the boundary of the Sindh Irrigation Department Complex Block-Aand B were consulted for the preparation of ESMP document are shown in **Table-7**list of stakeholders consulted.

Table 7: List of Stakeholders Consulted in Block A

No	Department	Representatives	Contact Number
1	Camp Office of the Sindh Irrigation Minister	Mr. Shahid Ali Kandhro Raza Ali Mughal	0313-2476476 0333-2472708
2	Office of Deputy Director Soil Mechanic & Hydraulic Laboratory	Mr. Shabeer Hussain Changazi Muhammad Asim	0321-3952706 0300-9218711
3	Office of the Sindh Barrage Improvement Project	Dr. Ali AsgharMahesar Mr. Jibran Khalid Kidwai	0301-3561195 0337-0771552
4	Office of the Electric Inspector office, Energy Department Government of Sindh.	Muhammad Yousif Baloch	0334-3382454
5	Mosque -Sindh Irrigation Department Complex Block A	Moulana Anwar Ali	0300-9241214

As part of ESMP of the sub-project, stakeholder consultations with stakeholders were held from May 11 to 15, 2020 during these consultations, the stakeholders shared their opinion regarding the sub-project, which were documented as follows:

4.4. Summary of Consultations - Block A

Comments/Observations	Actions/ Responses
Participants were of the views that proper dissemination of information about the subproject may be ensured.	Participants were briefed about the sub-project in detail during focus group discussion, while preparing ESMP.
Generally, all the stakeholders agreed with the proposed project and positive opinions were found about the project.	Noted.
Majority of the stakeholders expressed that they have no direct or indirect concerns or issues and they all appreciated the proposed development.	Noted.
The stakeholders were of the view that with the reconstruction of laboratory better testing facility would be available for the irrigation sector.	Noted.
The stakeholders suggested that sustainable building standards should be followed to increase the life of the infrastructure for long term benefits.	Adherence to local construction standards and quality would be ensured during construction.
Some stakeholders expressed about short term employment opportunities could be available as a result of the proposed development during construction phase.	Noted.
They expressed that during the construction phase, noise pollution may disturb the routine office work.	The main source of noise is during the demolition phase. Maximum possible efforts will be taken to schedule most of the demolition activities on weekends, holidays, and after office hours. As the existing structure is not very large, this disturbance period is expected to be not more than two to three days.
The representatives of mosque were of view that during the prayers times, noise generated due to construction	Prayer timings will be obtained from the mosque and noisy work such as demolition

Comments/Observations	Actions/ Responses
<p>activities may be avoided and suggested that noisy construction activities may not be scheduled around prayer times.</p>	<p>will not be carried out during prayer times.</p>
<p>The stakeholders expressed their concern regarding possibility of heavy transport of materials to the site, which may disturb passage. A suggestion that project vehicles come after office hours was given</p>	<p>All heavy transport vehicle movement to and from the site would take place after office hours and much later at night, as per city regulations to minimize disturbance to traffic. With the limited construction, not a lot of heavy transport requirement for the project is envisioned, and where possible pickups would be used to minimize disturbance.</p>

Keeping in view the comments and responses, it is very essential that the concerns of people may be addressed by applying good governance and management practices before and during the construction work.

Figure 9: Photographs of Stakeholder Consultations



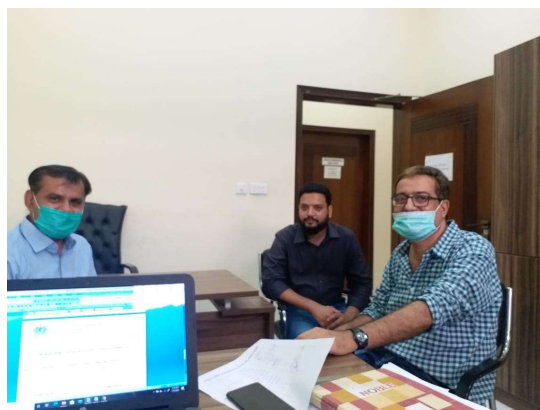
Consultation with Head cleric Camp Office of the Sindh Irrigation Minister office



Consultation with Senior Cleric Electric Inspector office Energy Department



Consultation with Assistant Research officer Soil
Mechanic & Hydraulic Laboratory



Consultation with Environment Specialist
Sindh Barrage Improvement Project

Table 8: List of Stakeholders Consulted Block-B

No	Name of resident	Contact Number
1	Mr. Muhammad Qasim Chang	0310-5555447
2	Mr. Hassan Pathan	0300-0132366
3	Mr. Ghulam NabiPalejo	0303-3943155

Summary of Consultations Block B

Comments/Observations	Actions/ Responses
Generally, all the stakeholders agreed with the proposed project and positive opinions were found about the project.	Participants were briefed about the proposed sub-project in detail during the community consultation.
The community expressed their concern regarding the heavy transport of materials to the proposed site, which may disturb passage, water supply lines, or electricity lines during construction activities, potential accessibility or commutation issues during construction phase; construction-related noise-causing general social disturbance.	All heavy transport vehicles will not be allowed to block B Vehicle movement to and from the site would take place after office hours and much later at night, as per city traffic regulations to minimize disturbance. Sub project construction area will be barricaded and green net will be installed to

Comments/Observations	Actions/ Responses
<p>Mobility of women may be affected due to the construction activities</p>	<p>reduce the disturbance to community of block B</p> <p>The proposed sub-project is located within the boundary of Sindh Irrigation Department complex which comprises of offices block (Block-A) and residential area (Block-B). The residential area and offices block is bifurcated through existing boundary wall (Height of 6ft).</p>

Figurexx: Photographs of consultations in Block B



Consultation with the resident of Block B



Consultation with the resident of Block B

4.5. Information Disclosure

As disclosure requirement, the Environmental and Social Management Framework (ESMF), has been uploaded on the SRP Sindh Irrigation Department website, while whole document of Environmental and Social Management Plan (ESMP) of the reported sub-project will be translated into Sindhi/Urdu, same will also be uploaded on the website of SRP Sindh Irrigation Department. The hard copy would be made available at the camp site.

5. GRIEVANCE REDRESS MECHANISM (GRM)

It is proposed to establish the following GRM mechanism prior to commencing project implementation activities including pre-construction activities:

- A Public Complaints Centre (PCC), which will be responsible to receive, log, and resolve complaints;
- A Grievance Redress Committee (GRC), responsible to oversee the functioning of the PCC
- A non-judicial decision-making authority e.g. Project Management Team or Secretary Irrigation Government of Sindh for resolving grievances that cannot be resolved by PCC;

5.1. Public Complaints Centre (PCC)

In its capacity as the Project Implementation Body, the PMT, in consultation with the Secretary Irrigation, Government of Sindh will establish a Public Complaints Centre (PCC) in the PMT, SRP office. The PCC's phone number, fax, address, the email address will be displayed at the sub project site.

The PCC will be staffed by a full-time officer from the PMT and will be independent of the PISSC and contractor/operator. The officer should have experience and/or training in dealing with complaints and mediation of disputes. The PCC will be responsible to receive, log, and resolve grievances.

Grievance Redress Committee (GRC)

The GRC will function as an independent body that will regulate the grievance redress process. It will comprise of, Environmental and Social Safeguard Specialists of PMT and Senior Engineer from PMT. Decisions or findings taken in the Grievance Redress Committee would be binding upon the contractor.

5.2. Role and Responsibilities of PCC

The responsibilities of the PCC are:

- The PCC will log the complaint and date of receipt onto the complaint database and inform the PISSC and the Contractor;
- The PCC will instruct Contractors and PISSC to refer any complaints that they have received directly to the PCC.

- The PCC, with the PISSC and the Contractor, will investigate the complaint to determine its validity, and to assess whether the source of the problem is due to project activities, and identify appropriate corrective measures. If corrective measures are necessary, PCC, through the PCI, will instruct the Contractor to take necessary action;
- The PCC will inform the Complainant of investigation results and the action taken;
- If the complaint is transferred from local government agencies, the PCC will submit interim report to local government agencies on status of the complaint investigation and follow-up action within the time frame assigned by the above agencies;
- The PCC will review the Contractors response on the identified mitigation measures, and the updated situation;
- The PCC will undertake additional monitoring, as necessary, to verify as well as review that any valid reason for complaint does not recur.

During the complaint investigation, the PCC should work together with the Contractor and the PISSC. If mitigation measures are identified in the investigation, the Contractor will promptly carry out the mitigation. PISSC will ensure that the measures are carried out by the Contractor.

5.3. GRM Steps and Timeframe

Procedures and timeframes for the grievance redress process are as follows:

- Stage 1: In this stage services of HSE officer of Contractor will be utilized at site to register the complaints and grievances in the community. When a grievance arises, the affected person may contact directly with the contractor/operator and the project manager to resolve the issue of concern. If the issue is successfully resolved, no further follow-up is required;

The contractor will also formally maintain a record of all complaints and issues raised, through HSE assigned for each sub-project. The contractor will also display prominent signage containing the contact details of PCC in Sindhi language.

- Stage 2: If no ad hoc solution can be found at stage-1 at site level, the affected person/s will submit an oral or written complaint to the PCC by themselves or through GRM entry points (the CFP, PMT, PISSC, and Contractor/Operator). For an oral complaint, the PCC must make a written record. For each complaint, the PCC must

investigate the complaint, assess its eligibility, and identify an appropriate solution. It will provide a clear response within five (5) working days to the complainant, PMT, and Contractor. The PCC will, as necessary, through PISSC; instruct the Contractor to take corrective actions. The PCC will review the Contractor's response and undertake additional monitoring. During the complaint investigation, the PCC will work in close consultation with the Contractors, and the Supervising Engineer (during construction) and with the SID (during operation). The contractors during construction and the PMT during operation should implement the redress solution and convey the outcome to the PCC within seven (7) working days;

In addition, the E&SS team of PISSC and PMT will also encourage oral and written feedback from the community during monitoring visits.

- Stage 3: If no solution can be identified by the PCC or if the complainant is not satisfied with the suggested solution under Stage 2, the PCC will organize, within two (2) weeks, a multi-stakeholder meeting under the auspices of the SID, where all relevant stakeholders (i.e., the complainant, PMT, contractor/operator, relevant local government offices) will be invited. The meeting should result in a solution acceptable to all, and identify responsibilities and an action plan. The contractors during construction and the SID during operation should implement the agreed-upon redress solution and convey the outcome to the PCC within seven (7) working days;

5.4. Reporting

The PCC will record the complaint, investigation, and subsequent actions and results in the monthly Environmental Management and Monitoring reports. In the construction period and the initial operational period covered by loan covenants, the PMT will periodically report progress to the World Bank, and this will include reporting of complaints and their resolution. The tracking and documenting of grievance resolutions within the PCC and/or PMT will include the following elements: (i) tracking forms and procedures for gathering information from project personnel and complainant(s); (ii) dedicated staff to update the database routinely; (iii) systems with the capacity to analyze information so as to recognize grievance patterns, identify any systemic causes of grievances, promote transparency, publicize how complaints are being handled, and periodically evaluate the overall functioning of the mechanism; (iv) processes for informing stakeholders about the status of a case; and (v) procedures to retrieve data for reporting purposes, including the periodic reports to the PMT and including PCC reports into the monthly ESMP Compliance monitoring report to the World Bank.



6. Impacts Management and Mitigation

6.1. Introduction

The sub-projects civil works will not have any major environmental and social impacts, as the works only involves reconstruction of Ground plus one floorbuilding with total covered area of 430 Sq. Yds. About 2,500 cubic feet of debris and solid waste are expected to generate from demolition and other construction related activities, for which management and mitigation measure are provided in Environmental and Social Impacts and Mitigation Plan in **Table 8**.

The purpose of this ESMP is to mitigate the environmental, health and safety issues which are expected during the construction stage, other impacts such as waste management, pollution prevention and control have been considered.

The occupational health and safety measures along with COVID-19 management and monitoring have also been given priority in this ESMP, which consist of protective measures for health and safety issues of labor and employees. The health and safety guidelines along with COVID -19 SOPs have also been provided in **Appendix B**.

The ESMP ensures that cultural, religious sensitivities and quality of life of the sub-project areas residents shall be fully well-looked-after and respected to avoid any social conflicts between the workers and host communities, (if raised any). Special consideration is to be given to maintain safe and secure movements of the elders, women and children living close to the building construction site.

Sub-projects site, details provided in **Table 3** requires no any land acquisition, as the civil works only involves reconstruction of the existing building structure.

6.2. Environmental and Social Impacts and Mitigations

The summary of Environmental impacts and mitigation are provided in a **Table 8**, given below. The table also identifies the monitoring parameters and assigns the corresponding responsibilities.

Table 9: Environmental and Social Impacts and Mitigation Plan

S. No	Activities	Environmental and Social Impact/Issues	Mitigation Measures	Monitoring Parameter	Implementing Body	Monitoring
Construction Related Impacts						
1.	Container Office/Sitting area for Construction Supervision/Contractor staff					
1.1	General use of camp	Security	<ul style="list-style-type: none"> The Contractor shall ensure provisions for camp security as per the Health and Safety Plan to be approved by the Supervision Engineer 	<ul style="list-style-type: none"> Submission & implementation of Health & Safety Plan, as detailed in contract specifications. Guards employed for security 	Contractor	PISSC/ PMT SRP
		Spread of fire	<ul style="list-style-type: none"> Camps, offices, parking, stores shall be equipped with fire prevention and fighting equipment. Staff of contractor responsible for firefighting will be properly trained 	<ul style="list-style-type: none"> Provision of fire extinguishers Training of EHS Officer for firefighting Ensure liaison of local fire department and EHS officer is in place. 	Contractor	PISSC/ PMT SRP

S. No	Activities	Environmental and Social Impact/Issues	Mitigation Measures	Monitoring Parameter	Implementing Body	Monitoring
		Disturbance to local people;	<ul style="list-style-type: none"> • The Contractor shall develop HSE plan which outlines the requirements given of the contract General Specification (including provision against local norms, and respect for local community). • The HSE person will maintain active rapport with neighboring residents of the sub project area • The construction workers will be prohibited from entering into the residential area • The Contractor shall ensure that the access road remain open for the local residents during construction activities • GRM will be established to address complaints during construction activities. 	<ul style="list-style-type: none"> • HSE Plan prepared and signed by all staff • Ensure no disturbance occurs to local community. • Community meeting register • Availability of complaint box/register will be ensured 	Contractor	PISSC/ PMT SRP


S. No	Activities	Environmental and Social Impact/Issues	Mitigation Measures	Monitoring Parameter	Implementing Body	Monitoring
1.2	Movement of vehicles within the camp	Traffic accidents	<ul style="list-style-type: none"> The Contractor shall include measures to prevent traffic accidents in the Traffic Management Plan. Submission & implementation of Traffic Management Plan 	<ul style="list-style-type: none"> Speed limit to 10km/hr Use of designated parking areas Maintenance of metaled roads Use of safety signs at locations of potential hazards. 	Contractor	PISSC/ PMT SRP
1.3	Sitting and Locating Container	Disturbance to local population.	<ul style="list-style-type: none"> Submit detailed layout plan to PISSC for approval for the deployment of container. 	<ul style="list-style-type: none"> Camp is located at safe distance from local community Detailed camp Layout Plans are submitted 	Contractor	PISSC/ PMT SRP
1.4	Sanitary Facilities	Ground and Soil Water Pollution Fouling of Site	<ul style="list-style-type: none"> Provide and maintain hygienic, well-lit and ventilated sanitary facilities. Separate latrines and washing facilities shall be provided for males and females with total isolation by wall, including clean running water, and a soap. Washing facilities shall be provided at readily available places within the immediate vicinity of every latrine. Shall be cleaned daily. 	<ul style="list-style-type: none"> Use of disposal areas like Main-hole which are connected with local municipality. Washrooms and toilets are cleaned daily. No fouling at sub-project site. 	Contractor	PISSC/ PMT SRP

S. No	Activities	Environmental and Social Impact/Issues	Mitigation Measures	Monitoring Parameter	Implementing Body	Monitoring
2.	Demolition of Old Building					
2.1	Demolition of existing structure	Disturbance to public movement due to Piling of material, damage to access roads and sewerage line.	<ul style="list-style-type: none"> Mechanized demolition shall be carried out Excavated material and debris shall not be allowed to pileup during excavation or dismantling works, on the spot excavated material will be transported to approved disposal points Public routes shall be kept free from hindrances. Sewerage and other utility lines shall be protected prior to dismantling works. Adequate arrangement of transport shall be arranged by contractor 	<ul style="list-style-type: none"> Ensure transfer of debris during excavation Ensure sewage lines are clear from any blockage. Ensure timely arrangement of transport to avoid the pile of debris. Ensure Barricade of site Ensure Appropriate safety signs posted. 	Contractor	PISSC/ PMT SRP
		Damage to public amenities structure during demolition like roads and flyovers	<ul style="list-style-type: none"> Only allowable limit of load will be allowed in transporting vehicles. No heavy machineries shall be allowed towards community roads and in colonies 	<ul style="list-style-type: none"> Ensure dumpers are not overloaded Heavy machineries are not allowed towards community area (Block-B) 		
3.	General Construction Activities					
3.1	Operation of equipment and construction	General	<ul style="list-style-type: none"> The Contractor shall prepare a training plan to provide all personnel with adequate instruction & training on environmental & social awareness 	<ul style="list-style-type: none"> Submission & implementation of Environmental Awareness Training Plan. 	Contractor	PISSC/ PMT SRP

S. No	Activities	Environmental and Social Impact/Issues	Mitigation Measures	Monitoring Parameter	Implementing Body	Monitoring
	machinery	Land, and groundwater	<ul style="list-style-type: none"> The contractor shall ensure a high level of maintenance of Concrete mixture machinery in order to reduce fuel and oil leakage. The Contractor shall prepare a pollution control plan Contractor's activities shall be performed in safe and secure manner to prevent entrance or accidental spillage of contaminants into soil. Impervious layers will be developed near oil storage areas to prevent oil spillage. 	<ul style="list-style-type: none"> No fuel/oil spills or leaks observed Submission & implementation of Pollution Control Plan Cemented floor and bunding are provided to the liquid storage areas. 	Contractor	PISSC/ PMT SRP

S. No	Activities	Environmental and Social Impact/Issues	Mitigation Measures	Monitoring Parameter	Implementing Body	Monitoring
		Air Pollution	<ul style="list-style-type: none"> Fitness of machines will be monitored during construction phase 	<ul style="list-style-type: none"> Only fit machines will be allowed on site. Stack emission generators and heavy vehicles will be monitored Ambient air quality will be monitored on quarterly basis for 24 hrs. as per Sindh EPA standards (UV Fluorescence method for Sulfur), β Ray absorption method for PM10 and Gas Phase Chemiluminescence method for NO & NO2 monitoring will be used. 	Contractor	PISSC/ PMT SRP
		Noise Pollution	<ul style="list-style-type: none"> The Contractor shall plan his work on the basis of a six-day working week. The contractor shall ensure a high level of maintenance of machinery in order to reduce noise. 	<ul style="list-style-type: none"> Working hours 6:00 am to 6:00 pm. Noise making activities such as demolition and excavation will not be allowed during prayers times. Noise pollution from sources will be monitored on monthly basis. 	Contractor	PISSC/ PMT SRP

S. No	Activities	Environmental and Social Impact/Issues	Mitigation Measures	Monitoring Parameter	Implementing Body	Monitoring
		Health and safety of workforce and public	<ul style="list-style-type: none"> • Contractor to prepare and implement the Environment Health and Safety Plan to be approved by the PISSC. • The Contractor shall employ a full time, qualified Environment Health and Safety Officer • Untrained staff shall not be allowed on site. • Provision of adequate Personal Protective Equipment (PPE) 	<ul style="list-style-type: none"> • Submission & implementation of Health & Safety Plan • Nomination of Health & Safety Officer • Staff received adequate training in use of equipment • Induction provided to all staff • PPE provided to all staff • Paramedic staff employed and first aid arrangement provided. 	Contractor	PISSC/ PMT SRP

S. No	Activities	Environmental and Social Impact/Issues	Mitigation Measures	Monitoring Parameter	Implementing Body	Monitoring
		Risk of Transmission of Corona virus in workers and Community	<ul style="list-style-type: none"> • Before resuming the work, the contractor should ensure the disinfection of camp premises and this should be done on regular basis subsequently. • Contractor representative (Project Manager) in consultation with HSE Staff and PISSC -HSE team shall arrange sufficient stock of PPE like coverall, face mask, face shield, surgical mask, hand sanitizer, gloves, temperature Guns shall be arranged before the arrival of the workforce on site. • Other items like tissues and hand sanitizer for all office workers. Surgical masks are made available to offer anyone, who develops respiratory symptoms. • The contractor should develop hand-washing areas for all the workers, with the facility of clean water and soap. • Wastewater tank should be developed for the disposal of contaminated water. • Minimize face to face meetings, on-site maximize telephonic, video, and conference calls as a replacement of physical meetings (where available). • Maintain physical distance at least 6 feet distance with each other during the meeting. 	<ul style="list-style-type: none"> • Nomination of Health & Safety Officer • Staff received adequate training in use of equipment • Induction provided to all staff • PPE provided to all staff • Submission & implementation of Covid-19 Management and Monitoring Plan 	Contractor	PISSC/ PMT SRP
			<ul style="list-style-type: none"> • Use a face mask and latex gloves while maintaining physical distance. 	<i>Sindh Resilience Project</i>		
			<ul style="list-style-type: none"> • Use infrared thermometer to screen all the personnel entering site office, site and camp areas and maintain a logbook for record-keeping of temperature readings of 			

S. No	Activities	Environmental and Social Impact/Issues	Mitigation Measures	Monitoring Parameter	Implementing Body	Monitoring	
3.2	Completion of engineering works close proximity to local population and school	Disturbance /danger to local people; Grievances and conflict; Disruption to local infrastructure	<ul style="list-style-type: none"> The Contractor shall employ a full time, Environmental, Health and Safety EHS Officer. A register of complaints received from the local community shall be maintained The Contractor shall develop a CESMP of the project in the first fifteen days of commencement of works. 	<ul style="list-style-type: none"> Deployment of Environmental health and safety Officer, Employment provided to local population Register maintained, and actions completed to close complaint. 	Contractor	PISSC/ PMT SRP	
			The Contractor shall not to use child, exploitative or forced labor	<ul style="list-style-type: none"> The contractor will maintain labour register containing labour particulars Age of labour would be verified from Computerized National Identity Card (CNIC) or birth certificate 			Contractor
4.	Waste Management and Disposal						
4.1	Storage of Waste	Health and Safety Risk to workforce and general public	<ul style="list-style-type: none"> Waste shall be collected and disposed-off on daily basis to prevent health risk for community. The Contractor shall include details of waste management and storage in the Waste Management Plan 	<ul style="list-style-type: none"> Submission & implementation of Waste Management Plan No spills or leaks of contaminants observed on site 	Contractor	PISSC/ PMT SRP	

S. No	Activities	Environmental and Social Impact/Issues	Mitigation Measures	Monitoring Parameter	Implementing Body	Monitoring
		Generation of Waste generated during construction, (Fuel, oils, and cement wastes; Demolition or construction waste, Packing waste).	<ul style="list-style-type: none"> Excavated and demolition waste; rocks, sand, silt/clay, concrete, bricks and other building material shall be disposed-off in near-by Sindh Solid Waste Management Board disposal facility which is 2.0 Km away from sub-project location. Recyclable waste to be handed over to recycling contractors. 	<ul style="list-style-type: none"> Disposal areas identified in the Waste Management Plan Waste stored in defined areas and not littered around site 		
		Contamination of recyclable/reusable / biodegradable wastes	<ul style="list-style-type: none"> Contractor should include measures for the storage of domestic and construction waste separately and the streaming of wastes in different types in the Waste Management Plan 	<ul style="list-style-type: none"> Waste Management Plan includes measures for streaming of biodegradable, non-biodegradable, recyclable & reusable wastes Fencing around waste storage areas 	Contractor	PISSC/ PMT SRP

S. No	Activities	Environmental and Social Impact/Issues	Mitigation Measures	Monitoring Parameter	Implementing Body	Monitoring
4.2	Disposal of solid waste	Soil, ground water and surface water pollution	<ul style="list-style-type: none"> All type of non-hazardous waste shall be disposed of through Sindh Solid Waste Management, The contractor shall sale such waste to local vendors for recycling. Waste that is not suitable for burial or combustion shall be removed from the project and shall be disposed-off in Sindh Solid Waste Management Board disposal facility. 	<ul style="list-style-type: none"> No burial or composting of non-hazardous shall be carried out on site. No hazardous waste disposed off through burial Observation of recycling or selling of wastes to local vendors No occurrence of waste incineration that may cause release of toxic or hazardous substances Removal of all waste from sub-project area. 	Contractor	PISSC/ PMT SRP
			<ul style="list-style-type: none"> Materials to be disposed of by dumping shall be hauled to an approved dumping site. The Contractor shall include details of waste disposal in the Waste Management Plan 	<ul style="list-style-type: none"> Identification & use of approved dump site. Submission & implementation of Waste Management Plan 	Contractor	PISSC/ PMT SRP
		Health risks to work force and general public	<ul style="list-style-type: none"> All wastes shall be disposed of by the Contractor and he shall arrange refuse collection services. 	<ul style="list-style-type: none"> Refuse collection services arranged 	Contractor	PISSC/ PMT SRP

S. No	Activities	Environmental and Social Impact/Issues	Mitigation Measures	Monitoring Parameter	Implementing Body	Monitoring	
4.3	Disposal of wastewater	Health risks to work force and general public Soil and groundwater pollution.	<ul style="list-style-type: none"> Contractor's activities shall be performed by methods that will prevent entrance or accidental spillage of contaminants. Details shall be included in the Contractor's Waste Management Plan including contingency plans in the event of failure of waste disposal procedures. 	<ul style="list-style-type: none"> Use of burial areas to dispose of sanitary waste Submission & implementation of Waste Management Plan No spills or leaks of contaminants observed on site 	Contractor	PISSC/ PMT SRP	
4.4	Burning of waste	Air pollution	<ul style="list-style-type: none"> The Contractor DO NOT burn any materials which may lead to the release of toxic or hazardous substances like rubber. 	<ul style="list-style-type: none"> Visual monitoring Record of solid waste management Availability of Fire extinguishers 	Contractor	PISSC/ PMT SRP	
5.	Traffic movement in the sub-project Area						

S. No	Activities	Environmental and Social Impact/Issues	Mitigation Measures	Monitoring Parameter	Implementing Body	Monitoring
5.1	Traffic on Public Roads	Public Safety due to Traffic accidents	<ul style="list-style-type: none"> Traffic sign boards of 1x1.5 inches size shall be installed at routes of project area. These sign boards must be clearly written, vivid in color and can be easily reflected in night. Maintain vehicles in accordance with the manufacture's maintenance procedure. Inspect vehicles regularly for leaks Movement over routes provided for access shall be in a manner to minimize damage to community infrastructure and public/private properties Enforce on site speed limit up to 10 Km per hour. 	<ul style="list-style-type: none"> Where haul routes cross public roads, the Contractor shall provide barricades, flagmen, adequate signage and other necessary precautions for safety. The Contractor's Traffic Management Plan shall detail traffic routes and segregation of vehicles and pedestrians. Movement of equipment shall only be allowed within the designated routes approved by the Engineer and avoiding trespassing into private property 	Contractor	PISSC/ PMT SRP
		Damage and disruption community infrastructure	<ul style="list-style-type: none"> Hauling and transportation over public roads and flyover shall be in compliance with local traffic regulations The contractor shall limit speed, and hauling operations over existing roads so as to minimize damage to other existing facilities 	<ul style="list-style-type: none"> Compliance with traffic regulations such as speed limits No damage to community infrastructure or adjacent facilities 	Contractor	PISSC/ PMT SRP

S. No	Activities	Environmental and Social Impact/Issues	Mitigation Measures	Monitoring Parameter	Implementing Body	Monitoring
		Traffic accidents and safety of works force	<ul style="list-style-type: none"> One-way traffic shall be maintained and traffic speeds restricted to minimum and safety signs displayed. The Contractor shall provide flagmen, warning signs and barricades. 	<ul style="list-style-type: none"> Flagmen and adequate signage used and one-way traffic enforced. 	Contractor	PISSC/ PMT SRP
		Dust	<ul style="list-style-type: none"> The Contractor shall carry out dust abatement measures such as sprinkling water on vehicle routes and limiting vehicle speeds 	<ul style="list-style-type: none"> Regular water sprinkling Vehicles are maintained on routine basis. 	Contractor	PISSC/ PMT SRP
		Air Quality	<ul style="list-style-type: none"> The Contractor shall carry out dust abatement measures including limited vehicle speeds and sprinkling of water on vehicle routes as required preventing the dust emissions. Materials to be stored at construction sites will include cement, sand, steel, crush and other building material. All these materials shall be stored as per their nature. The cement and steel must be stored under properly constructed sheds, sand should be covered with polythene sheets. 	<ul style="list-style-type: none"> Use of vehicles which emit less smoke and regular tuning. Provision of respiratory protective devices to workers where appropriate Strict implementation of the Traffic Management Plan. 	Contractor	PISSC/ PMT SRP
6.	Water Usage/Consumption					
	Use of water in construction camp	Conflict with local water demand	<ul style="list-style-type: none"> The Contractor shall not use local water sources, but shall arrange water at camp. 	<ul style="list-style-type: none"> Contractor has own arrangements for drinking water supply. 	Contractor	PISSC/ PMT SRP

S. No	Activities	Environmental and Social Impact/Issues	Mitigation Measures	Monitoring Parameter	Implementing Body	Monitoring
	Use of water in construction	Disruption of water supply	<ul style="list-style-type: none"> The Contractor shall make his own arrangements for supply of water for the construction works Contractor shall provide clean drinking water for labor and Staff. Ready mix concrete from market shall be used for all type of concreting works. Water shall be used from KWSB supply line of department or water tanker. 	<ul style="list-style-type: none"> Ensure concrete ready mix concrete supplied from market. Ensure water shall not use from community line for concreting purpose. Drinking water shall be monitored on quarterly basis as per SEPA standards (Physical, Chemical and Biological parameters will be monitored as per standards mentioned in Drinking Water Quality Standards. 	Contractor	PISSC/ PMT SRP
7.	Social Complaints	Disruption to local communities.	<ul style="list-style-type: none"> The Contractor will maintain a social complaint register at the camp site. Document all complaints received from the local communities. The register will also record the measures taken to mitigate the reported concerns. All complaints/issues of the community will be duly reported in the monthly progress report. 	<ul style="list-style-type: none"> No conflict is made with local community All social complaints are resolved timely. 	Contractor	PISSC/ PMT SRP
Operation phase related Impacts						

S. No	Activities	Environmental and Social Impact/Issues	Mitigation Measures	Monitoring Parameter	Implementing Body	Monitoring
8.	Storage of Waste during operations	Health and Safety Risk to employees and general public	<ul style="list-style-type: none"> Waste shall be collected and disposed-off on daily basis to prevent health risk for staff Waste shall be stored at designated area inside the building. 	<ul style="list-style-type: none"> Collection on regular basis by SSWMB No spills or leaks of contaminants observed in building. 	Contractor	PISSC/ PMT SRP
9.		Generation of Waste generated during operation phase, (kitchen waste, Soil samples, plastic waste, cardboards, paper waste, Packing waste).	<ul style="list-style-type: none"> Kitchen waste, soil and other material shall be disposed-off in near-by Sindh Solid Waste Management Board disposal facility which is 2.0 Km away from sub-project location. Recyclable waste to be handed over to recycling contractors. 	<ul style="list-style-type: none"> No waster littering on roads and within or inside building. Check records of waste handed over to contractor, 	SID	SID
10.	Disposal of wastewater	Health risks to employees and general public Soil and groundwater pollution.	<ul style="list-style-type: none"> Contractor's activities shall be performed by methods that will prevent entrance or accidental spillage of contaminants. Appropriate sewerage system shall be constructed. 	<ul style="list-style-type: none"> Ensure sewerage system has been designed and constructed. <p>No spills or leaks of contaminants observed on site</p>	SID	SID
11.	Firefighting	Fire Hazard to building and employees	<ul style="list-style-type: none"> Adequate No. of Fire extinguishers will be placed at Ground floor and First Floor) 	<ul style="list-style-type: none"> Check inspection record of firefighting system Checking refilling record of portable extinguishers 	SID	SID

7. Environmental and Social Management and Monitoring

7.1. General

The purpose of Environmental and Social Management and Monitoring Plan (ESMMP) for the construction of soil mechanics laboratory works is to ensure that all necessary identified measures have been adopted in order to protect the environment and social situations and to comply with country environmental and social legislation and applicable World Bank operational Policies.

7.2. Institutional Arrangements

7.2.1. Project Management Responsibilities

Implementation of the ESMP will be a contractual obligation between the Contractor and PMT, SRP. The Contractor shall engage full time technical staff capable of carrying out the monitoring activities as proposed in the ESMP as contractual obligations under the contract agreement.

PISSC in coordination with ESMU-PMT will carry out monitoring activities related to the project during the construction phase by using checklists and notify the Contractor of any violations of the ESMP, check the progress reports, advise the client and contractor regarding any violations which require further action and maintain a record of events and surveys for reference.

In addition, ESMEC as independent consultants will regularly monitor the environmental and social aspects of ESMP implementation including those associated with the Contractor's activities as and when required.

The overall responsibility for SRP project as well as Environmental and Social Management and Monitoring will rest with the Project Management Team (PMT), Irrigation Department Government of Sindh to be headed by a Project Director. In addition, the PMT will be supported during the Environmental and Social Management Plan (ESMP) implementation by the Environmental and Social Management Unit (ESMU) which is established within PMT and Project Implementation Support and Supervision Consultants (PISSC) respectively.

The specific responsibilities of the institutions involved in the ESMP implementation is shown in the **Figure-10** and described below.

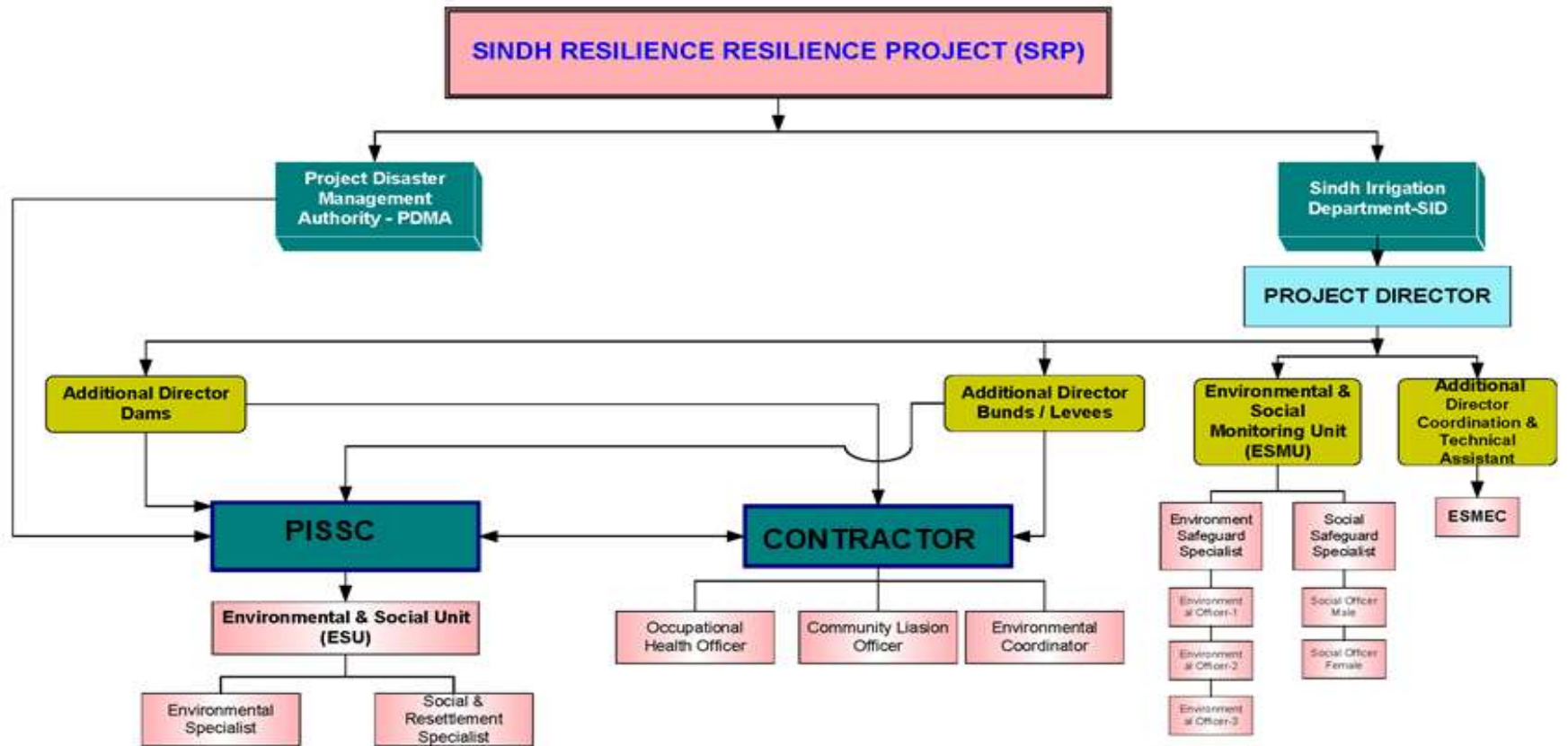


Figure 10: Organizational Chart of Sindh Resilience Project

7.2.2. Project Management Team (PMT)

The overall responsibility for the supervision of ESMMP will rest with the Project Management Team (PMT) under the Sindh Irrigation Department will act as apex body of the project to take care of Social/Gender and Environmental issues and to take policy decisions at project level. An Environmental and Social Management Unit (ESMU) is established within PMT under the supervision of Additional Director Coordination and Technical Assistant. Key positions within the ESMU include: Environment Specialist; Social Safeguard Specialist.

The ESMU shall be responsible for the supervision of implementing and monitoring the ESMMP. The Staff of ESMU shall be reporting to the Project Director (PD) SRP. The ESMU shall be responsible for the monitoring defined in the ESMMP as part of their overall monitoring of the social and environmental management.

7.2.3. Project Implementation Support and Supervision Consultant (PISSC)

The Project Implementation Support and Supervision Consultant (PISSC) is engaged by the project proponent and is responsible for day to day monitoring of the ESMMP on behalf of the Client/ PMT during execution of the Civil Works for sub-projects under the SRP and shall submit periodic reports to the PMT regarding the ESMMP and implementation status. The ESMPs prepared or to be prepared shall be part of the Contract documents. In general, the PISSC has the following responsibilities pertaining to the environmental aspects of the project.

- Prepare the required documents, review and update the available documents relevant to the Project (including ESIA, ESMP and RAP) and those to be prepared by the Contractor.
- Monitor the implementation of ESMP and RAP on a regular basis during execution of civil works by the Contractor.

PISSC has following key positions:

- 1) Environmental Specialist
- 2) Social Safeguards and Resettlement Specialist
- 3) Assistant Sociologist

The ESU of PISSC shall be responsible for monitoring the contractor's compliance with the ESMPs. The role of the ESU-PISSC shall be day to day monitoring of the supervision of the ESMP with the assistance of social and environmental staff of the Contractor and reporting

any non-compliances to the PISSC Chief Resident Engineer, Resident Engineers as well as PMT.

7.2.4. Environment and Social Monitoring & Evaluation Consultant

The ESMEC is an independent body responsible for regular environmental and social monitoring for the SRP Project on behalf of PMT. The ESMEC has environmental and social experts and shall carry out intermittent third-party monitoring of the project.

7.2.5. Contractor

The Contractor will be responsible for the on-field implementation of the ESMP as well as maintaining responsibility for environmental protection liabilities under Sindh Environmental Protection Act (SEPA), 2014, World Bank safeguard policies, ESMF, sub-project specific ESMPs and other applicable national as well as provincial policies and regulations.

The Contractor will also be responsible for training his crews on all aspects and implementation of the ESMP. The bid should include an environmental and social mitigation budget as part of the engineering costs of the respective works. Keeping in view the nature and level of work, only one-person Environment, Health and Safety (EHS) Officer will be deputed by Contractor for implementation of the ESMP.

7.3. Environmental Code of Practices (E.CoP)

The objective of preparation of the Environmental Code of Practices (ECoP) is to address less significant environmental impacts and all general construction-related impacts for the proposed SRP project implementation. The ECoPs will provide guidelines for best-operating practices and environmental management guidelines to be followed by the contractors for sustainable management of all environmental issues. This ECoP will be annexed in the general conditions of all the contracts to be carried out under the SRP project.

7.4. Contractor's Plans

This ESMP has been prepared prior to Contract award, and therefore, certain mitigations which are dependent upon the methodology chosen by any Contractor to deliver the project, could not be specified in it. Therefore, it is required that the Contractor shall prepare CESMP containing various plans mentioned below within 15 days of the signing of the contract or before mobilization and implement the plans described below with the help of mitigation measures discussed in Chapter-5. Once approved by the Engineer and Environment Specialist of PISSC, these documents will become part of the ESMP for the Contract.

7.4.1. Corona Virus Management Plan

The contractor shall provide the details of prevention measures, arrangements planned for the Management of COVID-19. The plan shall include the details of the designated quarantine area, disinfection facilities for Vehicles, and inventory arriving on site. The plan shall also include necessary supplies, such as face mask, soap, hand sanitizers, temperature monitoring infrared thermometers etc.

7.4.2. Pollution (Air, land, Noise and water) Control Plan

The Contractor shall provide details of the principal pollution control facilities proposed and of contingency plans in the event of failure of these facilities. The plan shall include the details of the designated licensed disposal facilities, which shall be used to dispose of waste.

7.4.3. Waste Management Plan

The Contractor shall include details of the procedures for the collection and disposal of wastes. The Plan shall deal with each waste stream separately.

7.4.4. Traffic Management Plan

The basis of the Contractor's Traffic Management Plan and further information is to be provided. The Contractor is required to provide further details once camp/work site locations and material sources are finalized. The Traffic Management Plan must include details of the proposed access routes to the project area as well as haulage and access routes throughout the project area (including access to and from quarries). Timings of transportation of material should be followed as per local traffic guidelines.

7.4.5. Occupational Health and Safety

Upon mobilization, and within 15 days of commencement, the Contractor shall prepare an Occupational Health and Safety Plan which shall be designed as International standards of safety, ISO 45001. This plan shall detail the following:

- Health and safety management structure, responsibilities, supervision and reporting scheme.
- Health and safety goals for the project
- Identification of potential hazards (health and safety risks)

- Proposed measures to reduce the risk of identified hazards
- Arrangements to implement such measures
- A system for reporting and investigating accidents, incidents and near misses
- A plan for emergency transfer of staff or public from site to medical facilities
- Fire and emergency procedures
- Site security.
- Management and Monitoring of COVID-19

7.4.6. Environmental and Social Awareness Training Plan

This shall include details of the Contractor’s environmental and social awareness training program proposed for the workforce. Details are given in **Table-9** given below.

Table 10: Training Plan

Topics	Audience
Health & Safety: Use of site specific and Corona PPEs	All staff
Health & Safety: Working at height	All construction staff
Efficient & safe driving practices, including road & vehicle restrictions	Delivery vehicles drivers
Waste Management	All staff (construction and camp staff)
Health & Safety: Safe way to work & hazard awareness	All construction staff
Pollution prevention: Best practice	All staff

7.5. Mitigation and Monitoring

Mitigation measures for reduction of environmental degradation and social impacts especially relating to safety, noise, soil contamination, traffic related will need to be implemented and monitored. Monitoring tasks will vary over the construction and operation stages of the sub-projects. Physical, biological and socio-cultural parameters will be measured/monitored to determine compliance with national and international standards and compliance with the ESMP itself. Monitoring during the construction phase will largely consist of compliance with mitigations identified in **Section 5. Table 8** presents the mitigation and monitoring plan.

7.5.1. Environmental Non-compliances and Corrective Measures

The Contractor will be notified of any violations of the ESMP, as well as any corrective actions required.

In this regard, some steps are outlined as below. The principle is to keep as many issues within the first few steps as possible.

Step 1. PISSC discusses the problem with PMT and Contractor to work out mitigations together and record the facts and the decision implemented.

Step 2. A more serious infringement is observed and PISSC notifies the Contractor of the issues in writing, with a deadline by which the problem must be rectified. All costs will be borne by the Contractor.

Step 3. PISSC/PMT shall order the Contractor to suspend part, or all, of the works. The suspension will be enforced until the offending parties, procedure, or equipment is corrected and/or remedial measures put in place if required. No extension of time will be granted for such delays and all costs will be borne by the Contractor.

Step 4. Breach of contract - One of the possible consequences of this is the removal of a Contractor and/or equipment and/or the termination of the contract. Such measures will not replace any legal proceedings that PMT may institute against the Contractor.

7.5.2. Communication Reporting and Documentation

The following environmental meetings are proposed:

Primary meetings between ESMU-PMT, PISSC, and Contractor for setting out the format for the regular meetings shall be held before the commencement of the project.

Scheduled Environmental and Social Progress Review Meeting (ESRPM) meetings between ESMU-PMT, PISSC, and Contractor shall be done every month.

The purpose of the meetings is to discuss the conduct of the operation, non-compliances noted by the PISSC and ESMU environmental and social teams and measures recommended for their remedy.

The Contractor and PISSC's environmental and social teams will produce monthly, quarterly, and works completion reports of the sub-projects based on the social and environmental issues. The distribution of the reports shall be to PMT, ESMEC, and World Bank.

A photographic record of the project area shall be kept. Photographs will be taken at key locations using a digital camera of the project area in a walkthrough survey by contractor, PISSC, and ESMU-PMT. The following data shall be recorded for each photograph:

- Shot number
- All the photographs will be referenced with GPS Coordinates
- Title of photograph
- Date and Time, and
- Photographic features.

The photographic record shall be incorporated into the monthly reports. Completed monitoring checklists to be prepared separately during the implementation of the project by PISSC, ESMU of PMT, and ESMEC shall be appended to the monthly reports.

7.5.3. Budget on Environmental and Social Management Plan

The following are the details of ESMP budget.

Table 11: ESMP Implementation Cost

Items	Unit Cost	No of Units	Estimated cost in PKR
Soil Mechanics Laboratory Karachi			
Training(ESMP trainings for 20 persons)	3,000	20	60,000
Ambient Air Monitoring (Quarterly Basis)	25000	4	100,000
Noise (Monthly basis)	1000	12	12,000
Drinking Water Analysis (Quarterly Basis)	20,000	4	80,000
Stack + Noise Generators and Vehicles (Quarterly Basis)	7000	16	112,000
Personal Protective Equipment (for 20 persons approx)	3,500	20	70,000
Fire Fighting Equipment purchase and refilling	4,000	04	16,000
First aid, and COVID-19 Management and Monitoring as per SOPs	Lumpsum	--	60,000
Tree plantation and post care	300	30	9,000
Environmental Health and Safety Officer	80,000	09	720,000
Total	PKR 1,239,000		

7.6. Objectives of the ECoPs

The following ECoPs demonstrate the manner in which the Contractor should comply with the mitigations contained in this ESMP. The objectives of these Environmental Code of Practices (ECoPs) are to address environmental impacts of lesser significant or important. It also provides the guidelines on environmental management and best operating practices which will be followed by the contractor during the execution of the sub-project. The following specific ECoPs are applicable for the Reconstruction of Soil Mechanics laboratory and office building works. The Contractor should also comply with the mitigations contained in this ESMP. The details and list of Environmental code of practices prepared are given below:

- ⑥ Management of fuels and hazardous substances
- ⑥ Waste management and disposal
- ⑥ Management of air quality
- ⑥ Traffic Management
- ⑥ Management of Noise and Vibration
- ⑥ Management of Health and Safety
- ⑥ Management and Monitoring of COVID-19
- ⑥ Storage of construction materials

7.6.1. Management of Fuels & Hazardous Substances

The ECoPs for the management of fuels and hazardous substances shall be followed:

Table 12: ECoP for Management of Fuels& Used Oils

<i>Activity</i>	<i>Environmental Impact</i>	<i>Environmental Management Guideline</i>
Fuels and hazardous goods.	Materials used in construction have a potential to be a source of contamination. Improper storage and handling of fuels, lubricants, on-site, and potential spills from these goods may harm the environment or health of construction workers.	Prepare pollution control procedures and submit the plan to the Engineer. Train the relevant construction personnel in handling of fuels and spill/pollution control procedures. Re-fueling should occur only within bunded areas. Transport waste, which cannot be recycled, to a designated & approved disposal site. Provide absorbent and containment material (e.g. absorbent matting) where hazardous material(like, Diesel or fuel)is used and stored and train personnel for appropriate use. Provide protective clothing, safety boots, helmets, masks, gloves, goggles, to the construction personnel, appropriate to

Activity	Environmental Impact	Environmental Management Guideline
		<p>materials in use.</p> <p>Make sure all containers, drums, and tanks that are used for storage are in good condition and are labelled with expiry date. Any container, drum, or tank that is dented, cracked, or rusted might eventually leak. Check for leakage regularly to identify potential problems before they occur.</p> <p>Put containers and drums in temporary storages in clearly marked areas, where they will not be run over by vehicles or heavy machinery. The area should preferably slope or drain to a safe collection area in the event of a spill.</p> <p>Put containers and drums in permanent storage areas on an impermeable floor that slopes to a safe collection area in the event of a spill or leak.</p> <p>Take all precautionary measures when handling and storing fuels and lubricants, avoiding environmental pollution.</p>

7.6.2. Waste Management and Disposal

The ECoPs for the management of waste and disposal shall be followed:

Table 13: ECoP for Waste Management

Activity	Environmental Impact	Environmental Management Guideline
Generation of general waste	Soil pollution from the improper management of wastes and excess materials from the construction Site.	<p>Develop waste management plans for various specific waste streams (e.g., reusable waste, flammable waste, construction debris, food waste etc.) prior to commencing of construction and submit to PISSC for approval.</p> <p>Organize disposal of all wastes generated during construction in an environmentally acceptable manner. This will include consideration of the nature and location of disposal site, so as to cause less environmental impact.</p> <p>Minimize the production of waste materials through the '3 Rs' (Reduce, Recycle and Reuse) approach.</p> <p>Segregate and reuse or recycle all the wastes, wherever practical.</p> <p>Collect and transport non-hazardous wastes to the approved disposal sites.</p> <p>Train and instruct all personnel in waste management practices and procedures as a component of the environmental induction process.</p> <p>Provide refuse containers at worksite.</p> <p>Place a high emphasis on good housekeeping practices.</p>

<i>Activity</i>	<i>Environmental Impact</i>	<i>Environmental Management Guideline</i>
		Maintain construction site in a clean, tidy and safe condition and provide and maintain appropriate facilities for temporary storage of all wastes before transportation and final disposal.
Generation of hazardous wastes	Health hazards and environmental impacts due to improper waste management practices	<p>Collect used oils from machinery in 200-liter drums (or similar sealed container), appropriately labelled for safe transport to SEPA approved waste contractor or recyclers.</p> <p>Store, transport and handle all substances avoiding potential environmental pollution.</p> <p>Collect hydrocarbon wastes, including lubricating oils, for safe transport off-site for reuse, recycling, treatment or disposal at approved locations.</p> <p>Construct concrete or other impermeable flooring to prevent seepage in case of spills</p>

7.6.3. Management of Air Quality

The ECoPs for the management of air quality shall be followed:

Table 14: ECoP for Air Quality

<i>Activity</i>	<i>Environmental Impact</i>	<i>Environmental Management Guideline</i>
Construction vehicles and machines	Air quality can be adversely affected by vehicle exhaust emissions and combustion of fuels.	<p>Fit vehicles with appropriate exhaust systems and emission control devices, in compliance with the SNEQS shall be allowed.</p> <p>Operate the vehicles in a fuel-efficient manner</p> <p>Cover haul vehicles carrying loose & dusty materials when moving outside the construction site</p> <p>Impose speed limits on all vehicle movement at the worksite to reduce dust emissions</p> <p>Control the movement of construction traffic as per the traffic management plan</p> <p>Water construction materials (where appropriate) prior to loading and transport</p> <p>Service all vehicles regularly to minimize emissions</p> <p>Limit the idling time of vehicles to not more than 2 minutes</p>
Construction activities	Dust generation from construction sites, material stockpiles and access roads is a nuisance in the environment and can be	<p>Water the material stockpiles & access roads as and when required basis to minimize the production of dust. Increase the watering frequency during periods of high risk (e.g. high winds)</p> <p>Minimize the extent and period of exposure of the bare surfaces</p>

Activity	Environmental Impact	Environmental Management Guideline
	a health hazard.	Reschedule earthwork activities or vegetation clearing activities, where practical, if necessary, to avoid periods of high wind and if visible dust is blowing off-site.

7.6.4. Traffic Management

The ECoPs for the traffic management shall be followed:

Table 15: ECoP for Traffic Management

Activity	Environmental Impact	Environmental Management Guideline
Construction vehicular traffic	Increased traffic use of roads by construction vehicles will affect the movement of normal road traffics and the safety of the road-users.	<p>As sub-project site is situated in irrigation complex of block-A, which is offices area, to avoid the disruption of offices, therefore the material transportation and shifting shall be carried-out in night hours (off peak hours) like 10 PM to 6 A.M.</p> <p>Sub-project area is near to sensitive area like school, so material transportation vehicles shall not be allowed during day time, also in the city construction vehicles or construction machinery are not allowed to move on the roads during day time.</p> <p>Prepare and submit a traffic management plan to PISSC for their approval.</p> <p>Include measures in the traffic management plan to ensure uninterrupted traffic movement during construction: detailed drawings of traffic arrangements showing all detours, temporary road, temporary diversions, necessary barricades, warning signs/lights, road signs, etc.</p> <p>Provide signs at strategic locations of the roads complying with the schedules of signs contained in the Sindh Traffic Department Regulations.</p> <p>Install and maintain a display board at each important road intersection on the roads to be used during construction, which shall clearly show the following information in Urdu:</p> <ul style="list-style-type: none"> - Location: - Duration of construction period

<i>Activity</i>	<i>Environmental Impact</i>	<i>Environmental Management Guideline</i>
		<ul style="list-style-type: none"> - Period of proposed detour/alternative route - Suggested detour route map - Name and contact address/telephone number of the concerned personnel - Name and contact address/telephone number of the Contractor - Inconvenience is sincerely regretted.
	Accidents and spillage of fuels and chemicals	Restrict truck deliveries, where practicable, to day time working hours. Ensure that driver has valid license Restrict the transport of oversize loads. Operate road traffics/transport vehicles, if possible, at non-peak periods to minimize traffic disruptions. Enforce on-site speed limit

7.6.5. Management of Noise

7.6.6. & Vibration

The ECoPs for the management of noise and vibration shall be followed:

Table 16: ECoP for Noise & Vibration

<i>Activity</i>	<i>Environmental Impact</i>	<i>Environmental Management Guideline</i>
Construction vehicular traffic	Increased noise levels in the project area	Maintain all vehicles in accordance with manufactures maintenance procedures to ensure good working order Make sure all drivers will comply with the traffic codes concerning maximum speed limit, driving hours, etc.
Construction machinery	Noise and vibration may have an impact on people, property, school environment, fauna, and the natural	Appropriately site all noise generating activities to avoid noise pollution to local residents and school children. Set the off-peak timings to avoid noise pollution to local residents and school children. Use the low noise available plant and equipment Modify equipment to reduce noise (for example, noise

Activity	Environmental Impact	Environmental Management Guideline
	environment.	control kits, lining of truck trays)

7.6.7. Health & Safety

The ECoPs for the management of health and safety shall be followed:

Table 17: ECoP for Health & Safety

Activity	Environmental Impact	Environmental Management Guideline
General construction works	Construction works may pose health and safety risks to the construction workers and site visitors leading to severe injuries and deaths. The population in the proximity of the construction site and the construction workers will be exposed to a number of (i) biophysical health risk factors, (e.g. noise, dust, chemicals, construction material, solid waste, waste water, vector transmitted diseases etc), (ii) Road accidents from construction traffic.	Implement suitable safety standards for all workers and site visitors which should not be less than those laid down on the international standards (e.g. International Labor Organization guideline on 'Safety and Health in Construction; World Bank Group's 'Environmental Health and Safety Guidelines') and contractor's own national standards or statutory regulations, in addition to complying with the national acts and rules of the Government of Pakistan Provide the workers with a safe and healthy work environment, taking into account inherent risks in its particular construction activity and specific classes of hazards in the work areas, Provide personal protection equipment (PPE) for workers, such as safety boots, helmets, masks, gloves, protective clothing, goggles, full-face eye shields, and ear protection. Maintain the PPE properly by cleaning dirty, and replacing damaged, PPE. Safety procedures include provision of information, training and protective clothing to workers involved in hazardous operations and proper performance of their job Appoint an environment, health and safety officer to look after the health and safety of the workers
	Child labor	Do not hire children of less than 14 years of age preceding weeks, in accordance with the Pakistani Labor Laws and Employment of Child Act (1977) and The Sindh Prohibition of Employment of Children Act, 2017
Accidents	Health and safety of workforce, exasperated	Ensure appropriately equipped first aid facilities are readily available and nearby health care facilities are well

Activity	Environmental Impact	Environmental Management Guideline
	if adequate health care is not available	<p>documented/notified in the contractor's operational plan in case of emergency</p> <p>Document and report occupational accidents, diseases, and incidents.</p> <p>Prevent accidents, injury, and disease arising from, associated with, or occurring in the course of work by minimizing, so far as reasonably practicable, the causes of hazards. In a manner consistent with good international industry practice.</p> <p>Identify potential hazards to workers, particularly those that may be life-threatening and provide necessary preventive and protective measures.</p> <p>Provide awareness to the construction drivers to strictly follow the driving rules</p> <p>Provide adequate lighting in the construction area</p>
Construction Camp with Moveable Container	Lack of proper infrastructure facilities, such as housing, water supply and sanitation facilities will increase pressure on the local services and generate substandard living standards and health hazards.	<p>The Contractor shall provide the following facilities in the campsites to improve health and hygienic conditions as mentioned below;</p> <ul style="list-style-type: none"> - Adequate ventilation facilities - Safe and reliable water supply. - Container toilet and domestic wastes line must be connected with existing sewerage line. - Solid waste collection and disposal system - Arrangement for trainings - First aid facilities
Water and sanitation facilities at the construction sites	Lack of water sanitation facilities at construction sites cause inconvenience to the construction workers and affect their personal hygiene.	<p>The contractor shall provide latrines at the construction sites. Location of facilities should be at least six metres away from any storm drain system and surface waters. These latrines should be cleaned once a day.</p> <p>Contractor should provide drinking water facilities to the construction workers at all the construction sites.</p>
Trainings	Lack of awareness and basic knowledge in health care among the construction workforce, making them susceptible to potential diseases.	<p>Train all construction workers in basic sanitation and health care issues.</p> <p>Train all construction workers in general health and safety matters, and on the specific hazards of their work Training should consist of basic hazard awareness, site specific hazards, safe work practices, and emergency procedures for fire, evacuation, and natural disaster, as appropriate.</p>

7.6.8. Management and Monitoring of COVID-19

The ECoPs for management and monitoring of Covid-19 have been prepared in accordance with SOPs of COVID-19 for SRP project which were prepared in the light of SOPs Sindh Government and ESF/Safeguard Interim Note World Bank issued on 9th April 2020. Detailed SOPs are attached in **Appendix-E**.

Table 18: ECoP for Management and Monitoring of COVID-19

<i>Activity</i>	<i>Environmental Impact and Social Impacts</i>	<i>Environmental Management Guideline</i>
Working on Site	Transmission of virus in workers	<ul style="list-style-type: none"> ♦ Before resuming the work, the contractor should ensure the disinfection of camp premises and this should be done on regular basis subsequently. ♦ Contractor representative (Project Manager) in consultation with HSE Staff and PISSC -HSE team shall arrange sufficient stock of PPE like coverall, face mask N-95, face shield, surgical mask, hand sanitizer, gloves, temperature Guns shall be arranged before the arrival of the workforce on site. ♦ Other items like tissues and hand sanitizer for all office workers. Surgical masks are made available to offer anyone, who develops respiratory symptoms. ♦ The contractor should develop hand-washing areas for all the workers, with the facility of clean water and soap. ♦ Wastewater tank should be developed for the disposal of contaminated water. ♦ Minimize face to face meetings, on-site maximize telephonic, video, and conference calls as a replacement of physical meetings (where available). ♦ Maintain physical distance at least 6 feet with each other during the meeting. ♦ Use a face mask and latex gloves while maintaining physical distance ♦ Use a digital thermometer to screen all the personnel entering site office, site and camp areas and maintain a logbook for record-keeping

Activity	Environmental Impact and Social Impacts	Environmental Management Guideline
		<p>of temperature readings of all the workers entering office area/building.</p> <ul style="list-style-type: none"> ♦ DO NOT use a traditional mercury thermometer. ♦ Promote communication with staff to inform if anyone in their contact (such as within their residential area, community, market area, place of visit for work/ meeting/ religious gathering) has developed any symptoms of COVID-19 and restrict their entry to workplace or meeting with staff. ♦ If an individual's temperature is on the higher side and exhibits symptoms of high fever, he should be investigated by a medical doctor for further symptoms of COVID-19. ♦ If an individual after examination exhibits all the symptoms of COVID-19 immediate attention should be given and contact Pak Corona Helpline (03001111166) for further guidance on an immediate basis. ♦ Install sanitizer dispensers at the workplace in each room. Make sure these dispensers are regularly refilled. ♦ Ensure that face masks and / or paper tissues are available at workplaces, for those who develop a runny nose or cough at work, along with closed bins for hygienically disposing of them. ♦ Signages in local language promoting regular hand washing should be displayed at prominent locations, occupational health and safety officer and Social Officer shall make sure this. ♦ All persons including officers, labourers, etc. should frequently wash hands for more than 20 seconds regularly with soap or hand sanitizer. ♦ All bench tops, door handles, working tables, chairs, etc. should be sanitized by using alcohol-based cleaning liquids or hypochlorite-based chemicals (twice a day). ♦ COVID-19 waste should not dispose in an open area, and it must be contained properly and

Activity	Environmental Impact and Social Impacts	Environmental Management Guideline
		<p>disposed of properly, through incineration only.</p> <ul style="list-style-type: none"> ♦ All staff members should be trained for the COVID-19 waste management. ♦ All the waste such as face masks, gloves, and other items generated at office and campsites should be stored in a labelled marked container (Hazardous Waste) and should be stored separately in isolation after disinfection. The waste once accumulated should be disposed of via SEPA, certified contractor for Incineration. ♦ In case of any worker/staff member develops the symptoms of COVID-19 he should be referred to the nearest Government facility for the testing. ♦ In case if any of the worker develops symptoms of COVID-19 he should be thoroughly explained about WHO's guidelines of "Home Care for Patients with COVID-19 presenting with mild symptoms and management of their contact" ♦ HSE Team shall not allow the overage, person with diabetes, lung infection, cancer, or any other team member having chronic health issues HSE Team should check the COVID parameters of each worker before the start of work and record may be shared on the group by 9:00 am every day. ♦ If any worker found suspected should not be allowed on-site for work and after examination exhibits all the symptoms of COVID-19 immediate attention should be given and contact Pak Corona Helpline (03001111166) for further guidance on immediate basis. ♦ Daily toolbox talk should include COVID-19 preventive measures on a regular basis and preventive measures should be made mandatory for the contractors and subcontractors. ♦ All the team members conducting inspections should minimize their time on-site to the barest minimum necessary to ensure compliance with the Specification. DO NOT LINGER on-site and return as soon as possible to the colony.

Activity	Environmental Impact and Social Impacts	Environmental Management Guideline
		<ul style="list-style-type: none"> ♦ All staff must be sprayed and cleaned on returning to the camp and a wash facility has been set up at the site gate. ♦ The guards may be instructed to enforce these measures. Gloves, masks, shoes and helmet must be left at the gate after spraying. ♦ All the workers working on site, should be provided with protective clothing; coverall, face masks, gloves and hand sanitizers for their regular use.
Communication with Community	Risks posed to the community by local workers	<ul style="list-style-type: none"> ♦ Other forms of communication should be used; posters, pamphlets, the means used should take into account the ability of different members of the community to access them, to make sure that communication reaches these groups. ♦ Face to face meetings should be avoided or safe distance should be maintained. ♦ The community should be made aware of the procedure for entry/exit to the site, the training being given to workers, and the procedure that will be followed by the project if a worker becomes sick. ♦ Community as well workers should be encouraged to use the existing project grievance mechanism to report concerns relating to COVID-19, preparations being made by the project to address COVID-19 related issues, how procedures are being implemented, and concerns about the health of their co-workers and other staff.
Material Transportation	Risk of Corona virus transmission from outsiders	<ul style="list-style-type: none"> ♦ The temperature of the drivers, attendants, loaders, and other staff of the vehicle transporting such materials shall be monitored at entry points along with other indicators of COVID-19 that are flu, cough, and muscular pain, etc. No person(s) associated with such vehicles having any or all symptoms of COVID-19 shall be allowed to enter the site or premises. ♦ The material like steel, wood, and cloth, iron,

Activity	Environmental Impact and Social Impacts	Environmental Management Guideline
		<p>plastic the COVID-19 for days, therefore, all such raw material shall be properly sanitized and disinfected before entry to site or premises is granted.</p> <ul style="list-style-type: none"> ♦ Seating arrangement of such vehicles amongst the individuals occupying it shall be such that 3 feet distance is maintained. Individuals occupying such vehicles shall wash hands with soap before entry into site or premises and, subsequently, their hands shall be sanitized. ♦ Raw materials, machinery, and any other material required to be processed shall be only allowed to enter the site or premises after the vehicle is completely sanitized and disinfected at the entry point.
Infected Persons/Team Member Isolation:	Risk of spread of Corona Virus	<ul style="list-style-type: none"> ♦ If an individual after examination exhibits all the symptoms of COVID-19 immediate attention should be given and contact Pak Corona Helpline (03001111166) for further guidance on immediate basis. ♦ Allocate quarantine quarters at camp site and keep the infected person isolated from the remaining staff until the doctor decides return to the wider community. ♦ No healthy person will be allowed to enter or access the quarantine room at all times not even after wearing proper PPEs. ♦ Healthcare wastes produced during the care of COVID-19 patients should be collected safely in designated containers and bags, treated and then safely disposed.

7.6.9. Management of Storage of Materials

The ECoPs for the management of stores of material shall be followed:

Table 19: ECoP for Management of Soil Quality

Activity	Environmental Impact	Environmental Management Guideline
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Activity	Environmental Impact	Environmental Management Guideline
Storage of hazardous and toxic chemicals	Spillage of hazardous and toxic chemicals will contaminate the soils	<p>Strictly manage the waste management plans proposed in ESMP Plan.</p> <p>Construct appropriate spill contaminant facilities for all fuel storage areas</p> <p>Establish and maintain a hazardous materials register detailing the location and quantities of hazardous substances including storage, use and disposal</p> <p>Train personnel and implement safe work practices for minimizing the risk of spillage</p> <p>Identify the cause of contamination, if it is reported, and contain the area of contamination. The impact may be contained by isolating the source or implementing controls around the affected site</p> <p>Remediate the contaminated land using the most appropriate available method</p>
Construction material stock piles	Erosion from construction material stockpiles may contaminate the soils	Protect the toe of all stockpiles, where erosion is likely to occur, protect with silt fences, straw bales.

Appendix A: Field Monitoring Checklist on Environmental, Social, Health and Safety

S. No	Description	Yes	No	Comments
Traffic Management and Monitoring Plan				
1.	Are barricades, flagmen & signs provided at entry and exit points of sub-project area?			
2.	Are delivery vehicles queuing on public roads?			
3.	Are vehicles overloaded?			
4.	Is water sprinkling is being carried out at sub-project area?			
5.	Are any vehicles exceeding 10km/hr inside the sub-project area?			
Health and Safety				
6.	Has a health & safety induction been provided to all staff starting this month?			
7.	Are first aid stations/kits available at construction site?			
8.	Have there been any incident/accidents in this month? Was the accident recorded? Have measures been taken/practice improved/Corrective actions reports are prepared to prevent the accident reoccurring?			
9.	Is staff wearing all necessary PPE?			
10.	Adequate number of fire extinguishers available at site			
11.	Appropriate barricade, fencing erected at working areas/construction site?			
12.	Accident/incident, near misses record register available site and properly reported with corrective actions?			
13.	Guard rails or equivalent protection erected (at height or excavations) to stop falls?			
14.	Scaffolds/work platforms properly erected?			
15.	Use of harness belt?			
16.	Signage's displayed?			
17.	Emergency drills conducted?			
18.	Emergency telephone numbers displayed?			
19.	All staff aware of the emergency procedures?			
20.	Danger of falling object?			

S. No	Description	Yes	No	Comments
21.	Training Records available?			
Waste Management and Disposal Plan				
22.	Is waste stored is handled as defined in the waste management plan?			
23.	Was any waste observed littering the site?			
24.	Is solid waste being disposed of in the approved site by the engineer?			
25.	Where any waste material is disposed of through burning, have all charred remains been removed			
26.	Is adequate number of waste bins provided at all camp and construction site??			
Pollution Prevention and Control				
27.	Are plant & vehicle refilling only in designated and bunded areas or are drip tray used?			
Contractor Camp Site				
28.	Is stagnant water accumulating in the camp sites?			
29.	Is reliable electricity and lighting supplied in container office?			
30.	Are vehicles parked in designated parking areas at camp site?			
31.	Are fire extinguishers available at camp site?			
32.	Are fire extinguishers periodically inspected and replaced prior to expiry			
33.	Are fire extinguisher easily accessible and their path clear?			
34.	Is contractor staff using public water line?			
35.	Is fencing provided and maintained around camp site?			
36.	Are security guards present at project sites?			
Social Safeguard				
37.	Are any staff/labor under the age of 14 ?			
38.	Is staff is aware of social dynamics/sensitivities.?			
39.	Has the access to women and girls affected?			
40.	The Complaint box and register is placed at site and updated on regular basis?			
41.	Has the Grievance redressedmechanism is in place?			

Appendix B:HSE Guidelines

The Contractor shall implement their plan, and in particular, no staff will be allowed to enter the site that has not undergone induction training. The Contractor shall ensure employees are trained in the proper use of equipment in their care. In addition, adequate Personal Protective Equipment (PPE) shall be provided to all workers. A qualified doctor and paramedic shall be engaged by the contractor on site along with adequately equipped and properly staffed portable first aid stations.

Table B.1: HSE Guidelines

Item	Activity	Guidelines
Guidelines on Health and Safety	Safety Measure	<p>Display emergency contact numbers clearly and prominently at strategic places in camps.</p> <p>Communicate the roles and responsibilities of labor in case of emergency in the monthly meetings with contractors.</p> <p>Provide appropriate security personnel (police /home guard or private security guards) and enclosures to prevent unauthorized entry in to the camp area.</p>
	Health and Hygiene	<p>Provide adequate health care facilities within camp sites.</p> <p>Provide first aid facility round the clock. Maintain stock of medicines in the facility.</p> <p>Provide adequate drainage facilities throughout camps to ensure that disease vectors habitats (stagnant water bodies) do not form.</p> <p>Place display boards at strategic locations within the camps containing messages on best hygienic practices</p> <p>Provide transport facility for the laborers during emergency to be transported to nearest hospitals</p>
	Fire Prevention	<p>The purpose of Fire Prevention plan, as part of emergency evacuation plan, is to provide chance and awareness to workers and managers with a planned response to situations that will protect lives, infrastructure, environment and property. Fire can arise from natural disasters or from project and human</p>

		<p>activities supported with heavy machinery and have the potential for creating devastating destruction.</p> <p><u>The broad outline of proposed firefighting arrangement is as under:</u></p> <p>Fire alarm system must be installed in all working areas having a connection with the central office</p> <p>Camps shall be equipped with fire prevention and fighting equipment</p> <p>The contractor shall provide training to designated EHS officer</p>
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Appendix C: Filled Environmental Screening Checklist

S.No	Environment Issues	Positive Impact			Negative Impact		
		D	M	S	D	M	S
Environmental impacts Assessment for Soil Mechanics Laboratory Building							
1	Acquisition of land						
2	Soil contamination from wastes						<input type="checkbox"/>
4	Clogging of drainage works and introduction of hazardous wastes						<input type="checkbox"/>
5	Dust generation						<input type="checkbox"/>
6	Noise disturbance during construction.						<input type="checkbox"/>
7	Risk of construction debris dumped into or nearby settlements or disposal of construction waste along the settlements and risk of unauthorized access to the construction areas.						<input type="checkbox"/>
8	Construction accidents, handling of, working under an exposure of noise and dust, potential negative impact of materials used in the construction.						<input type="checkbox"/>
9	Construction of the building near historic structure.						<input type="checkbox"/>
10	Building code of Pakistan, if not considered in designing and construction						<input type="checkbox"/>

D: Definite large, frequent and serious impact M: Likely medium and more frequent impact S: Possible small and Infrequent impact

Appendix D: Pictorial View of Sub-Project Site

Figure D.1: Existing Condition of Soil Mechanics Laboratory Karachi



Figure D.2: Another view of existing building of Soil Mechanics Laboratory



Figure D.3: Backside of Soil Mechanics Lab



Figure D.4 Backside of Soil Mechanics Lab



Appendix E: SOPs for COVID-19 Management



SINDH RESILIENCE PROJECT



Standard Operating Procedure for Management of COVID-19

Abstract

This document has been prepared in-line with World Bank Interim Guidance Note on COVID-19. This document provides general guideline for the Contractors to mobilize the team and construction material.

**Sindh Resilience Project
Irrigation Department
Government of Sindh**

DOCUMENT ISSUE AND REVISION RECORD

This document and its contents have been prepared and are intended solely for the information and use of the Government of Sindh, Irrigation Department concerning the **SINDH RESILIENCE PROJECT (SRP)**.

Document History

Project	Sindh Resilience Project (SRP)
Proponent	Irrigation Department, Government of Sindh
Document Ref	SRP-ESMP-COVID-19
Document Title	Standard Operating Procedure for Management of COVID-19

Revision	Description	Prepared	Checked	Review	Authorized	Date
0	Draft for World Bank Review	Arshad Hussain Memon Nasir Ali Panhwar/	Mohammad Ibrahim Daudpota	Zahid Hussain Shaikh	Jawed Ahmed Memon	23-04-

Table of Contents

i. PURPOSE.....	2
ii. SCOPE.....	2
iii. Construction Contract Coverage for COVID 19 under Existing ESMP Budget.....	4
ESMP Budget for COVID Management	
iv. Focal Person and their Roles for Management of COVID.....	5
a. SRP-PMT.....	5
b. SRP-PISSC.....	5
c. Contractor Level	6
v. Procedures for Working at Camps located at all sub-projects.....	6
vi. Communication with Community.....	8
vii. Procedures for Team Traveling, Material Transportation & Work on Site.....	8
viii. Training of ESMP Security Staff	10
ix. Monitoring & Reporting Mechanism ...	10
x. Signages / Communication	10

Hadith of the Prophet (PBUH) that addresses disease outbreaks and how Muslims should deal with it.

The Hadith says:

"If you hear of an outbreak of plague in a land, do not enter it, but if the plague breaks out in a place while you are in it, do not leave that place" (Sahih Bukhari and Muslim)

I. Introduction:

Sindh Resilience Project (SRP) received an ESF/safeguards interim note: COVID-19 considerations in construction/civil works projects on 9 April 2020 from the World Bank. In continuation to this ESMU-SRP team has developed this document. The COVID-19 pandemic has created unprecedented challenges for everyone. Addressing COVID-19 related issues at the construction site 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. To use reasonable efforts in 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).

II. Purpose:

This SOP shall provide guidelines to deal with the current situation created due to the epidemic of COVID-19 and to provide preventive measures for prevention from the COVID-19 rampant.

III. Scope:

The scope of this Standard Operating Procedure (SOP) applies to all active work-sites of Sindh Resilience Project (SRP) mentioned below; This is general Standard operating procedure, however, as per guidance note issued on 7th April 2020 by World Bank Section 5, each contractor HSE staff should prepare site-specific COVID Management plan, which needs to be approved by PISSC and PMT team.

IV. Focal Person and their Roles for Management of COVID

Addressing COVID-19 at a project site goes beyond occupational health and safety, and is a broader project issue which requires the involvement of different members of a project management team. Given the project context, a designated team would be established to address COVID-19 issues, at PMT level, PISSC level, and at the contractor level.

Following would be the composition of designated teams at three levels; which are Client

a) SRP-PMT

Name	Designation	Cell number/ WhatsApp number	Email
Muhammad Ibrahim Daudpota	Deputy Director (EHS)	0335-3865861 0300-3317550	mibrahim.daudpota@yahoo.com
Arshad Hussain Memon	Environment Safeguard Consultant	0333-7045597	arshad.memon@hotmail.com
Nasir Ali Panwhar	Social Safeguard Consultant	0300-3079491	napanhwar@gmail.com

b) SRP-PISSC

Name	Designation	Cell number/ WhatsApp number	Email
Ibrahim Samoon	Team Leader		samoonibrahim@yahoo.com
Niaz Ali Baloch	Chief Resident Engineer		niazshar@hotmail.com
Sohail Memon	Resident Engineer		samemon@gmail.com
Farooq Ahmed Memon	Environment Specialist		efarooqm@gmail.com
Jan Muhammad	Social Safeguard Specialist		jansamoon@gmail.com

c) Contractor Level

The immediate contact persons like Project Manager of each contract shall be focal person regarding COVID management. During the execution of the project ESMP team member Environment officer and Health and Safety officer of the each contract shall be contact person after in the absence of Project Manager.

The overall obligation of the Contractor will be:

- to take all necessary precautions to maintain the health and safety of the Contractor's Personnel

- to appoint a health and safety officer at site, who will have the authority to issue directives to maintain the health and safety of all personnel authorized to enter and or work on the site and to take protective measures to prevent accidents
- to ensure, in collaboration with local health authorities, that medical staff, first aid facilities, sickbay, ambulance services and any other medical services specified are available at all times at the site and at any accommodation
- to ensure suitable arrangements are made for all necessary welfare and hygiene requirements and for the prevention of epidemics

V. Procedures for Working at Camps located at all sub-projects

Following is the general standard operating procedure (SOP) and shall be followed by all Contractors, however, each contractor shall prepare site-specific plans according to local conditions and site-specific needs.

- Before resuming the work, the contractor should ensure the disinfection of camp premises and this should be done on regular basis subsequently.
- Contractor representative (Project Manager) in consultation with HSE Staff and PISSC -HSE team shall arrange sufficient stock of PPE like coverall, face mask N-95, face shield, surgical mask, hand sanitizer, gloves, temperature Guns shall be arranged before the arrival of the workforce on site.
- Other items like tissues and hand sanitizer for all office workers. Surgical masks are made available to offer anyone, who develops respiratory symptoms.
- The contractor should develop hand-washing areas for all the workers, with the facility of clean water and soap.
- Wastewater tank should be developed for the disposal of contaminated water.
- Minimize face to face meetings, on-site maximize telephonic, video, and conference calls as a replacement of physical meetings (where available).
- Maintain physical distance at least 6 feet distance with each other during the meeting.
- Use a face mask and latex gloves while maintaining physical distance
- Use a digital thermometer to screen all the personnel entering site office, site and camp areas and maintain a logbook for record-keeping of temperature readings of all the workers entering office area/building.
- DO NOT use a traditional mercury thermometer.
- Promote communication with staff to inform if anyone in their contact (such as within their residential area, community, market area, place of visit for work/ meeting/ religious gathering) has developed any symptoms of COVID-19 and restrict their entry to workplace or meeting with staff.
- If an individual's temperature is on the higher side and exhibits symptoms of high fever, he should be investigated by a medical doctor for further symptoms of COVID-19.
- If an individual after examination exhibits all the symptoms of COVID-19 immediate attention should be given and contact Pak Corno Helpline (03001111166) for further guidance on an immediate basis.
- Have details of contact numbers of concerned District Health Officer (DHO), Taluka Hospital and local administration i.e Deputy Commissioner and Assistant Commissioner
- Install sanitizer dispensers at the workplace in each room. Make sure these dispensers are regularly refilled.

- xvi. Ensure that face masks and / or paper tissues are available at workplaces, for those who develop a runny nose or cough at work, along with closed bins for hygienically disposing of them.
- xvii. Signages in local language promoting regular handwashing should be displayed at prominent locations, occupational health and safety officer and Social Officer shall make sure this.
- xviii. All persons including officers, laborers, etc. should frequently wash hands for more than 20 seconds regularly with soap or hand sanitizer.
- xix. All benchtops, door handles, working tables, chairs, etc. should be sanitized by using alcohol-based cleaning liquids or hypochlorite-based chemicals (twice a day).
- xx. COVID-19 waste should not dispose in an open area, and it must be contained properly and disposed of properly, through incineration only.
- xxi. All staff members should be trained for the COVID-19 waste management.
- xxii. All the waste such as face masks, gloves, and other items generated at office and campsites should be stored in a labelled marked container (Hazardous Waste) and should be stored separately in isolation after disinfection. The waste once accumulated should be disposed of via EPA, a certified contractor for Incineration.
- xxiii. In case of any worker/staff member develops the symptoms of COVID-19 he should be referred to the nearest Government facility for the testing.
- xxiv. In case if any of the worker develops symptoms of COVID-19 he should be thoroughly explained about WHO's guidelines of "Home Care for Patients with COVID-19 presenting with mild symptoms and management of their contact"
- xxv. HSE Team shall not allow the overage, person with diabetes, lung infection, cancer, or any other team member having chronic health issues.

VI. Communication with Community

The community may be concerned about the presence of non-local workers, or the risks posed to the community by local workers' presence on the project site. The following actions should be considered by ESMP Staff:

- Other forms of communication should be used; posters, pamphlets, the means used should take into account the ability of different members of the community to access them, to make sure that communication reaches these groups.
- Face to face meetings should be avoided or safe distance should be maintained.
- The community should be made aware of the procedure for entry/exit to the site, the training being given to workers, and the procedure that will be followed by the project if a worker becomes sick.
- Community as well workers should be encouraged to use the existing project grievance mechanism to report concerns relating to COVID-19, preparations being made by the project to address COVID-19 related issues, how procedures are being implemented, and concerns about the health of their co-workers and other staff.

VII. Procedures for Team Traveling, Material Transportation & Work on Site:

a) Team Traveling

- i. Before traveling make sure that the latest information on the area where COVID-19 is spreading is readily available, the information may be accessed through www.covid.gov.pk and www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports/.
- ii. Based on the latest information, assess the benefits and risks related to upcoming travel plans and avoid sending a large number of team members on field visits also exclude older employees and those with medical conditions such as diabetes, heart and lung disease to areas where COVID-19 is spreading.
- iii. Make sure all persons traveling to locations reporting COVID-19 are briefed by a qualified professional.
- iv. Employees traveling to sites must have face mask and hand sanitizer of alcohol-based hand rub. This can facilitate regular hand-washing.
- v. Seating arrangement of such vehicles amongst the individuals occupying it shall be such that 3 feet distance is maintained. Individuals occupying such vehicles shall wash hands with soap before entry into site or premises and, subsequently, their hands shall be sanitized.
- vi. All Vehicles must have the minimum possible number of travelers as per the Guideline of Sindh Government. (2 to 3 person/vehicle)

b) Material Transportation

- i. The temperature of the drivers, conductors, loaders, and other staff of the vehicle transporting such materials shall be monitored at entry points along with other indicators of COVID-19 that are flu, cough, and muscular pain, etc. No person(s) associated with such vehicles having any or all symptoms of COVID19 shall be allowed to enter the site or premises.
- ii. The material like steel, wood, and cloth, iron, plastic the COVID-19 for days, therefore, all such raw material shall be properly sanitized and disinfected before entry to site or premises is granted.
- iii. Seating arrangement of such vehicles amongst the individuals occupying it shall be such that 3 feet distance is maintained. Individuals occupying such vehicles shall wash hands with soap before entry into site or premises and, subsequently, their hands shall be sanitized.
- iv. Raw materials, machinery, and any other material required to be processed shall be only allowed to enter the site or premises after the vehicle is completely sanitized and disinfected at the entry point

c) Working on Site

- a. HSE Team should check the COVID parameters of each worker before the start of work and record may be shared on the group by 9:00 am every day.
- b. If any worker **found suspected should not be allowed on-site** for work and after examination exhibits all the symptoms of COVID-19 immediate attention should be given and contact Pak Corno Helpline (03001111166) for further guidance on immediate basis.

- c. Daily toolbox talk should include COVID-19 preventive measures on a regular basis and preventive measures should be made mandatory for the contractors and subcontractors.
- d. All the team members conducting inspections should minimize their time on-site to the barest minimum necessary to ensure compliance with the Specification. **DO NOT LINGER** on-site and return as soon as possible to the colony.
- e. All staff must be sprayed and cleaned on returning to the camp and a wash facility has been set up at the site gate.
- f. The guards may be instructed to enforce these measures. Gloves, masks, shoes and helmet must be left at the gate after spraying.
- g. All the workers working on site, should be provided with protective clothing; coverall, face masks, gloves and hand sanitizers for their regular use.

d) Infected Persons/Team Member Isolation:

- a. At each camp site at least one room should be declared as quarantine quarter, with appropriate facilities.
- b. If an individual after examination exhibits all the symptoms of COVID-19 immediate attention should be given and contact Pak Corno Helpline (03001111166) for further guidance on immediate basis.
- c. Allocate quarantine quarters at camp site and keep the infected person isolated from the remaining staff until the doctor decides return to the wider community.
- d. No healthy person will be allowed to enter or access the quarantine quarter at all times not even after wearing proper PPEs.
- e. Medical doctor handling the infected person for initial first aid; should use following PPEs; medical masks, gown, apron, eye protection goggles or face shield (respirator N95 or FFP2 standard) and boots.
- f. Healthcare wastes produced during the care of COVID-19 patients should be collected safely in designated containers and bags, treated and then safely disposed.

VIII. Training of ESMP Security Staff

- Training of the ESMP staff and security staff will be carried out by the ESMU PMT team and PISSC team.

IX. Monitoring & Reporting Mechanism

Keeping in view the aggressive behavior of pandemic, effective and timely reporting will be the key to success; Environment officer of each sub-project will be the focal person, prepare a report on below format a on daily basis and submit to the PISSC through what sup group already working and PISSC Environment Specialist shall compile and submit the report 10:00 am on daily basis. (10:00 am – 10:00 am- 24hrs)

a) Health Status of Workers

- Contractor shall provide the Status in **Daily/Weekly report** of implementation, which includes following;
 - Total number of staff available on site
 - Number of total patients tested

- Number of patients reported positive
- Number patients reported negative
- Number patients reported quarantine at hospital or home

b) **Status of Personal Protective Equipment and other supplies at each Sub-project site**

- Temperature guns
- Number of Gloves available and used
- Number of Mask available and used
- Availability of Hand sanitizer
- Number of Coverall available and used
- Contractor shall also submit the details of items procured and any actions taken for COVID-19 in each IPC and verified by the PISSC.

X. **Signages / Communication**

All Contractors shall install following signages at prominent locations after translation into Sindhi language. These are given as sample, while more could be developed jointly.

