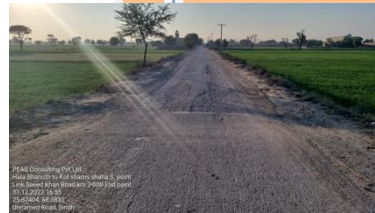




GOVERNMENT OF SINDH

ENVIRONMENTAL & SOCIAL MANAGEMENT PLAN (ESMP) FOR

Rehabilitation of Rain/Flood Affected Roads, District Matiari



Sindh Flood Emergency Rehabilitation Project (SFERP)

PROJECT IMPLEMENTATION UNIT
PIU - SFERP

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This document and its contents have been prepared and intended solely for the information and use of the Government of Sindh, Project Implementation Unit (PIU) concerning the **SINDH FLOOD EMERGENCY REHABILITATION PROJECT (SFERP)**

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LIST OF ABBREVIATION

BOQ	Bill of Quantity
CC	Construction Contractor
Col	Corridor of Impacts
CSC	Construction Supervisory Consultant
DC	Deputy Commissioner
EC	Electrical Conductivity
ECA	Employment of Child Act
EIA	Environmental Impacts Assessment
EPA	Environmental Protection Agency
ESIA	Environmental and Social Impacts Assessment
ESF	Environmental & Social Framework
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
ESS	Environmental and Social Standards
FGDs	Focus Group Discussions
GFP	Grievance Focal Point
GoS	Government of Sindh
GRC	Grievance Redress Committee
GRM	Grievance Redress Mechanism
IBIS	Indus Basin Irrigation System
IEE	Initial Environmental Examination
IPF	Investment Project Financing
IUCN	International Union for Conservation of Nature
NGO	Non-Governmental Organization
OP	Operational Policy
P&DD	Planning and Development Department
PAP	Project Affected Person
PCC	Public Complaint Centre
PC-I	Pakistan Planning Commission Form – 1 Appraisal of Development Project
PD	Project Director
PDMA	Provincial Disaster Management Authority
PEPC	Pakistan Environmental Protection Council
PID	Project Information Document
PIU	Project Implementation Unit
PKR	Pakistani Rupee
POPs	Persistent Organic Pollutants
SEPA	Sindh Environmental Protection Agency
SEQS	Sindh Environmental Quality Standards
SFERP	Sindh Flood Emergency Rehabilitation Project
WB	World Bank
WHO	World Health Organization



1. EXECUTIVE SUMMARY

The monsoon season of 2022 has brought heavy rains causing high river flood in the province. The rainfall in various districts has been recorded up to 900 mm. The River Indus discharge recorded above 0.6 Million cusecs due to heavy downpours in its catchment coupled with local rains. The high flood at Kotri Barrage persisted due to hill torrent emanating from Khirthar Mountains. The two month's rains and River Indus Flood caused heavy losses to human life, livestock, crops, houses, private buildings, Industries, and public infrastructures like roads, irrigation; river protective embankments (Bunds) and drainage networks, and railways.

The Sindh Flood Emergency Rehabilitation Project (SFERP) will restore/rehabilitate rural (farm to market) roads in affected districts, talukas and UCs of rains & flood-affected areas. Raising the profile, adequacy of cross-drainage structures all are the factors considered to address climate and/or flood resilience design. The improvement in pavement structural numbers is an additional benefit.

The present Environmental and Social Management Plan (ESMP) represents the environmental impacts and mitigations of Component- 1: Infrastructure Rehabilitation, Sub-component 1.2: Restoration of three Roads in Matiari District.

According to Sindh Environmental Protection Agency (SEPA): According to Sindh Environmental Protection Agency (Environmental Assessment) Regulations, 2021, the sub-project falls under category schedule II – F. Transport 3. Rehabilitation or rebuilding or reconstruction of existing roads more than one kilometer in urban areas and more than 5 km from rural areas” (only 2 Roads are more than 5 km). Therefore, Initial Environmental Examination (IEE) will be required as per Sindh Environmental Protection Agency (Environmental Assessment) Regulations, 2021 of Sindh Environmental Protection Act, 2014.

Rehabilitation/restoration works are limited to the existing Right of Way (RoW) hence, the proposed project will have some minor adverse environmental impacts that are reversible and site-specific with short duration. Therefore, this sub-project falls under the moderate risk category under the ESMF of the SFERP. The environment and Social Management Plan (ESMP) has been prepared accordingly to meet the moderate level of requirements

Furthermore, the sub-project screening was performed through the checklist covering environmental and social issues. Surveys were conducted to fill individual checklists and a summary of environmental and social concerns noted during surveys. The rehabilitation works of proposed Project are anticipated within defined RoW. No public infrastructure or commercial activities exist within RoW. While the indirect impacts have been evaluated at 200 meters/656 ft buffer zone of the proposed roads (100 meters/328 ft on each side from the center line). Trees will not be uprooted or need relocation due to rehabilitation works because the existing RoW will be used for the proposed rehabilitation works. No archaeological site was observed near (within 500 meters) the sub-project areas and no physical cultural resources at or near the proposed sub-project sites are observed which may likely be affected by construction activities. No graveyard is situated within the construction area. A number of the settlements were observed near the proposed rehabilitation works but outside the RoW. During the



construction phase, a few socially sensitive receptors like mosques, schools, basic health unit graveyards, etc. might be indirectly impacted but this impact is temporary and reversible having a short duration with low significance (by adopting the mitigation measures). No protected forests were observed near the proposed sub-project area. As far as the sub-project area is concerned, none of the endemic or endangered species of both flora and fauna were recorded from sub-project sites.

The proposed sub-project areas lie in eastern Sindh, District Matiari. The sub-project area is falling in Zone 2A, with peak ground acceleration (PGA) varying from 0.08 to 0.16 (Pakistan Building Code of Pakistan, 2007).

Vehicular traffic on dirt roads causes some dust emissions and noise pollution whose effect is fairly localized. The main pollutants emitted by vehicle exhaust pipes are particulate matter, carbon monoxide, sulfur dioxide, and nitrogen oxides. These emissions generally affect the air quality in the vicinity of the roads. However, traffic on the roads in the proposed project intervention's area is low compared to the national highways or other major roads. The surface & ground water, ambient air and noise testing will be done before the start of the construction by the contractor through a SEPA-approved lab with the consent of Construction Supervisory Consultant (CSC).

Mammals found mostly in riverine forests include hog deer, wild boar, fishing cat, jungle cat, small Indian civet, Indian crested porcupine, fox, desert cat, smooth-coated otter, palm squirrel, and rabbits.

Avifauna includes partridges (both gray and black) (*Perdix perdix*, *Melanoperdix niger*) white-cheeked bulbul (*Pycnonotus leucogenys*), little brown dove (*Streptopelia senegalensis*), black-crowned finch lark (*Eremopterix nigriceps*), Persian short-toed lark (*Alaudala cheleensis*), Indian short-toed lark (*Alaudala raytal*), lesser white throat (*Sylvia curruca*), common white throat (*Sylvia communis*), house bunting (*Emberiza striolata*), gray-necked bunting (*Emberiza bucharani*), and crested lark (*Galerida cristata*). In some areas, the houbara bustard (*Chlamydotis undulata*) is seen in the season of its migration from Siberia. Reptiles include monitor (*Varanus*) and spiny-tailed lizards (*Uromastyx*), spotted Indian house gecko (*Hemidactylus parvimaclatus*), ground agama (*Agama aculeata*), saw-scaled viper (*Echis*), Indian cobra (*Indian cobra*), Indian sandy boa (*Eryx johnii*). The proposed project is located in Matiari, which is part of the lower Indus valley. As the climate of the track is arid and subtropical, the original flora of the area consists of tropical thorn forest type vegetation, in which thorny usually hard wooded species predominate with Acacia species being particularly characteristic. However, the natural vegetation has long ago been replaced completely by crops.

In general, flora of the district includes shisham (*Dalbergia sissoo*), kikar (*Acacia prosopis*), mulberry (*Morus alba*), toot (*Morus idevigata*), ber (*Zizyphus jujuba*), dhrek (*Melia azadirachta*), sarin (*Albizia lebbek*), sufeda (*Eucalyptus cameldanesis*), jand (*Prosopis spicigera*), and karil (*Capparis aphylla*). Along canals and other moist places, sar (*Saccharum sara*), kans grass (*Saccharum spontaneum*), pilchi (*Tamarix dioca*) and kundar (*Typha angustata*) are grown. The fodder grasses found in the area are khabbal (*Cynodon dactylon*) and madhana (*Eleusine degyptica*).

Some barren areas of the district are mostly saline and consist of salt tolerant species. The rangelands of the district mostly include lai or salt cedar (*Tamarix dioca*), athel pine, khagal or ghaz (*Tamarix aphylla*), kikar/babul or gum Arabica (*Acacia nilotica*), mesquite or velaiti kikar



(*Prosopis juliflora*), milk weed or aak, (*Calotropis procera*), camel thorn or jawain (*Alhagi maurorum*) and kans grass (*Saccharum spontanium*)

No acquisition of any private land is required for this sub-project. In addition, no demolition of structures will be involved and no one will be required to resettle as sub-project areas are lying in the less populated areas and the population is scattered. However social and environmental impacts may arise only due to the influx of external workforce, unattended residual wastes, and occupational health and safety issues for laborers and the community, therefore ESMP has been prepared. Existing tracks will be used for the transportation of the material, and it is capable of the transportation of material. The negative impact could only be anticipated during the construction phase, which will last for this very small period only. However, mitigation measures recommended in the report would need to be strictly ensured by the contractor during the construction period.

Anticipated negative impacts can be mitigated through proper inspection and maintenance of vehicles and machinery to reduce exhaust emissions, using noise suppressors or mufflers for heavy equipment & watering unpaved roads. Control of adverse impacts from construction debris/ residual wastes by proper handling, and immediate removal. Control of water pollution through proper storage and handling of oil wastes and treatment of wastewater at the active construction site. Control of solid waste through sanitary storage and frequent collection for sanitary disposal.

Occupational health and safety will be ensured through continuous inspection to prevent disease and accidents, awareness raising among labor and community, sanitation measures, COVID-19 management & monitoring and emergency response and rescue procedures, provision of adequate sanitary facilities, potable water, and garbage bins for workers.

Environmental and Social (E&S) monitoring will be carried out as per the Sindh Environmental Protection Act 2014, ESMF of SFERP, Labour Management Procedures prepared for SFERP & Stakeholder Engagement Plan (SEP) to ensure that the mitigation plans are regularly and effectively implemented. It will be carried out at three levels. At the Project Implementation Unit (PIU) level, the environment and social specialists will carry out safeguard monitoring to ensure that the mitigation plans are being effectively implemented, and will conduct field visits regularly. At the field level, the relevant staff of the CSC will carry out more frequent safeguard monitoring. At the third level, Construction Contractor's (CC) E&S team will implement and produce monthly, quarterly and bi-annual reports.

The overall responsibility for implementing the SFERP project as well as the present ESMP rests with the PIU, headed by the Project Director. The PIU is supported by the E&S team. PIU has also engaged CSC, responsible for construction supervision. Appropriate clauses will be included in the construction contracts for this purpose.

A separate budget of Rs 500,000/- has been allocated for the implementation of the ESMP including the Grievance Redress Mechanism (GRM) running & general community support needs. This has been incorporated as a provisional sum item in the ESMP bill and Bill of Quantities (BOQ). The implementation of the ESMP involves inputs from CC, CSC and PIU. The CC will be primarily responsible for ensuring the implementation of mitigation measures proposed in the ESMP, which will be part of the contract documents. Hence, the provision of



environmental mitigation cost as a separate head in BOQs will be made mandatory in contract documents.

However, if the CC fails to comply with the implementation of ESMP and reporting properly, the proponent will enforce compliance with the terms of the contract, including adherence to the ESMP. For the smooth execution of ESMP implementation activities, it has been recommended that all the bills/payments related to EMP implementation will be approved/authenticated by the CSC Env & Social. ESMP implementation cost will be deducted from Interim Payment Certificates (IPC) until compliance has been done.



2. INTRODUCTION

Following the Flood 2022 emergency, the Federal Government of Pakistan requested the global community and development partners for assistance to respond to the flood disaster. Subsequently, the World Bank (WB) task team visited the province and had a series of meetings with the provincial Govt. During the discussions held with the WB Mission, a two-pronged strategy was agreed i.e.

- Restoration/Rehabilitation of Rural (Farm to Market) Roads in affected districts, talukas and UCs.
- Restoration of water supply, drainage and sanitation schemes in affected districts, Talukas and Union Councils.
- To provide immediate financial assistance, cash for work is proposed to rehabilitate small community structures like rural roads, watersheds, watercourse (s) to carry irrigation water to Farm(s), Rehabilitation of village streets and restoration of village sanitation work including removal of stagnant water in villages. The exact number to be arrived at after assessment.
- Expansion of the Emergency Rescue Service (Sindh Emergency Rescue Services-1122) to district. The Provincial Government has already launched Sindh Emergency Rescue 1122 in Six Districts HQs – Karachi, Hyderabad, Mirpurkhas, Shaheed Benazirabad, Sukkur, and Larkana.

2.1 Project Components

The proposed Sindh Flood Emergency Rehabilitation Project – SFERP falls into three main components.

- i. Component--1 Infrastructure Rehabilitation:
- ii. Component--2 Livelihoods Restoration
- iii. Component--3 Institutional Strengthening for Resilience and Technical Assistance
- iv. Component--4 Project Management

2.2 The Proposed Sub–Project

The proposed project under Flood 2022 Emergency Response is a sub-component that will support the rehabilitation and reconstruction of the flood-affected road network to improve accessibility to public facilities and facilitate the socio-economic revival of the worst-affected areas of the province:

Under the Flood 2022 Emergency Response following roads were identified for immediate rehabilitation Location map is given in Figure 1.



Table 1: List of Districts for Roads Rehabilitation under SFERP

Sr. No	Description	No. of Roads
1	Rehabilitation of different roads in District Hyderabad	3
2	Rehabilitation of different roads in District Matiari	3
3	Rehabilitation of different roads in District Tando Allah Yar	3
4	Rehabilitation of different roads in District Shaheed Benazirabad	12
5	Rehabilitation of different roads in District Naushahro Feroze	14
6	Rehabilitation of different roads in District Thatta	16
7	Rehabilitation of different roads in District Sujawal	4
8	Rehabilitation of different roads in District Badin	3
9	Rehabilitation of different roads in District Dadu	6
10	Rehabilitation of different roads in District Jamshoro	16
11	Rehabilitation of different roads in District Tharparkar	2
12	Rehabilitation of different roads in District Mirpurkhas	3
13	Rehabilitation of different roads in District Umerkot	5
14	Rehabilitation of different roads in District Sanghar	8
15	Rehabilitation of different roads in District Sukkur	8
16	Rehabilitation of different roads in District Khairpur	19
17	Rehabilitation of different roads in District Larkana	13
18	Rehabilitation of different roads in District Kamber-Shahdadkot	14
19	Rehabilitation of different roads in District Shikarpur	4
	Total	156

Sub–Project/Sub-Component, Restoration of Roads and Allied Infrastructure

The present Environmental and Social Management Plan (ESMP) represents the environmental impacts and mitigations of Component- 1: Infrastructure Rehabilitation, Sub-component 1.2: Restoration of Roads and Allied Infrastructure:

The proposed project is aimed at reconstruction / rehabilitation of 03 roads of different areas of district Matiari, (Taluka Hala and Taluka Matiari) damaged by the flood with the objective to restore the road connectivity and restoration of livelihood resources of flood affected communities.

2.3 Objective of ESMP

The primary objectives of the ESMP are as follows:

- Identify the social and environmental impacts of the sub-component and related activities.
- Suggest suitable mitigation measures for identified impacts at the planning, designing, and implementation stage of the sub-projects and eliminate or reduce their adverse impacts if any.
- Propose environmental monitoring program to ensure that mitigation measures are implemented during the subprojects execution and timely corrective actions are taken where required, and
- Propose the institutional arrangements required to implement and monitor the EMP.

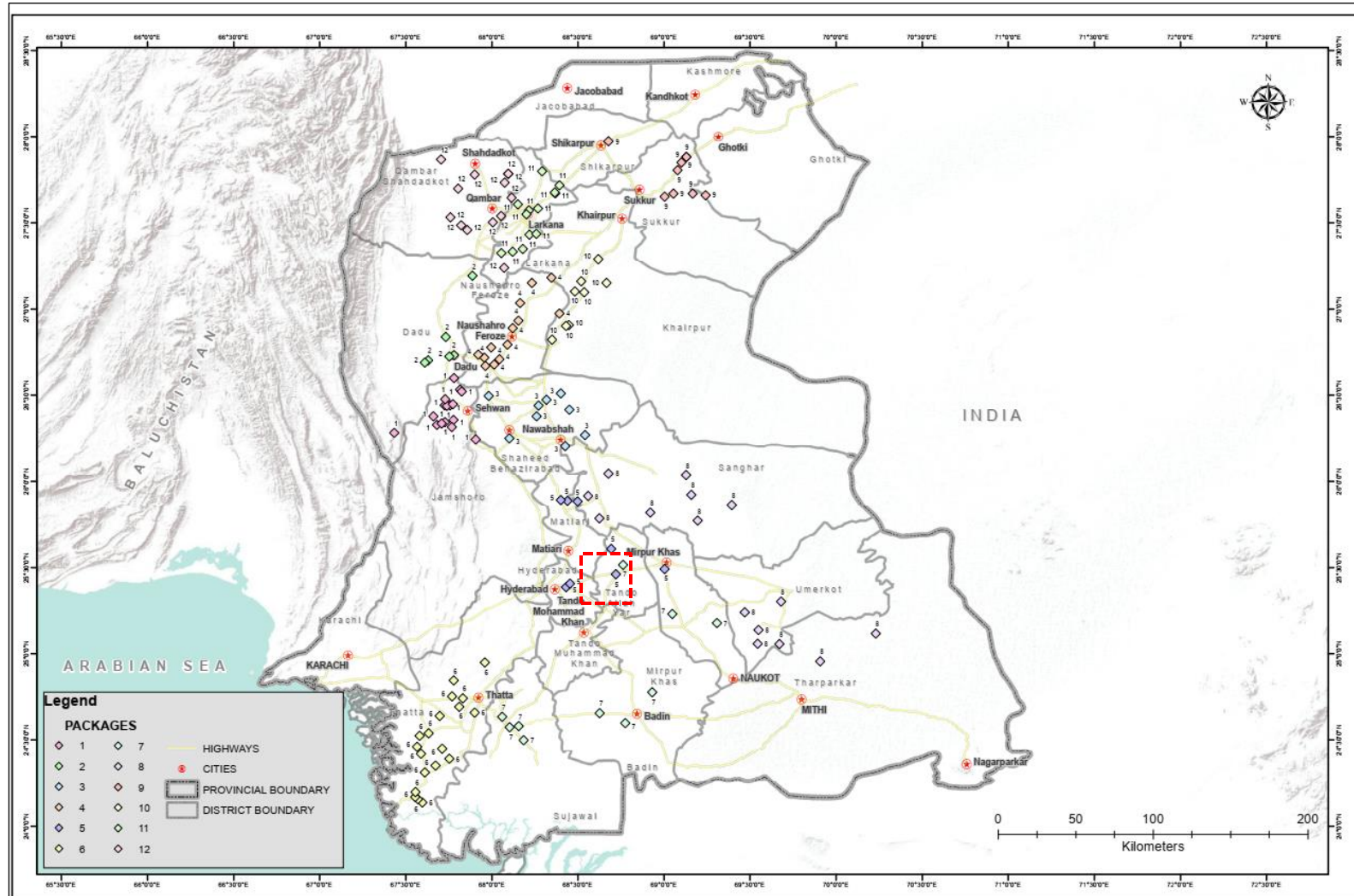


Figure 1: Location Map of Rehabilitation of Roads-SFERP



According to Sindh Environmental Protection Agency (SEPA): According to Sindh Environmental Protection Agency (Environmental Assessment) Regulations, 2021, the sub-project falls under category schedule II – F. Transport 3. Rehabilitation or rebuilding or reconstruction of existing roads more than one kilometer in urban areas and more than 5 km from rural areas. There is only 01 road more than 5 km for which IEE will require to be prepared as per Sindh Environmental Protection Agency (Environmental Assessment) Regulations, 2021.

According to Donor Agency (World Bank): Because of rehabilitation works and due to the existing Right of Way (ROW) will be used hence the proposed project will have some minor adverse environmental impacts that are reversible and site-specific with short duration. Therefore, this sub-project falls under the moderate category under the ESMF of the SFERP. The present ESMP has been prepared accordingly to meet the moderate sub-project requirements.

2.4 Sub-project Screening Procedure

The sub-projects screening was performed through the checklist covering environmental and social issues. Surveys were conducted to fill individual checklists (Annexure – I) and a summary of environmental and social concerns noted during surveys is given below.

- No tree will be uprooted or need relocation due to rehabilitation works because the existing RoW will be used for the proposed construction.
- No archaeological site was observed near (within 500 meters) the project area and no physical cultural resources at or near the proposed sub-project; sites are observed which may likely be affected by construction activities.
- The number of the settlement was observed near the proposed rehabilitation works. None of the infrastructure and commercial activities exist within the RoW. No resettlement is expected due to the rehabilitation of the proposed project's sub-component. During the construction phase, a few socially sensitive receptors might be impacted but this impact is temporary and reversible having a short duration with low significance (by adopting the mitigation measures).
- No protected forests were observed near the proposed sub-project area.
- The contractor will conduct the baseline environmental monitoring before the start of the civil work with the consent of the Environmental Specialist of Construction Supervision Consultant (CSC) and Project Implementation Unit (PIU).

2.5 Project Corridor

The sub-project corridor is delineated according to two criteria: the RoW; which the Works and Services Department, Government of Sindh is legally entitled to, and the Corridor of Impact (CoI), i.e. the width of the corridor that will be impacted, directly or indirectly, by the proposed Project during the construction and operational phases.

2.5.1 Right of Way (RoW)

The proposed sub-project corridor will have a well-defined RoW that will be the existing width of the roads (which is 12 ft as depicted in Table-2) as the proposed sub-project is rehabilitation



or restoration. Major construction works will generally remain confined within the RoW. None of the public infrastructures and commercial activities exist within RoW.

2.5.2 Corridor of Impact

The Col was delineated as the area/extension to which the sub-project has a direct or indirect impact. Direct impacts of project are defined as the relocation of houses, trees, private land, utilities and air & noise pollution impact on workers during construction. All direct impacts are confined to the RoW. Indirect impacts, caused by noise, dust emissions, campsites and borrow sites could be beyond the RoW. The direct Col of the surface water bodies will be confined within the RoW of the proposed sub-project and will be temporary only for the construction period.

For the proposed sub-project no impacts have been envisaged pertaining to relocation of houses, trees, private land, and utilities. The work is done on the existing platform/right of way. No additional land is needed.

The indirect impacts have been evaluated at 200 meters/650 ft buffer zone of the proposed roads (100 meters/328 ft on each side from the center line).



3. DESCRIPTION OF SUB-PROJECTS

3.1 Locations of Sub-Project

The proposed sub-project falls in the District Matiari. The proposed project is aimed at the reconstruction/rehabilitation of the following three (03) roads of the district, damaged by the flood with the objective to restore the road connectivity and restoration of livelihood resources of flood-affected communities.

3.2 Main Activities for Rehabilitation Works

The proposed activities will be confined to the existing road RoW. For this ESMP, potential impacts were considered within a corridor extending some 100 meters on either side of the road center line. Both rehabilitation and reconstruction within the existing carriageway are category B works.

The main activities for the rehabilitation works are as follow:

- Asphalt wearing course shall pertain to "Class-B" gradation as specified in the National Highway Authority (NHA) General Specification of 1998.
- The asphalt concrete wearing layer shall be designed with air voids in the range of 3% to 5%. Air voids greater than this range will result in increased permeability/porosity of the mix.
- For rehabilitation of the existing carriageway, care shall be taken not to scarify/excavate the underlying exposed granular material.
- The Maximum Dry Density (MDD) of Water Bound Macadam (WBM) layer shall be 100%. In the section where the sub-base is provided its density shall be 98% of MDD. WBM and Subbase shall pertain to gradation as specified in NHA General Specifications.
- Cross fall of 2% shall be maintained at Subbase formation, in case of new construction and at base course formation in case of existing carriageway.
- On both sides of the culverts backfilling should be done with Granular Backfill material over which required layers are to be laid. The compacting will be done with the plate compactor.
- Effective Drainage of the road shall be ensured through the proper cross slope of the pavement.
- The material for the Formation of Embankment shall pertain to AASHTO Class A-1-a, A-1-b, A-2-4, with Maximum Dry Density (MDD), California Bearing Ratio (CBR) and Compaction as per NHA General Specifications:
- Zebra crossing and traffic calming measures including additional signage, marking and rumble strips with raised walkways and speed restrictions shall be given near socially sensitive receptors areas.
- Restoration of the campsite and Contractor's demobilization.
- Typical cross sections for roads, culverts and causeways are given in Annexure – II.



3.3 Climate Resilient Measures

Raising the profile, adequacy of cross-drainage structures, provision of protection works (Riprap), increase in the number of culverts and provision of side drains all are the factors considered to address climate and/ or flood resilience design. The improvement in Pavement Structural Number is an additional benefit.

- The design economizes with respect to field condition surveys and the type of roads. The side drain is provided.
- Daylighting of Aggregate Base and/ or sub-base is considered for all types of roads while 0.5 m rounding is also taken for proper daylighting.
- Raising the existing profile with the formation of the embankment is taken to make the design flood resilient.
- The damaged culverts are rectified or replaced while a sufficient number of culverts are provided for proper cross-drainage.
- Vented causeways will also be provided in detailed Design, while their plan cross-sections will also be part of detailed design drawings.
- The flow from culverts and road drainage will be ensured.

Table 2: Details of Three (03) Roads for Rehabilitation at District Matiari

S# No	Name of Road	Location / Taluka	Existing Width (ft)	Length (in Kms)	Tentative Cost (Rs in Million)	GPS Coordinates
1	Reconditioning of road from Hala Bhanoth Rao @ Kot Shamshuddin Shah to Merranpur I/C Link Vanhyal Village, Saeed Khan Laghari & Bhanoth Road	Hala	12	8.20	180.400	25°53'12.32"N 68°26'17.26"E 25°57'58.51"N 68°29'56.58"E
2	Reconditioning of road from kot jandal shah to anjuman-e-asgharia & ameer Ali house to anjuman-e-Hussaini road	Hala	12	3.00	66.000	25°52'58.92"N 68°29'50.12"E 25°54'51.43"N 68°30'18.73"E
3	Reconditioning of road from Gul Muhammad Pahwar Chowk to Nasurpur Road	Matiari	12	4.00	88.000	25°53'32.20"N 68°24'01.75"E 25°54'26.64"N 68°25'48.97"E
	Total Matiari			15.20	334.40	

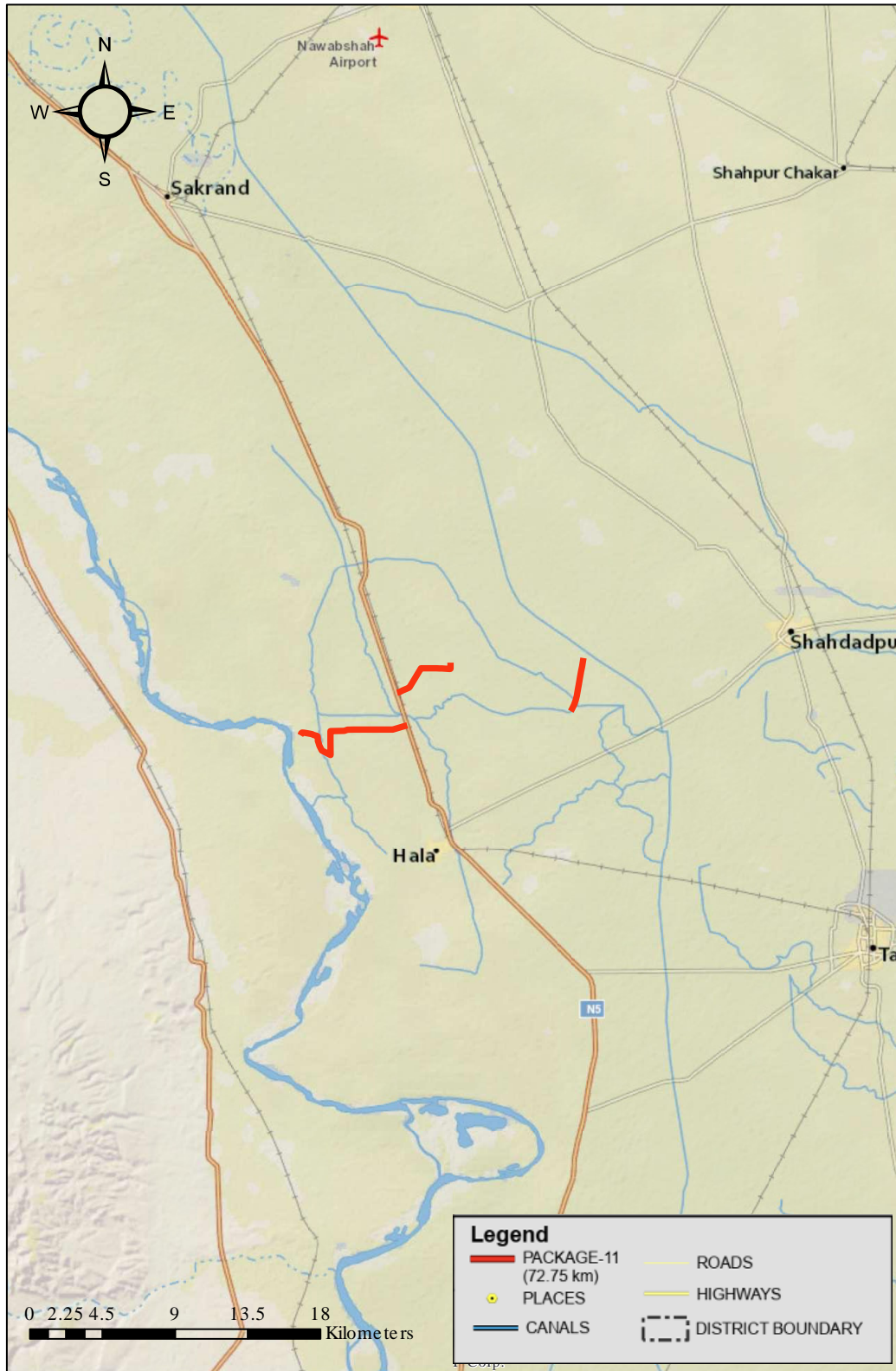


Figure 2: Location Map of Sub-Project - Matiari Roads



3.4 Construction Material

The following construction materials are foreseen to be used in the rehabilitation works includes:

- a) Embankment fill
- b) Granular Subbase
- c) Cement
- d) Fine and coarse aggregates
- e) Asphalt Concrete for Wearing Course
- f) Steel Reinforcement

Natural materials such as coarse aggregate, stones, and coarse filters can be obtained from crush plants of local suppliers. Illegal crushing plants/suppliers cannot do the procurement of these materials. Only purchase by those crush plants/ suppliers having approval from the relevant department of the Sindh Government and this should be part of the contract agreement with the contractor. Existing tracks will be used for the transportation of the material, and it is capable of the transportation of material.

The proposed project roads cross a number of watercourses and minor and major canals. The Contractor will be able to use canal water for general construction purposes with the permission of the Irrigation Department and Sindh Irrigation and Drainage Authority. While the amount of water required is considerable, it should be negligible when compared with the amount available. The water would also be obtained from tube wells installed by the Contractors. The contractor shall be strictly bound not to use the community tube well. The contractor will conduct an Electrical resistivity-surveying test along with a pump-out test to assess the groundwater potential required for the construction activities before the tube wellbore. This condition will be included in the bid document as contractual binding.

3.4.1 Reuse/Recycling of scarified material from The Road Surface.

The material from the scarification removal of the existing road surface is judged by the material engineer as being not suitable for use on the project roads due to its poor quality and the small quantities involved which makes recycling uneconomic. This leaves the following options.

Option 1: Waste material that meets the required specifications will be used as fill when constructing or repairing the shoulders.

Option 2: Waste material can be used to refill borrow pits and covered as topsoil.

Option 3: Scarification materials can be spread on earthen link roads, and compacted with rollers, improving the road surface as well as reducing road dust.

3.5 Contractor's Camps

For the construction of the sub-project, camps will be established on the government land near the subproject area a minimum of 500 m away from settlements. The contractor will prepare



workers' code of conduct plans and Camp layout plans and get them approved by the Resident Engineer and PIU. The camp will be established after the approval of the layout plan.

3.6 Manpower Requirement

The manpower required by the contractor during the execution of the sub-projects will be determined by the contractor and will be depicted in the Site Specific ESMP/Site Specific ESMP (SSEMP), which needs to be approved by the CSC.

During surveys and consultations, the major demand of the community was the provision of jobs during the construction phase. Sufficient labor particularly unskilled is available in the sub-project area.

The contractor will be bound through the contractor's code of conduct and contractual obligations to provide jobs to local people for unskilled labor from the communities. If local unskilled labor is not available in the sub-project area, then contractor can hire from outside the project area. Local operators/drivers will be preferred with valid driving licenses having experience driving vehicles like (trucks, dumpers, dozers, and stone, cement & steel carrier etc.). This process would be initiated with the consultation of elders of different communities in an equitable manner hence there would be no need of setting up a large-scale camp.

3.7 Borrow Material

The fill for the earthwork/embankment can be obtained from borrow areas where suitable soil is available. The Contractors will identify their borrow areas as per their arrangement and get approval from PIU. The contractor will be bound to procure the material from authorized quarries. Before the start of the work, the contractor will get approval.

3.8 Machinery & Equipment

The construction work includes mainly earthworks. These works will require earth-moving types of machinery such as excavators, dumpers, graders and rollers, transit mixtures, etc. The concrete works will involve a medium-sized batching plant and concrete placing equipment. The contractors will directly manage all equipment. The actual number of equipment required on the site will be determined by the contractor to carry out the work.

3.9 Construction Time

The execution works of the sub-project are proposed to be completed in the stipulated time (PIU determined to ensure project completion in 1 year) after the approval of PC-1 and the bidding process according to the procurement plan approved by the World Bank.

3.10 Traffic Studies

3.10.1 General

A survey of the present traffic is to analyze the current state of traffic and use the survey results as the basic data for forecasting traffic demand. In order to forecast the traffic demand, it is deemed necessary to review the recent present state traffic closely. Therefore, the survey has been conducted regarding the traffic volume, road conditions and traffic facilities, etc. The traffic volume has been collected through field surveys in the project areas.



Table 3 Traffic Volume Survey Approach

Contents	Items	Description	Remark
Traffic volume survey	<ul style="list-style-type: none"> By selection, type, the direction of the vehicle 	24hr Survey For a total of 12 vehicle types	By the survey team.
Travel speed survey	<ul style="list-style-type: none"> The average speed of traffic by section and direction. 	<ul style="list-style-type: none"> The survey by actual drive. 	By experts visit.
Reference to Literature Data	<ul style="list-style-type: none"> Socio-economic index 	Socio-economic index of influence, direct/ indirect	Reference to literature data. To be utilized as fundamental data of traffic demand forecast.
	<ul style="list-style-type: none"> Land use plan and environs development plan for the neighboring area 	<ul style="list-style-type: none"> Major geographic features and urban infrastructure Traffic facility installation plan Status of designation of region and zone 	
	<ul style="list-style-type: none"> Installation of traffic facilities and relevant plans 	Master plans associated with the project	

3.10.2 Method of Traffic Volume Survey

- Period: 10 Jan to 13 Jan 2023 for 4 days
- Method: On site traffic volume survey by consultant team
- Location: At Matiari roads
- Duration: 24 hours for project route

Classification of vehicles for traffic survey: Twelve different classes of vehicles have been considered in the current traffic count survey. Details of these vehicles are provided in Table 4.

Table 4 Vehicle Count in Sub-Project Area

Classification	Vehicle Type	Classification	Vehicle Type
1	Motor Cycle	7	Truck (2-axles)
2	Rickshaw	8	Truck (3-axles)
3	Car/Jeep	9	Truck (4-axles)
4	Wagon/Pickup	10	Truck (5-axles)
5	Mini Truck	11	Truck (6-axles)
6	Bus	12	Tractor Trolley

Result of traffic Volume Survey: Total number of vehicles counted at the proposed project location is summarized in Table 5.

Table 5 Traffic Volume Survey Results

Classification	Matiari	Matiari	Matiari	Matiari
Survey Date	10 (Tue) Jan, 2023	11 (Wed) Jan, 2023	12 (Thu) Jan, 2023	13 (Fri) Jan, 2023
Traffic volume	698	750	690	721

3.10.3 Analysis of Traffic Present State

Traffic volume characteristic of Dadu

Monthly adjustment factor: Monthly and daily adjustment factors are used to convert the traffic volume into Average Annual Daily Traffic (AADT). Weekly and monthly adjustment factors have been adopted by National Transport Research Centre. The adopted monthly and daily adjustment factors are provided in Tables 6 and 7 respectively.

Table 6 Monthly Adjustment Factor

Monthly Factor	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	0.9974	1.0935	0.9808	0.9711	1.0165	1.0019	0.9557	0.9943	1.0137	0.9753	1.0113	1.0010

Source: Traffic Factors for Pakistan II, 1990, NTRC (National Transport Research Centre)

Table 7 Weekly Adjustment Factor

Monthly Factor	Mon	Tue	Wed	Thu	Fri	Sat	Sun
	0.9920	0.9928	0.9888	0.9785	1.0101	1.0318	1.0126

Source: Traffic Factors for Pakistan II, 1990, NTRC (National Transport Research Centre)

Conversion into average annual daily traffic volume: AADT (Average annual Daily Traffic) = ADT/ (Monthly Adjustment Factor* Daily Adjustment factor). AADT of various types of vehicles is provided in Table 8.

Table 8: AADT of various types of vehicles

Motor Cycle/ Rikshaw	Cars / Jeep	Bus	Mini Truck	Trucks					Tractor Trolley
				2-Axle	3-Axle	4-Axle	5-Axle	6-Axle	
306	312	6	27	42	6	0	0	0	21

Vehicle Type Composition: The component rate of vehicle types is passenger car (49.54%), pick up (12.49%), motorcycle (15.46%) and truck (7.93%).

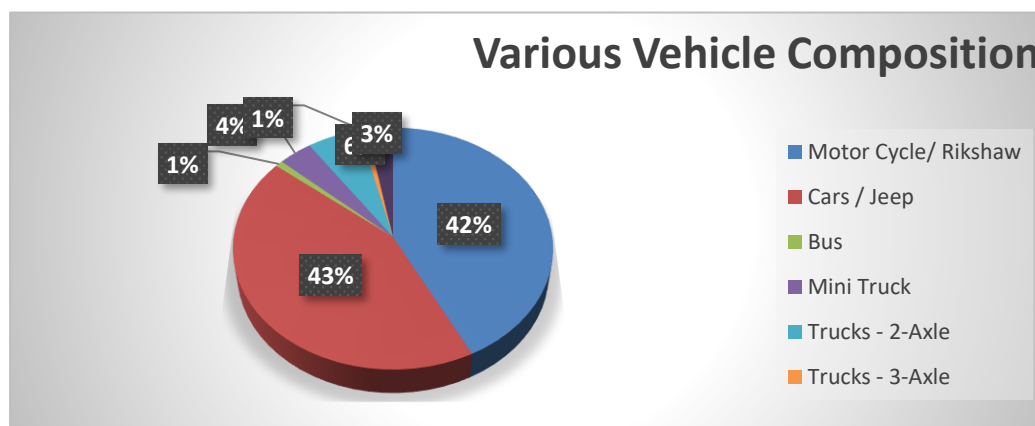


Figure 3: Vehicle Type Composition



4. ENVIRONMENTAL & SOCIAL BASELINE

4.1 Introduction

This section describes the existing environmental and socio-economic conditions of the sub-project area. The environmental and social baseline aims to provide a generic baseline against which the project impacts can be measured. Due to the emergency nature of work, the details have pertained to the important areas according to the rehabilitation works. This Section also identifies sensitive receptors along the ROW of the proposed roads.

4.2 Physical Environment

4.2.1 Geography

The district derives its name from its capital/ headquarters town Matiari. It is located between 68° 14' 8" to 68° 14' 40" East longitudes and 25° 26' 20" to 26° 5' 43" North latitudes. The district is bounded by district Sanghar on the East, district Jamshoro on the West, district Shaheed Benazirabad (Nawabshah) on the North and districts Hyderabad and Tando Allahyar on the South.

4.2.2 Soils

Matiari is located between 0-150 m above mean sea level. The district is mostly an alluvial plain formed by the deposits of River Indus. The Pab Hills and Ganjo Takkar segments of the Kirthar Mountain Range pass near the district. The soil of the area is generally loamy and clayey, and has been formed from Indus River alluvial deposits. The electrical conductivity of soil has an average value of (<one dsm-1). For pH, however, is medium alkaline (pH7.6-8.3). Salinity and waterlogging are common in irrigated areas, particularly near the canal.

4.2.3 Seismicity

The map shown in Figure – 5 indicates that the project area is falling in Zone 2A, with Peak Ground Acceleration (PGA) varying from 0.08 to 0.16 (Pakistan Building Code of Pakistan, 2007). While proposed project area is quite away from Zone 4 which is called the High Damage Risk Zone and covers areas liable to MSK VIII. Moreover, all structure designs will be reviewed by the World Bank expert.

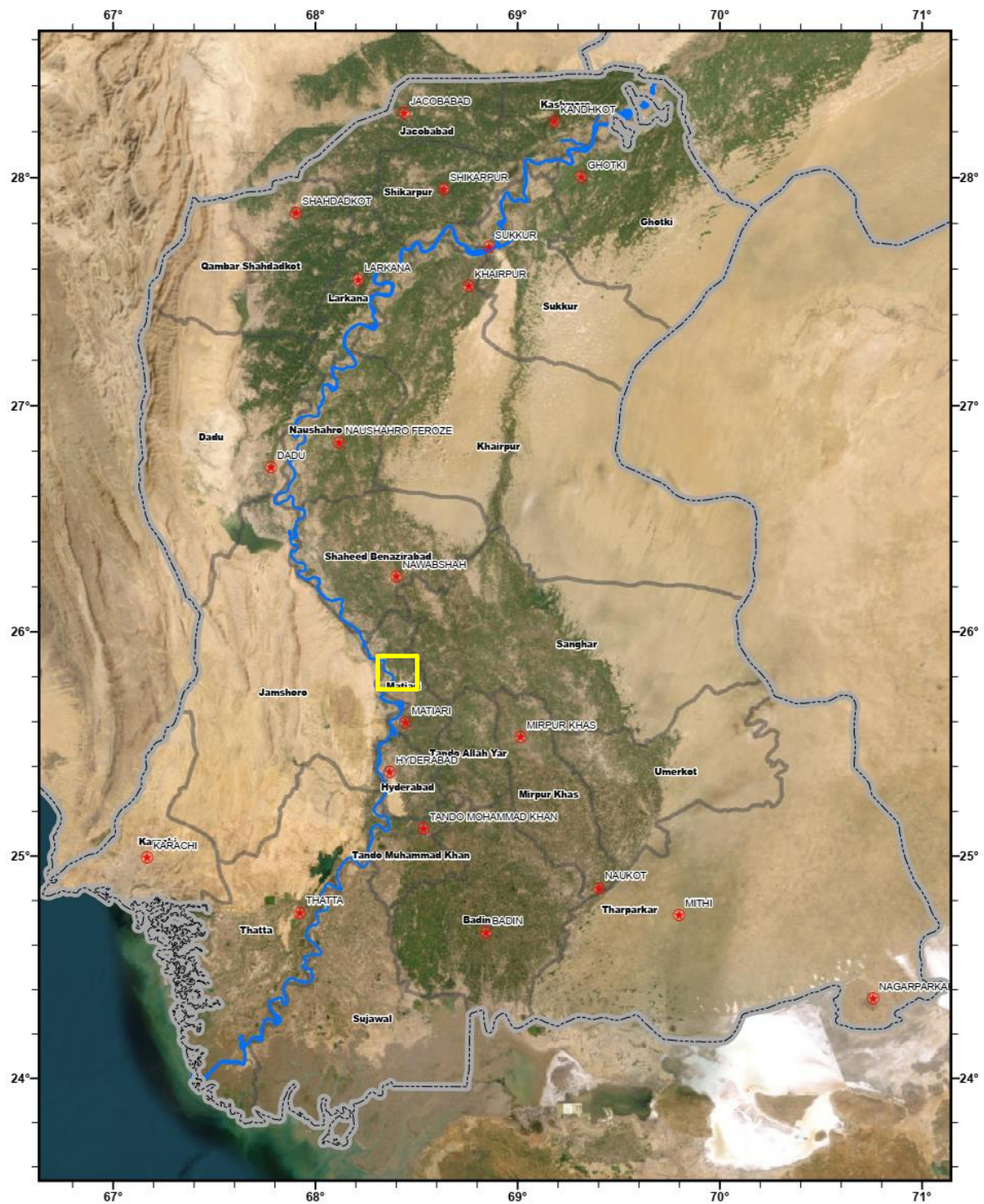
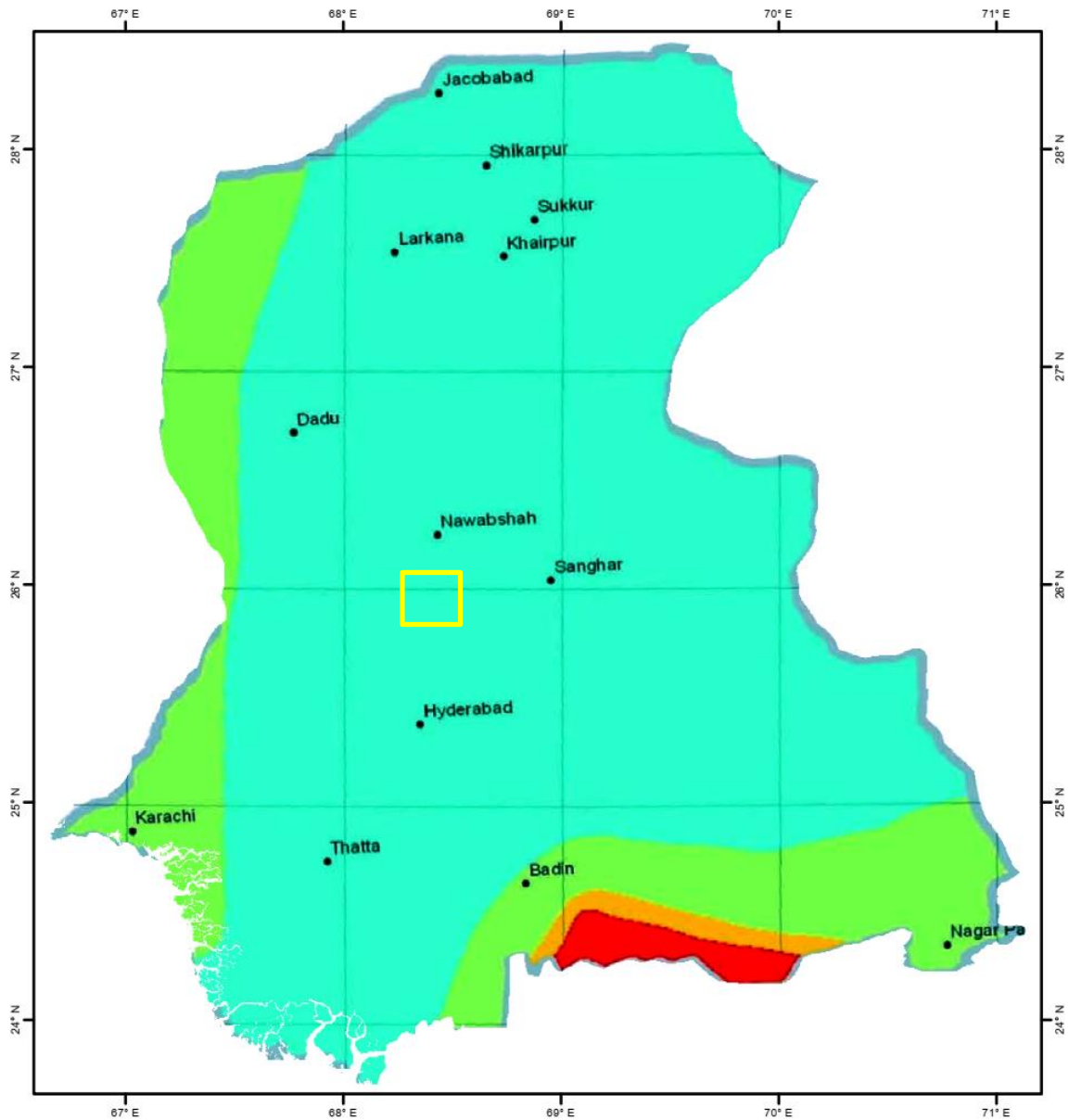


Figure 4: Geographic Map of Sub Project Area



Seismic Zones

- Zone 1
- Zone 2A
- Zone 2B
- Zone 3
- Zone 4
- Cities

Seismic Zone Peak Horizontal Ground Acceleration	
Zoning	Magnitude
1	0.05 to 0.08g
2A	0.08 to 0.16g
2B	0.16 to 0.24g
3	0.24 to 0.32g
4	> 0.32g

0 12.5 25 50 75 100 Km

NOTE: Based on Building Code of Pakistan
Ministry of Housing and Works of
Pakistan - SEIZMIC PROVISION 2007

Figure 5: Seismic Zone Map of the Project Area



4.2.4 Climate

The climate of Matiari district is moderate. The months of May and June are very hot during the day, with maximum and minimum temperatures of 41 °C and 26 °C respectively in June—the hottest month. December and January are the coldest months, with maximum and minimum temperature of 25 °C and 11 °C respectively. Sometimes, cold winds from Balochistan make the winter severe.

Humidity levels vary; highest humidity occurs near the end of August, and the minimum in May, when the air can be uncomfortably dry. Fogs are common in the cold season.

The average annual rainfall is about 155 millimeters, more than 50 percent of which is received during the monsoon period of July and August. Dust storms are common and hot winds blow continuously for about 40 days from May-June each year. District Meteorological Station is located within the catchment area, with precipitation data available from 1968 to 2011. Table 9 shows 24-hour yearly maximum rainfall for Matiari.

Table 9 Maximum and Minimum Temperature for Matiari District

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Rainfall	2.7	2.5	1.4	4.4	2.2	9.0	47.1	84.3	40.5	2.9	3.6	0.2
Maximum Temp	27.5	31.28	38.2	43.9	47.3	45.9	43	40.8	41.2	41.2	34.8	29.2
Minimum Temp	14.5	17.4	23.6	29.4	32.0	32.4	31.9	30.5	29.4	28.1	23.2	17.0

Source: District Profile of Matiari

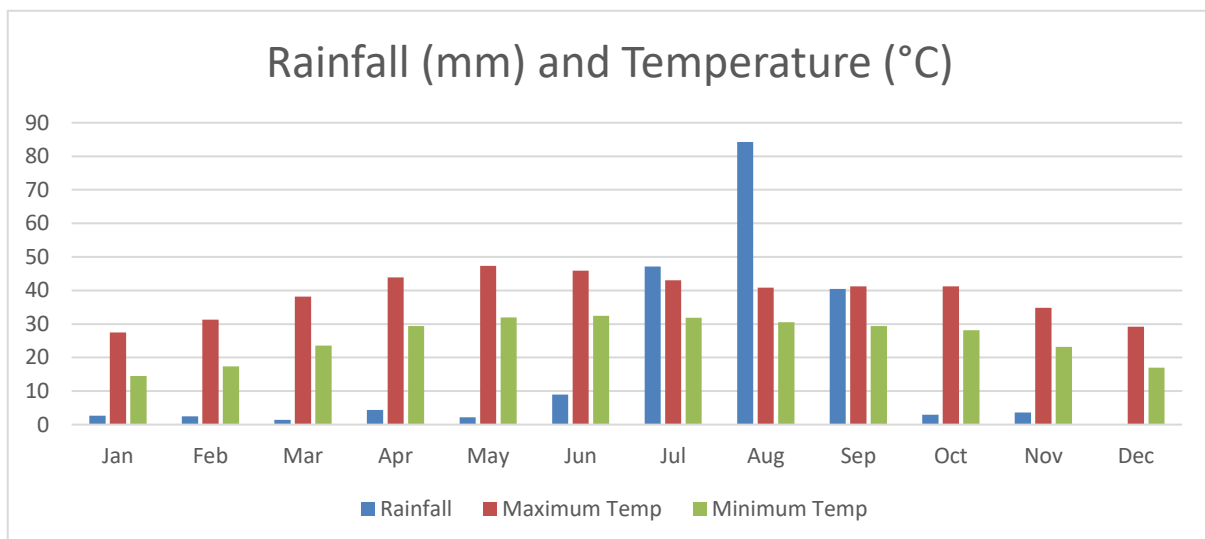


Figure 6: Monthly Average Temperature & Rainfall at District Matiari



4.3 Water Resources

i. Surface Water

Sindh is one of the primary beneficiaries of the Indus Basin Irrigation System (IBIS). It has three major barrages on the Indus River that divert approximately 48 MAF of water annually to the 14 main canal commands in Sindh. These canal systems have an aggregate length of 13,325 miles and serve a gross command area of 14.391 million acres. There are about 42,000 watercourses, which have an aggregate length of about 75,000 miles.

The major surface water body in the district is the River Indus which flows along the western boundary of the district. There are 2 lakes (dhands): Gulsher dhand and Samno dhand. These have been declared as wildlife sanctuaries. Some small natural streams flowing in the district include Obaio Nala, Chhandanr Wah, Takarro Dhora, Karri Nal, Sada Bahar Wah, Baghdad Wah, Takarro Nala, and Bajani Nadi. The district is irrigated by the Indus Basin Irrigation System. The Rohri Canal system, originating from Sukkur Barrage, is the main canal irrigating the district. The Matiari Distributary is the chief canal providing water for agriculture to the district. This canal irrigates the eastern part of the district; the waters from River Indus irrigate the western part

i. Ground water

Groundwater is found to be marginally sweet and is available in ample quantity in areas along the Canal. The water table also varies with the discharge in the canal and the amount of precipitation in the area. In periods of high discharge in the Canal, the water level in areas adjacent to the canal rises so does the water level along the canal. Precipitation being low in the area does not significantly affect the water table. Water quality in areas along and recharged by the Canal is generally sweet and fresh. Water is extracted through hand pumps; the water table in the area varies from 80 ft to 150 ft depending upon the location and elevation of the settlement.

ii. Surface and Groundwater Analysis

Due emergency nature of the works the baseline environmental monitoring will be done by the contractor before the start of the civil works as per the approval of the CSC Environmental Specialist. Sampling from different locations in the sub-project area will be done by third party instrumental environmental laboratory which is certified from SEPA as per Sindh Environmental Quality Standards (SEQS) 2016. The selection of locations for monitoring will be done with due consideration to sensitive receptors

4.3.1 Air Quality & Noise Level

The sub-project areas are located in a sparsely populated rural area with no industrial or commercial activity. Vehicular traffic on dirt roads causes some dust emissions whose effect is fairly localized. However, traffic on the roads in the Sub-project area is low compared to the national highways or other major roads. The ambient air quality tests & Noise levels will also be monitored before the start of the civil work by the contractor after the approval of the CSC's Environmental Specialist..



Rationale for the baseline environmental monitoring has been given in Table 10.

Table 10: Rationale for the Baseline Environmental Monitoring

Sr. No	Monitoring Parameters	No. of samples	Rationale
1	Ambient Air	6	One from the camp area, one each from roads as per SEQS
2	Drinking Water/Ground Water	3	Construction near water body as per SEQS
3	Waste/Surface Water	4	Construction near water body as per SEQS
4	Noise	12	4 from each road/nearby sensitive receptor and as per SEQS

4.4 Biological Environment

The sub-project area falls in a rural locality and has a limited diverse habitat, which supports a few varieties of faunal and floral species. Common animal habitats are mountains, deserts, and wetlands. The following broad categories have been identified for this report focusing on the sub-project areas.

4.4.1 Fauna of the Sub-Project Area

Mammals found mostly in riverine forests include hog deer (*Axis porcinus*), wild boar (*Sus scrofa*), fishing cat (*Prionailurus viverrinus*), jungle cat (*Felis chaus*), small Indian civet (*Viverricula indica*), Indian crested porcupine (*Hystrix indica*), fox (*Vulpes vulpes*), desert cat (*Felis margarita*), smooth-coated otter (*Lutrogale perspicillata*), palm squirrel (*Funambulus*), and rabbits (*Oryctolagus cuniculus*).

Avifauna includes partridges (both gray and black) (*Perdix perdix*, *Melanoperdix niger*) white-cheeked bulbul (*Pycnonotus leucogenys*), little brown dove (*Streptopelia senegalensis*), black-crowned finch lark (*Eremopterix nigriceps*), Persian short-toed lark (*Alaudala cheleensis*), Indian short-toed lark (*Alaudala raytal*), lesser white throat (*Sylvia curruca*), common white throat (*Sylvia communis*), house bunting (*Emberiza striolata*), gray-necked bunting (*Emberiza bucharani*), and crested lark (*Galerida cristata*). In some areas, the houbara bustard (*Chlamydotis undulata*) is seen in the season of its migration from Siberia.

Reptiles include monitor (*Varanus*) and spiny-tailed lizards (*Uromastyx*), spotted Indian house gecko (*Hemidactylus parvimaclatus*), ground agama (*Agama aculeata*), saw-scaled viper (*Echis*), Indian cobra (*Indian cobra*), Indian sandy boa (*Eryx johnii*).

4.4.2 Flora of Sub-Project Area

The proposed project is located in Matiari, which is part of the lower Indus valley. As the climate of the track is arid and subtropical, the original flora of the area consists of tropical thorn forest type vegetation, in which thorny usually hard wooded species predominate with Acacia species being particularly characteristic. However, the natural vegetation has long ago been replaced completely by crops.

In general, flora of the district includes shisham (*Dalbergia sissoo*), kikar (*Acacia prosopis*), mulberry (*Morus alba*), toot (*Morus idevigata*), ber (*Zizyphus jujuba*), dhrek (*Melia azadirachta*), sarin (*Albizzia lebbek*), sufeda (*Eucalyptus cameldanesis*), jand (*Prosopis*

spicigera), and karil (*Capparis aphylla*). Along canals and other moist places, sar (*Saccharum sara*), kans grass (*Saccharum spontaneum*), pilchi (*Tamarix dioica*) and kundar (*Typha angustata*) are grown. The fodder grasses found in the area are khabbal (*Cynodon dactylon*) and madhana (*Eleusine degyptica*).

Some barren areas of the district are mostly saline and consist of salt tolerant species. The rangelands of the district mostly include lai or salt cedar (*Tamarix dioica*), athel pine, khagal or ghaz (*Tamarix aphylla*), kikar/babul or gum Arabica (*Acacia nilotica*), mesquite or velaiti kikar (*Prosopis juliflora*), milk weed or aak, (*Calotropis procera*), camel thorn or jawain (*Alhagi maurorum*) and kans grass (*Saccharum spontinium*)

Figure 7 Avifauna in the Sub-Project Areas



Little Brown Dove



House Bunting



Grey Partridge



Persian Short-toed Lark



White Cheeked Bulbul



Crested Lark

Figure 8 Fauna in the Sub-Project Area



Hog Deer



Jungle Cat



Procupine



Fishing Cat



Fox



Saw Scaled Viper

Figure 9 Flora in the Sub-Project Area



Ber (*Zizyphus jujuba*)



dhrek (*Melia azadirachta*)



kikar (*Acacia prosopis*)



Mullberry (*Morus Alba*)



4.4.3 Endemic and Endangered Species

There are 2 wetlands/dhands and one forest protected under the Government of Pakistan laws in Matiari district to provide sanctuary to migratory water fowl and other flora and fauna. These are:

- Gulsher Dhand; Matiari district
- Samno Dhand; Matiari district
- Hala Forest Game Reserve; Matiari district

As far as the sub-project area is concerned, none of the endemic or endangered species of both flora and fauna were recorded from sub-project sites. No protected forests were observed near the proposed sub-project area (refer to Figure – 10)

4.5 Socially Sensitive Receptors along the RoW

In order to identify potentially sensitive community structures, a survey of the Project impact area was undertaken. Structures were identified through direct observation and by interviewing those living within the sub-project area. Most of the structures were located near towns and settlements in rural areas.

Mosques, shrines and graveyards are of historical, cultural and religious importance for the people. By applying a careful design strategy all potential impacts were avoided. However, care will need to be taken during construction activity.

Table 11 Socially Sensitive Receptors along the Proposed Roads of District Matiari

Sr. No	Name of Road	Existing Width/ ROW (ft)	Proposed length for rehabilitation/ restoration (in Kms)	Socially Sensitive receptor *	Distance (m) from the center line**	Side of Road (North /South)
1	Reconditioning of road from Hala Bhanoth Rao @ Kot Shamshuddin Shah to Merranpur I/C Link Vanhyal Village, Saeed Khan Laghari & Bhanoth Road	12'	8.20	School	68	N
				Schhol	4	E
				Hospital	56	N
				Mosque	128	W
				Mosque	32	W
School	90	S-W				
2	Reconditioning of road from kot jandal shah to anjuman-e-asgharia & ameer Ali house to anjuman-e-Hussaini road	12'	3.00	Hospital	32	E
				School	42	W
				School	53	W
3	Reconditioning of road from Gul Muhammad Pahwar Chowk to Nasurpur Road	12'	4.00	College	30	E
				School	54	W
				Mosque	95	W

*Category (Mosque, School, BHU, Hospital, Graveyard, Mazar, Mandir, etc.)

**the indirect impacts on Socially sensitive receptors have been evaluated at 200 meters/650 ft buffer zone of the proposed roads (100 meters/328 ft on each side from the center line).

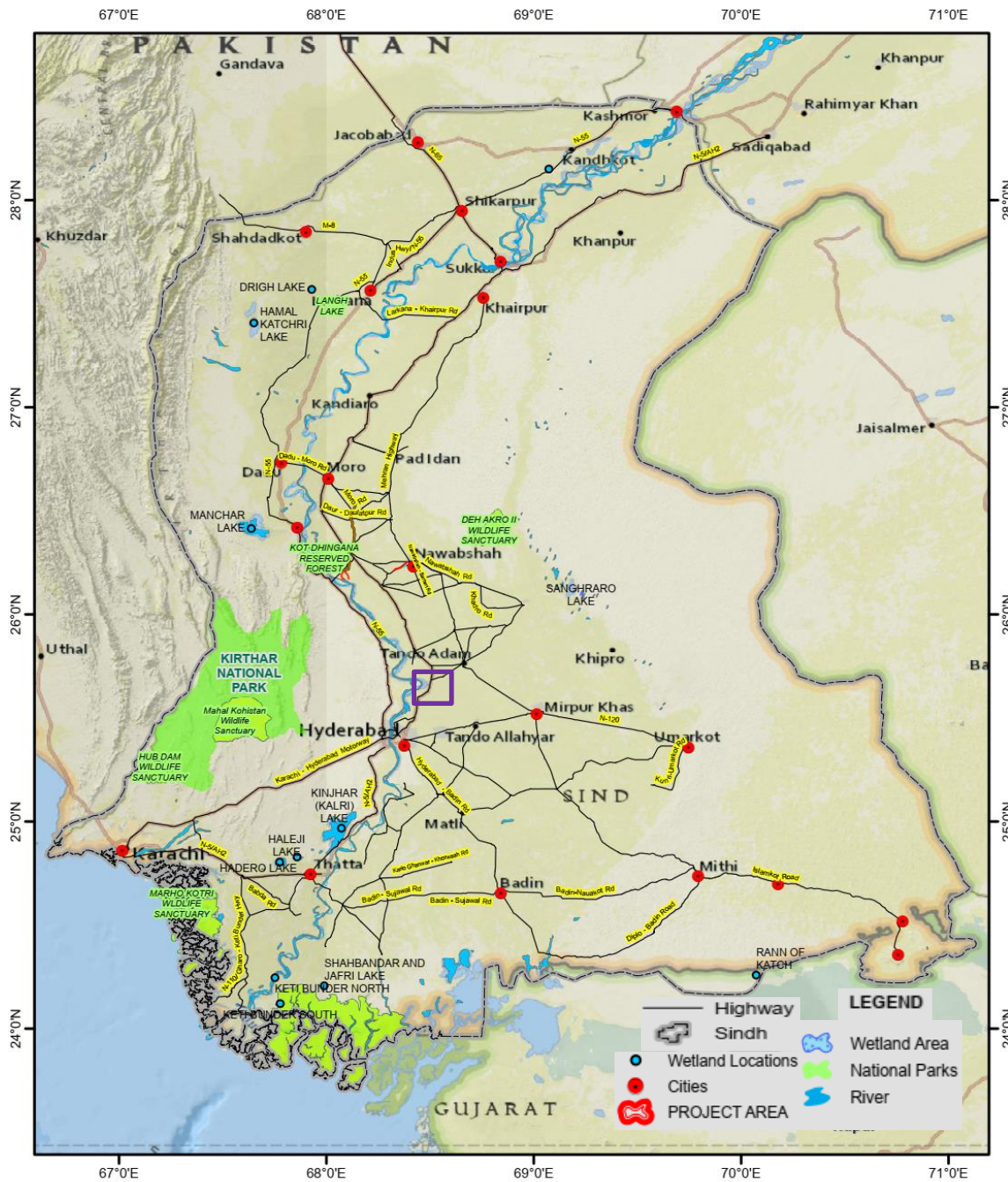


Figure 10: Locations of Protected Area with respect to Sub-Project



4.6 Socio-Economic Environment

4.6.1 Demography

According to the national-level census conducted by the Government of Pakistan in 2017, the total population of Sindh is 47,893,244, Matiari District has a population of 770,00 with an average annual growth rate of 2.35 % from 1998 to 2017. District Matiari, like the majority of the other districts in Sindh, is rural by its characteristics as 76 percent of the population resides in the rural area as compared to the 23.8 percent that resides in the urban areas. and the total population of Matiari District is 1,524,391¹

The sub-project area is located in the Matiari district having Talkuka Matiari, Taluka Hala and Taluka Saeedabad (Table 12²). Most inhabitants are Muslims. The population represents different cast groups including Noohani, Gabol, Shahani, Sahtani, Khaskheli, Bughio and Shahpat. Social harmony is prevalent in the area and people maintain their social relations and participate in each other's social events. The area is deprived of a high poverty line and low literacy rate. The main livelihood of the people is related to rain-fed agriculture and livestock rearing followed by daily wages earners who primarily work as laborers,

Table 12: Population in Matiari District

Factor	Matiari
Area: km ²	1,417
Population (Persons)	769,349 (Taluka Matiari 340,677 Hala 262,423, Saeedabad 166,249)
Male	51.6%
Female	48.4%
Population Density	543.4 persons per km ²
Urban Population	23.8%
Rural Population	76%
Avg Household size	6 people
Literacy ratio 10+	45%:
Male	60%
Female	30%

4.6.2 Population Density of Sub-Project Area's Tehsil

The population density of the Tehsil is given in following Table 13 and depicted in Figure 11 also. The majority of the sub-project area falls in a rural setup as all these roads which are under rehabilitation are farm-to-market roads with short lengths.

¹ Source: <https://pakistanalmanac.com/sindh-matiari/#1633497051692-7046db05-a3ea>

² District-wise Tables - Census 2017 Final Results". *pbs.gov.pk*. Pakistan Bureau of Statistics. 2017.



Table 13: Population Density of Sub-Project Area's Tehsil

Sr. No	Name of Roads	Taluka	Population Density	Rural Population %
1	Reconditioning of road from Hala Bhanoth Rao @ Kot Shamshuddin Shah to Merranpur I/C Link Vanhyal Village, Saeed Khan Laghari & Bhanoth Road	Hala	538.2/Km ²	55
2	Reconditioning of road from kot jandal shah to anjuman-e-asgharia & ameer Ali house to anjuman-e-Hussaini road	Hala		
3	Reconditioning of road from Gul Muhammad Pahwar Chowk to Nasurpur Road	Matiari	600/Km ²	87

4.6.3 Ethnicity & Languages

Area comprising a mixture of residential and commercial setups. A mixture of Hindu and Muslim religions was found, there is tolerance between these settlements who live peacefully and respect each other. Several tribes live around Abro, Jatoi, Brohi, Solangi, Chandio and Bhutto. Most people speak the Sindh language, however, some Baloch and Urdu-speaking populations are also found.

4.6.4 Irrigation Network

The district is irrigated by the Indus Basin Irrigation System. The Rohri Canal system, originating from Sukkur Barrage, is the main canal irrigating the district. The Matiari Distributary is the chief canal providing water for agriculture to the district. This canal irrigates the eastern part of the district; the waters from River Indus irrigate the western part.

4.6.5 Housing

The project area consists of a rural population living comparatively in isolation. The majority of the population lives in small settlements of 30 to 150 houses. Some of the houses usually have a boundary wall enclosing enough space for cattle and storage. The study area consists of various types of housing patterns such as Paka (cemented), Semi-Paka, Kacha (roofs of grasses with mud plaster). It was observed that all the people were living in self-owned houses.

4.6.6 Health Facilities

According to the community, different communicable and non-communicable diseases are prevalent in the subproject area. These diseases include typhoid, malaria, eye problems, diarrhea and other ailments. Due to long distances to health facilities in main cities, women with complications die during the delivery cases. In the sub-project area, there is a lack of health facilities like Basic Health Units (BHU) dispensaries, midwifery centers and medical stores in the immediate vicinity. The seriously ill patients are taken to Hyderabad.

4.6.7 Occupations, Sources of Livelihood and Income Levels

Within the study area of sub-projects, canal-irrigated & rain-fed agriculture, as well as livestock are the main sources of income for the people. Major crops of the area, which is at subsistence level include wheat (40 Maunds/acre) and vegetables.

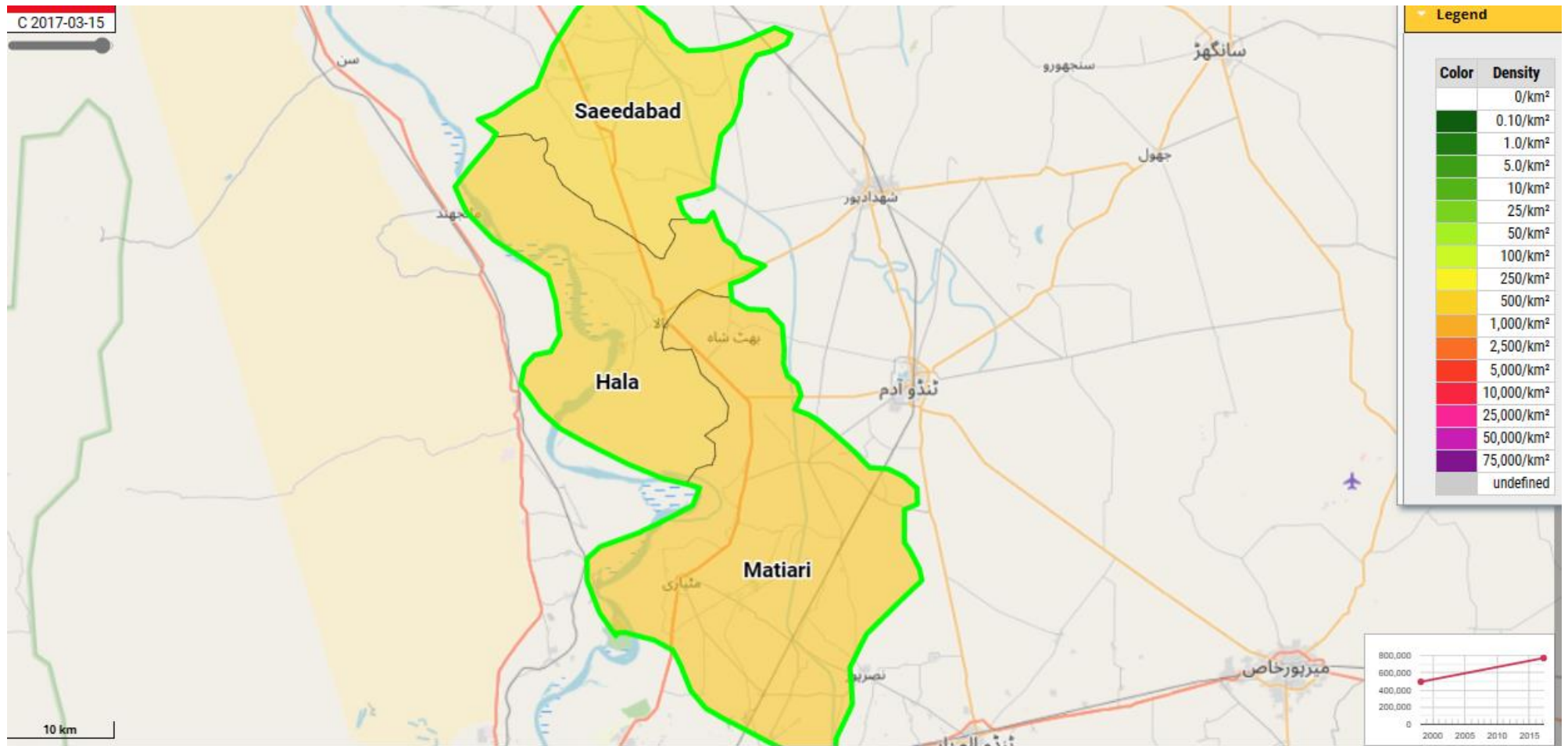


Figure 11: Population Density Map of Sub Project Area



In the absence of alternative livelihoods like industrial-based employment opportunities, people depend on traditional livelihood sources like agriculture and livestock. However, a good number of youth from the subproject area also work in big cities as private sector employees and daily wage labor.

4.7 Social Cohesion and Conflict

Social organization in all settlements is strongly based on the community (tribal and clans) system, where each tribal and clan have a leader. Though the settlements are multi-tribe/clans, there is a single leader of the settlement, which is recognized by all tribes/clans.

The tribe/clan leaders are mostly landlords and politically active. All families belonging to the same tribes have strong interactions with one another but mostly remain separate from other tribes. This extends to marriages, where it is the preference for young tribal members to marry a member of the same tribe

4.8 Conflict Resolution within Tribes and Villages

According to the socio-economic survey, no major conflict was found in the sub-project area. The minor conflicts like disputes related to marriages petty property disputes at village level are settled by the village head and the conflict of similar nature among tribes are resolved by tribal chief. Mainly conflicts were settled at village level. The people accept the mediation and decisions of the village head and tribal chief as village heads and tribal chief are being held in high esteem by the local population.

In rare cases when parties to dispute do not agree on the decision of village head or tribal chief, the matter is taken to police and a court of law. The police and the courts of law are the last resort and this option is rarely exercised.

4.9 Telecommunication

During the field survey, the community reported that access to Mobile phone communication is also good. The sub-project area people use the social media including WhatsApp, Facebook and twitter.

4.10 Energy Sources

The majority of the villages have electricity connections. There is remained high load-shedding in the sub-project areas. Villagers are not satisfied with the electricity supply in the area. The villagers said that they face long load shedding since a decade. Most of houses have installed solar panels in their houses as alternate energy resources. The firewood from the surrounding area is collected for cooking purposes.



5. STAKEHOLDER CONSULTATION AND INFORMATION DISCLOSURE

This section describes the consultations undertaken with the stakeholders in the sub-project areas to explain to them the project components and activities and to seek their views and opinions on the sub-project. The consultations were held with communities/households located in the sub-project interventions who are also the beneficiary of the sub-project. They include households and owners of commercial entities bearing positive and negative impacts of the sub-project. Institutional consultation with the relevant government agencies is also made part of this section, delineating information disclosure of environmental social safeguards measures.

5.1 Need of Consultation

The Environmental and Social Framework (ESF) of the World Bank under Environmental and Social Standard (ESS)-10 requires stakeholder engagement and information disclosure for the project. ESS-10 thrusts on to identifying and engaging the stakeholders, especially the ones affected by the project activities. It advises building and maintaining a constructive relationship in order to increase their interest and support for the project and to provide the stakeholders with enough opportunity to record their concerns so that their apprehensions are satisfactorily addressed.

The ESF necessities that ESMP is prepared through a process of consultation with all concerned stakeholders and publicly disclosed. The process helps to minimize adverse environmental and social impacts and reduces the expected conflicts at the design and implementation stages, minimizes the risk of sub-project delays at the construction stage, and enables making the subproject more economical and socially acceptable. Moreover, public consultations create a sense of ownership among the stakeholders regarding the sub-project and disclosure further ensures transparency in sub-project activities.

5.2 Identification of Stakeholders

There are two types of stakeholders, i.e. project affected parties and other interested parties. Project affected parties are groups of individuals who are affected or likely to be affected by the project. The Other Interested Parties for the sub-project are the representatives of Government Departments/agencies involved in the planning, design, implementation and operation of the sub-project, including various provincial government departments such as City/District Administration, Environment Protection Agency, Revenue Department, Works & Services Department, etc.

5.3 Engagement approach

For the community-level consultations, three days before the consultations, representatives of all the segments of the community were invited to the consultations through communication with local representative. The invitation purpose, date and time of the consultation were shared with the stakeholders.



5.4 Stakeholder Consultation

The social and environmental staff of consultants held consultation meetings with the local community residents of the sub-project area in January 2023.

The field team comprising the Environment and Social Safeguard Consultants visited the nearby communities of the sub-project to get the views of the people of the sub-project, who are going to be affected and beneficiaries. They appreciated the client for taking up the initiative of rehabilitation and restoration of rural roads and allied structures. According to the community, the rehabilitation works would enhance the communication means and transportation which will benefit the sub-project area.

The social and environmental team carried out a public consultation with the households and local people. Participants of public consultation meetings were briefed on salient features of the Environmental and Social Management Plan (ESMP) prepared for the sub-project. The team assured households that all project related concerns raised by them would be addressed. Measures have been made part of ESMP to minimize the impacts during construction. Mitigation measures will be adopted to control noise and air pollution. Participants were apprised that their concerns and suggestions have been incorporated into the ESMP. In case of any complaint/grievance from the households, a well-defined Grievance Redress Mechanism (GRM) is devised in ESMP. Participants were also briefed on the GRM.

Table 14: Details of Community Consultations

Name of Sub Project	Name of Settlement/ Village	Date of Consultation	No. of Participants
Road No 1	Village Bilawali	07-02-2023	11
Road No 2	Mansoorah	06-02-2023	9
Road No 3	Village Ghulam Muhammad Laghari	06-02-2023	21
Total			41

5.5 Consultations with Females of the Sub-Project Areas

During the survey, consultations with women were also conducted by female resource persons in a limited number as local males were discouraged from attending the women in some consultation sessions. Sessions were allowed to be conducted only in 3 sub-project areas. During the meetings, the women were encouraged to ask questions and share their views and concerns related to the project, which were noted accordingly.

They were informed that the successful completion of the sub-projects, will boost the living standard of the inhabitants through enhanced means of communication/traveling. They were happy and told that these sub-projects are most important for their better livelihood and also help them during rainy seasons. They also told that these sub-projects will leave positive impacts on women and their livestock by developing climate-resilient roads and enhanced means of transportation. Moreover, they do not express any concerns regarding these sub-projects.



Table 15: Summary of concerns raised by the community during consultation

Comments /Observations	Action /Response
The Participants informed that most of the rehabilitation work undergoes in rural areas and a number of socially sensitive receptors exist along the roads. Noise become a big issue, that alters the social behavior of the local communities.	All vehicles, equipment and machinery used for construction will be regularly monitored to the emission levels that conform with SEQS. Vehicles and equipment used will be fitted as applicable, with silencers and properly maintained. In rural settlements, construction activities will be restricted to being carried out between 9 a.m. and 5 p.m.
The participants enquired about the timeline of the project and how will it impede the project	The team explained that the timeline of construction, tentatively is 12 months. Detours would be created wherever possible to allow smooth flow of traffic
The participants enquired that how would the closures and detours be communicated to the nearby community	Road closures and detours would be clearly marked on the roadside, before execution of the works, to ensure minimum disruption
Overall the participants appreciated the project and foresee it as a positive sign of development. Participants raised a concern regarding temporary restrictions to access by-passers will occur due to construction activities. They suggested undertaking construction activities at a quicker pace.	The team briefed that the contract will be bound to provide a schedule of work and that will be communicated to local people. The contract will also work in patches to reduce the risk of restrictions on access. Participants were also briefed on GRM regarding the enumeration of any concerns.
What is the scope of the project, and what kind of work will be done to rehabilitate the road (e.g. resurfacing, widening, etc.)	Scope of the project was explained road wise, as each road had different rehabilitation strategy as per design.
The community pointed out that the rainwater accumulated during the 2022 rain floods, affected the area badly as the water remained stagnant for a couple of months. Water drainage should be provided for the drainage of rain/flood water.	The field team briefed that the damaged culverts are rectified or replaced while a sufficient number of culverts are provided for proper cross-drainage. Vented causeways have also been provided. The flow from culverts and road drainage has to be ensured.



On-site Consultations



5.6 Institutional Consultation

The Environment and Social team conducted a consultation with relevant government departments in Matiari in January 2023. The team briefed the officers of government agencies regarding the salient features of the sub-project. It was informed that the “Detailed Design of the Sub-Project, under PIU-SFERP being implemented by the W & S Department and funded by the World Bank. They were informed that the project intends to improve the roads which are affected by rain/flood water. The primary goal of the project is to meet the present and future requirements. It was also briefed that the project will bring positive impacts on the lives of the local population through improved mobility.

Table 16: Details of Consultations with Line Departments

Sr. No	Designation - Department	Representatives of Department
1.	Deputy Commissioner, Matiari	Mr. M. Nawaz Sohu
2.	Assistant Commissioner, Matiari	Mr. Irfan Hussain Khoso
3.	District Police Office, Matiari	Mr. Naeem Ahmed Shaikh
4.	District Education officer, Matiari	Mr. Muhammad Ali Abro

Generally, the officials were of the view, that the construction of the proposed project will have a positive impact on the people living in the sub-project areas. During the meeting, the officials extended their full cooperation for the proposed project and their views were in favor of the project.

Table 17: Summary of Concerns Raised by Institutional Stakeholders

<i>Comments/Observations</i>	<i>Actions Responses</i>
The majority of the stakeholders expressed their positive views related to the rehabilitation of flood-affected roads.	In general, the participants approved of the project and believed that there is a dire need for this kind of project as the recent floods had badly damaged these roads.
Detailed discussions were held regarding the screening of the sub-project according to the Sindh Environmental Protection Agency (Environmental Assessment) Regulations, 2021	As the proposed sub-project is restoration /rehabilitation hence the proposed sub-projects According to Sindh Environmental Protection Agency (Environmental Assessment) Regulations, 2021, the sub-project falls under category schedule II – F. Transport 3. Rehabilitation or rebuilding or reconstruction of existing roads more than one kilometer in urban areas and more than 5 km from rural areas” (only 01 road is more than 5 km). Due to the emergency nature of work and impact will be low and confined during the construction stage hence despite submitting the IEE monthly compliance & effect monitoring will be strictly follow-up. The project will bring all direct and indirect development to the area. The contractor’s staff shall be engaged locally and if workers from outside are



	brought to the project area, then they should respect local customs and traditions.
The stakeholders suggested that the construction of the proposed project would lead to improvement in overall socioeconomic conditions in the sub-project areas.	Noted
The stakeholders suggested that the construction camp must be outside the settlements minimum of 500 away from the fence to avoid social issues	A single camp has been proposed for about 500 meters away from the settlement furthermore camp activities will be kept confined within the boundary area, and activities will not be allowed during Juma prayer and other festive times/days.
The stakeholders suggested that care must be given to protect fauna and flora during the construction phase.	The plantation would be undertaken with the preference of local species no exotic species will be promoted. The fruit plants will be provided to locals to plant in their adobe only.
The Stakeholder suggested that Emergency Preparedness and Response training should be given.	The duration of this training will be 3 days and will be free of cost. The training will guide the labor and staff in emergency preparedness and response to the emergency at construction sites.
The representative of the Agriculture Department stated that irrigation channels must be protected during the construction stage from contaminations. There is a risk of disposal of waste construction material or other waste material in a water channel passing near the subproject area.	The campsite would be confined to the minimum area and away from areas of the water body. Permanent as well as seasonal water channels should be protected from any type of contamination during construction work. Monitoring of the water bodies will strictly comply with SEQS.
The Stakeholder shows their concern regarding the impacts during the construction stage on waste management and land acquisition	Social and environmental teams briefed about the mitigation measures that will adopt to control dust, noise, health and safety issues. There are no issues regarding land acquisition. If the issues occur, then these matters will be dealt with Revenue Department. The contractor shall dispose of the hazardous waste through EPA-certified contractors.

5.7 Information Disclosure

As a disclosure requirement, the environmental and social management framework (ESMF) will be uploaded on the Provincial Disaster Management Authority (PDMA) and project website, while an executive summary of ESMP of the reported sub-projects will be translated into Sindhi after approval from the World Bank will also be uploaded on the website. In addition to this ESMP document will be made available at the campsite/s.



5.8 Future Consultation Plan

The stakeholder consultation is a continuous process and should be carried out throughout the life of the sub-project. The consultations carried out during the present ESMP stage and reported are essentially among the initial steps in this process. During the subsequent project phases as well, the participation of the project stakeholders needs to be ensured as per SEP of SFERP. Supervision Consultants along with PIU staff will ensure time-to-time consultation with locals to get their feedback on project activities and their related complaints.



6. ENVIRONMENTAL & SOCIAL IMPACTS AND MITIGATIONS

The reconnaissance field visit was carried out to assess the social and environmental impacts of the activities to be undertaken for the construction of rehabilitation works. A screening checklist showing rapid assessment of potential environmental and social impacts, mitigation measures and residual impacts after mitigation reveals that the project activities will not cause significant disturbance and inconvenience to the local community and natural environment of the area rather than provide the safe and steady mode of communication by improved roads after the flood. All the impacts that have been identified during the reconnaissance are associated with the construction phase and minor to moderate in severity, and can easily be mitigated through planning or adopting appropriate management measures. The minor impacts can be resolved through the best management practices. Social impacts such as getting borrow pit area, hiring laborers and setting up of labour camp will be mitigated according to applicable policies and procedures.

The social impacts associated with the rehabilitation works will be managed by proper guidance and strict monitoring of subproject activities. The Labourers are expected to be recruited entirely from local areas, which will enhance economic opportunity for them.

6.1 Major Social & Environmental Impacts and Mitigations

It is evident from the screening checklist that the sub-project is very beneficial concerning the adjoining area. As regards the adjoining area, the people of this area will be the main beneficiaries. The following sections give in detail the possible environmental impacts and their mitigations.

During the construction stage of proposed rehabilitation works, the surrounding area will face some undesirable effects. Many impacts are temporary and may occur during construction. Some of them are described below.

6.2 Topsoil Erosion

6.2.1 Description

Excavation will expose bare soils that may erode. This will include sites such as; borrow pits, quarries, road embankments, culverts, bridge abutments and road diversions.

6.2.2 Mitigation Measures for Erosion

Excavation of earth fill will be limited to an appropriate depth of 20cm. Where the use of priority will be given to getting the earth fill material from the licensed contractors, where the use of agricultural land is unavoidable, private land will not be taken until a prior written agreement (with local tradition) and documentation of relevant details of compensation (on prevailing market rates) are signed between the owner/s and relevant authorities. Furthermore, the top 15cm of topsoil will be stripped and stored and then replaced after the removal of borrowed material. Where deep ditching is carried out, the top half-meter layer will be stripped and stockpiled. The ditch will be filled initially with debris/scrap material from old construction and leveled with stockpiled topsoil later. Where ditches and borrow pits cannot be fully



rehabilitated, landowners will be compensated as provided in agreements between the landowner/s and contractor.

The provision for vegetation with a fast-growing crop and a native seed mix immediately after fill placement to prevent scour and encourage stabilization has been made in the design. Use of stone pitching or riprap has also been provided in the design at appropriate places, especially around culverts; Provision for rip-rap in discharge zones from drainage structures has been made in the design to reduce erosion; Side slopes will be adjusted to a gradient necessary to reduce erosion potential or, if steeper, stabilized, covered with riprap or other material to prevent soil erosion.

6.3 Air Pollution

6.3.1 Impacts of Air Pollution

The air-related mitigation is discussed as follows, during the construction phase of the proposed sub-project; some adverse impacts on the environment by suspended dust and noise are foreseen. As ESS3 of ESF 2018, the contractor will comply with the requirements for resource efficiency and pollution management and prevention by preparing a dust abatement plan before the start of the construction activities.

The Batch plant requires cement and dry sand gravel to be fed into a mixing chamber, and the addition of water to make concrete. Considerable fine dust is emitted when bagged cement is loaded manually into the batch plant hopper, as well as with the conveyor system bringing the materials to the plant.

Air quality would be disturbed during the construction stage due to vehicular movement, and the release of particulate matter $PM_{2.5}$ from vehicular emission. Construction activities will generate dust and pollute the surrounding area. The emission from the machinery used in earthwork activities will also degrade the air quality of the site. The exhaust of noxious gases from the movement of heavy machinery will further pollute the air, which will adversely affect the health and vigor of plants. Smoke emissions from vehicular movement and heavy machinery would slightly cause the smoke problem in the nearby villages, which are located near the construction areas.

6.3.2 Air Pollution Mitigation Measures

Dust from the cement work will be avoided by using bulk cement brought to the plants in large tanker trucks and transferred to the plant hoppers via a closed system. Batch plant/s will need to be equipped with dust suppression equipment, now standard on most such facilities, or which can be easily retrofitted.

The air-related mitigation is discussed as follows, during the construction phase of the proposed sub-projects; some adverse impacts on the environment by suspended dust and noise are foreseen. These will be effectively mitigated by adopting the following preventive measures;

- The Contractor will be required to have approval (from The Construction Supervision Consultant) for the dust abatement plan/Pollution Prevention Plan.



- Regular spraying of water should be undertaken to minimize dust pollution. The water would be obtained from tube wells installed by the Contractors or maybe grey water from the camp areas and reuse of wastewater from batching plant.
- All vehicles, machinery, equipment, and generators used during construction activities will be kept in good working condition to minimize exhaust emissions & limit the idling time of construction vehicles to 2 minutes to minimize local air pollution.
- Enforce the maximum speed limit to 10km/h for vehicles to reduce dust emissions.
- Native species trees shall be planted, and no rapidly growing trees, shrubs and grasses in the sub-project area shall be allowed during the operation stage of the sub-project with the collaboration of the Forest department.
- Conduct ambient air quality monitoring as per SEQS periodically as per Environmental Management Plan (EMP).

6.4 Water Pollution

6.4.1 Water Related Impacts

During the construction stage, different types of activities such as cutting, earthwork, and concrete work would alternately result in deteriorating the surface water quality. Canals and water courses crossed the road, and during the rehabilitation works of culverts and bridges can be polluted by the accidental discharge of cement and other chemicals like epoxy and paints.

A secondary adverse impact is the potential spillage of chemicals, hydrocarbons and other pollutants as part of the construction process as well as contamination arising from the improper disposal of wastes (organic and inorganic) at the camp and work sites.

6.4.2 Water-Related Mitigations

Asphalt should not be applied during heavy rain to avoid it being washed into watercourses. The water channels have to be diverted properly, and a protection mechanism should be provided, or construction will be undertaken during the dry season.

A contractor will make his arrangement, would not rely on existing community resources, and would not extract from sources currently used by the community. Moreover, the Contractor must provide the following facilities at each campsite: Latrines; lined washing areas; septic tanks, and soaking pits for toilet waste. Key mitigation measures are listed below.

- There should be proper septic tanks and soaking pits for sewage treatment and disposal, sewage/sanitation at work camps and proper wastewater collection facilities. Wastewater effluent from contractors' will be passed through an oil skimmer and to gravel/sand beds to remove oil/grease contaminants before discharging it into the water body. The Septic tank and soak pit shall be covered properly to avoid any obnoxious smell in the surrounding areas. The soak pit will be built in absorbent soil and located 300m away from a water well. Soak pits will be designed to accommodate wastewater generated during the total operation. Soak pit will be constructed such that surface runoff cannot enter the pits. At the time of restoration, septic tanks will be dismantled in place and backfilled with at least a 1m soil cover keeping in view the landscape of the surrounding natural surface.



- To overcome the drinking water contamination issue, at the construction camp/s, the contractor shall install a solar-operated domestic water filter/150GDP with Ultraviolet (UV) to ensure safe and healthy drinking water for the workforce.
- The contractor shall prepare, and implement a spoils management plan under the supervision of PIU.
- The E & S team of PIU shall carry out regular monitoring of water quality.
- Wastewater from laundry, kitchen washings and showers will be disposed of in separate soak pits.
- Soak pits will be built in absorbent soil and located 250 m away from a surface water source or groundwater well.
- In case the soak pits are filled, greywater will be sprinkled over access tracks. A sprinkling of greywater will be done in a manner such that ponding of water is avoided.
- Water consumption will be monitored during the construction stage and records will be maintained to avoid any wastage.
- Diesel, oil, and lubricants should be properly stored following petroleum regulations. This will be the responsibility of the contractor.
- It has been further, proposed that before the start of the construction, the contractor will establish updated baseline environmental monitoring of air, water & noise including the soil analysis (trace metals such as Cd, Zn, Cu, Cr, Pb and Ni as per WHO standards) for comparison during the construction phase. Permissible limits/standards according to the World Health Organization and the Food, and Agriculture Organization of the United Nations (FAO) indicated for soil, and limits set by SEQS for Air, Water & Noise will be followed as standards for the comparison.
- Appropriate arrangements will be made to stop stones and soil to slip into the river water.
- Avoid stockpiling of earth fill especially during the monsoon season unless covered by tarpaulins or plastic sheets;
- Dispose of any wastes generated by construction activities in designated sites;
- Conduct surface quality inspection according to the Environmental Management Plan (EMP) while adhering to SEQS 2016.
- Community liaison will be maintained and GRM will be established to address complaints related to waste disposal.

6.5 Diversion of Water channels

6.5.1 Impacts due to diversion of water course

Inadequate diversion of canal/water course will affect the water supply to agricultural land of communities living nearby, which may create a social issue. Insufficient diversions/bypasses around bridges and culverts under construction could cause a disturbance to construction activity as well as create a nuisance for the community and project workers.

6.5.2 Mitigations for diversion of water course

The contractor should provide an adequate-sized diversion so that there shall be no disturbance to the water flows of the canal /water course. Schedules for construction activities



along the water body have to be prepared with the consultation of the local community and active GRC needs to operate all the time.

6.6 Noise Pollution

6.6.1 Impacts of Noise Pollution

Construction works will be conducted along the roads in rural/semi-urban areas, where there are houses, schools and hospitals, religious places and small-scale businesses. An increase in noise level may be caused by excavation, particularly the breaking of cement concrete or bitumen roads, the operation of construction equipment like concrete mixers, and vibratory rollers used to compact subgrade materials and the transportation of equipment and materials. Vibration generated from construction activity, for instance from the use of pneumatic drills, will have an impact on near buildings. This impact is negative but short-term and reversible by mitigation measures.

6.6.2 Noise Related Mitigation

Plan the activities in consultation with CSC environmentalists so that activities with the greatest potential to generate noise are conducted during periods of the day, which will result in the least disturbance. Machinery operations close to sensitive receptors area are restricted to daylight hours, and a schedule is agreed to between the contractor and the local communities. Horns should not be used unless it is necessary to warn other road users or animals of the vehicle's approach. The mitigations shall be to limit working hours to between 9 am and 5 pm, six days a week. Noise monitoring will be conducted every month as recommended in ESMP as per SEQS.

In spite of this, the affected communities will also carry out On-demand noise monitoring in case of any complaint or request. The noise level of machines to be used during the construction will be controlled and measured will be taken to limit the levels as per SEQS, as far as possible and the workers will be provided earmuffs, where necessary. Minimize the noise from construction equipment by using vehicle silencers, fitting jackhammers with noise-reducing mufflers, and using portable street barriers to minimize sound impact to surrounding sensitive receptors.

Community liaison will be maintained to ensure that complaints and grievances are addressed as soon as possible. Identify any buildings at risk from vibration damage and avoid any use of pneumatic drills or heavy vehicles in the vicinity. Consult the custodians of important buildings, cultural and tourism authorities and local communities in advance of the work to identify and address key issues, and avoid working at sensitive times, such as religious and cultural festivals.

6.7 Waste Management

6.7.1 Impacts of Waste

As part of the reconstruction process, the asphalt layers of the existing road will be removed, together with base course material that is unsuitable for re-use. There will also be unused construction material (sand, crush), empty drums, concrete waste and waste from work camps.



Proper management of waste is also important because of the risk that improper waste handling and disposal pose to human health and environmental degradation. Careless and indiscriminate open dumping of wastes can create unsightly and unsanitary conditions within the project area.

The total quantity of domestic waste generated will vary depending on the strength of labor that the contractor poses to use. Most of the laborers will be locals who will return to their homes at the end of the working day. A maximum of about 25 % of labour comprising mainly skilled labour will reside at construction camps at the peak of the works.

6.7.2 Mitigation for Waste

The asphalt and base course removed from the existing road will be recycled. It may be re-used in the soft shoulders or as fill for other parts of the new road depending on the quality of the material. It may also be used as a backfill for borrow pits and then over-lain with topsoil. Asphalt can be pulverized, spread on access roads and compacted.

The contractor will identify dumping locations for construction debris and nonhazardous solid waste with respective Taluka Municipal and EPA Sindh.

The contractor shall identify any hazardous waste as part of its health and safety plan and dispose of the material through Sindh EPA-approved waste contractor under section 13 of the Sindh Environment Protection Act 2014.

For solid wastes, the following mitigation measures are recommended:

- No waste will be disposed of in the field. All waste will be disposed of in the waste bins provided within the working area.
- Combustible noncombustible and hazardous waste will be temporarily stored on-site and handed over to approve waste contractors for recycling purposed and safe disposal.
- Encourage staff (through training) to reduce and reuse waste wherever possible.
- Arrange for regular collection of camp waste and transfer to storage area/disposal with the cooperation of local admiration.
- Furthermore, the contractor will draft The Waste Management Plan (WMP) and get approval from PIU. The Contractor shall include details of the procedures for the collection and disposal of wastes. The Plan shall deal with each waste stream separately.
- The wastes generated from the rehabilitation works shall be dispose of through SEPA certified vendor.

6.8 Traffic Management

6.8.1 Traffic diversion and/or road closure.

Rehabilitation of road works significantly impact traffic movement. This should be avoided as far as possible by proper planning of construction works. Excavation along the roads, hauling of construction materials and operation of equipment on-site can cause traffic problems. If traffic diversion and/or road closure is required for the proposed works, prior consent from the department will be required and prior information to affected areas and the public should be



disseminated through consultations by PIU. The potential impact is negative but short-term and reversible by mitigation measures.

6.8.2 Traffic/Access-Related Mitigations

The construction contractor will be required to:

- Plan all works to minimize traffic disturbance/blockades; on all the roads under construction and adjacent connected / linked roads and streets, work planning is crucial to minimize the inconvenience to the public due to the construction works;
 - Prepare and implement a Traffic Management Plan;
 - Locate entry and exit points in areas where there is low potential for traffic congestion;
 - Keep the site free from all unnecessary obstructions;
 - Coordinate with Traffic/Local Police for temporary road diversions and provision of traffic aids if transportation activities cannot be avoided during peak hours;
 - Proper road signage and traffic aids should be provided at the site. Use all necessary safety precautions including signboards, temporary signals, skilled traffic guides, traffic diversions, electric lights, demarcation of construction work lanes/worksites/excavation areas, construction equipment/plant/machinery, separate active/live traffic lane from the active construction work sites,
 - Pro-Actively update the signage well in advance on the basis of planned construction activity.
 - Notify socially sensitive receptors by providing sign boards informing nature and duration of construction works and contact numbers for concerns/complaints.
 - Increase workforce in the areas with predominantly institutions, places of worship, business establishment, hospitals, and schools; consult businesses and institutions regarding operating hours and factoring this into work schedules.
- Outreach to nearby communities informing them of road closures and construction schedules. Conduct an awareness program on the nature of work, likely disturbances and risks and construction work, mitigation measures in place, entry restrictions, and do's and don'ts; and to the communities.

6.9 Biodiversity

6.9.1 Impacts on Biodiversity

ESS6 – Biodiversity Conservation and Sustainable Management of Living Natural Resources. The objectives of this standard are to protect and conserve biodiversity and habitats and avoid adverse impacts on biodiversity and habitats because of project activities. The following mitigation measures will adhere to comply ESS6. No tree cutting has been involved due to existing RoW will be used for rehabilitation work and no rare or endangered aquatic faunal or floral species occurring in the sub-project area. Furthermore, all of the roads are in a rural area so no wild animals or critical habitats will be impacted.

6.9.2 Mitigations for Biodiversity

During the baseline survey of the sub-project area, no endemic or rare species were observed in the primary impact zone as well as the secondary impact zone. All species recorded during the field survey have a wide range of distribution. Since the campsite will occupy small areas



and will be located in existing clearings, the impacts are reversible and localized by adopting mitigation measures. Use of local vegetation as fuel by labor will be prohibited.

No hunting, harassment, or netting of wildlife will be permitted. No clearing of bushes will be allowed during the nesting/breeding season of birds. Maximum effort will be made to save rodent colonies during construction.

The camps will be properly fenced and gated to check the entry of wild animals in search of eatable goods. Similarly, wastes from the camps will be properly disposed of to prevent them from being eaten by wild animals. Staff working on the project should be given clear orders, not to shoot, snare or trap any bird.

6.10 Community & Construction Workers

6.10.1 Impacts on HSE of Community & Construction Workers

During the construction stage of the proposed sub-project, there shall be impacts on the health, safety and hygienic conditions of both the workforce and the local community. The potential impacts on the local communities shall be direct, such as being struck by moving vehicles within and outside the sub-project area and indirect through the decrease in air quality surrounding the sub-project area. The air quality will reduce as a result of increased dust generated from construction and on transport routes, as well as due to emissions from plants and vehicles. The impact will continue for the duration of the works and can be mitigated by using water bowsers. The water will be obtained from the nearby water body. The contractor shall be strictly bound not to use a community tube well to prevent the creation of dust and by keeping plants and vehicles to a high standard through regular servicing to ensure they meet the SEQS.

6.10.2 Health and Safety-Related Mitigations

The following steps are suggested for the proper management of occupational health & Safety within the sub-project area:

- The contractor will have to prepare Site Specific Labour Management Plan/an Occupational Health and Safety Plan according to Sindh Occupational Safety and Health Act 2017 while adhering to the ESS2 – Labor and Working Conditions as well as Labour Management Procedure (LMP) and will submit it to the PIU for review and approval. When approved, the contractor will implement the plan during the construction period. This plan will need to describe all jobs, their risks, and the controls that will reduce risks; these controls may include PPEs, restrictions on activities or locations, and other measures. The plan also needs to describe what type of training will be given to the workers. Those who work near water, at heights, and with heavy equipment will need special training so those hazards can be managed and minimized.
- The contractor will ensure the use of Personal Protective Equipment (PPEs) for his labours during the construction period; OHS Training³.

³ Some of the key areas that may be covered during training as they relate to the primary causes of accidents include (i) slips, trips and falls; (ii) personal protective equipment; (iii) ergonomics, repetitive motion, and manual handling; (iv) workplace transport; and (v) legislation and responsibilities. Training can provide the foundations of competence but it does not necessarily result in a competent worker. Therefore, it is essential to assess staff



- The contractor will train his crews on the aspects covered in the above-described Plan;
- The contractor shall fence the working area and unauthorized shall not be allowed to enter the area;
- The contractor will hire an HSE officer with adequate experience to address the above impacts.
- The Contractor will display signboards and banners about traffic diversion at places on detour routes;
- Provision of speed breakers at appropriate places in consultation with/approval of the Engineer which should be removed after completion of the project;
- Establish and obey speed limits;
- The Contractor will maintain workers' hygienic conditions in labour camps.
- The Contractor shall make available the first aid kit and bandages at all times and all the sites. Moreover, paramedic staff will be available on-site and the cost of hiring will be a part of the BOQ item. The location of these kits shall be marked and shall be easy to access by all.
- No private property without permission of the owner will be used for transportation;
- Drivers will fix the net on containers while transporting stones and sand etc.
- Community liaison will be maintained during the construction stage and GRM will be established to address complaints related to safety hazards.

The contractor will also prepare an emergency response plan to address events such as urban floods, fires, earthquakes, injury/death, and accidents.

6.11 Community Health & Safety

6.11.1 Impacts on the Public due to Project Activities

The potential impacts shall be direct, such as being struck by moving vehicles within and outside the sub-project area and indirect through the decrease in air quality surrounding the sub-project area. The air quality will reduce as a result of increased dust generated from construction and on transport routes, as well as due to emissions from plants and vehicles. The impact will continue for the duration of the work.

6.11.2 Potential Mitigation Measures

- Ensure that the site is restricted from the entry of irrelevant people particularly children;
- Timely public notification on planned construction works;
- Seeking cooperation with local educational facilities (school teachers) for road safety campaigns, especially when/if a school is located in the indirect impact area;
- Provision of proper safety and diversion signage, particularly at socially sensitive receptors areas;
- Setting up speed limits in close consultation with the traffic police; and

competence to ensure that the training provided is relevant and effective. Supervision and monitoring arrangements shall be in place to ensure that training has been effective and the worker is competent at their job. The level of supervision and monitoring required is a management decision that shall be based on the risks associated with the job, the level of competence required, the experience of the individual and whether the worker works as part of a team or is a lone worker.



- During construction work, pedestrian and vehicular passages shall be provided for crossing near the settlement;
- Open trenches and deeply excavated shall be protected by a fence/barricade to avoid any accident.

6.12 Physical/Community Infrastructure

6.12.1 Damage to Physical Infrastructure

The construction works can potentially damage existing infrastructure such as roads, culverts, and electricity lines. Some of this infrastructure may need to be relocated to allow the proposed works to be carried out.

6.12.2 Mitigations to Physical Infrastructure

Currently, no public infrastructures are observed which creates hindrances in the execution of the work. All damaged/removed infrastructures will be repaired/ restored to their original or better condition. Liaison with the community will be maintained and site-based GRM will be established to address any related complaint.

6.13 Cultural Heritage

There is little likelihood of buried archaeological sites as no archeological or cultural heritage has been identified with a minimum of 1000 meters of sub-project area.

6.13.1 Chance Find Strategy

The sites or items of heritage significance could be found in the course of development work. The "chance finds" procedure covers the actions to be taken from the discovery of a heritage site or item to its investigation and assessment for siting and designing a project to avoid significant adverse impacts to the culture the client is responsible for heritage. It would be ensured that any chance to find further is not disturbed until an assessment by competent professionals is made and actions consistent with the requirements of ESS8 – Cultural Heritage. ESS8 recognizes the importance of cultural heritage as a valuable source of scientific and historical information, as an economic and social asset for development, and as an integral part of people's cultural identity. This standard sets out measures to protect cultural heritage throughout the lifecycle of the project

- i. In the case of a chance find, the contractor will secure the site and report immediately to PIU. Works may not recommence until the Engineer approves.
- ii. PIU will intimate to Archeological Department.
- iii. Meanwhile, the contractor will cease their operations and due caution will be ensured for archaeological remains.
- iv. Archeology department to inspect, identify, advise management, and recover remains.
- v. Site visits of the Archeological Department will be facilitated. Further works will be carried out on such sites only after obtaining clearance from the Archeological Department.



6.14 Labour Influx

6.14.1 Impacts of Labor Employed from Outside

Some social impacts could arise due to labor influx. There shall also be a risk to community health from HIV/AIDS/COVID-19 or other transmitted infections as a result of the presence of migrant construction labour. There could be the risk of gender-based violence from migrant labour, which often remains away from home on the site. This may lead to inappropriate behavior including sexual harassment of women, girls and boys in the local community. This could especially be relevant in case the nearby population is from any marginalized group e.g. Hindu community.

6.14.2 Mitigation Labour Influx

A large-scale labor influx is not expected due to the availability of local unskilled labor supply in the subproject area and the scale of works anticipated under the subproject. Except for a limited number of managers, supervisors and skilled workers, the majority of workers may be sourced locally or from nearby areas within the district. The priority for local labor (dependent on skill, and experience capacity) is expected to minimize the risk of labor influx. As part of the mitigation process, the contractors shall locate/ construct camps for their staff at least 500 meters away from communities to avoid social conflict as well as to avoid the possible adverse impacts of the construction camps on the surrounding communities. Fencing will be provided around the campsite and the Contractor will provide security. The camp layout plan and workers' code of conduct will be prepared by the contractor and will be submitted for review and approval by the Engineer.

While the contractor shall also include proposals for awareness of HIV/AIDS/COVID-19 and the spread of sexually transmitted diseases in the Contractor's Environmental & Social Management Plan (CESMP) and the training plan. The contractor will train the workers regarding (Gender Based Violence - GBV) and also train workers about sexual harassment, child abuse, and human trafficking for reducing the risk of GBV.

6.15 Gender Base Violence (GBV), Sexual Exploitation & Abuse (SEA)/Sexual Harassment (SH)

6.15.1 Impacts related to GBV/SEA/SH

Although the influx of workers will be minimal as discussed earlier, new workers (outside of their social spheres) may form close social relationships with local communities. This can lead to unacceptable and/or illegal behavior, ranging from unwanted aggressive advances, SEA/SH against women and children.

6.15.2 Mitigations related to GBV/SEA/SH

As part of the mitigation strategy, training/orientation sessions will be conducted to sensitize PIU and the Contractor's staff/workers on the importance of addressing GBV/SEA/SH risks at the project level. The contractor will be required to have a written contract with their workers materially consistent with the objective of ESS2, following the procedures as specified in the World Bank's Procurement Regulations. The workers will be required to sign a Code of Conduct (CoC) prepared by the Contractors and reviewed and approved by PIU.



6.16 Child Labour

6.16.1 Impacts Related to Child Labour

Although the risks of child labor is anticipated on the lower side, there may be instances when Contractors hire persons below the age of 18 years. Children hired at labor sites are susceptible to unfair treatment, exploitation and violence because their hiring may be depicted as a favor to them, and they may be talked into not raising complaints for fear of losing a much needed source of income.

6.16.2 Mitigations Related to Child Labour

Only persons above the age of 18 years will be hired at construction sites, and their age will be confirmed by checking their government-issued Computerized National Identity Card (CNIC) which is only provided to persons above 18 years. Moreover, for child labour in hazardous work, the minimum age is 18 years and above as specified by the Sindh Prohibition of Employment of Children Act 2017. However, if other labor-related risks arise during project implementation, the PIU will develop procedures to prevent other impacts. This will include awareness-raising sessions, which will be conducted regularly in the communities to sensitize on prohibition and the negative impacts of child and forced Labor.

6.17 Human Resource Development

During the construction stage, the local population would get jobs in the form of semi and unskilled labor. The contractor would ensure that unskilled and skilled labour is paid wages as notified by the Government of Sindh. Due to their interaction with skilled labor, their skills would be developed for future development activities of this kind.\

6.18 Road safety Risks and Mitigations

The increased vehicular movement and speed may result in road safety issues like traffic accidents. The impacts on road safety would be permanent and moderately negative. They will be mitigated by enforcing speed limits and imposing penalties on traffic violators. Traffic signs will be provided to facilitate road users about speed limits, turns, speed breakers, informative signage for Socially sensitive receptors, etc.

Warning messages will also be displayed at appropriate locations and local language to aware drivers of likely accidents due to overspending. All the median and sharp bends will be reflectorized to facilitate travelers in the nighttime.

Zebra crossing and traffic calming measures including additional signage, marking and rumble strips with raised walkways and speed restrictions shall be given near socially sensitive receptors areas.



7. GRIEVANCE REDRESS MECHANISM (GRM)

7.1 Grievance Redress Mechanism (GRM)

The grievance redress mechanism (GRM) is an institutional arrangement that allows stakeholders to address grievances related to the project through a timely, transparent, and predictable process. A grievance is defined as any formal communication that expresses dissatisfaction about an action or lack of action, about the standard of services, works or policy, deficiency of service, works or policy of the project management and its implementation mechanism. During project execution, different issues and constraints may arise. In this situation, if stakeholders have inadequate means to voice and resolve grievances, they may turn to other venues, which may be cumbersome and lengthy, leading to delays in the project. Alternatively, if their grievances remain unresolved or ignored over time, it may lead to inflexibility, stalemate and delays for the project to meet its sustainable development goals.

The SFERP GRM will be gender-responsive, culturally appropriate, and readily accessible to the stakeholders at no cost and without retribution. It will enable Project Affected Persons (PAPs), local communities, employees, and other affected stakeholders to raise grievances and provide suggestions vis the sub-projects, with the project proponents and contractors, and seek redress when they perceive a negative impact arising from the activities. This mechanism serves as a platform to promptly resolve and address community concerns, reduce risks, and strengthen systems and processes, thereby contributing to positive service delivery. Therefore, the complaints/grievances should be addressed through a well-organized Grievance Redress Mechanism (GRM) covering all activities under the project.

7.2 Objective and Composition of GRM:

The principal objective of GRM is to implement and maintain a procedure for handling the environmental and social concerns of the project stakeholders. This procedure will include a redressal mechanism scaled to the project's identified risks and adverse impacts, focusing on stakeholders. Standard Operating Procedures (SOPs) and informational material will be prepared for the SFERP GRM in Urdu, Sindhi and English and made publicly available as soon as the Project begins implementation and before contractors mobilize to sites.

7.2.1 Specific Objectives:

- i. To systematically process complaints received from the Project Affected Persons (PAPs) and other stakeholders and provide a prompt, transparent and fair response and resolution without reprisals;
- ii. To provide project staff with practical suggestions/feedback that allows them to be more effective, accountable, transparent, and responsive to beneficiaries;
- iii. Increasing stakeholder involvement in the project
- iv. The GRM is expected to address 4 types of complaints: *Compensation*; *Environmental issues* (e.g. noise, pollution, solid waste management, flora/fauna, etc.); *Social issues* (Exclusion, Inclusion); *Gender Based Violence (GBV)*; and *other*.



7.3 GRM structure

The SFERP grievance redressal mechanism (GRM) is established at three levels starting from the site, PIU and Project Steering Committee (PSC). The process at each level is defined as under:

7.3.1 Site level Grievance Redress Cell (GR Cell)

At the site level, a GR cell will be established to enter the PAPs concerns/grievances. The Community Liaison Officer (CLO) appointed by the Contractor will be its Focal Person/Convener and be responsible for registering grievances and maintaining all records. Grievance Focal Points (GFPs) will be nominated by the community at each sub-project site. These will be men and women whom the community can easily approach. Grievances can be received by GFPs or the CLO in writing or by word of mouth, and recorded in the grievance register by the CLO. The Grievance Register contents will be kept updated by the CLO and s/he will share the monthly Grievance Register with the Grievance Redress Committee (GRC) at PIU level, so that the GRC can maintain a consolidated record of all Project sites grievances. The contractor and the project manager are responsible for resolving site level grievances. If a grievance remains unresolved, it will be sent in writing by the project manager of each sub-project to GRC.

The responsibilities of GR Cell shall include the following:

1. Review, consider and resolve grievances site level;
2. Conduct fact-finding pertaining to grievances;
3. Resolve grievances within a period of one week;
4. Undertake analysis of data on grievances and use this to make informed decisions;
5. Maintain confidentiality if complainants wish to remain confidential;
6. Maintain an updated GRM database/ Complaints Log;

During the complaint investigation, the GRC works with the Contractor and the PIC. If mitigation measures are identified in the investigation, the Contractor promptly carries out the mitigation. PIC is responsible for ensuring that the Contractor carries out the measures.

7.3.2 Grievance Focal Points (GFPs)

The GFPs will be men and women from each community who will assist and facilitate the community members in reporting grievances resulting from project activities. The GFPs will be provided training by the PIU/PIC in facilitating grievance redress.

GFPs will be identified by the relevant community in consultation with the Social Safeguard team of PIU (SFERP), PIC and CLO. The GFP would be responsible for making the community aware of the following components:

- Inform people about the GRM and how it works, and their options depending on the types of complaint;
- Types of grievances not acceptable/eligible to the GRM;
- Intake channels at the GRM, e.g., phone numbers, postal and email addresses, and website and information that should be included in a complaint;



- Inform the Complainant of the investigation results and the action taken, and option of appeal to PSC if not satisfied with the outcome;
- Two GFPs (a female and a male) will be selected for each sub-project site.

7.3.3 PIU Level GRM

A Grievance Redress Committee (GRC) has been established at SFERP PIU office which shall resolve the grievances of affected persons/parties received at the PIU level. If a grievance remains unresolved at the PIU level despite making best efforts till the stipulated time of 21 days, it will either be retained for another 21 days with prior agreement of the Project Director and the complainant, or sent to Project Steering Committee (PSC) for resolution, depending on the GRC's assessment on which is the best option to facilitate a resolution.

The GRC will function as a dedicated body that ensures the grievance redress process is effective and efficient. It will comprise Environmental, Social Safeguard and Gender Specialists of PIU, a Representative of the District Commissioner's office, and community/civil society members from sub-project areas. Its Focal Person/Convener will be the Social Safeguards Specialist. Decisions or findings taken in the GRC would be binding upon the contractor.

The PIU will issue public notices to inform the public about the Grievance Redress Mechanism (GRM) sub-project area. The contractor will also display prominent signage containing the contact details of GRC in the Sindhi language. The complainant(s) can lodge their grievances through an email, phone (021-99332368), and fax number (021-99332367) at GRC based at PIU.

These phone and fax numbers and email ID will be managed by GRC based at PIU. The Social Safeguard Specialist will be the designated focal person to receive complaint(s) in writing, through calls, fax and emails. The Social Safeguard Specialist will have resources and facilities to maintain a complaints database which will be digitized and available online, and will communicate with the contractor, Site Engineers, and PIC.

Given that female community members have restricted mobility outside their villages and homes, the female PIU staff (Gender Specialist) will be required to visit the local communities to record grievances. The frequency of visits will depend on the nature and magnitude of activity in an area and the frequency of grievances.

The responsibilities of the GRC at PIU are:

1. The Social Safeguard & Resettlement Specialist shall be the focal person for GRC, which is responsible for logging the complaint and date of receipt onto the complaint database and informing the PIC and the Contractor;
2. The GRC will coordinate with local government to receive project-related complaints made directly to them;
3. The GRC shall review, consider and resolve grievances related to environmental and social issues during implementation received at the PIU level;
4. The GRC, with the PIC, is responsible for investigating the complaint to determine its validity and assess whether the source of the problem is due to project activities and

identifying appropriate corrective measures. If corrective measures are necessary, GRC, through the PIC, will instruct the Contractor to take necessary action;

5. Resolve grievances presented to the GRC within a period of two weeks;
6. Inform the Complainant of the investigation results and the action taken;
7. Undertake analysis of data on grievances and use this to make informed decisions;
8. GRC decisions, if not acceptable to the complainant(s), can be appealed to the PSC;
9. Maintain an updated online GRM database/Complaints Log.

7.3.4 Appeals at the Project Steering Committee (PSC) Level

The PSC will meet on a quarterly basis to hear grievance cases during its regular meetings, and will be convened for special grievance redressal meetings as needed. PSC members and the Secretary will address the grievance with a viable resolution. The below flow chart shows the grievance entry points:

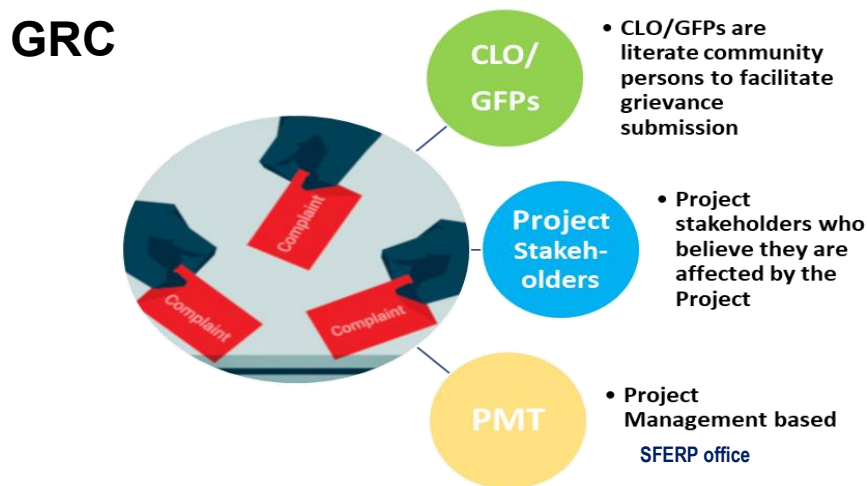


Figure 12: SFERP Grievances Processes

The GRC composition at different levels is given below.

<u>SITE Composition</u>	<u>GRC PIU Composition</u>	<u>PSC Composition</u>
<ul style="list-style-type: none"> - Community Liaison Officer (CLO) - Convener - Grievance Focal Points (GFPs) - Contractor - Project Manager - Co-opted Members 	<ul style="list-style-type: none"> - Additional Director Social Development Specialist - Convener - Environment Specialist - Gender Specialist - PIC Representative (s) - Representative of relevant Deputy Commissioner - Co-opted Members 	<ul style="list-style-type: none"> - Secretary - Project Director - Representative of relevant Deputy Commissioner - E&S Specialists - Gender Specialist - Co-opted Members

Grievance Entry Points for Complaint



7.4 GRM for workers

Community Liaison Officer (CLO) will serve as Grievance Focal Point (GFP) for labor/workers complaints at site level. If the issue is successfully resolved, no further follow-up is required, and the case shall be documented and closed. In case the grievance is unresolved at the site/contractor level, the workers may directly approach GRC about their grievance. The prominent signage containing the contact details of GRC in the Sindhi language will be displayed at each site.

7.5 Grievance Redress Mechanisms for GBV and SEA/SH

Grievance Redress Mechanisms (GRM) will integrate mechanisms to track complaints related to SEA/GBV, including a feedback system for regular and timely feedback on actions taken to respond to complaints. These mechanisms will protect confidentiality of individuals without compromising access to justice.

Grievances related to GBV and SEA/SH will always be escalated to the PIU, and will be dealt with by the PIU designated GBV specialist. GBV/SEA related complaints will be communicated to World Bank no later than 48 hours after being received by the GR Cell (site level) or by the GRC (PIU level).

The GRC/PIU will assist GBV survivors by referring them to GBV Services Provider(s) for support immediately after receiving a complaint directly from a survivor. A list of GBV service providers will already be available with the GRC before project work commences. In general, the timeframe for resolution of complaints shall not exceed 21 days.

Grievances related to GBV and SEA/SH will be forwarded to the staff specifically trained to handle these types of complaints. The Social Specialist (as GRC Focal Person) and the Gender Specialist at the PIU will receive the necessary training to handle such sensitive cases.

The GRC will develop specific procedures to ensure complainants are able to register their grievances anonymously, and in a survivor-centered and discreet manner. The GRC will assist GBV survivors by referring them to GBV Services Provider(s) for support immediately after receiving a complaint directly from a survivor.

7.6 Role of Contractor in GRM Complaints Register

The Contractor will maintain a complaint register at the campsite office to document all complaints received from the local communities. The register will also record the measures taken to mitigate these concerns. The final report regarding complaint closing will be communicated to PIC, the project manager is responsible to provide the record to GRC/PIU. The PIU shall carry out the monitoring of the implementation of measures for the eradication of complaints.

7.7 Reporting and Monitoring

The GR Cell will enter the PAPs concerns/grievances at site level. The PIU gender specialist will be responsible for managing GBV and SEA/SH-related complaints at the project/PIU level. SFERP PIU will develop specific procedures to ensure complainants are able to register their grievances confidentially, and in a discreet manner. GBV/SEA related complaints will be



communicated to World Bank no later than 48 hours after being received by the GR Cell (site level) or by the GRC (PIU level).

The GRC will record the complaint, investigation, and subsequent actions and results in the monthly Environmental Management and Monitoring reports. In the construction and initial operational periods covered by loan covenants, the PIU will periodically report progress to the World Bank, including reporting complaints and their resolution. The tracking and documenting of grievance resolutions within the GRC and or PIU will include the following elements:

- i. tracking forms and procedures for gathering information from project personnel and complainant(s);
- ii. computerized grievance database with dedicated staff to update the database routinely;
- iii. systems with the capacity to analyze information 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 PIU and GRC, reports into the monthly ESMP Compliance monitoring report to the World Bank.
- vi. An annual qualitative review of all complaints processed (ensuring filters such as gender, type of complaint, resolution status, time taken, intake channel, district/site, etc.) will also be undertaken to analyze the efficacy of the system.

The GRM will be provided the necessary budget required for its efficient functioning.



8. ENVIRONMENTAL AND SOCIAL MANAGEMENT AND MONITORING PLAN

8.1 Objectives

The purpose of the ESMP for the rehabilitation works is to ensure that all necessary identified measures have been adopted to protect the environment and social situations and to comply with the country's environmental and social legislation and applicable World Bank standards. After the preparation of ESMF, PIU has outlined site-specific EMP for the Contractors and executing agency.

8.2 Institutional Arrangements

8.2.1 Project Management Responsibilities

Implementation of the ESMP will be a contractual obligation between the Contractor and the PIU, SFERP. 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.

Environmental and Social (E&S) Team – PIU 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.

The overall responsibility for the SFERP project as well as the Environmental and Social Team will rest with the PIU. Besides, the PIU will be supported during ESMP implementation by E&S team to be established within PIU respectively.

8.2.2 Project Implementation Unit

The overall responsibility for the supervision of ESMP will rest with the PIU under SFERP will act as the apex body of the project to take care of Social/Gender, Environmental issues and to take policy decisions at the project level. An E&S Team will be hired which will be comprising of Environment Specialist, Social Safeguard/Resettlement Specialist and Gender Specialist.

The E&S Team shall be responsible for the supervision of implementing and monitoring the ESMMP including GRM. The team shall be answerable to the PD SFERP. The team shall be responsible for the monitoring defined in the ESMP as part of their overall monitoring of social and environmental management.

8.2.3 Construction Supervision Consultant

The Construction Supervision Consultant (CSC) will be engaged by the project proponent, is responsible for monitoring of the ESMP on behalf of the PIUs during the execution of the Civil Works for sub-projects under the SFERP, and shall submit periodic reports. In general, the CSC has the following responsibilities regarding the environmental aspects of the project:

- Review the documents prepared by the Contractor regarding E&S implementation.



- Monitor the implementation of ESMP regularly during the execution of civil works by the Contractor. The CSC must have the following key positions:
 - a) Environmental Specialist
 - b) Social and Resettlement Specialist
 - c) OHS experts

8.2.4 Contractor Responsibilities

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 2014, World Bank ESF 2018, ESMF of SFERP, Stakeholder Engagement Plan (SEP-SFERP) Labour Management Procedures (LMP) for SFERP, , 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. The key positions to be filled within the contractor's staff for implementation of the ESMP include:

Environmental Coordinator(s); Occupational Health and Safety (OHS) Officers; and Community Liaison Officers.

8.3 Environmental Code of Practices

The objective of the preparation of the Environmental Code of Practices (ECOPs) is to address less significant environmental impacts and all general construction-related impacts for the proposed SFERP sub-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 to the general conditions of all the contracts to be carried out under the SFERP project. Detailed E.CoPs can be obtained from the website⁴.

8.4 Contractor's Plans

This ESMP has been prepared before the 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. For example, haulage routes are dependent upon the exact campsite locations chosen by the Contractor. Therefore, it is required that the Contractor shall prepare site-specific plans before mobilization and implement the plans described below with the help of mitigation measures. Once approved by the CSC Environment Specialist & PIU, these documents will become part of SSEMP for the Contract.

8.4.1 Stakeholder Engagement Plan - SFERP

The contractor shall prepare the SEP-specific for the sub-project under the guidelines of SEP or SFERP as well as ESS10 – Stakeholder Engagement and Disclosure. The SEP outlines ways in which the PIU will communicate with stakeholders and includes a mechanism by which people can raise concerns, provide feedback, or make complaints about project activities. The

⁴ <https://documents1.worldbank.org/curated/en/249991468024570005/pdf/E40110V70REVIS00disclosed0100260120.pdf>



plan shall also ensure that appropriate project information on environmental and social risks and impacts is disclosed to stakeholders in a timely, understandable, accessible, and appropriate manner and format.

8.4.2 Labour Management Plan

The contractor shall be prepared and get approval from PIU for the LMP. The LMP will adhere to Labour Management Procedure, which have been approved for SFERP. These procedures have been developed to manage risks under the SFERP funded by World Bank. The LMP will sets out the project's approach consistent with national requirements as well as the objectives of the relevant World Bank's Environmental and Social Standards on Labor and Working Conditions (ESS2).

8.4.3 Camp Management Plan

The contractor camp management shall provide all details of social facilities, including dormitories, washrooms for labor, cooking areas, dining facilities, prayer areas, septic tanks, drinking water, and other necessary facilities.

8.4.4 Corona Virus Management Plan (COVID-19) and Communicable Diseases Prevention Plan

The contractor shall provide the details of prevention measures, and arrangements planned for the Management of COVID-19 and other Communicable diseases. 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 facemasks, soap, hand sanitizers, temperature-monitoring infrared guns, etc. Disposal of COVID-19-related waste plans should also be prepared.

8.4.5 Pollution (air, land, 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 contractor must follow ESS3 – Resource Efficiency and Pollution Prevention and Management while formulating the plan before the start of civil work.

The plan shall include the details of the designated and licensed tip, oil treatment facilities and hazardous waste disposal sites that shall be used to dispose of waste. The plan shall also include Environmental effects monitoring.

8.4.6 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. Waste Management Plan will be prepared and implemented by the Contractor based on ECoPs 1, 2, 4 & 10 and WBG EHS Guidelines (2007), as well as the mitigation plans given in the report. The Plan will include the camp layout, and details of various facilities including supplies, storage, and disposal.

8.4.7 Traffic Management Plan

The basis of the Contractor's Site Specific Traffic Management Plan (TMP) and further information is to be provided. The Contractor is required to provide further details once



camp/worksite 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 borrow pits).

8.4.8 Plan for Handling of Hazardous Materials

The Contractor shall identify control measures to ensure no environmental or health impacts from the handling of hazardous materials and the collection and safe disposal of hazardous materials (this may be included within the Pollution Control Plan).

8.4.9 Occupational Health and Safety

Upon mobilization, the Contractor shall prepare an Occupational Health and Safety Plan following ESS4 – Community Health and Safety & Sindh Occupational Safety and Health act 2017, which shall be relevant to his chosen methodology. 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 risks, 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 the site to medical facilities
- Fire and emergency procedures
- Site security.

8.4.10 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 – 18 given below.

8.4.11 Emergency Response Plan

The contractor will prepare an emergency plan to address emergencies/events such as fire, floods, earthquakes, accidents, and death/injury. The Plan will include the following details:

- Contacting the relevant agency (e.g., Fire Brigade)
- Procedure for the shutdown of the site;
- Indicators on-site that shall prompt the shutdown of areas of work (linked to natural events)
- Emergency evacuation procedure of staff and members of the public within range of likely impact.)



Table 18 Environmental and Social Awareness Training Plan

Areas of Training	Key Aspects to be Covered	Target Group	Frequency	Budget.
Environment, Social Safeguards	<p>a. Environmental and social awareness on ESS;</p> <p>b. Key environmental and social issues associated with the project and subprojects ESMP and findings;</p> <p>c. Subproject monitoring and reporting;</p> <p>d. Occupational Health and Safety Issues associated with Construction.</p> <p>e. Grievance Redress Mechanism implementation</p> <p>f. Gender-Based Violence (GBV)/SEA/SH</p> <p>g. Child Labor</p> <p>h. COVID -19 Management and Monitoring</p> <p>i. Safety measures for COVID-19</p> <p>j. Water conservation and optimal resource use, Awareness regarding open defecation and better WASH practices for relevant community</p> <p>k. Identifications, conservation and precautionary measures of wildlife.</p>	PIU, Contractor staff as well as relevant communities	Before project/physical works commencement, during construction and after construction.	A total of eleven types of training for the proposed sub-project is to be conducted.

8.5 Compliance and Effects Monitoring

PIU shall carry out monitoring within the sub-project area using the monitoring checklists to be prepared based on this mitigation and monitoring plan to aid the monitoring process, the Contractor will complete the following:

- Train construction staff for the implementation of the ESMP and safety measures.
- Submit various progress reports to the Environmental and Social Specialists of PIU.
- Explain the implementation of various environmental aspects to visiting national and international agencies and representatives of the donor.
- Receive monitoring reports/notes issued and take action to mitigate various violations of ESMP.
- Regularly submit Reports to PIU Environment Specialists about compliance with the ESMP and various issues related to the HSE including but not limited to the following:
 - OHS Measures adopted (OHS statistics)
 - Fuel and hazardous material consumption
 - Workforce statistics (employment/deployment etc.)
- Compliance monitoring to check whether the actions proposed in the ESMP are being carried out.
- Effects monitoring to record the impacts of mitigation measures adopted on the biophysical and social environment; as applicable, these effects are repeatedly measured.

E&S team – PIU, will complete compliance monitoring. The effects monitoring shall be the responsibility of CSC. Examples of compliance and effects monitoring parameters are



included in the Box below. Both approaches will be conducted using the monitoring parameters by visual observation, photographic documentation, and measurement where necessary. A record of events and surveys will be maintained.

8.6 Environmental Non-compliances and Corrective Measures

The Contractor will be notified of any violations of the ESMP, as well as any corrective actions required. Outlined below are some steps, relating to the increasing severity of environmental problems, which will be implemented. The principle is to keep as many issues within the first few steps as possible.

Step 1. PIU and Contractor to work out mitigations together and record the facts and the decision implemented.

Step 2. A more serious infringement is observed and PIU 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. PIU 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 PIU may institute against the Contractor.

8.7 Communication Reporting and Documentation

The following environmental meetings are proposed:

- Primary meetings between the E & S team of PIU and the 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 the team PIU and the Contractor shall be done every regular intervals.

The purpose of the meetings is to discuss the conduct of the operation, non-compliances noted by the environmental and social teams and measures recommended for their remedy. The Contractor and PIU will produce monthly, quarterly and work completion reports of the sub-projects based on social and environmental issues. The distribution of the reports shall be to PIU and World Bank.



Box 1

(i) Compliance Monitoring:

- Frequency of anti-dust water sprays during construction period;
- Installation of signage regarding community health and safety
- Safety at workplaces and working hours during construction;
- Incidence of liquid/solid waste in the vicinity of work camps (type and amount of waste, amount, interference with local residents, fauna, flora and crops);
- Plantation of saplings of new trees against trees cut
- Survival rate of saplings of new trees
- Arrangements made at construction sites for protection of floral and faunal resources
- Assurance of installation of signage regarding community health and safety

(ii) Environmental Effects Monitoring

- Ambient air quality (Particulate matter) during construction phase;
- Surface water quality during construction phase especially at diversion sites
- Ground water quality at camp sites;
- Ground water table at construction sites;
- Number of patients suffering from malaria, cholera, diarrhea, respiratory ailments during construction phase
- Noise levels (in dBA), monitored at fixed locations and planned schedule during construction
- Extent and degree of functionality of diversion channels to ensure un-interrupted water supply;

(iii) Social Effects Monitoring

- Number of local people recruited on project works.
- Incidence of child labour and disproportionate wages
- Conflict at community level
- Chance find archaeological site
- Grievance redressal mechanism is in place
- Health screening of labour at site
- Contractor's staff sensitized on Gender base violence (GBV)

A photographic record of the project area shall be kept. The contractor, E&S-PIU will take photographs at key locations using a digital camera of the project area in a walkthrough survey 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.

Complaints Register. The Contractor will maintain a complaint register at the campsite and workplaces to document all complaints received from the local communities. The register will also record the measures taken to mitigate the reported concerns. The final report will be communicated to the E&S team of PIU. All complaints/issues of the community will be reported in the monthly progress report of the following month along with the status of the last month's complaints and will be reviewed by the E&S team of PIU.



Moreover, telephone numbers and addresses of all concerned tiers within the GRM would be displayed in Sindhi and Urdu at all sites, and the same would be distributed in community training/meetings.

Change Record Register. A review of this ESMP will be triggered in two scenarios:

- A change to the designs deviates from the parameters that are safeguarded in this ESMP.
- A discovery in the baseline socio-environmental conditions, which is not recognized or covered by this ESMP.

In the event of either scenario, the ESMP shall be updated and reissued accordingly. The Contractor and PIU to document any change in the project design/operation shall maintain the design change record.

8.8 Environmental and Social Management and Monitoring Cost

The implementation of the ESMP involves inputs from Construction Contractor (CC), CSC and PIU. The CC will be primarily responsible for ensuring the implementation of mitigation measures proposed in the ESMP, which will be part of the contract documents. Hence, the provision of environmental mitigation cost as a separate head in Bill of Quantities (BOQs) will be made mandatory in contract documents.

However, if the CC fails to comply with the implementation of ESMP and reporting properly, the proponent will enforce compliance with the terms of the contract, including adherence to the ESMP and WB operational policies. For the smooth execution of ESMP implementation activities, it has been recommended that all the bills/payments related to EMP implementation will be approved/authenticated by the CSC Env & Social. ESMP implementation cost will be deducted from Interim Payment Certificates (IPC) until compliance has been done.

The cost of Rs. 5,000,000- budget for the implementation of the ESMP has been allocated. The breakup of the cost is given in Table 19.



Table 19: Cost of Environmental & Social Management and Monitoring Cost

Item No.	Item	Standards / Rational	Frequency	Average Rate (Rs./Unit)	Quantity / year	No. Of Units	Quantity	Estimated Amount (Rs.)
A. Baseline Environmental Monitoring Before Start of Civil Works								
1	Surface Water	As per SEQS / Construction near water body	Once before start of Civil Works	15,000	2	3	6	90,000
2	Drinking Water			15,000	2	3	6	90,000
3	Ambient Air from Batching / Asphalt plant area	As per SEQS / One from camp area		20,000	2	3	6	120,000
4	Ambient Noise	As per SEQS / 4 from each road / nearby sensitive receptor		1,000	4	3	12	12,000
Sub Total - A								312,000
B. Environmental Monitoring Cost During Construction Phase (12 months)								
5	Surface Water	SEQS	Once every three months	15,000	2	3	6	90,000
6	Drinking Water	SEQS		15,000	2	3	6	90,000
7	Ambient Air from Batching / Asphalt plant area	SEQS		20,000	2	3	6	120,000
8	Ambient Noise	SEQS		1,000	2	3	6	6,000
9	Machinery Stack + Noise Monitoring	SEQS		10,000	2	3	6	60,000
Sub Total - B								366,000
C. EHS Management								
10	COVID-19 Test for staff and worker for two rounds & Health Hygiene and COVID-19 Management	Personal Protective Equipment	Bi-Annual	4,000	2	50	100	400,000
11	Personal Protective Equipment			5,000	2	50	100	500,000
12	Fire Fighting Equipment Purchase and Refilling						Lumpsum	100,000
13	Soft and Hard Landscaping - Plantation Plan						Lumpsum	150,000
Sub Total - C								1,150,000
D. EHS Administrative Cost								
14	Training / Capacity Building	50 Persons	2,000	2	50	100	200,000	
15	Social Monitoring and General Community support needs (if any)						Lumpsum	92,000
16	Environmental / Biodeversity & OHS officer salaries			120,000	12	2	24	2,880,000
Sub-Total - D								3,172,000
Total of A to D								5,000,000



Table 20: Environmental & Social Management Plan

Sr. No.	Project Activities	Section	Environmental Impacts/Entity	Mitigation Measures	Responsibility		Key Performance Indicators	Monitoring Frequency	Location
					Execution	Monitoring			
A. DESIGN PHASE									
A.1. Design / pre-construction considerations									
A.1.1	pre-construction considerations	A.1.1.1	Slope Instability	Excavated Material Disposal Plan to include siting and detailed assessment of the suitability of the proposed excavated materials disposal site	PIU	SFERP	All excavated surplus materials are to be disposed of in designated sites.	Once at the end of the design stage	SFERP Office
		A.1.1.2	Compliance to ESMP	Consideration of EMP in preparation for the detailed design and bid documents.	PIU	SFERP	Added ESMP in contract documents	Before the tendering	SFERP Office
		A.1.1.3	Baseline Environmental Monitoring	As per the monitoring plan given in ESMP before the start of the civil works as per SEQs	CC	CSC	Compliance to ESMP	Once before the start of the works	Sub-project areas
		A.1.1.4	Geology and seismology	Stone pitching of the degraded reaches	PIU	SFERP	Emergency Preparedness Plan in place before the commencement of construction.	Once at the end of the design stage	SFERP Office
		A.1.1.5	Public Consultations in rural semi-urban areas	Stakeholder Engagement Plan (SEP) has been prepared for the SFERP and will be implemented in the sub-project. Stakeholder consultations will be conducted throughout the project implementation. Full-time CSC Social Expert will be engaged for the proposed project. The CSC Social Expert will exchange rehabilitation work to roadside landowners, the period of access	CC	PIU	Implementation of SEP	Once at the end of the design stage	Sub-project areas



Sr. No.	Project Activities	Section	Environmental Impacts/Entity	Mitigation Measures	Responsibility		Key Performance Indicators	Monitoring Frequency	Location
					Execution	Monitoring			
				restriction, and the measures taken to allow movement around the construction work					
		A.1.1.6	Loss of flora and disturbance of fauna within Col	Tree inventory has been prepared and avoidance of tree cutting to the possible extent is recommended	PIU	SFERP	Tree inventory prepared	Once at the end of the design stage	Same as above
B. CONSTRUCTION PHASE									
B.1. Site Preparation and Clearance									
B.1.1	Site preparation	B.1.1.1	Top Soil Erosion	PIU will prepare earthworks the checklist that defines the contractor, and limits to the excavation during road rehabilitation. Instructions for topsoil management will also be defined, including the removal and storage of all topsoil to be used in landscaping, once the road work is completed. The use of soil from private land will be minimized and only after consultation with and compensation of landowners.	CC	PIU & CSC	Approved Plans and comply with ESS1	During the Planning phase, in parallel with the preparation of bid documents	At any locations where borrow pits, and quarries will be operated.
				Vegetation clearance shall be limited to the area required for work.	CC	PIU & CSC	Written approval for cutting marked trees before cutting	Weekly	Same as above
				use of existing accessing tracks	CC	PIU & CSC	No tree-cutting on temporary haul routes	Weekly	Same as above
B.1.2	Disposal of Excavated Material	B.1.2.1	Identification of re-use of excavated material on site, to reduce off-site effects	All excavated materials are to be disposed of in designated sites as per the approved waste management plan the Plan shall	CC	PIU & CSC	Comply with approved WMP as per ESS1 – Assessment and Management of	Monthly	Same as above



Sr. No.	Project Activities	Section	Environmental Impacts/Entity	Mitigation Measures	Responsibility		Key Performance Indicators	Monitoring Frequency	Location
					Execution	Monitoring			
				deal with each waste stream separately			Environmental and Social Risks and Impacts, ESS3 – Resource Efficiency and Pollution Prevention and Management & ECPs 1, 2, 4 & 10 and WBG EHS Guidelines (2007). Community complaints; Monitoring record		
		B.1.2.2	Community Disturbance	Community liaison will be maintained during the construction stage and GRM will be established to address complaints.	CC	PIU & CSC		Monthly	Same as above
			Noise	Limiting working hours to between 9 am and 5 pm, six days a week. The campsite/s shall be situated at least 500m from any settlement. The affected communities will carry out on-demand noise monitoring in case of any complaint or request. Additional mitigation measures will be identified and implemented in case the noise levels exceed the permissible limits of SEQS. Community liaison will be maintained to ensure that complaints and grievances are addressed as soon as possible.	CC	PIU & CSC		Monthly	Same as above
		B.1.2.3	Damage to existing infrastructure Need to relocate infrastructure such as electricity transmission lines	Currently, no public infrastructure is observed which creates hindrances in the execution of the work. All damaged/removed infrastructures will be repaired/restored to their original or better condition. Community liaison to be maintained.	CC	PIU & CSC		Monthly	Along the alignment
B.2. Construction and Labor Camps									



Sr. No.	Project Activities	Section	Environmental Impacts/Entity	Mitigation Measures	Responsibility		Key Performance Indicators	Monitoring Frequency	Location
					Execution	Monitoring			
B.2.1	Locating Camp	B.2.1.1	Community disturbance	Locate the camp at least 500m away from the communities. Community consultations will be carried out and liaison will be maintained. GRM to be established to address related complaints.	CC	PIU & CSC	Review of Camp layout plan	Once	Campsite
			Loss of flora and fauna	Submit layout plans for the camp for the approval of the Engineer before the construction of the camp	CC	PIU & CSC	Construction of campsite: do not begin before approval of the layout plan. As per ECoP 3:	Once before camp establishment.	Same as above
			Surface water pollution	Locate camps away from the waterbody, canal, watercourses, etc.	CC	PIU & CSC			
B.2.2	Supply of Drinking Water	B.2.2.1	Depletion of local drinking water resources	The contractor shall make his arrangements for the supply of water ensuring water supply and availability to local communities is unaffected.	CC	PIU & CSC	The contractor is not using public water resources	Monthly	Along the alignment
		B.2.2.2	Spread of the disease through the unsuitable water supply	Provision of safe drinking water and monthly testing according to the SEQS-16	CC	PIU & CSC	Comply with SEQS	Monthly	Same as above
B.2.3	Water contaminations	B.2.3.1	Construction of impermeable layer	Suitable latrines (septic tanks etc.) and washing facilities are provided in the camps	CC	PIU & CSC	Latrines are provided at each camp	Once	Construction Camp
				Lined washing facilities including a shower, are available near each latrine, including clean running water, soap and drying facilities.	CC	PIU & CSC	Suitable washing facilities are provided at each camp	Once	Same as above
	Diversion of Water channels/water course	B.2.3.2	Inadequate diversion of canal/water course will affect the water supply to	Schedules for construction activities along the water body have to be prepared with the consultation of the local	CC	PIU & CSC	adequate-sized diversion	Monthly	Along the alignment



Sr. No.	Project Activities	Section	Environmental Impacts/Entity	Mitigation Measures	Responsibility		Key Performance Indicators	Monitoring Frequency	Location
					Execution	Monitoring			
			agricultural land of communities living nearby, which may create a social issue.	community and active GRC needs to operate all the time					
B.2.4	Accidents and Emergencies	B.2.4.1	Emergency Response	The contractor shall prepare a shutdown procedure and evacuation plan	CC	PIU & CSC	Approved Plan as per ECoP 10: Construction Camp Management	Once	All active work sites
				Emergency Response Plan to man-made and natural disasters (including rains, urban floods, fire, etc.)	CC	PIU & CSC	Annual evacuation drill	Quarterly	Same as above
				Emergency access routes shall be signed and maintained	CC	PIU & CSC	Emergency access routes are clear and signed	Monthly	Same as above
				Fire extinguishers are to be provided throughout the camp	CC	PIU & CSC	Fire extinguishers provided	Monthly	Same as above
B.2.5	Security	B.2.5.1	Conflict with local communities, attack on staff	Security for avoiding any conflict with local communities	CC	PIU & CSC	Fencing and security. The entrance to the camp shall be monitored and restricted	Monthly	Same as above
				Preparation and Implementation of communication strategy	CC	PIU & CSC	Approval of Communication Strategy	Once	
				The contractor shall provide all staff with Identity Cards showing their association with the project	CC	PIU & CSC		Monthly	All active work sites
				Sindh-speaking staff to be available at all active work sites to communicate with the local community	CC	PIU & CSC	Sindhi staff available at all active work sites	Monthly	Same as above
				The Contractor shall include in the Emergency Plan, a procedure	CC	PIU & CSC	Plan submitted and approved	Once	Camp area



Sr. No.	Project Activities	Section	Environmental Impacts/Entity	Mitigation Measures	Responsibility		Key Performance Indicators	Monitoring Frequency	Location
					Execution	Monitoring			
				for emergency evacuation of camp and practice this procedure					
B.2.6	Restoration	B.2.6.1	Change in Landscape after the closure of works	All temporary facilities shall be removed by the Contractor after the completion of the works	CC	PIU & CSC	Temporary facilities are removed on completion of works	Once	Same as above
B.3. Storage of Material									
B.3.1	Stockpile Storage of Materials	B.3.1.1	Increase in particulate matter	Proper covered storage. Water sprinkling of any uncovered stockpile where dust is generated	CC	PIU & CSC	No dust generated from stockpiles	Monthly	Stockpiles
B.3.2	Storage of Hazardous Materials	B.3.2.1	Health and safety due to improper use of hazardous material	Fuel tanks and other hazardous material storage containers will be properly marked to highlight their contents.	CC	PIU & CSC	Comply with the approved Plan for Handling of Hazardous Materials while adhering ECP2	Monthly	Hazardous material storage areas
				Hazardous areas to be secure and access limited to trained personnel only	CC	PIU & CSC	Untrained personnel are not accessing hazardous storage areas	Monthly	
				Provide fire extinguishers	CC	PIU & CSC	Fire extinguishers are provided	Monthly	
		Provide and enforce the use of PPEs as per the Contractor's Health and Safety Plan	CC	PIU & CSC	PPEs used	Monthly			
		B.3.2.3	Health and Safety and Pollution	An oil-designated storage area used	CC	PIU & CSC	Stockpiles only in storage areas identified in the camp layout plan	Monthly	Sub-Project area



Sr. No.	Project Activities	Section	Environmental Impacts/Entity	Mitigation Measures	Responsibility		Key Performance Indicators	Monitoring Frequency	Location
					Execution	Monitoring			
				Training on handling, use and disposal of hazardous material must be given to all those with access to the hazardous material area	CC	PIU & CSC	Training as per the Contractor's approved training plan	Monthly	Hazardous material storage area
B.4. Waste Management									
B.4.1	Disposal of sanitary wastes using the municipal system (if available)	B.4.1.1	Introduction of Inappropriate Contaminants or Waste Volume to Municipal System	Testing of wastes and submission of results to the Engineer.	CC	PIU & CSC	Test results show waste is within SEQS limit for pre-treatment	Quarterly	Construction camp/s
				Written consent from the operator of the municipal system submitted to the Engineer	CC	PIU & CSC	Consent submitted	Once	
		B.4.1.2	Use of municipal system which falls below SEQS standards	Only the government-approved system to be approved	CC	PIU & CSC	The government-approved system used	Once	
B.4.2	Collection of domestic wastes	B.4.2.1	Surface and groundwater pollution	Provide garbage bins within all camps for domestic wastes	CC	PIU & CSC	Provision of bins	Monthly	
B.4.3	Disposal of domestic wastes using Municipal facilities.	B.4.3.1	Ground and groundwater pollution, the spread of disease	Domestic waste shall be collected from waste bins on alternate days and transported by tractor trolley to dispose of in a nearby Municipal facility. A written agreement shall be made between the Municipal operator and contractor for the disposal of domestic waste.	CC	PIU & CSC	License or Written agreement b/w Municipal operator and Contractor checked.	Monthly	Licensed site.
B.4.4	Disposal of medical wastes	B.4.4.1	Surface water pollution, health and safety of staff and public.	Medical wastes will be stored on site The contractor will engage a third-party contractor for the treatment and ultimate disposal of	CC	PIU & CSC	No medical waste in the municipal facility.	Monthly	Collection point



Sr. No.	Project Activities	Section	Environmental Impacts/Entity	Mitigation Measures	Responsibility		Key Performance Indicators	Monitoring Frequency	Location
					Execution	Monitoring			
				medical waste in a controlled manner.					
B.4.5	Disposal of hazardous wastes	B.4.5.1	Ground, groundwater and surface water pollution, health and safety	Hazardous wastes are to be passed to licensed contractors, or, available wastes are to be stored in long-term storage facilities meeting the requirement of hazardous material storage area to be taken on client following construction. Details are to be provided in the pollution plan to the Engineer.	CC	PIU & CSC	As per approval of the Plan and guidelines set by ECoP 1: Waste Management. ECoP 2: Fuels and Hazardous Substances Management to meet the ESS1 & 3	Once	Collection point
B.4.6	Closure of works	B.4.6.1	Ground, groundwater and surface water pollution, health and safety.	All solid wastes shall be removed from the project area on completion of works	CC	PIU & CSC	All solid wastes disposed of or removed from the site	Once	Sub-Project area
B.5. Construction Plant and Vehicles									
B.5.1	Movement/ operation of vehicles on site	B.5.1.1	Air pollution	All vehicles are regular services as per manufacturers' requirements	CC	PIU & CSC	Black smoke was not observed emitting from Vehicles/plant	Quarterly	Sub-Project area
		B.5.1.2	Generation of dust	The access road is to be adequately compacted or regularly sprinkled to prevent dust generation during use	CC	PIU & CSC	Dust not reaching the settlements in the project area		Settlement in the Sub-project area
			Soil and Groundwater pollution	Vehicles/plants will be checked daily for fuel oils and leaks and fixed as required	CC	PIU & CSC	No fuel oil leaks were observed from the plant/vehicle		Sub-Project area
		B.5.1.3	Safety of the community, other road users, fauna and staff	Vehicle speed is limited to 15km/hr.	CC	PIU & CSC	Submittal and approval of the plan	Once	
				Safe driving practices included in Contractor's training plan	CC	PIU & CSC	Training as per the approved plan	Monthly	Sub-Project area



Sr. No.	Project Activities	Section	Environmental Impacts/Entity	Mitigation Measures	Responsibility		Key Performance Indicators	Monitoring Frequency	Location
					Execution	Monitoring			
				Flag persons to be provided where plant cross/meet the village road	CC	PIU & CSC	Flag persons provided	Monthly	Road approaching and crossing
				The contractor's Community Liaison Officer collaborates with communities to identify sensitive areas and inform communities before the movement of large plant	CC	PIU & CSC	No complaints were received from the communities	Monthly	Settlement in the project area
				Vehicles with restricted rear visibility to be fitted with an audible backup alarm or provided with banks men	CC	PIU & CSC	Back-up alarms or banks men provided	Monthly	Project area
				Driving in the project area after nightfall is prohibited except on public highways	CC	PIU & CSC	No driving after dark	Monthly	Haul roads and temporary access roads
			Damage to public infrastructure	Damage to roads, infrastructure and property was immediately repaired/compensated by the Contractor	CC	PIU & CSC	No damage to roads/infrastructure	Monthly	Public roads
				Use of horns is prohibited near the settlement	CC	PIU & CSC	Nor horns were heard at the settlement	Monthly	Settlement in the project area
			Disturbance of Fauna	Biodiversity monitoring of impacts on fauna	CC	PIU & CSC	Status and behavior of terrestrial and avian-fauna	Quarterly	Sub-Project area
			Reduction in access to women and girls	Avoid routes used by women and girls as far as possible, if unavoidable, identify alternate routes for women and girls	CC	PIU & CSC	No complaints were received from women and girls	Monthly	
B.5.2	Deliveries to Site	B.5.2.1	Dust	Covered transportation of loose materials	CC	PIU & CSC	No dust generation from delivered materials	Monthly	Approach roads
		B.5.2.3		Traffic management plan to be submitted to Engineer for	CC	PIU & CSC	Submittal and approval of plan TMP	Once	



Sr. No.	Project Activities	Section	Environmental Impacts/Entity	Mitigation Measures	Responsibility		Key Performance Indicators	Monitoring Frequency	Location
					Execution	Monitoring			
			Community disturbance increase in traffic	approval and to include routes for delivery vehicles			as per ECoP 9: Road Transport and Road Traffic Management to address ESS 4		
				Deliveries should be carried out during normal working hours and prohibited at night if unavoidable then follow the nighttime working protocols.	CC	PIU & CSC	No deliveries were carried out at the night.	Monthly	Construction camp
				Delivery vehicles are prohibited from queuing on public roads	CC	PIU & CSC	No queuing delivery vehicles on public roads	Monthly	Same as the above
B.5.3	Road/access Closure	B.5.3.1	Community disturbance increase in traffic	Flag persons are to be provided where the plant cross/meet the village road.	CC	PIU & CSC	Flag persons provided	Weekly	At road partial closure
				The contractor's Community Liaison Officer collaborates with communities to identify sensitive areas and inform communities before movement.	CC	PIU & CSC	No complaint received	Monthly	Settlement in the project area
				Request for road closure must be approved by the relevant authority	CC	PIU & CSC	As per Approved TMP	Once for each closure	Throughout construction period
B.6. Health and Safety of The Workforce									
B.6.1	General construction works	B.6.1.1	Health and safety of provisions	The contractor shall prepare and submit occupational health and safety plan. This plan will need to describe all jobs, their risks, and the controls that will reduce risks; these controls may include PPE, restrictions on activities or locations, and other measures. Those who work near water, with heavy equipment will	CC	PIU & CSC	Submittal and approval of Labour Management plan as per the guidelines provided in Labour Management Procedure of SFERP to comply with the ESS 2. The number of reported accidents.	Regularly	Sub-Project area



Sr. No.	Project Activities	Section	Environmental Impacts/Entity	Mitigation Measures	Responsibility		Key Performance Indicators	Monitoring Frequency	Location
					Execution	Monitoring			
				<p>need special training so those hazards can be managed.</p> <p>The contractor will ensure the use of Personal Protective Equipment (PPE) for his labours during the construction period;</p> <p>To overcome the drinking water contamination issue, at each construction camp, the contractor shall install a solar-operated domestic water filter/150GDP with Ultraviolet (UV) to ensure safe and healthy drinking water for the workforce.</p> <p>The Contractor will display sign boards and banners about traffic diversion at places on detour routes;</p> <p>Community liaison will be maintained during the construction stage and GRM will be established to address complaints related to safety hazards.</p>			<p>The number of reported near-misses.</p> <p>Non-compliance observed.</p> <p>Community complaints.</p>		
		B.6.2.1	Health and safety of Staff	The contractor will submit an accident report to the Engineer following an accident on site. The report must detail actions to be taken to reduce the risk of occurrence	CC	PIU & CSC	Submittal of the accident report	Monthly	Same as above
				Qualified health and safety manager will be appointed by the Contractor	CC	PIU & CSC	Qualified health & safety manager present on site	Monthly	Same as above
				The contractor shall engage a full-time first-aider on-site	CC	PIU & CSC	On-site Presence of qualified Doctor	Monthly	Same as above



Sr. No.	Project Activities	Section	Environmental Impacts/Entity	Mitigation Measures	Responsibility		Key Performance Indicators	Monitoring Frequency	Location
					Execution	Monitoring			
				Contractor to have the on-call doctor					
				Provision of the dispensary for the treatment of staff. Dispensary to be stocked with appropriate medicines for likely incidents, diseases and ailments to have occurred on site. Stock is to be replenished as necessary.	CC	PIU & CSC	Dispensary available on-site and regularly restocked	Monthly	Same as above
B.7 Rehabilitation of rain-affected roads/ Works									
B.7.1	Rehabilitation works along water body/water crossing structures	B.7.1.1	Flooding	Prefer given not to work during rainy seasons Provide alternative drainage for rainwater if earthworks fill established drainage lines	CC	PIU & CSC	alternative drainage is provided	Monthly	Same as above
B.7.2	Formation of Borrow Areas	B.7.2.1	Habitat loss	The borrow Area Management Plan has to be prepared before the start of the civil work. Borrow areas shall not be established in the agriculture active land	CC	PIU & CSC	Borrow Area Management Plan. Borrow areas are not established in the agriculture-active lands.	Weekly	Borrow Area
		B.7.2.2	Borrowing from toes of embankments	The material shall not be borrowed from the outer and inner toe of the embankments	CC	PIU & CSC	Material is not borrowed from the toe of the embankments	Weekly	Borrow Area
		B.7.2.3	Borrow areas in environmentally sensitive sites	Borrow areas shall not be established in the wetlands, forest and any other environmental and socially sensitive areas	CC	PIU & CSC	Borrow areas are not established in the environmental and socially sensitive sites	Weekly	Same as above



Sr. No.	Project Activities	Section	Environmental Impacts/Entity	Mitigation Measures	Responsibility		Key Performance Indicators	Monitoring Frequency	Location
					Execution	Monitoring			
		B.7.2.4	Restoration/rehabilitation of borrowed areas	Restoration of borrowed areas	CC	PIU & CSC	Borrow areas are restored to their original condition if situated on the private land	Monthly	Same as above
				Community liaison to be maintained. GRM to be established to address related complaints.	CC	PIU & CSC	Number of complaints	Regularly	Borrow Area
B.7.3	Access to Borrow Areas	B.7.3.1	Impacts on flora and fauna	available/existing access routes shall be followed	CC	PIU & CSC	existing access routes are followed	Weekly	Sub-Project area
		B.7.3.2	Impacts on agriculture land and crops	access routes in agricultural land shall be avoided	CC	PIU & CSC	Same as above	Weekly	Same as above
		B.7.3.3	if access route in the agricultural land is unavoidable, the owner of the land and crop shall be compensated	Compensation to the affected person shall be paid	CC	PIU & CSC	the affected person is compensated	Weekly	
B.7.4	Restoration of borrowed areas	B.7.4.1	Loss of habitat and landscape change	Potential for shallow wetland creation shall be maximized by the limited restored depth of borrow area to 0.3m	CC	PIU & CSC		Monthly	
		B.7.4.2	Loss of topsoil	Spread stockpiled topsoil (where topsoil is unsuitable for the formation of rehabilitation work) over borrow areas	CC	PIU & CSC		Weekly	
B.8 Archaeology and Cultural Sites									
B.8.1	Construction near religious sites	B.8.1.1	Community disturbance	All works excluded from mosques and Graveyards at the Project Site. (Spiritual Place for local people).	CC	PIU & CSC	Compliance with ESS8 – Cultural Heritage by adopting the ECoP 11: Cultural and	Monthly	Sub-Project area



Sr. No.	Project Activities	Section	Environmental Impacts/Entity	Mitigation Measures	Responsibility		Key Performance Indicators	Monitoring Frequency	Location
					Execution	Monitoring			
							Religious Issues. All works excluded from the identified locations		
				Works do not block access to sites	CC	PIU & CSC	access to the sites is not blocked	Daily	Same as above
B.8.2	Discovery of unidentified cultural or religious site	B.8.2.1	Community disturbance	The contractor shall not trespass into the site, shall exclude all works and immediately inform the Site Engineer	CC	PIU & CSC	The engineer informed of the discovery of unidentified cultural or religious sites	Monthly	Same as above
				Community liaison to be maintained. GRM to be established to address related complaints.	CC	PIU & CSC	Number of complaints	regularly	Same as above
B.8.3	Chance find	B. 8.3.1		In the case of a chance find, the contractor will secure the site and report immediately to PIU. Works may not recommence until the Engineer approves. Site visits of the Culture Tourism & Antiquities Department, Govt of Sindh will be facilitated. Further works will be carried out on such sites only after obtaining clearance from the Department	CC, CSC	PIU & Culture Tourism & Antiquities Department, Govt of Sindh	Chance find	As or when	Same as above
B9. Safety/Health Measures for The Local Population									
B 9.1	The local population living within/near the sub-project especially women, children	B 9.1.1	Accident risks, particularly for the local population living within/near the subproject especially women, children and	Restriction on movement of machinery on the designated haulage routes for transportation of materials. Public awareness campaigns through displaying signboards at the site and haulage routes. Interaction with the	CC	PIU & CSC	Number of complaints to ensure compliance with ESS4 – Community Health and Safety	regularly	Same as above



Sr. No.	Project Activities	Section	Environmental Impacts/Entity	Mitigation Measures	Responsibility		Key Performance Indicators	Monitoring Frequency	Location
					Execution	Monitoring			
	and elderly people		elderly people; Public awareness campaigns through displaying signboards at site and haulage routes; Vulnerability to accidents; Deterioration of health due to dust	community; Setting up speed limits (not more than 15 Km in work areas); Availability of first aid box for locals; Strict enforcement keeping non-working persons, particularly children, away from work sites; Adequate signage to manage traffic at sites, haulage and access roads; Ensure water sprinkling. (ECoP 12) For Community Female Members: •Awareness should be created among the local community including females about the construction work. •Workers should not be allowed to crowd in the residential communities within the site. •Alternative routes for pedestrians should be provided to avoid mixing women with workers. •Raise awareness among the communities of the potential risks of GBV, SEA, and SH and establish links with response services in the nearby communities that can respond to instances of GBV (particularly those related to issues of labour influx). •Contractor should take proper measures to address and resolve issues relating to harassment, intimidation, and exploitation, especially against women.					



Sr. No.	Project Activities	Section	Environmental Impacts/Entity	Mitigation Measures	Responsibility		Key Performance Indicators	Monitoring Frequency	Location
					Execution	Monitoring			
				<ul style="list-style-type: none"> •Measures to prevent GBV, SEA and SH the Contractor must include relevant clauses in the workers' code of conduct. •Development and implementation of grievance redress/stakeholder response mechanism procedures to ensure timely handling of grievances. 					
C. OPERATION PHASE									
C.1	Maintenance of rehabilitation facilities	C.1.1	Road Safety	Road maintenance will be carried out as per the contract agreement. During maintenance follow road safety rules and regulations to avoid any accidents.	SFERP/ W&S Deptt	Third-party	No incident of any damages	Continues	Entire project area
C.2	Increased Traffic	C.2.1	Air pollution and Greenhouse gases	Regular motioning of the vehicles for engine efficiency and avoid any unnecessary work and transportation. Alternative energy resources should be considered where possible. SEQs applicable to gaseous emissions generated by construction vehicles, equipment and machinery should be enforced during construction works. Reduction in travel time and better mode and frequency of transport and enhanced tourism activities in the area which in many terms will boost the local	SEPA/ SFERP/ W&S Deptt	Third-party	Compliance with SEQs	Once in year	Entire project area



Sr. No.	Project Activities	Section	Environmental Impacts/Entity	Mitigation Measures	Responsibility		Key Performance Indicators	Monitoring Frequency	Location
					Execution	Monitoring			
				economy and improve the lifestyle of local people. Access to quality health care facilities, educational and other infrastructural facilities. A better investment climate for industries creates more employment opportunities for local people.					

Table 21: Environmental Monitoring Plan

Sr. No.	Parameters	Means of Monitoring	Frequency	Responsibility	
				Implementation	Supervision
1	Vegetation clearance	Visual inspection of loss of vegetation, soil erosion & instability, surface water pollution and occupational health of workers and community	Weekly	CC	CSC/PIU-SFERP
2	Top Soil	Visual inspection of topsoil of 20 cm to 30 cm depth should be excavated and stored properly	Beginning of earthworks	CC	CSC/PIU-SFERP
3	Erosion	Visual inspection of the occurrence of erosion and erosion prevention measures	At the end of the filling activity	CC	CSC/PIU-SFERP
4	Operation of burrow and quarry site	Visual inspections of quarry sites/ burrow areas for change in landscape and creation of water ponds.	Monthly	CC	CSC/PIU-SFERP
5	Excavation of earth	Visual inspection for soil erosion & stability	Weekly	CC	CSC/PIU-SFERP
6	Material supply	Inspection of possession of official approval or valid operating license of suppliers' materials (asphalt, cement, quarry and burrow material)	Before the agreement for the supply of material	CC	CSC/PIU-SFERP
7	Storage and handling of materials	Visual inspection of storage facilities	Monthly	CC	CSC/PIU-SFERP
8	Local roads	Visual inspection to ensure local roads are not damaged	Monthly	CC	CSC/PIU-



Sr. No.	Parameters	Means of Monitoring	Frequency	Responsibility	
				Implementation	Supervision
					SFERP
9	Traffic safety	Visual inspection to see whether proper traffic signs are placed and safety barriers for traffic management are occupied	Monthly	CC	CSC/PIU-SFERP
10.	Air Quality	Air quality monitoring mobile lab(Certified laboratory from the relevant agency)	Quarterly	CC	CSC/PIU-SFERP
		Visual inspection to ensure water sprinkling is being implemented	Daily	CC	CSC/PIU-SFERP
		Visual inspection to ensure asphalt plant is located greater than 500 m from residential areas	Monthly	CC	CSC/PIU-SFERP
10	Air quality & noise	Visual inspection of conditions of equipment in use	Quarterly	CC	CSC/PIU-SFERP
11	Surface & groundwater quality	Sampling and analysis of surface water quality (Certified laboratory from the relevant agency)	Quarterly	CC	CSC/PIU-SFERP
12	Solid waste	The visual inspection that solid waste is disposed of at the designated site	Weekly	CC	CSC/PIU-SFERP
13	Floral and faunal monitoring	Visual inspection	Daily	CC	CSC/PIU-SFERP
14	Cultural and archeological sites	Visual inspection	Daily	CC	CSC/PIU-SFERP
15	Visual check for exhaust emissions from equipment and vehicles	Visual inspection	Daily	CC	CSC/PIU-SFERP
16	Grievances of the local communities	Visual inspection	Daily	CC	CSC/PIU-SFERP
17	Reinstatement of work site	Visual Inspection	After completion of all works	CC	CSC/PIU-SFERP



Annexure I: Rehabilitation of Road-SFERP Screening Checklist

SINDH FLOOD EMERGENCY REHABILITATION PROJECT REHABILITATION OF RAIN/FLOOD AFFECTD ROADS

Environmental and Social Screening Checklist

Proposed Project Interventions Details			
Name of proposed project interventions			
ID of proposed project interventions			
Proposed project interventions location			
Proposed project interventions Tehsil			
Village/Town Name at Start & End Point			
Proposed date of commencement			
Screening Question	Yes	No	Remarks
PHYSICAL ENVIRONMENT			
Will the proposed project interventions pose the risk of clearance of vegetation that may result in an increase in the level of suspended solids washing into nearby water bodies?			
Will the proposed project interventions pose a risk of contaminating drinking water sources due to construction activities?			
Will the proposed project interventions deplete groundwater because of the water used during road construction activities?			
Will the proposed project interventions result in an increase in ambient air pollution , including chemical and particulate matter due to the construction and operation of related machinery?			
Will the proposed project interventions result in an increase in ambient noise levels and vibrations due to the operation of construction machinery/vehicles?			
Will these ambient noise levels be beyond the specifications in the SEQS ?			
Will the proposed project interventions lead to erosion hazards ?			
Will the proposed project interventions lead to increased soil erosion ?			
Will the proposed project interventions result in the generation of hazardous and/or non-hazardous waste ?			
Will the proposed project interventions result in potentially increased health risks for project workers and communities (e.g. COVID-19)?			
Is the proposed project interventions being implemented in an area with high natural hazard risk ? (e.g. floods, earthquakes, landslides)			
ECOLOGICAL ENVIRONMENT			
Will the proposed project interventions potentially cause any adverse impacts on habitats, ecosystems , and/or ecosystem services?			
Will any rehabilitation & improvement works be located in areas that would promote the conversion of natural habitats ?			
Will any proposed project interventions be located on or near sensitive environmental areas , including national parks and protected areas?			



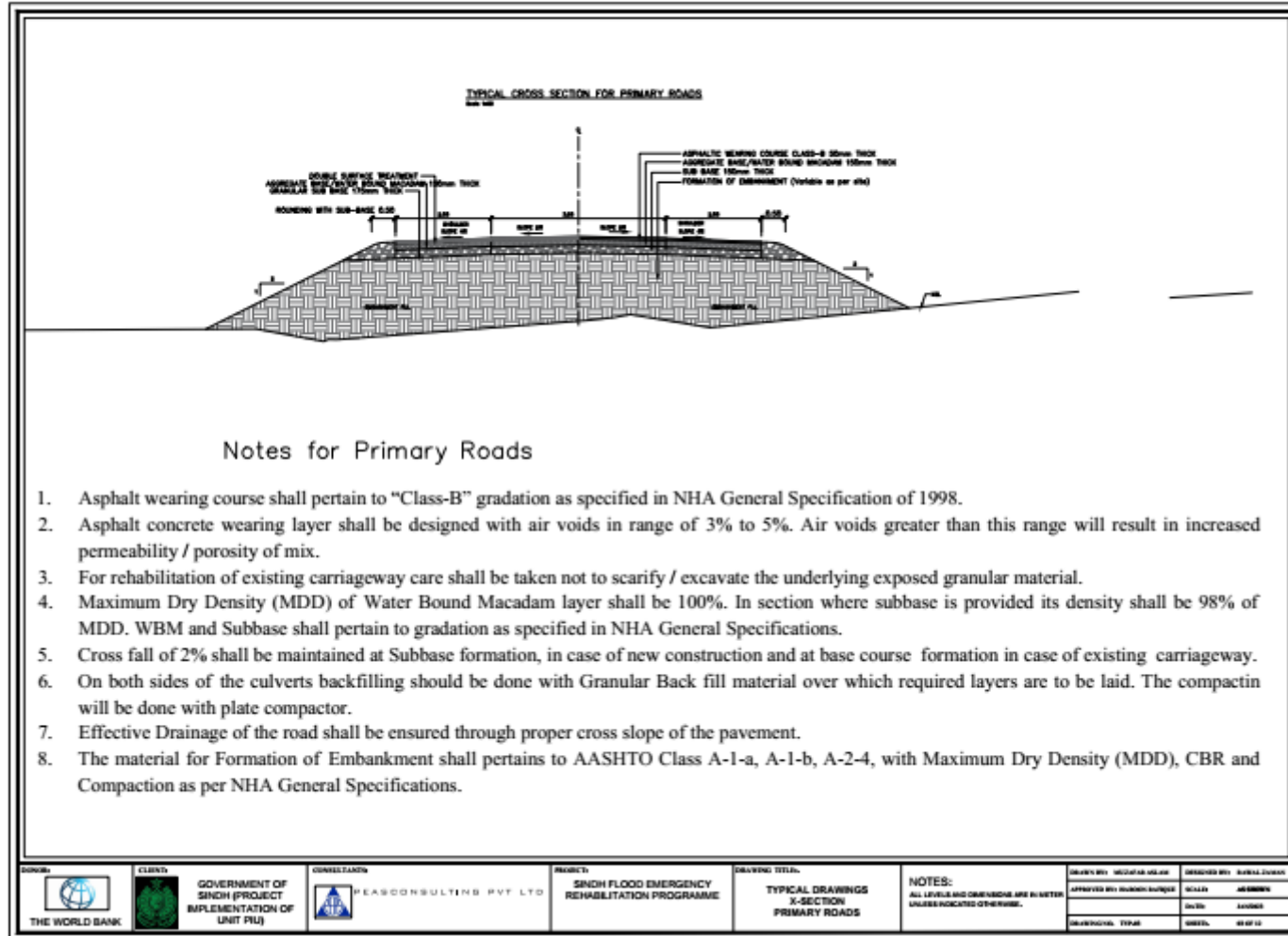
Are the proposed project interventions activities likely to pose risks to any endangered species ?			
SOCIAL ENVIRONMENT			
Will the proposed project interventions involve land acquisition ?			
Are there any forced labor or child labor risks associated with contractors or other third parties involved in implementing this proposed project intervention?			
Is labor influx expected during the implementation of the proposed project interventions? Please estimate the strength of the anticipated outside labor force .			
Will local labor be used for the proposed project intervention activities? Please estimate the strength of the anticipated local labor force.			
Will there be any temporary or permanent displacement as a result of the proposed project intervention activities?			
Are there expected to be any traffic-related issues as a result of the proposed project intervention activities, particularly during the construction phase?			
Are there any recognized Indigenous Peoples present in the proposed project interventions area, and are they likely to be impacted by the project, either positively or negatively ?			
Are the proposed project interventions likely to have impacts on important religious/cultural heritage sites ?			
Have there been any past security-related issues at the proposed project intervention site?			
Has stakeholder engagement taken place in the proposed project interventions area?			
Were vulnerable and indigenous groups involved in stakeholder consultations? (e.g. women, minorities, economically disadvantaged individuals, etc.)			
RISK CLASSIFICATION			
Step	Recommendations/Findings		
Risk category identification			
Recommendation on type of E&S instruments required.			
Recommendations to the design engineer			
Summary of screening findings			
Name of person conducting screening			
Name of the person endorsing screening findings			

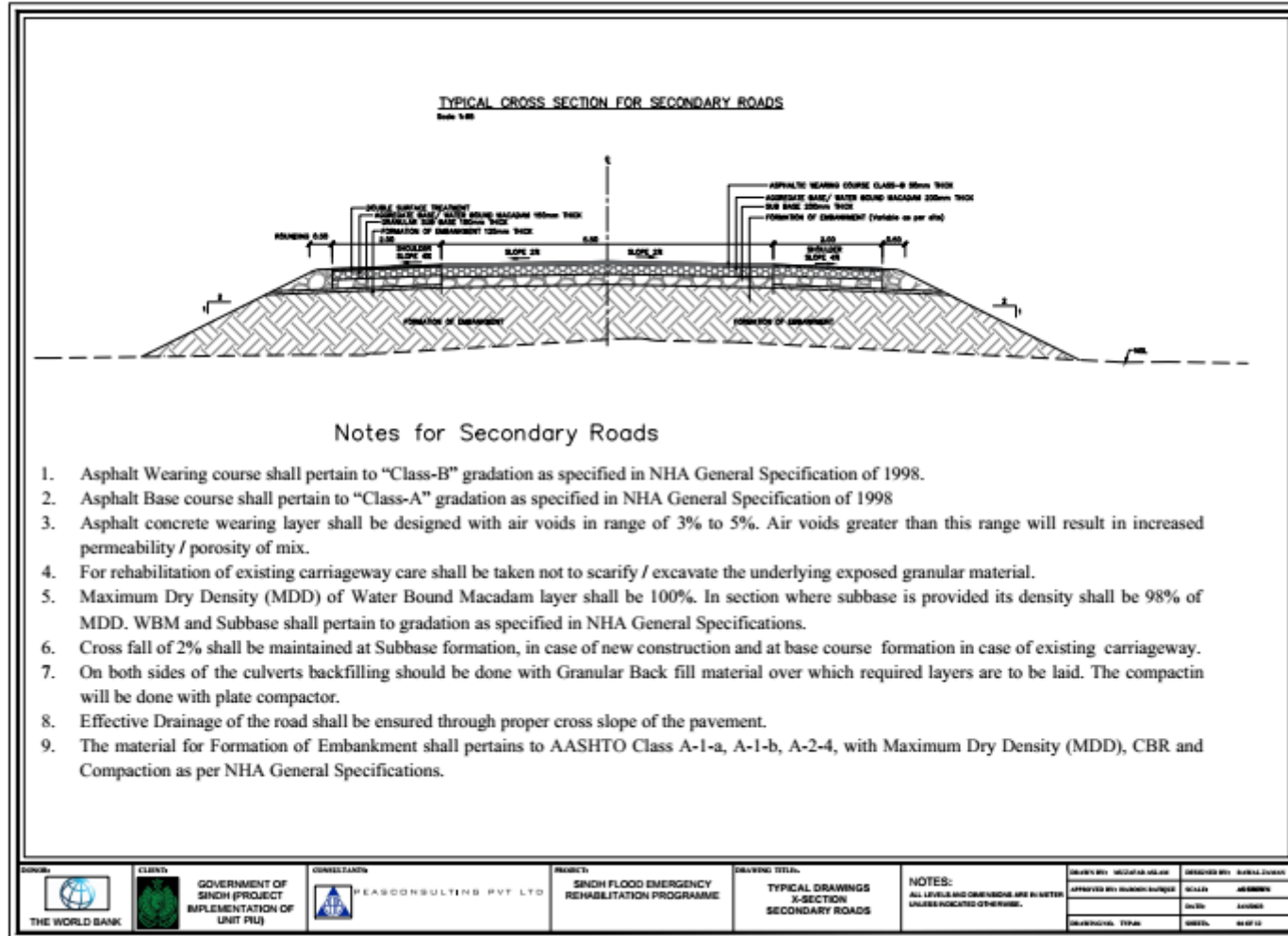


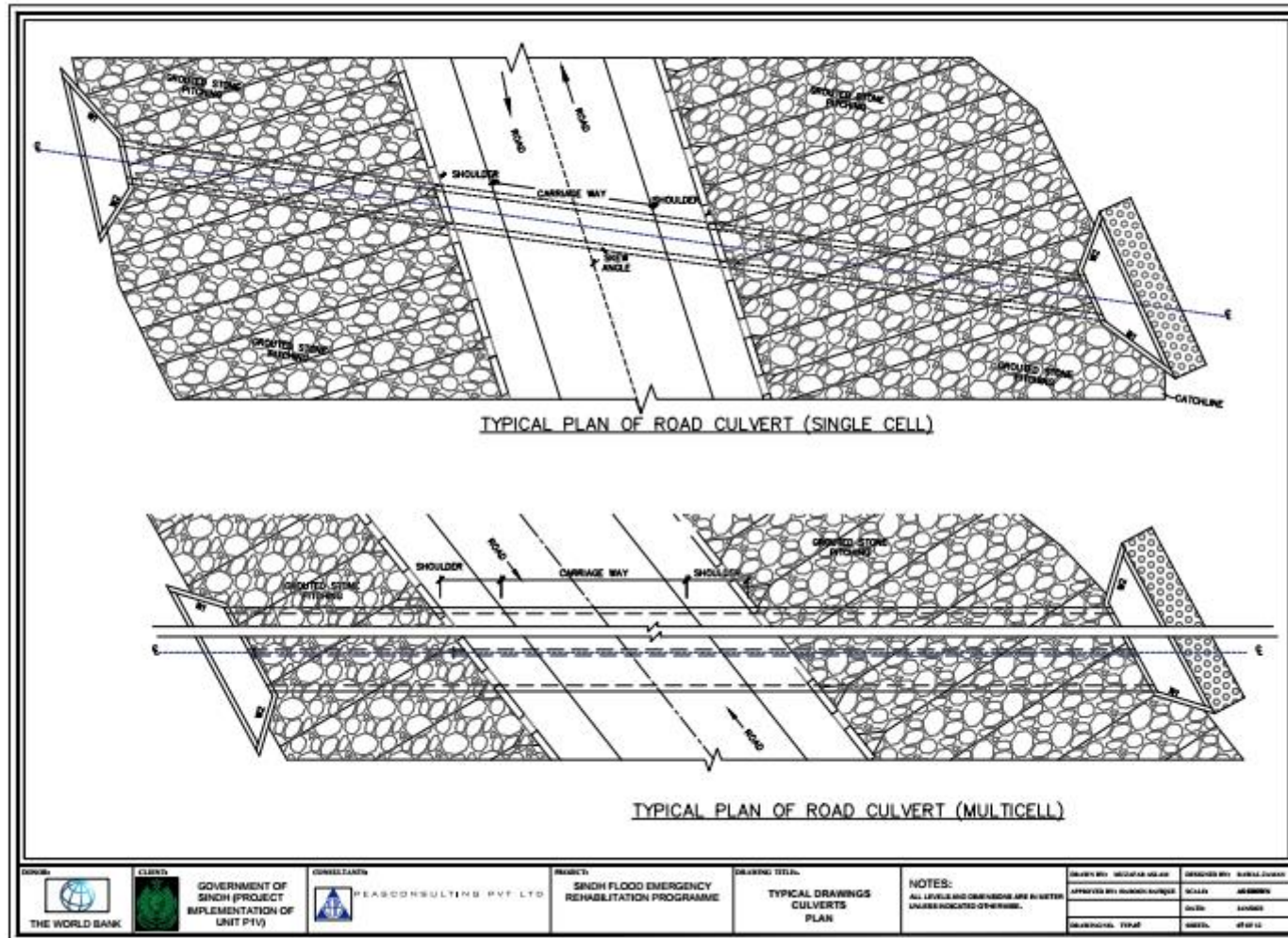
Annexure II: Typical Cross Sections of Sub-Project

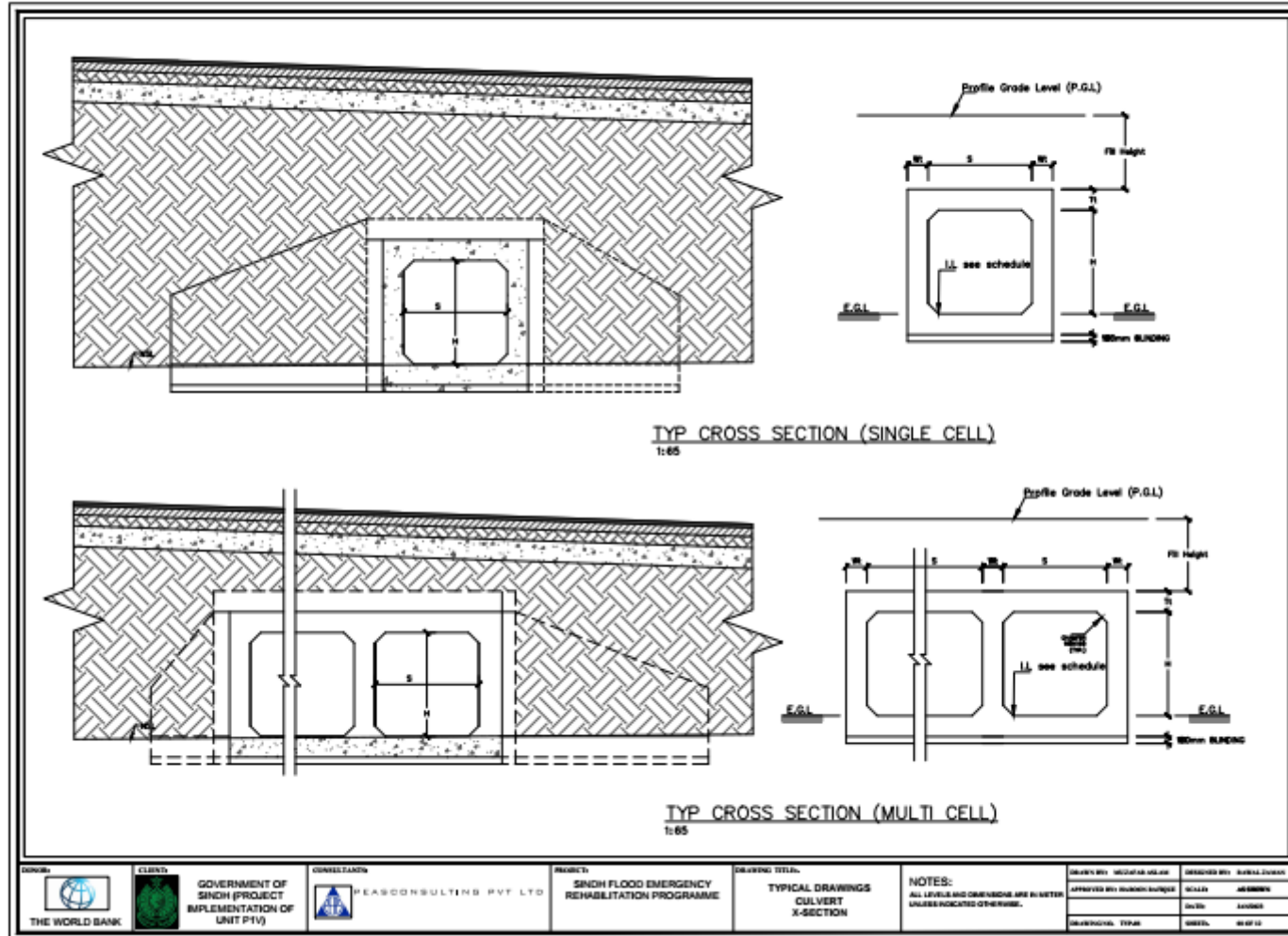
LIST OF DRAWINGS	
SR.NO	DESCRIPTION
01	LIST OF DRAWINGS
02	CROSS SECTION – PRIMARY ROADS
03	CROSS SECTION – SECONDARY ROADS
04	CROSS SECTION – COLLECTOR ROADS
05	CROSS SECTION – MAJOR ROADS 01
06	CROSS SECTION – MAJOR ROADS 02
07	CULVERT – PLAN
08	CULVERT – CROSS SECTION
09	CULVERT – LONGITUDINAL SECTION
10	CULVERT – REINFORCEMENT DETAILS
11	CULVERT – APPRON DETAILS
12	CAUSEWAY DETAILS

THE WORLD BANK	GOVERNMENT OF SINDH (PROJECT IMPLEMENTATION UNIT PIU)	PEARCONSULTING PVT LTD	PROJECT: SINDH FLOOD EMERGENCY REHABILITATION PROGRAMME	DRAWING TITLE: TYPICAL DRAWINGS LIST OF DRAWINGS	NOTES: ALL LETTERS AND DIMENSIONS ARE IN METERS UNLESS INDICATED OTHERWISE.	DESIGNED BY: HUSNAIN AHMED APPROVED BY: HUSNAIN AHMED	DESIGNED BY: AYESHA ZAMAN SCALE: AS SHOWN DRAWN: AYESHA ZAMAN CHECKED: HUSNAIN AHMED
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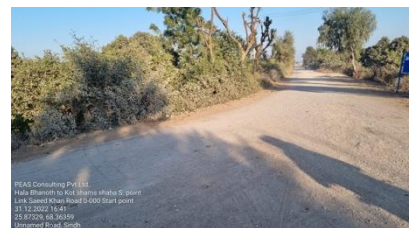
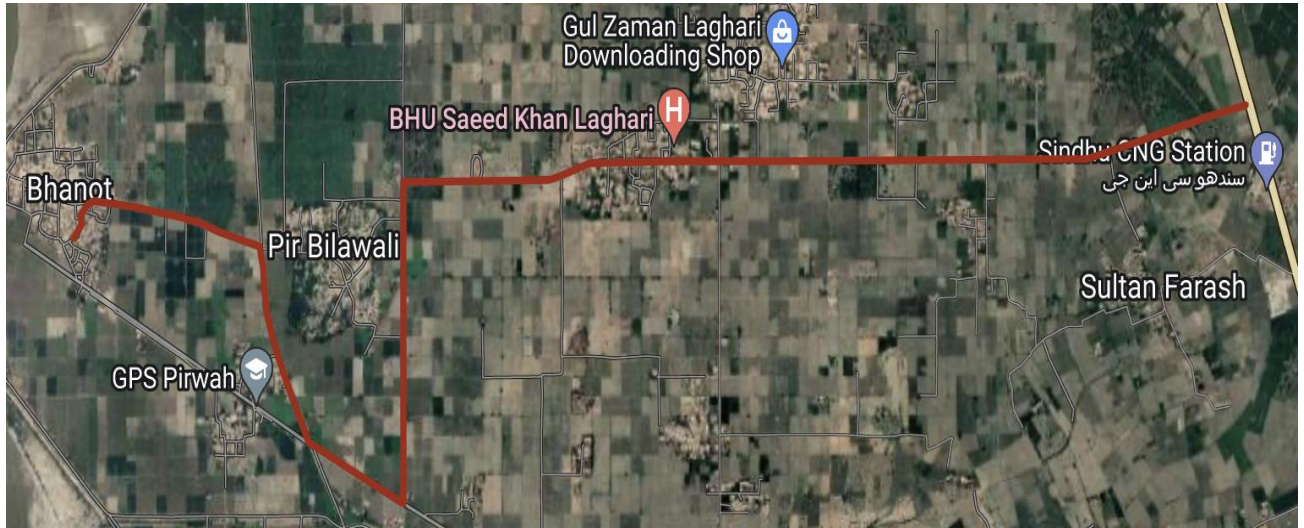






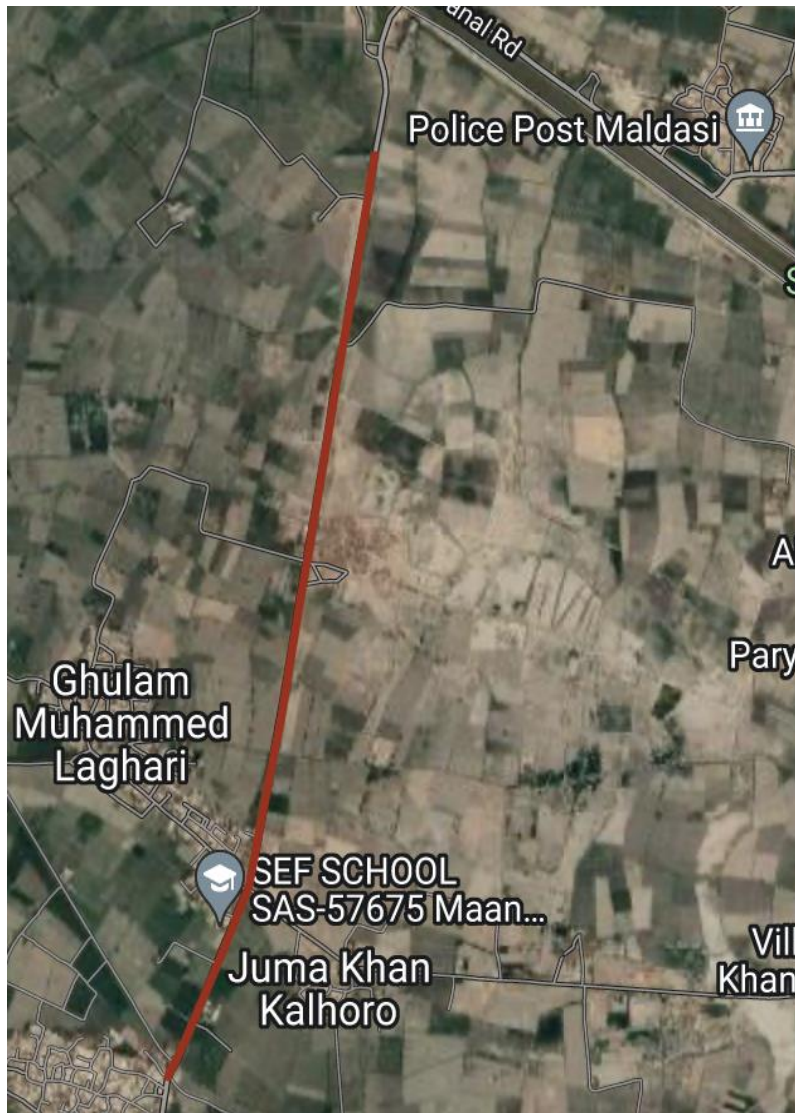
Annexure III: Photo Log

Road 01 – Reconditioning of road from Hala Bhanoth Rao @ Kot Shamsuddin Shah to Merranpur I/C Link Vanhyal Village, Saeed Khan Laghari & Bhanoth Road





Road 02 – Reconditioning of road from kot jandal shah to anjuman-e-asgharia & ameer Ali house to anjuman-e-Hussaini road





Road 03 – Reconditioning of road from Gul Muhammad Pahwar Chowk to Nasurpur Road

