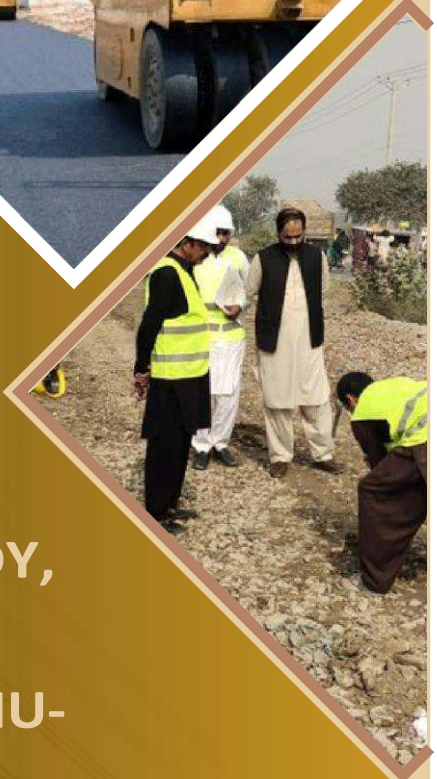

SITE SPECIFIC-ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

Sohbatpur Chowk Dera Allah Yaar to Hairdin Drainage

CONSULTANCY SERVICES FOR

PREPARATION OF ASSESSMENT STUDY, PREPARATION OF DETAILED DESIGNS, PROCUREMENT ASSISTANCE, AND SUPERVISION OF WORKS (C&W) (PK-PIU-IFRAP-CIR-441964-CS-QCBS)

April 2026

ZEERUK INTERNATIONAL
Private Limited

Kasib Consultants
Pvt. Ltd.

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ABBREVIATIONS AND GLOSSARY

GoP	Government of Pakistan
MoPDSI	Ministry of Planning, Development and Special Initiatives
P&DD	Planning and Development Department
IFRAP	Integrated Flood Resilience and Adaptation Project
BIWMRD	Balochistan Integrated Water Resources Management & Development
PIU	Project Implementation Unit
PMU	Project Management Unit
ESMP	Environmental and Social Management Plan
E&S	Environmental & Social
ESSs	Environmental & Social Standards
CC	Construction Contractor
CSC	Construction Supervision Consultant
CHMP	Cultural Heritage Management Plan
ESCP	Environmental and Social Commitment Plan
CESMP	Construction-Environmental and Social Management Plan
ESF	Environmental & Social Framework
NEP	National Environmental Policy
NCS	National Conservation Strategy
BWPPCM	Balochistan Wildlife Preservation Protection Conservation and Management
CITES	Convention on International Trade in Endangered Species
UNCBD	United Nations Convention on Biological Diversity
UNFCCC	United Nations Framework Convention on Climate Change
COI	Corridor of Impact
GRM	Grievance Redress Mechanism
NEQs	National Environmental Quality Standards
BEQs	Balochistan Environmental Quality Standards
MSDS	Material Safety Data Sheet
HSE	Health Safety Environment
EE	Environmental Engineer
ES	Environmental Specialist
ERP	Emergency Response Plan
WHO	World Health Organization
RE	Resident Engineer
CRE	Chief Resident Engineer
BLEP	Balochistan Livelihood and Entrepreneurship Project
FPMU	Federal Project Management Unit
FPs	Focal Persons
MTP	Material Transport Plan
PPEs	Personal Protective Equipment
WSMP	Waste & Spoil Management Plan
TMA	Tehsil Municipal Authority
LFS	Life & Fire Safety
PEPA	Pakistan Environmental protection Act
CO	Carbon monoxide
Nox	Nitrogen dioxide
Sox	Sulphur dioxide
PM	Particulate Matter
TPM	Total Particulate Matter
TSS	Total suspended solids
TDS	Total dissolve solids

EXECUTIVE SUMMARY

ES-1: INTRODUCTION

The Government of Pakistan (GoP), through the Ministry of Planning, Development and Special Initiatives (MoPDSI) at the federal level and the Planning and Development Department (P&DD), Government of Balochistan at the provincial level, is implementing the Integrated Flood Resilience and Adaptation Project (IFRAP). The project is supported by the World Bank and executed by the Government of Balochistan under the umbrella PC-I titled "Resilience, Enhancement, and Livelihood Diversification in Balochistan," with an allocated share of US$50 million. Specifically, the subproject covering the Sohbatpur Chowk (Dera Allah Yaar) to Hairdin Drainage Road section is to be rehabilitated, with a total length of 38.8 km.

ES-2: POLICY, LEGAL AND INSTITUTIONAL FRAMEWORK

The Environmental and Social Management Plan (ESMP) has been prepared in accordance with the World Bank's Environmental and Social Framework (ESS1–ESS10) and complies with national regulations, including PEPA 1997, the Balochistan Environmental Protection Act (2012), and the Pakistan Climate Change Act (2017). Relevant labour and occupational health and safety (OHS) laws have been incorporated to ensure worker protection. The ESMP also aligns with international conventions ratified by Pakistan, including UNFCCC, CBD, and CITES, ensuring consistency with global best practices.

Key applicable standards include: ESS1 for risk assessment and management; ESS2 for labour and working conditions; ESS3 for resource efficiency and pollution control; and ESS4 for community health and safety. ESS5 is not triggered as activities remain within the existing right-of-way, though a precautionary approach is adopted. ESS6 addresses biodiversity conservation, ESS8 covers cultural heritage and chance finds, and ESS10 ensures stakeholder engagement and information disclosure. Together, these standards provide a robust framework for sustainable and responsible project implementation.
ES-3: Baseline Environmental and Social Conditions

ES-3: ENVIRONMENTAL AND SOCIAL BASELINE

The Subproject area, located in Jafarabad and Sohbatpur districts of Balochistan, is characterized by an arid to semi-arid environment with flat alluvial plains and low elevations within the Kacchi region. The climate is defined by high temperatures, mild winters, low and erratic rainfall (50–150 mm annually), and occasional dust storms. Land and water resources primarily depend on canal irrigation systems such as the Pat Feeder and Kachhi Canals; however, challenges including water scarcity, salinity, soil erosion, and contamination persist. Geologically, the area consists mainly of alluvial and sedimentary deposits, while geotechnical investigations indicate variability in soil conditions due to flood damage. The region falls within seismic Zones 2A and 2B, reflecting moderate seismic risk. Hydrological conditions are influenced by both natural drainage and irrigation infrastructure, with flood vulnerability heightened by inadequate cross-drainage and canal breaches, as evidenced during the 2022 floods. Environmental monitoring indicates that air and water quality generally remain within permissible limits, although concerns regarding turbidity and biological contamination exist.

Ecologically, the area supports a fragile desert ecosystem with sparse vegetation dominated by drought-resistant species such as Acacia and Prosopis. Agricultural land is a key land use, while overgrazing, water scarcity, and climatic stress limit biodiversity. Socio-economically, the area is predominantly rural, with agriculture and livestock forming the backbone of local livelihoods. The population faces multiple challenges, including low literacy rates, inadequate healthcare, poor water supply and sanitation, and limited infrastructure. Social organization is strongly influenced by tribal systems, where decision-making is largely male-dominated and governed through traditional jirga mechanisms. Women play a significant role in household management, agriculture, and livestock activities but have limited access to resources, income opportunities, and decision-making processes.

The gender assessment indicates that women carry substantial domestic and economic responsibilities but face constraints such as restricted mobility, inadequate healthcare services, and limited access to clean drinking water. Health facilities are insufficient, often requiring travel to distant urban centers, and water quality remains a major concern. Despite these challenges, women expressed positive perceptions of the Subproject and highlighted the need for improved education, healthcare services, and vocational training opportunities.

The climate change assessment underscores the severe impacts of the 2022 floods, which caused extensive damage to road infrastructure due to inadequate drainage capacity, insufficient cross-drainage structures, and canal breaches. The Pat Feeder Canal acted as a barrier and redirected floodwaters toward the road, resulting in inundation, erosion, and pavement failure at multiple locations. Proposed mitigation measures include designing infrastructure based on a 100-year return period, enhancing cross-drainage capacity, integrating climate change projections, adopting resilient engineering solutions, and strengthening inter-agency coordination.

Sensitive receptors within the project's corridor of influence include social, environmental, and economic features such as mosques, schools, madrassahs, graveyards, residential settlements, roadside businesses, and vulnerable populations including children and the elderly. Key infrastructure elements, including electricity lines, pipelines, and communication networks, are also present. Environmental receptors include agricultural land, roadside vegetation, and nearby water bodies such as Hairdin Drainage. Although these receptors are mostly located outside the direct RoW, they fall within the area of influence and require appropriate mitigation measures during project implementation.

ES-4: STAKEHOLDER CONSULTATION

Public participation and stakeholder consultation are integral to the environmental and social (E&S) safeguards process. Stakeholders, individuals and groups affected by or influencing the Project were engaged to ensure their concerns, inputs, and local knowledge are incorporated into Subproject planning and implementation. Consultations were conducted in line with national requirements, the World Bank's ESF, and the SEP. The key objective was to inform stakeholders, gather feedback, enhance transparency, and build trust, while ensuring that potential environmental, social, and economic impacts are properly addressed.

Stakeholders were identified during the scoping phase, with a primary focus on communities along the project corridor, including Sohbatpur Chowk, Goth Hazar Khan, Goth Dil Murad Khan, Goth Jan Muhammad, Goth Bahadur Khan, Goth Mehboob Ali Khan, Dirgi Village, and Sohbatpur Bazaar. They were categorized into non-institutional stakeholders (residents, shopkeepers, and service providers) and institutional stakeholders (government and non-government entities). Consultations were conducted through public meetings, Key Informant Interviews (KIIs), and Focus Group Discussions (FGDs), ensuring representation of diverse groups, including women. Key discussion areas included environmental and social impacts, employment opportunities, health and safety, access to services, land use, climate resilience, and timely project completion.

The consultation process followed principles of meaningful engagement, including inclusivity, timely information disclosure, and participation in a transparent and non-intimidating environment. Community feedback highlighted concerns regarding the need for climate-resilient road design, improved drainage, transparency in implementation, road safety, and local employment opportunities. Institutional stakeholders expressed overall support for the Subproject, recognizing its importance in restoring connectivity and mobility after the 2022 floods. Consultations will continue throughout the project lifecycle. The draft ESMP will be disclosed for stakeholder review, and the final report will be made available at the PMU and PIU. Regular community engagement will be maintained during implementation. A project-specific GRM will also be established to address stakeholder concerns in a timely and transparent manner, ensuring effective and sustainable project implementation.

ES-5: IMPACT ASSESSMENT AND MITIGATION STRATEGIES

The Subproject is expected to generate significant positive outcomes, including improved connectivity, better access to essential services, enhanced economic opportunities, and increased resilience of road infrastructure to flooding. Short-term employment during construction will also support local livelihoods. However, potential adverse impacts may arise during construction, such as dust, noise, soil erosion, waste mismanagement, and water pollution. Social risks include occupational and community health and safety concerns, traffic hazards, and labour influx issues, including GBV, SEA/SH, and communicable diseases. No significant impacts are anticipated on land acquisition, biodiversity, or cultural heritage, though chance find procedures will be applied.

The ESMP follows the mitigation hierarchy (avoid, minimize, mitigate, compensate). Key measures include dust and pollution control, waste management, erosion prevention, and safe material handling. Social measures include Labour Management Procedures (LMP), a Worker Code of Conduct (including GBV/SEA/SH provisions), traffic management, community awareness, and health and safety protocols. Occupational safety will be ensured through PPE, training, and emergency preparedness, while community safety will be managed through controlled site access and safe construction practices.

An E&S budget of PKR 23.268 million has been allocated to implement mitigation measures, monitoring, capacity building, and stakeholder engagement, including the GRM. The PIU, Construction Supervision Consultant (CSC), and Contractor (CC) will oversee implementation. The Contractor will execute ESMP measures, the CSC will monitor compliance, and the PIU will ensure overall coordination and reporting. Prior to construction, the Contractor will prepare a site-specific Contractor's ESMP (C-ESMP) for approval by the CSC and PIU, ensuring effective and compliant implementation.

ES-6: GRIEVANCE REDRESS MECHANISM

An effective GRM is essential to ensure timely resolution of community concerns and avoid project delays. The Subproject GRM will include a Public Complaint Cell (PCC), Grievance Redress Committee (GRC), and Grievance Focal Persons (GFPs). The PCC, under the PMU, will receive and manage complaints, while GFPs will facilitate community access. The GRC will act as the final non-judicial body for unresolved cases.

Complaints will be logged and acknowledged within two days, investigated by the PCC within seven days, and resolved where possible. Unresolved cases will be escalated to the GRC, which will review and decide within 14 days through dialogue and, if needed, hearings. If still unresolved, complainants may approach relevant authorities or courts. The GRC will include representatives from the PIU, CSC, Contractor, workers, and community (male and female), and will be chaired by a local representative. The PCC will maintain grievance records for transparency and reporting. The GRM will be reviewed quarterly to ensure effectiveness and continuous improvement.

ES-7: CONCLUSION

The Site-Specific ESMP for the Subproject establishes a comprehensive framework to ensure that all rehabilitation and reconstruction activities are implemented in an environmentally sustainable and socially responsible manner. It identifies the key environmental and social risks associated with the rehabilitation of the existing road infrastructure and defines appropriate mitigation, monitoring, and management measures in line with national regulations and the World Bank ESF. The ESMP emphasizes a preventive and adaptive approach to environmental and social management, ensuring that potential impacts are avoided, minimized, or effectively mitigated throughout all phases of the project.

Successful implementation of the ESMP requires the active and coordinated participation of all key stakeholders, including government implementing agencies, the CSC, CC, local communities, and relevant monitoring authorities. Continuous environmental and social monitoring, regular reporting, and adaptive management will be

undertaken to ensure compliance and to address any unforeseen issues in a timely manner. This approach will help safeguard environmental quality, protect community health and safety, and ensure that project benefits are achieved without causing long-term adverse impacts on surrounding ecosystems and populations. The CC shall fully comply with all applicable national environmental, social, labour, and occupational health and safety regulations, as well as the requirements of the World Bank ESF, during the execution of the Subproject. In this regard, the CC will be responsible for preparing a detailed C-ESMP, which will translate the ESMP provisions into site-specific, actionable measures, including method statements, mitigation plans, monitoring procedures, and emergency response protocols.

The C-ESMP shall be submitted to the CSC, the implementing agency, and the World Bank for review and approval prior to the commencement of any civil works. No construction activities will be permitted until the C-ESMP has been formally reviewed and approved by all relevant authorities. This ensures that all environmental and social safeguards are fully integrated into construction planning and execution, thereby promoting accountability, compliance, and sustainable project delivery.

CHAPTER - 1: INTRODUCTION

1.1 PROJECT BACKGROUND

The provincial Government of Pakistan (GoP), through Ministry of Planning, Development and Special Initiatives (MoPDSI) at federal level and Planning and Development Department (P&DD), Government of Balochistan, at provincial level is planning to undertake Integrated Flood Resilience and Adaptation Project (IFRAP). The Balochistan Integrated Water Resources Management & Development (BIWMRD) Project and Project Implementation Unit (PIU) of IFRAP intends to conduct detailed assessment for reconstruction/rehabilitation of the damaged roads caused by floods in 2022 through a consultancy agreement against the US$ 50 million allocated share in the umbrella PC-I for the project titled "Resilience, Enhancement, and Livelihood Diversification in Balochistan" through ranking based on cost effectiveness. The IFRAP is an initiative funded by the World Bank and implemented by the Government of Balochistan, Pakistan. It aims to enhance flood resilience and support recovery in flood-affected regions. The project addresses the impacts of recent floods in 2022, which caused widespread damage to infrastructure, particularly roads, in Balochistan. These floods disrupted connectivity and access to essential services, affecting communities in remote areas.

The road infrastructure sub-component focuses on rehabilitating and upgrading flood-damaged roads to climate-resilient standards. This includes improving drainage systems and incorporating measures to withstand future weather events. The sub-component supports the project's goals of improving livelihoods and flood risk protection in selected districts of Balochistan, such as Jhal Magsi, Naseerabad, Sohbatpur, Jaffarabad, and Quetta. By enhancing road networks, it seeks to boost connectivity and economic recovery while integrating climate adaptation measures. Referring to the TORs, the project involves the construction/rehabilitation of 1) Allah Yaar to Hairdin Drainge, 2) Ghandawa – Nautaal Road Section, 3) Shah Alam Bridge Quetta, 4) Ahmadabad Bridge Quetta. In pursuant to the TORs, road network starting from Sohbatpur Chowk Dera Allah Yaar to Hairdin Drainage (Refer to as Subproject) is to be rehabilitated. The total length of the Subproject is 38.8 km.

1.2 OBJECTIVES OF ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP)

The Environmental and Social Management Plan (ESMP) has been prepared in compliance with Bank's Environmental and Social (E&S) Safeguard requirements including E&S Standards (ESS). ESMP provides a framework for implementing and managing the mitigation and monitoring measures recommended against the project activities. ESMP identifies environmental and social management measures to be implemented throughout the project. The purpose of the ESMP is to consider and develop adequate measures and controls to minimize and mitigate the potential environment and social risks to manage adverse impacts identified during the project implementation.

The main objective of the ESMP is to ensure that anticipated environmental and social impacts and risks are effectively managed during the construction, operation, and closure of the project. The ESMP specifies the mitigation measures, which are to be implemented by the Construction Contractor (CC). Stepwise objectives, which can be contractual obligations of contractor are as under:

a) Compliance with World Bank Environment and Social Framework (ESF)
b) Site selection for Facilities
c) Human Resource
d) Mitigation Measures
e) Climate Resilient infrastructure
f) Defining roles and responsibilities of Project Actors
g) Environmental Trainings
h) Documentation requirements
i) Inspection and Supervision

j) Contractor's ESMP
   - Campsite management plan
   - Waste Management Plan
   - Occupational Health & Safety Plan
   - Emergency Response Plan
   - Traffic Safety and Diversion Management Plan
   - Solid & Liquid Waste Management Plan
   - Air Quality, Noise & Dust Management Plan
   - Biodiversity Management Plan (Flora & Fauna)

1.3 APPROACH AND METHODOLOGY

The following methodology has been used for the preparation of ESMP of sub-project.

Table 1: Methodology for ESMP Preparation

Sr. No.	Components	Description
1	**Literature Review& Data Collection**	Sub-project documents including ESMF of the project and other published and unpublished information/data was gathered.
2	**Review of Legal and Institutional Framework**	Reviewed all applicable national environmental and social regulations, including World Bank (WB) Environmental and Social Framework (ESF), IFC Performance Standards and assessed institutional capacity, roles and responsibilities at all stages of the project.
3	**Baseline Environmental & Social Survey**	Carried out environmental and social baseline studies. For example, ambient air, water (surface, ground), soil, noise, socio-economic and ecological environment etc.), identified sensitive receptors and consulted with the local communities.
4	**Impact Assessment & Analysis**	Determined likely impacts, both positive and negative during implementation and operation and classified impacts as direct, indirect, long-term, short-term and cumulative.
5	**Mitigation and Enhancement Measures/Options**	Planed the mitigation options like pollution reduction, biodiversity management, waste management, occupational and community health & safety plan and other mandatory options for continual environmental and social improvement and applied the mitigation hierarchy at different stages of the project. Further, also included enhancement strategies for positive E&S impacts.
6	**Stakeholder Consultation & Disclosure**	Carried out the initial participatory meetings with affected communities and other stakeholders and integration of feedback into final ESMP will continue during the project, as ESMP being the standalone and living document.
7	**ESMP Document**	Tabulated the mitigation measures in detail and monitoring plan has been formulated, including the methodology, frequency and responsibilities. Training needs and capacity building and stakeholder engagement and grievance mechanism has been incorporated. Furthermore, budget and resource allocation for E&S monitoring has been made part of the plan.

1.4 SUBPROJECT AREA

Construction & Works (C&W) department Balochistan targets to re-habilitate the road section that starts from Sohbatpur Chowk Dera Allah Yaar (28.376987, 68.350996) District Jafarabad and ends at Hairdin Drainage

(28.515624, 68.685187) District Sohbatpur of Balochistan province. The total length of the Subproject is 38.8 kilometres (km) that was damaged during flood 2022. It is rehabilitation of two lanes single carriageway. The proposed Subproject does not lie at or near by any protected area, conservation area and wetlands. However, the Subproject area is surrounded by agriculture fields on both sides of Right of Way (RoW). Figure below shows the Subproject area and its surroundings.

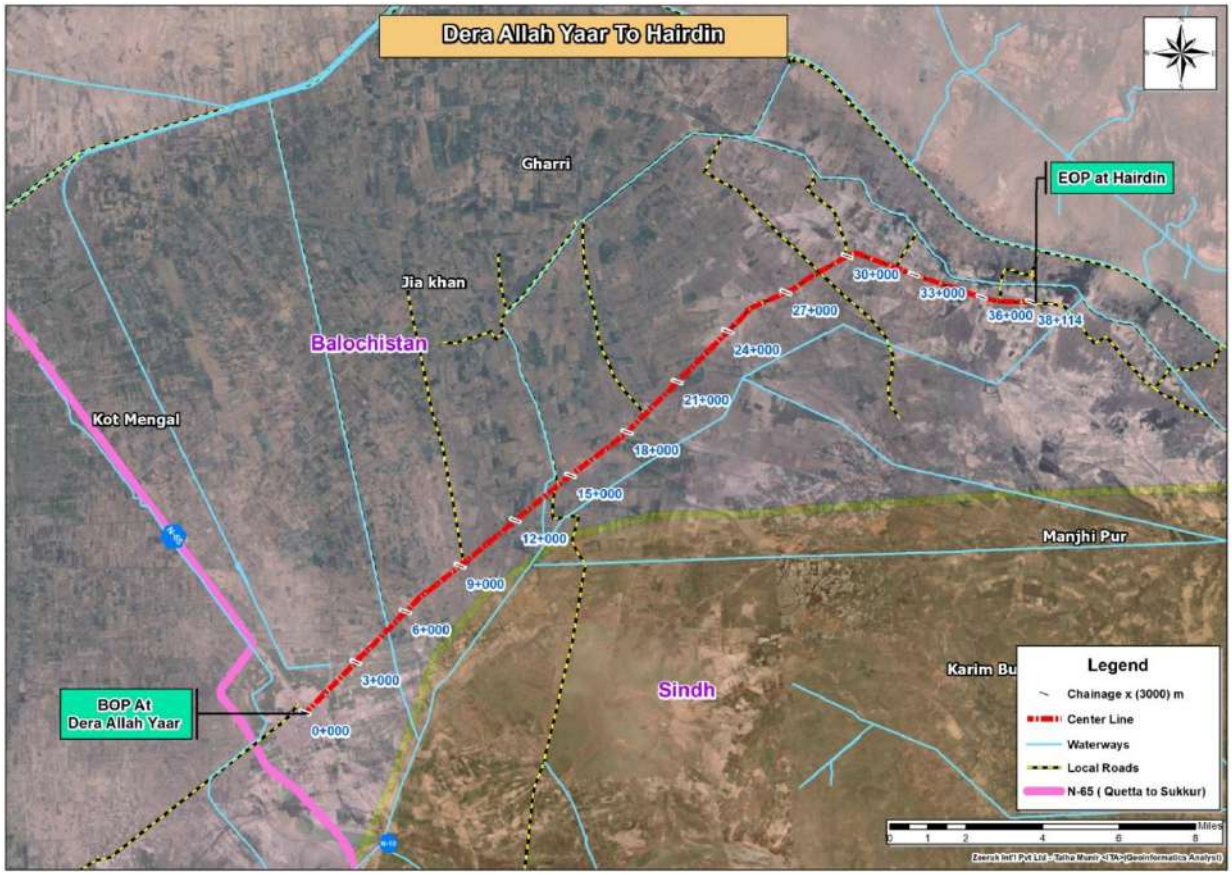


Figure 1: Map of Subproject Area

1.5 STUDY TEAM

The following was involved in the field surveys, data collection and preparation of ESMP of sub project.

Table 2: ESMP Preparing Team

Sr. No.	Names	Expertise/job description
1	Abdul Shakoor Khan	Team lead of ESMP preparation
2	Samar Shireen	Social & Gender specialist
3	Dr. Mohiuddin Zia	Ecologist/Biodiversity expert
4	Talha Munir	GIS Expert
5	Mohammad Muzammil Khan	Junior Engineer/Surveyor
6	Mohammad Haseeb	Junior Engineer/Surveyor
7	Rohit Kumar	Hydrologist
8	Mohammad Qasim Ali	Traffic counts expert

CHAPTER - 2: LEGAL AND POLICY FRAMEWORK

2.1 LEGAL AND APPLICABLE REQUIREMENTS

ESMP is developed as per the World Bank Safeguard Policies, Environment and Social Standards (ESS), Environmental and Social Commitment Plan (ESCP). Environmental and Social Management Framework (ESMF) of the project and relevant provision of Environmental Policies laid out by the Government of Pakistan along with the national and international guidelines. The Project proponent will be required to adhere to these regulations throughout the course of the proposed Project.

2.1.1 World Bank Environmental and Social Framework (ESF)

The World Bank Environmental and Social Standards (ESSs) are a set of policies designed to ensure that projects financed by the World Bank are environmentally and socially sustainable. These standards are part of the Environmental and Social Framework (ESF), which has been in effect since October 1, 2018. The ESF replaces the earlier safeguard policies and introduces a more comprehensive and integrated approach to risk management in development projects. Ten ESS are as under:

Table 3: World Bank ESSs

Environmental & Social Standards	Description	Relevancy to the Project
ESS 1: Assessment and Management of Environmental and Social Risks and Impacts	Requires a risk-based approach to managing potential environmental and social risks and impacts.	**Relevant to the Project:** The Project activities will involve a wide range of civil works from medium to relatively large scale which could have potential E&S impacts. The SSEMP and C-ESMP and other allied safeguard plans will be implemented throughout the project to comply with the specific standard.
ESS 2: Labour and Working Conditions	Protects workers' rights, health, and safety, sets standards for working conditions, terms of employment and grievance mechanisms.	**Relevant to the Project:** The Project will involve direct workers, contracted workers, primary supply workers and community workers. Locally hired labour will be preferred where possible, except for skilled workers who may not be available in project locations. The project may create some labour related risks and impacts, which may include lack of skills and compliance with relevant laws and regulations, unsafe and unhealthy working conditions, and GBV/SEA/SH. To comply with the ESS-2, a Labour Management Procedure (LMP) and SEA/SH Action Plan will be made as a part of the project.
ESS3: Resource Efficiency and Pollution Prevention and Management	Promotes sustainable use of resources (energy, water, raw materials) and management of pollutants and hazardous materials.	Relevant to the Project, as the project involves the rehabilitation/reconstruction of existing road on the same alignment that may generate solid waste, dust issues, soil erosion, water pollution etc.
ESS 4: Community Health & Safety	Addresses risks and impacts on local communities, including those related to infrastructure, traffic, hazardous materials, and	**Relevant to the Project:** The Project is planned to have significant investment in re-construction of infrastructure which may cause generation of generated solid waste, dust issues, soil erosion, water pollution and include use

	emergency response.	of construction materials that includes asphalt, sand, cement and gravel stone etc.).
ESS 5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	Sets rules for compensating people economically or physically displaced due to Projects	Relevant to the Project, as there is no land acquisition/displacement of communities involved. Land acquisition and resettlement is not anticipated; However, Resettlement Policy Framework (RPF) will be developed to respond to risks and impacts related to land acquisition and resettlement (if any), land-use, temporary economic and/or physical displacement, anti-encroachment drives/forced evictions along with relevant management and mitigation measures.
ESS 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	Aims to protect biodiversity and promote sustainable natural resource use.	**Relevant to the Project:** Since the Project is not passing through any protected land/forest cover etc. However, the general ecological environment has been assessed. Moreover, most of the infrastructure investments are rehabilitation works and anticipated to exist within the existing built environment. Physical investments that could have significant adverse impacts to natural and critical habitats will be excluded from the Project. However, mitigation options are proposed in the ESMP to minimize the impact during construction and operation phases.
ESS 7: Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities	Safeguards the rights, culture, and livelihoods of Indigenous Peoples and ensures their inclusion in development.	Not relevant to the Project, as Pakistan has recognized Indigenous People, "Kalash" residing in three valleys of Chitral of Khyber Pakhtunkhwa.
ESS 8: Cultural Heritage	Protects cultural heritage from adverse Project impacts and supports its preservation.	**Relevant to the Project:** Since the Project involves significant amount of civil works including excavation etc., the SSEMP includes chance find procedures and screening checklist which will guide the handling of cultural heritage discovered during commencement of Project activities. In addition, in case there are impacts recorded on a notified cultural heritage within the Project implementation, a Cultural Heritage Management Plan (CHMP) will be prepared and implemented accordingly.
ESS 9: Financial Intermediaries	Requires financial intermediaries receiving Bank funding to manage environmental and social risks in their Subprojects.	Not relevant to the Project

ESS 10: Stakeholder Engagement and Information Disclosure	Mandates engagement with stakeholders throughout the Project cycle, including consultation and access to information.	**Relevant to the Project:** Effective stakeholder engagement and information disclosure will be crucial to the project. The SSEMP will follow a structured approach to stakeholder engagement and public outreach that is based upon meaningful consultation and disclosure of appropriate information. A standalone SEP has been prepared as part of SSEMP, that will be periodically updated periodically.

2.1.2 World Bank Occupational Health & Safety (OHS) Guidelines

Contractor will follow the Occupational Health and Safety Guidelines of International Finance Corporation (IFC) and World Bank Group during project's implementation stage. These guidelines are as under:

Occupational Health and Safety:

- General Facility Design and Operation
- Communication and Training
- Physical Hazards
- Chemical Hazards
- Radiological Hazards (if any)
- PPEs
- Special Hazard Environments
- Monitoring

Community Health and Safety:

- Water Quality and Availability
- Structural Safety of Project Infrastructure
- Life and Fire Safety (LFS)
- Traffic Safety
- Transport of Hazardous Materials
- Disease Prevention
- Emergency Preparedness and Response

Construction and Decommissioning:

- Environment
- Occupational Health and Safety
- Community Health and Safety

2.1.3 National/Provincial Guidelines and Policies

The ESMP also complies with the national/provincial environmental requirements defined through Pakistan Environmental Protection Act (PEPA) 1997 and subsequent Balochistan Environmental Protection act, 2012. The ESMP will consider the natural environment (air, water, and land); human health and safety; social aspects, transboundary and global environmental aspects including climate change and its implications, and induced impacts as well as the cumulative impacts of other development projects in the area.

National Environmental Policy (NEP), 2005

The National Environmental Policy (NEP) identifies a set of sectoral and cross-sectoral guidelines to achieve its goal of sustainable development. Section 5 of the policy commits for integration of environment into development planning as instrument for achieving the objectives of National Environmental Policy. Management of proposed project will ensure that the project will not add to the aggravation of the environmental issues identified in NEP and mitigation measures will be adopted to minimize or avoid any contribution of the project in these areas.

National Conservation Strategy (NCS)

The National Conservation Strategy (NCS) has 68 specific programs in 14 core areas in which policy intervention is considered crucial for the preservation of natural and physical environment. The core areas that are relevant in the context of the proposed project are pollution prevention and abatement, restoration of rangelands, conserving biodiversity, supporting plantations, and the preservation of cultural heritage.

Pakistan Climate Change Act 2017

The Project activities will involve a wide range of civil works from medium to relatively large scale, which would contribute to the significant use of natural resources, and generation of waste. The proposed project will ensure efficient use of resources through implementation of measures. This act is applicable in the sub project.

National Disaster Management Act, 2010

The Subproject involves re-construction of infrastructure, affected in Balochistan by the 2022 floods. The aim of the project is to build back better with improved infrastructure based on climate risks, improved engineering design standards, and improved construction and maintenance to enhance resilience. However, this act is applicable in the proposed sub project.

Balochistan Wildlife Preservation Protection Conservation and Management Act 2014 (BWPPCMA)

Direct impacts on the biodiversity and natural resources is not anticipated as most of the infrastructure investments are rehabilitation works and anticipated to exist within the existing built environment. Physical investments that could have significant adverse impacts to natural and critical habitats will be excluded from the project.

Balochistan Antiquity Act, 2014

The Project investments include significant amount of civil works which includes excavation, the site specific ESMP will include chance find procedures and screening checklist which will guide the handling of cultural heritage discovered during commencement of Project activities. In addition, in case there are impacts recorded on a notified cultural heritage within the project implementation, a Cultural Heritage Management Plan (CHMP) will be prepared accordingly.

Balochistan Employment of Children (Prohibition & Regulation) Act, 2021

Project interventions will involve different contractors and sub-contractors for the execution of the project; however, children may involve in direct or indirect employment with the contractors. Hence, the act is applicable in the proposed sub project.

Balochistan Payment of Wages Act, 2021

The workforce (direct workers, contracted workers, primary supply workers and community workers) in the proposed sub project will be involved during implementation stage. The project proponent will respect the provision of relevant sections of this act.

The Protection against Harassment of Women at the Workplace Act, 2010

In case of females are involved in the project activities, this act will be applicable. However, the proponent of the project will ensure the relevancy of this act to involvement of women.

Balochistan Factories Act, 2021

The sub project will involve in multi-dimensional works and the workers (direct workers, contracted workers, primary supply workers and community workers) which may involve in occupational and health related risks during construction phase. Hence, this act is applicable to provide safety to the workers.

Land Acquisition Act, 1894 & amendments

Land acquisition and resettlement is not anticipated in the Subproject, However, Resettlement Policy Framework (RPF) will be developed prior to commencement of civil works or infrastructure activities to respond to risks and impacts related to land acquisition and resettlement (if any), land-use, temporary economic or physical displacement, anti-encroachment drives/forced evictions along with relevant management and mitigation measures.

Balochistan Occupational Safety and Health Act, 2022

The project may create some labour-related risks and impacts, which may include lack of skills and compliance with relevant laws and regulations, unsafe and unhealthy working conditions, and GBV/SEA/SH risks. Therefore, this law is applicable, and the project will ensure compliance with the relevant sections during the implementation. Necessary mitigation measures have been provided in this SSEMP to manage these risks. Moreover, a separate LMP has been prepared as a part of the Project. However, more site-specific LMP will also be part of the C-ESMP, that will be furnished by the CC before mobilization to the site.

Balochistan Forest Act 2022

The Project activities under roads component are proposed to rehabilitate/reconstruct the damaged bridges and roads that is expected to overall benefit the biodiversity of the area. However, the physical investments that could have significant adverse impacts to natural and critical habitats will be excluded from the Project.

Balochistan Environmental Protection Act (2012)

The Project activities will involve a wide range of civil works from medium to relatively large scale which could have potential E&S risks. The Subproject will respect the provision of this act and prepare the EIA/IEE study, where required, as per Balochistan Environmental Protection Agency (Review of IEE/EIA) Regulations, 2020) to obtain the approval with conditions.

2.1.4 International Treaties and Conventions

Pakistan is signatory to several multilateral environmental and social agreements. The proposed sub project is obliged to respect the applicable agreements. The following are the relevant international treaties and conventions to which Pakistan is a party:

Table 4: E&S Obligations

Sr. No.	Environmental obligations	Social obligations
1	Convention on the Conservation of Migratory Species of Wild Animals	International Covenant on Economic, Social and Cultural Rights
2	Convention on International Trade in Endangered Species (CITES)	Convention on the Elimination of all Forms of Discrimination against Women, 1979.
3	United Nations Convention on Biological Diversity (UNCBD)	Discrimination (Employment and Occupation) Convention, 1958 (No. 111).
4	United Nations Framework Convention on Climate Change (UNFCCC)	Elimination of forced and compulsory labour (conventions 29 and 105)
5	Convention concerning the Protection of World Culture and Natural Heritage	Abolition of child labour (conventions 138 and 182)
6	Kyoto Protocol to the Convention United Nations Framework on Climate Change	International Covenant on Civil and Political Rights, 1966.
7	Stockholm Convention on Persistent Organic Pollutants	Elimination of discrimination in respect of employment and occupation (conventions 100 and 111)
8	Convention on Wetlands of International Importance	Hours of Work (Industry) Convention, 1919 (No. 1)
9	Paris Agreement, 2015.	Indigenous and Tribal Populations Convention, 1957 (No. 107)
10	Vienna Convention, 1985	Convention for Safeguarding the Intangible Cultural Heritage, 2003.

CHAPTER - 3: DESCRIPTION OF THE SUBPROJECT

This chapter describes the salient features of the Subproject that falls under Sub-component 1.3 (Reconstruction and Rehabilitation of Roads and Bridges) of IFRAP. This component involves the construction/rehabilitation of 1) Allah Yaar to Hairdin Drainge, 2) Ghandawa – Nautaal Road Section, 3) Shah Alam Bridge Quetta, 4) Ahmadabad Bridge Quetta.

3.1 SUBPROJECT

The scope of the work for the Subproject includes the construction/rehabilitation of existing road starting from Sohbatpur chowk Dera Allah Yaar to Hairdin Drainage on the same alignment. The location map of Subproject is shown in **Figure 1** below. It is evident that there is no encroachment found through out the stretch, and the rehabilitation works shall be undertaken within the RoW of existing road.

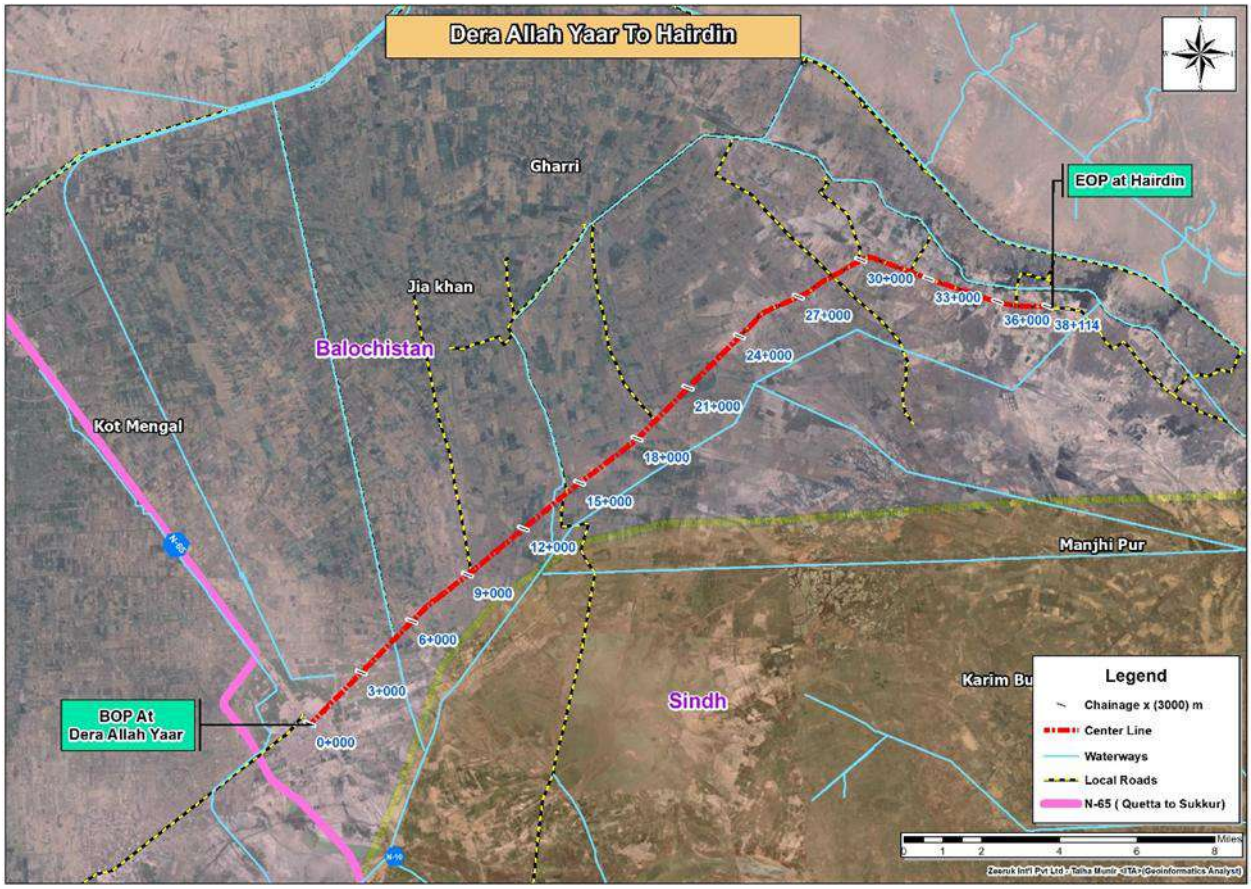


Figure 2: Sohbatpur Chowk Dera Allah Yaar to Hairdin Drainage

3.2 DESIGN CRITERIA

Table 5:Design Criteria

Sr No.	Parameters	Terrain		
		Unit	Plain	Hilly
1	Design Speed	Km/hr	100	80
2	Horizontal Curvature (Min. Radius)	M	120	90
3	Maximum Super elevation	%	6	6
4	Tangent Runout Length	M	42	30
5	Pavement	%	2	2
	Shoulders	%	4	4

6	Embankment Fill Side Slope	(H:V)	2:1
7	Design Speed	Km/hr	80-100
8	Width of Carriageway	m	2 x 6.30
9	Outer Shoulder Width	m	2 x (2.0/1.5)
10	Inner Shoulder Width	M	2 x (1.0/1.0)
11	Cross-slope Carriageway	%	2/2
12	Cross-slope Shoulders	%	4/4

For the Subproject, the following design criteria shall be applied.

Codes and Practices:

- AASHTO LRFD Bridge Design Specifications (8th Edition, 2017)
- West Pakistan Highway Code of Practice: Highway Bridges (1967)
- Pakistan Building Code (2007)

Concrete Standards:

- ACI 318-14: Building Code Requirements for Reinforced Concrete
- ACI 301-95: Standard Specifications for Structural Concrete

Steel and Reinforcement Specifications:

- ASTM A36: Standard Specification for Carbon Structural Steel
- ASTM A242: Standard Specification for High-Strength Low-Alloy Structural Steel
- ASTM A416: Standard Specification for Uncoated Seven-Wire Steel Strand for Prestressed Concrete
- ASTM A706: Standard Specification for Low-Alloy Steel Deformed and Plain Bars for Concrete Reinforcement
- ASTM A722: Standard Specification for Uncoated High-Strength Steel Bars for Concrete Reinforcement
- ASTM A615: Standard Specification for Deformed and Plain Billet Steel Bars for Concrete Reinforcement

3.3 RAW MATERIAL SOURCE AND AVAILABILITY

Sources of different raw materials required for construction are given in the **Table 6** below.

Table 6: Availability of construction material

Sr. No.	Raw material	Availability in the surrounding	Criteria for selecting site
1	Borrow material	The contractor will identify with the site and get that approved by CSC.	Material Quality: Suitable soil, good compaction, free of organic matter E&S requirements: Avoid farming land, settlements, wetlands, protect water table Legal & safety requirements: Authorized, compliant with SSEMP, landowner consent, safe access, low risk of flooding or instability Location: Close to site, accessible, avoid protected areas. The approved sites for materials like stone, sand etc. are not owned or maintained by any agency in Balochistan. However, the borrow material sites should be selected in close coordination of CSC and CC and approval of CSC to avoid any additional E&S risks.

2	Stones for retaining walls and rip rap.	The contractor will identify the most viable site for stones and CSC will approve accordingly.	Size: 150–300 mm for retaining walls and 300–1000+ mm depending on flow for rip rap stones Strength: High compressive strength for retaining walls and high strength, abrasion-resistant for rip rap stones Absorption: greater than 2–3% for both retaining walls and rip rap stones Forbidden materials: Weak, laminated stones for retaining walls and rounded cobbles and soft stone for rip rap stones.
3	Stone for sub-base, aggregate base course, asphalt courses	The site will be identified by the CC.	Sub-base: LAAV ≤ 50%, PI ≤ 6, CBR ≥ 20–30%, well-graded, low absorption Bae course: LAAV ≤ 40%, CBR ≥ 80%, FI ≤ 25%, angular crushed stone Asphalt course: LAAV ≤ 30–35%, FI ≤ 15–20%, PSV ≥ 45–55, water absorption ≤ 2%
4	Sand	The contractor will identify the viable site for sand duly approved by the CSC.	Silt content: ≤ 3–5% Soundness loss: ≤ 10–12% Fineness Modulus: 2.2–3.2 (concrete) Particle shape: Angular/sub-angular Water absorption: ≤ 2% Specific gravity: 2.5–2.7 Organic matter: Must pass color test
5	Water for compaction and sprinkling.	CC will meet with the water demand for construction, identify the source and get that approved by CSC.	Ph: 6.0 to 8.0 TDS (Salinity): < 2000 mg/L Electrical conductivity: < 1500–2000 µS/cm Odor: None or minimal Color: Clear to slightly turbid Suspended solids: Low; no excessive mud Organic matter: Minimal
6	Cement & reinforcement steel	CC will provide these requirements. However, CSC will be consulted.	Cement: Must meet the standards, proper fineness, strength, soundness, low chloride and alkalinity Reinforcement steel: Must meet yield strength requirements (Fe 415–500), ductile, uniform ribs, controlled carbon content, corrosion-protected if required

3.4 CONTRACTOR'S CAMP

The criteria for contractor's camp site will be 500m away from any residential dwelling and sensitive receptors. The CC will be contractually bound to maximize employment of the local people. The machinery and equipment will be accommodated in the open yard or rented building, that should have enough storage and haulage space with ample moving and working space. The CC will establish a workshop for repair of vehicles and other similar machinery. The contractor will establish a dispensary where paramedical staff and a doctor working on a part time basis will be available.

The maintenance of machinery/equipment should be carried out in a designated place within the labour/construction camp with consideration of safety and health protocols for workers. The purpose is to avoid transportation of disordered machinery/equipment to the market for maintenance and repair work. Figure below shows the recommended labour/construction camp for the Subproject. Labour camp location is proposed as shown

in figure below. However, it is further apprised that the CC will suggest a more specific labour camp location in the C-ESMP considering the E&S aspects before mobilization to the site.

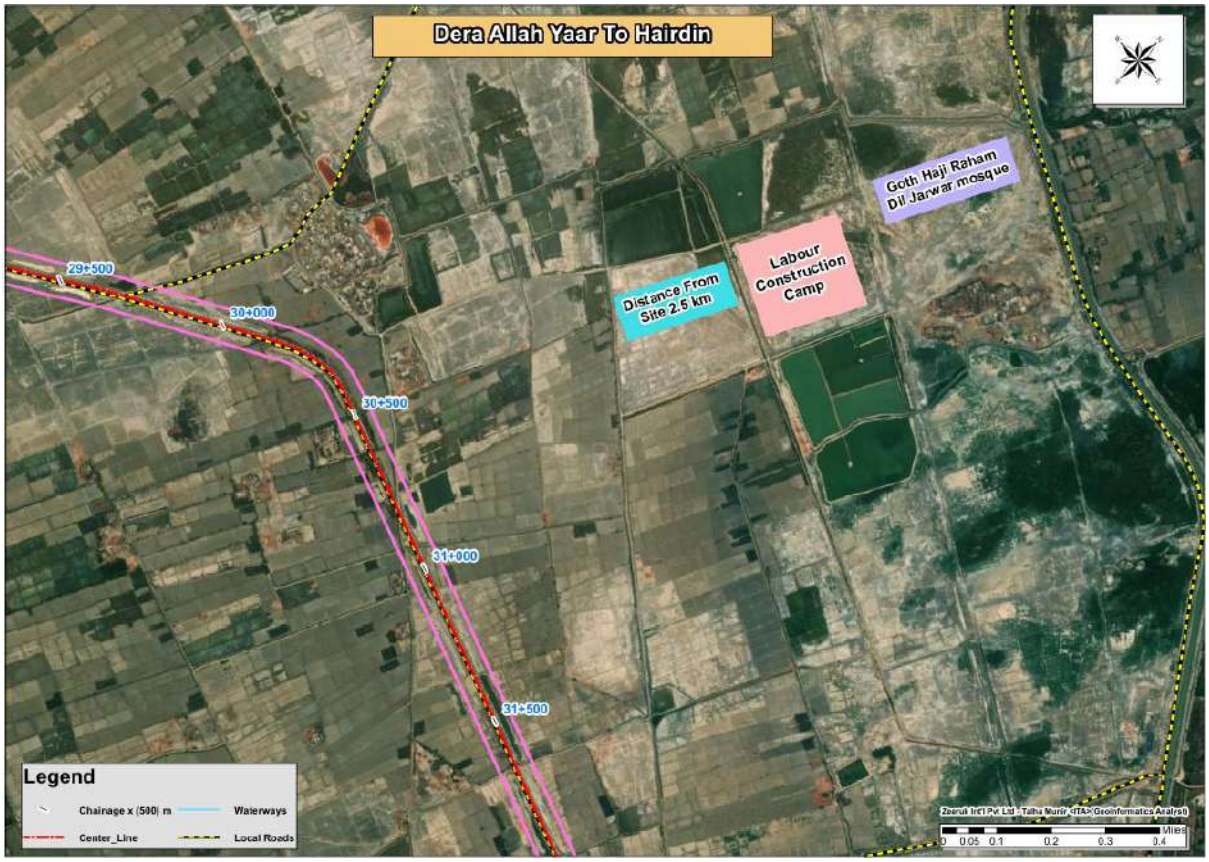


Figure 3: Labour/Construction Camp

3.6 SECURITY ARRANGEMENTS AND HEALTHCARE FACILITIES

Given the prevailing security condition in the project area, security staff is important. Adequate security will be required at contractor's camp, material store, equipment yards and location of the work in progress on the work site. Coordination will be necessary with nearby law enforcing agencies.

With many labours and employees working in the project of road construction, small accidents are expected to take place on all construction sites. A dispensary will be set by the CC within the base camp. The dispensary will be operated by the CC with full time paramedics. For major cases the patients will be shifted to the District Hospital under a pre-coordinated arrangement. Almost all the unskilled labour will be employed from the local area of Sohbatpur and Jafarabad. This will also keep the camps less pressurized and manageable.

Road construction is a special job and the labour working on such work requires special protective uniforms and special HSE measures. It will ensure that the labour engaged in breaking stones, handling bricks, mixing concrete or mixing and laying asphalt will have long boots, overall, goggles, gloves, ear mufflers, safety jackets, safety hats etc.

3.7 LABOUR REQUIREMENT AND REPORTING OFFICE

Approximately 40 to 50 labours are likely to be involved for the Subproject during the peak construction activities. It is anticipated that the unskilled labour will be hired from the local area (project location area and its surroundings) while the skilled ones will be hired from outside the Project locations. Along the roads and in work bases special areas will be marked where the labour can gather at the time of pick and drop, emergency or briefing

and places will be clearly marked and kept open and clean and asper requirement will be equipped with a public address system.

3.8 REQUIREMENT OF MACHINERY AND EQUIPMENT

It is estimated that machinery/equipment will be required for the Subproject. However, the machinery/equipment provided by the CC should be fit for construction work. The list of machinery/equipment is given below for the Subproject is given in below table.

Sr. No.	Description	Total quantity
1	Excavator	04
2	Dumper Truck	10
3	Grader	02
4	V-Roller	02
5	Static Roller (2 nos) and Sheep foot Roller	02
6	Concrete batching plant, (at least one cubic meter capacity)	
7	Asphalt batching plant (at least capacity, 2 Ton)	
8	Scaffolding (Steel pipes and accessories) & Steel form work for each lot of 50,000 Rft (0.5 mark less than required quantity)	
9	Paver machines for asphalt and rigid pavement work (complete set)	
10	Concrete pump	02
11	Transit Mixture	04
12	Drilling Rigs for pile works	02
13	Crane of suitable capacity for girder launching	02

3.9 CONSTRUCTION SCHEDULE

The construction schedule for the Subproject will be twenty-four (24) months. The CC will be required to submit the construction schedule of 24 months to the CSC and implementing agency.

CHAPTER - 4: BASELINE DESCRIPTION

This chapter provides the description of physical, ecological and socioeconomic conditions of the proposed subproject. The baseline has been prepared considering the primary data collection tools and published and un-published information/data.

4.1 CORRIDOR OF IMPACT (COI)

Corridor of impact (COI) comprised of subproject RoW and the surrounding area, where positive and negative impacts are predicted during project execution. The area of influence is the area likely to be affected by the subproject. These areas include construction/labour camps, burrow and disposal areas etc. Therefore, a maximum COI of 100 m width, 50 m on each side from the centreline was selected as COI for the baseline survey. Figure 4 and Figure 5 below show the COI from RD 0+000 to RD 19+000 and RD 19+000 to 38+095 respectively. Please refer to Annexure-1 for more understanding of the project surroundings.

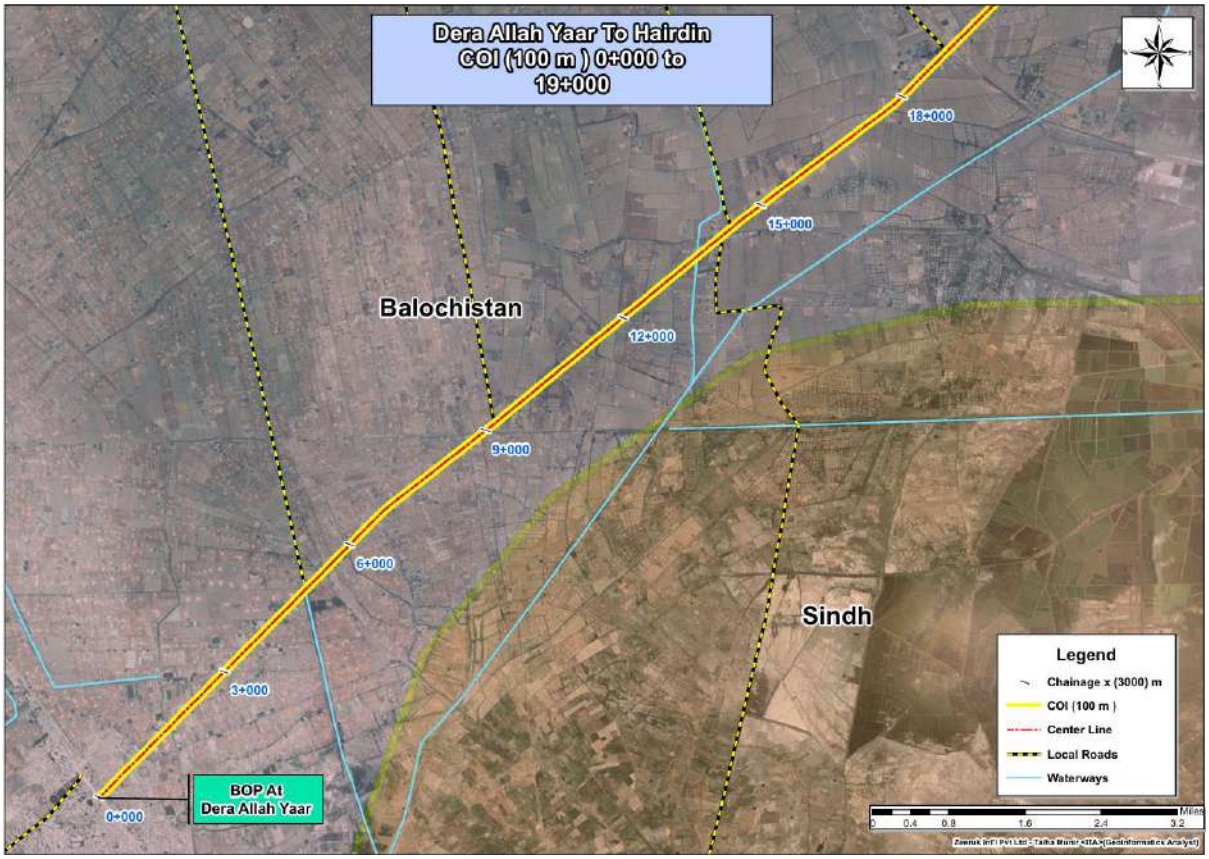


Figure 4: COI – 0+000 to 19+000

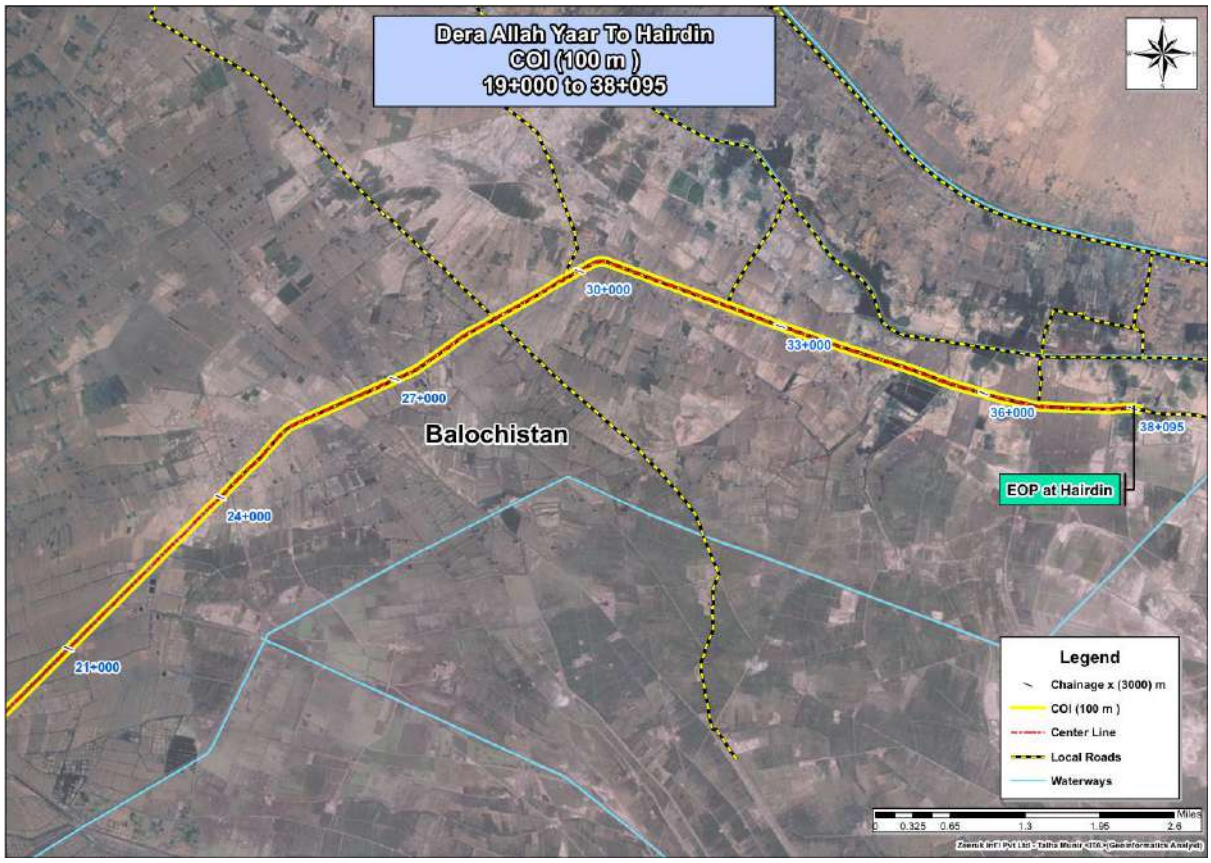


Figure 5: COI – 19+000 to 38+095

4.2 PHYSICAL ENVIRONMENT

4.2.1 Geography and Climate

The Subproject is located in district Jafarabad and Sohbatpur of Balochistan province. Jafarabad District lies in the southeastern part of Pakistan's province of Balochistan. Dera Allah Yar, also known as Jhatpat among locals, serves as the district headquarters. Jafarabad District is sub-divided into two tehsils. On the other hand, Sohbatpur District, situated in the northeastern region of Balochistan, Pakistan, is a land of cultural depth, agricultural importance, and historical relevance. Since its establishment in May 2013, the district has gradually gained administrative recognition and is on a steady path toward development. The district's strategic location, bordering both Balochistan and Sindh, has contributed to its unique cultural and linguistic blend.

The climate of the Subproject area is arid to semi-arid, with hot summers, mild winters, limited rainfall (roughly 50–150 mm annually), and occasional dust storms depending on the wider basin zone. Jafarabad covers approximately 1,643 km² in southeastern Balochistan, situated on flat alluvial plains within the Kacchi (Bolan) region, at elevations between 50–170 m above sea level.

Sohbatpur District covers an area of approximately 802 square kilometres and is geographically positioned in the Kacchi Plain, which is part of the larger Indus Plain. This terrain provides excellent conditions for agriculture due to its fertile soil and availability of irrigation water. The land is flat, with minor undulations, making it suitable for farming and rural settlements.

4.2.2 Land and Water Resources

Sohbatpur district lies within fertile plains irrigated by canal systems (from Nari, Bolan, Pachin Rivers), supporting intensive agriculture; soils vary in fertility but are susceptible to salinity and erosion. Balochistan is water scarce and land rich area of Pakistan. Surface water mainly comes from precipitation in the form of surface runoff and its share of water from the Indus River. Surface water resources are very limited in most parts of Balochistan except Naseerabad and Jaffarabad and Sohbatpur, which are fed by the Pat Feeder, the Desert and Kirthar Canals emanating from Guddu and Sukkur Barrages on the Indus River. Water in the Subproject area is found biological contaminated. Turbidity is also a common factor in the project surroundings. Post-flood water quality assessments (e.g. following 2013 flooding) revealed elevated levels of heavy metals and microbial contaminants in groundwater and surface water, posing risks of kidney, immune, and digestive disorders.

4.2.3 Geology

Geologically, the province is divided into four main geological regions, Central Mountains Range, Chagai Hills and Ras Koh Range, Makran Mountains Range and Chagai – Kharan Basin. The hills and mountains ranges consist predominantly of folded and faulted Mesozoic to middle Tertiary limestone. Mesozoic and tertiary sedimentary rocks, mostly inter bedded limestone, sandstone, shale and marls make up the bulk of the Central Mountains Range. Similar sedimentary rocks in addition to the Calcalkaline and ultramafic intrusions are found together with young quaternary volcanic rocks in the Ras Koh Range. This range is favorable for copper, iron and Sulfur deposits (Saindak). The Makran Mountains Range includes central and coastal ranges and is mainly made up of uniform sequence of tertiary and quaternary sedimentary rocks. The Chagai-Kharan Basin is mostly desert basin partly filled with younger sedimentary rocks derived from surrounding mountains ranges. A total of 14 test pits were excavated along the Subproject. These test pits allowed for direct visual inspection and evaluation of pavement layers, including asphalt, base, sub-base, and subgrade materials. Field observations from the pits provided critical data for assessing the extent of flood induced damage and layer composition. The grain size analysis is shown in **Table 7** below:

Table 7: Soil test results

BH/TP No.	Location	Top Depth (m)	Bottom Depth (m)	N.M.C (%)	Grain Size Analysis			
					Gravel (%)	Sand (%)	Silt (%)	Clay (%)
TP-01	Dera Allah Yar to Hairdin	0.00	1.00	15.30	19.20	14.13	66.67	
TP-02	Dera Allah Yar to Hairdin	0.00	1.00	17.12	0.00	2.54	97.46	
TP-03	Dera Allah Yar to Hairdin	0.00	1.00	13.47	5.47	1.78	92.75	
TP-04	Dera Allah Yar to Hairdin	0.00	1.00	15.69	4.43	3.25	92.32	
TP-05	Dera Allah Yar to Hairdin	0.00	1.00	19.02	70.74	16.47	12.79	
TP-06	Dera Allah Yar to Hairdin	0.00	1.00	14.74	0.73	1.76	97.51	
TP-07	Dera Allah Yar to Hairdin	0.00	1.00	8.18	48.23	20.24	31.53	
TP-08	Dera Allah Yar to Hairdin	0.00	1.00	13.65	9.64	23.42	66.94	
TP-09	Dera Allah Yar to Hairdin	0.00	1.00	6.14	41.14	36.70	22.16	
TP-10	Dera Allah Yar to Hairdin	0.00	1.00	11.53	9.40	36.04	54.56	
TP-11	Dera Allah Yar to Hairdin	0.00	1.00	7.66	59.86	27.50	12.64	
TP-12	Dera Allah Yar to Hairdin	0.00	1.00	9.08	11.73	53.03	35.24	
TP-13	Dera Allah Yar to Hairdin	0.00	1.00	17.56	32.43	48.14	19.43	
TP-14	Dera Allah Yar to Hairdin	0.00	1.00	12.80	11.67	17.86	70.47	

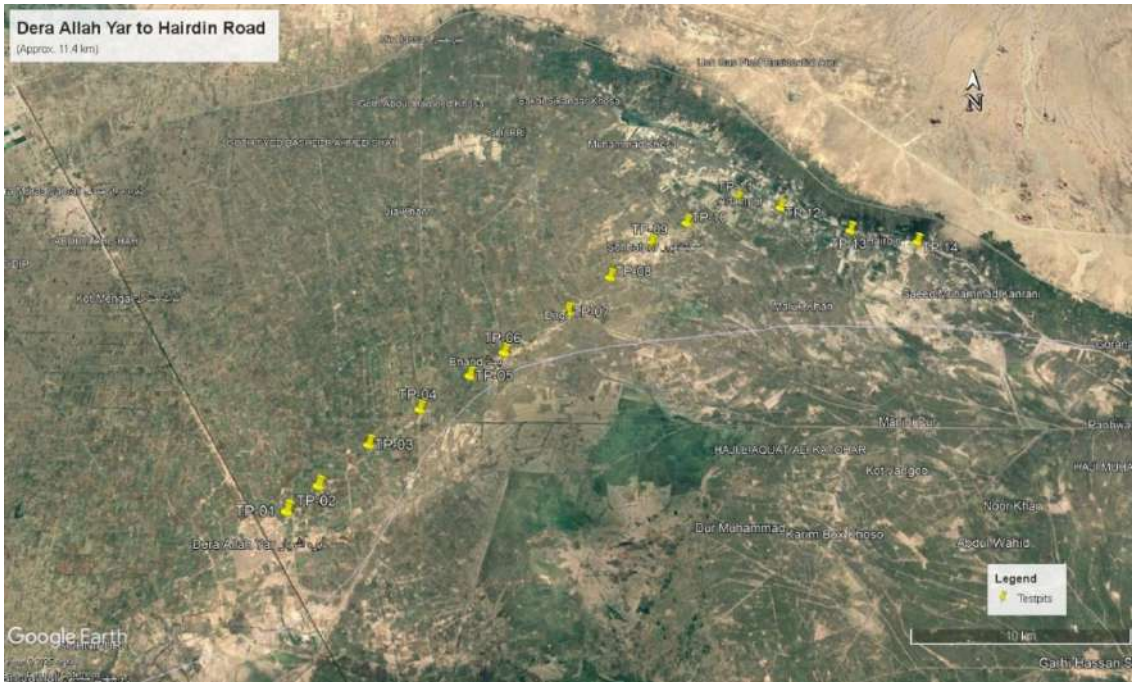


Figure 6: Test pits locations

Figure 7:Pictorial view of test pits

4.2.4 Land Use and Soil Erosion

The principal land uses in the province are agriculture which is about 2.5 million hectares (7.2 percent), forests about 1.71 million hectares (4.94 percent), rangelands about15.4 million hectares (44.45 percent) and areas not available for cultivation is about 9.83 million hectares (28.3 percent). Out of the total cultivated area, 43.54 percent is irrigated land while 56.45 percent is rain-fed area or flood irrigated area.

Salinity and soil erosion are the major environmental issues in most of the regions of the Balochistan province. However, it is at maximum level in Sohbatpur, Jafarabad and Naseerabad. Studies show that about three quarters of the piedmont basin soil is naturally saline. Man-made salinity occurs on the piedmont plain in the command area of Kirthar Canal which is caused due to unsustainable design of irrigation practices, lack of proper drainage structures leading to water logging and salt accumulation. The detailed land Use of Subproject is enclosed as **Annexure-1** of the report.

4.2.5 Seismology

According to the seismic zoning map of Pakistan proposed by the Building Code of Pakistan (BCP; 2007), Pakistan is divided into five seismic zones (Zones 1, 2A, 2B, 3, and 4) considering the severity of seismic hazard; zone 1 is the lowest, and zone 4 is the highest seismic zone. The Subproject falls into two seismic zones, i.e. Zone 2A, and Zone 2B.

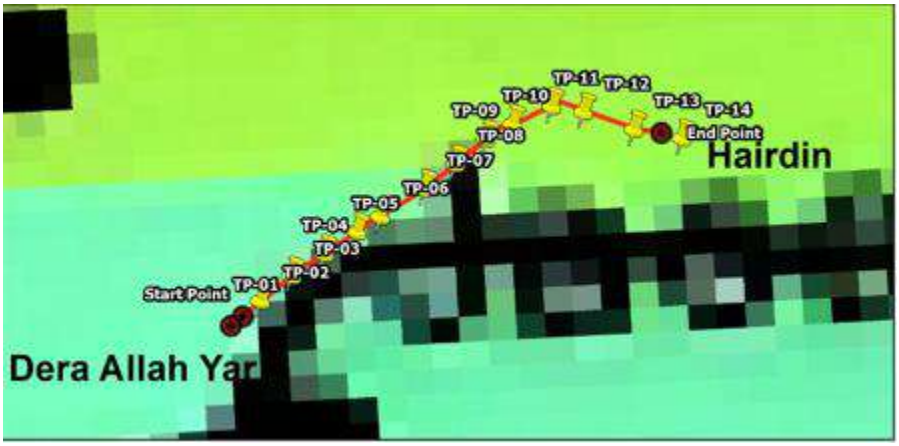


Figure 8: Seismic Zone of Subproject

4.2.6 Hydrology

Hydrological assessment has been undertaken to provide critical data to support the design of effective drainage and flood management measures for the road infrastructure. The Subproject is surrounded by two major irrigation canals, the Pat Feeder Canal, originating from the Guddu Barrage, and the newly constructed Kachhi Canal that runs near to the road, altering local hydrology by diverting water for agriculture. The terrain is relatively flat, with an elevation of approximately 58 meters MSL around Dera Allah Yaar, gradually rising to about 61 meters MSL near Hairdin.

Watershed delineation was carried out to identify contributing catchments and potential flood risks along the alignment. The analysis was undertaken using the calibrated DEM and flow accumulation models, further supplemented with field observations and stakeholder inputs. The results of the delineation indicate two distinct catchments contributing towards the project road. The primary watershed, directly draining into the streams and natural channels crossing the road, has an estimated contributing area of approximately 2,577 km², as shown in **Figure 5** below. This area represents the natural hydrological regime that would normally affect the road section

during storm events. In addition, the analysis highlights a secondary extended watershed located to the north and west of the alignment, bounded by the Pat Feeder Canal. Under normal conditions, this extended watershed will not contribute due to the presence of the canal bunds and relatively higher elevations represented in the DEM.

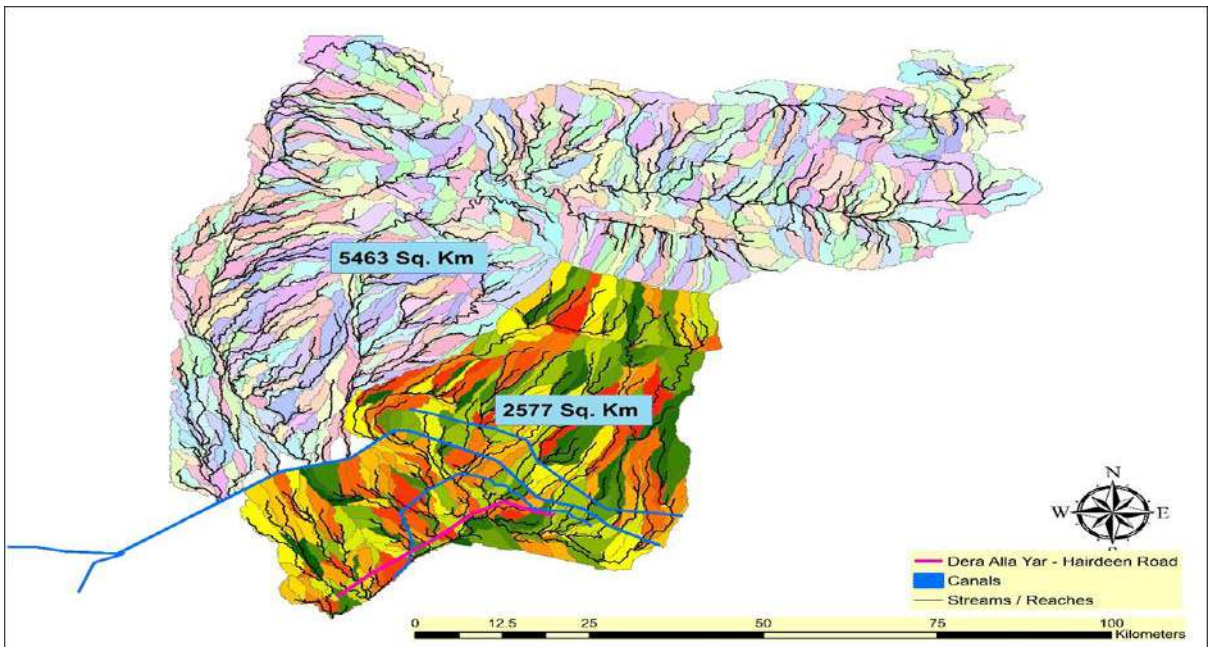


Figure 9: Watershed Delineation & Sub-Basins

4.2.7 Ambient Air Quality

Table 8: Ambient air quality monitoring at Point-1

Sr. No.	Time	Co (mg/m^3)	NO (µg/m^3)	NO2 (µg/m^3)	NOx (µg/m^3)	SO2 (µg/m^3)
1	07:35	1.17	16.50	25.55	42.06	17.00
2	08:35	1.12	16.69	25.91	42.60	18.96
3	09:35	1.12	15.13	25.61	40.75	21.96
4	10:35	1.15	16.82	23.28	40.10	20.98
5	11:35	1.21	15.18	27.74	42.92	17.03
6	12:35	1.13	15.47	26.35	41.82	15.97
7	13:35	1.22	17.07	24.59	41.66	23.04
8	14:35	1.09	16.31	23.03	39.34	21.94
Average Concentration		**1.15**	**16.15**	**25.26**	**41.41**	**19.61**

Table 9: Ambient air quality monitoring at Point-2

Sr. No.	Time	Co (mg/m^3)	NO (µg/m^3)	NO2 (µg/m^3)	NOx (µg/m^3)	SO2 (µg/m^3)
1	07:30	1.26	18.20	22.60	40.80	20.70
2	08:30	1.29	16.88	26.70	43.58	20.60
3	09:30	1.25	18.65	24.59	43.24	20.54
4	10:30	1.24	19.62	23.41	43.03	14.58
5	11:30	1.27	14.84	23.83	38.66	19.52
6	12:30	1.33	18.04	25.80	43.83	12.51
7	13:30	1.38	14.99	24.26	39.24	15.55

8	14:30	1.31	18.09	25.95	44.04	20.63
Average Concentration		**1.29**	**17.41**	**24.64**	**42.05**	**18.08**

Ambient air quality of the Subproject has been monitored at two locations for eight hours, and results are found under the limits of National Environmental Quality Standards (NEQs). The average concentrations are shown under **Table 7** and **Table 8** above. Detailed monitoring Reports are enclosed as **Annexure-2** of the report. The date of intervention was 8th August 2025 for ambient air & noise levels. The monitoring was undertaken by a certified labouratory. Please see Annexire-2 of the report.

a) Surface Water Quality

Table 10: Surface water quality at Point-1

Parameters	Analysis Method	Unit	LOR	Result
				01
Cadmium	APHA-3111 B	mg / l	0.0028	<0.0028
Iron	APHA-3111 B	mg / l	0.1	1.3456
Copper	APHA-3111 B	mg / l	0.0045	<0.0084
Lead	APHA-3111As B	mg / l	0.0013	<0.013
Mercury	APHA-3111Ba B	mg / l	0.0008	<0.0008
Nickel	APHA-3111 B	mg / l	0.008	<0.0116
Zinc	APHA-3111 B	mg / l	0.0033	<0.0138
Arsenic	APHA-4500B C	mg / l	0.01	<0.01
Barium	APHA-4500 C1 B	mg / l	0.031	<0.031
Manganese	APHA-3111 C1 B	mg / l	0.0016	0.0157

b) Ground Water Quality

Table 11: Ground water quality at Point 1

Parameters	Analysis Method	Unit	LOR	Result	BEQs
				01	
Cadmium	APHA-3111 B	mg / l	0.0028	<0.0028	0.01
Residual Chlorine	APHA-4500Cl G	mg / l	0.1	<0.1	0.2-0.5
Copper	APHA-3111 B	mg / l	0.0045	<0.0084	2
Boron	APHA-4500 B (C)	mg / l	0.1	<0.1	0.3
Mercury	APHA-3111Ba B	mg / l	0.0008	<0.0008	≤ 0.001
Nickel	APHA-3111 B	mg / l	0.008	<0.0116	≤ 0.02
Zinc	APHA-3111 B	mg / l	0.0033	<0.0138	5.0
Arsenic	APHA-4500B C	mg / l	0.01	<0.01	≤ 0.05 (P)
Barium	APHA-4500 C1 B	mg / l	0.031	<0.031	0.7
Lead	APHA-3111 B	mg / l	0.013	<0.013	≤ 0.05

Environmental sampling for surface and ground water was carried out along the Subproject locations. The samples were analyzed by following the standard protocols. However, the results are found under the permissible limits of BEQs for ground water. A summary of labouratory and analytical test results are tabulated in **Table 9** and **Table 10** above. Detail analysis report is annexed as **Annexure-2.**

4.3 ECOLOGICAL ENVIRONMENT

Balochistan province has the potential of wildernesses for diverse flora and fauna. The ecological environment around the Subproject area (Dera Allah and other villages) is characterized by an arid, fragile ecosystem shaped by thorn scrub vegetation, rangeland stress and limited natural resources. Drinking water scarcity and climate-triggered challenges (disease outbreaks and flooding) are the most common in the area. These issues strain both human health and ecological balance.

The Subproject is surrounded by sparse vegetation cover. For example, native grasses and shrubs are often limited due to intense grazing pressures, drought conditions and overexploitation. Moreover, agriculture fields in the Row of the Subproject have great importance as rice and wheat are grown by the locals. Flora of the area is categorized as thorn scrub and desert adapted or drought- resistant. An expanse of xeric shrublands dominated by thorny scrub species like Acacia Senegal, Prosopis cineraria are commonly available in the Subproject area.

4.4 SOCIO-ECONOMIC ENVIRONMENT

The Subproject and its surrounding area suffer from systemic socio-economic challenges as per the locals. The combination of rural poverty, minimal access to essential services, elite dominance and weak governance has created a cycle of deprivation.

4.4.1 Administrative Divisions

The city of Sohbatpur, which now serves as the district headquarters, was named after Sardar Sakhi Sohbat Khan Gola, a respected tribal leader and landowner. He is credited with laying the foundation of the town and playing a crucial role in the early settlement and development of the area. His legacy continues to influence local traditions, especially in community decision-making and dispute resolution through jirgas (tribal councils). Historically, the region has witnessed various migrations and settlements due to its fertile lands and proximity to Sindh. The local population consists of tribes that have lived in the area for generations, including Golas, Jamalis, and Chandios, among others. The formation of the district has given these communities a sense of identity and ownership, motivating them to actively participate in regional development.

The administrative setup of Sohbatpur District includes three main tehsils: Sohbatpur, Faridabad, and Sanhri. These tehsils serve as sub-divisional units for governance and public service delivery. Among them, Sohbatpur Tehsil is the largest and houses the district headquarters and most government offices. Faridabad Tehsil is known for its strong agricultural base and is home to several small towns and villages. The tehsil has been the focus of many agricultural extension programs due to its fertile land and irrigation access. Sanhri Tehsil, on the other hand, includes a cluster of important areas such as Hair Din, Manjhipur, Panhwar, and Saeed Muhammad Kanrani. These regions are not only agriculturally rich but also culturally vibrant.

Each tehsil is further divided into Union Councils, which are the basic units of local governance. These councils play a vital role in delivering municipal services, registering complaints, and coordinating community development projects. The administrative divisions help bring governance closer to the people and ensure that the unique needs of each area are addressed effectively.

4.4.2 Geography and Location

Sohbatpur District covers an area of approximately 802 square kilometers and is geographically positioned in the Kacchi Plain, which is part of the larger Indus Plain. This terrain provides excellent conditions for agriculture due to its fertile soil and availability of irrigational water. The land is flat, with minor undulations, making it suitable for farming and rural settlements. The district is surrounded by a combination of districts from Balochistan and

Sindh provinces. To the west, it borders Naseerabad and Jafarabad, while Dera Bugti lies to the southwest. On the eastern side, it shares borders with Jacobabad and Kashmore districts of Sindh. This proximity to Sindh allows the district to benefit from inter-provincial trade and cultural exchange.

Despite its small size compared to other districts in Balochistan, Sohbatpur holds significant geographical importance due to its location near major irrigation networks like the Guddu Barrage and Sukkur Barrage. Seasonal streams from the Sulaiman Range also provide water during monsoons, playing a critical role in sustaining agriculture and livestock.

4.4.2 Demographics

According to the 2023 census, the population of Sohbatpur District stands at approximately 240,106 individuals. A significant majority of the population, around 225,378, resides in rural areas, while only 14,728 people live in urban centers. This distribution highlights the district's deeply rural character, with agriculture being the dominant way of life.

The gender composition in the district is balanced, with 121,863 males and 118,241 females. However, in terms of access to resources, education, and healthcare, women often face greater challenges, especially in remote areas. Addressing this gender disparity requires focused government and NGO interventions to empower women and ensure equality.

4.4.4 Languages

The linguistic landscape of Sohbatpur is diverse and reflects its multi-ethnic and inter-provincial identity. The most widely spoken language is Balochi, spoken by 76.33% of the population. This language is deeply embedded in the local culture, and most tribal communication, folklore, and traditional songs are in Balochi. Sindhi is the second most spoken language, accounting for 12.55% of the population. This is largely due to the district's proximity to Sindh and the presence of Sindhi-speaking tribes. Brahui, another important regional language, is spoken by 6.75%, while Saraiki is spoken by 3.52%. A small percentage, 0.85%, speaks other languages, including Urdu and Punjabi.[1]

Multilingualism is common in Sohbatpur, and many residents are fluent in more than one language. This linguistic diversity plays a positive role in promoting inter-tribal harmony and cultural richness. Schools often use Balochi or Sindhi as mediums of informal instruction, but formal education is typically delivered in Urdu and English.

4.4.5 Education and Literacy

Education in Sohbatpur is gradually expanding but remains underdeveloped, particularly in rural and tribal areas. The overall literacy rate stands at 41.02%, with a sharp gender divide: 53.26% for males and only 28.42% for females. This gap reflects both social and infrastructural barriers to education. Most children attend government primary schools, but dropouts are common after the middle school level due to poverty, lack of infrastructure, and social constraints, especially for girls. Education is often deprioritized in favor of farm work, household duties, or early marriages. Several factors contribute to the low literacy rates, including lack of access to quality schools, poverty, and traditional norms that often restrict girls' education. In rural areas, many families prioritize farm work or household responsibilities over formal schooling, especially for girls.

[1] https://digitalhubbalochistan.com/sohbatpur-district-a-comprehensive-overview/

Government initiatives and awareness campaigns are trying to shift this mindset, but progress is gradual. In recent years, private educational institutions have started operating in the district, offering better teaching standards and facilities. However, affordability remains an issue for many families. The district requires well-structured public education policies, investment in teacher training, and gender-inclusive education models to boost literacy levels. Prominent educational institutions in the district include the Government Degree College Sohbatpur and the Government Girls Inter College Sohbatpur. A few private schools like Al-Suffah Academy and Iqra Public School offer slightly better facilities and English-medium instruction, attracting students from middle-income families. However, there are still limited opportunities for higher education, and most students seeking university-level degrees must travel to Quetta, Sibi, or Larkana.

Numerous challenges plague the educational sector. There is a shortage of qualified teachers, particularly in science and mathematics, and many schools lack libraries, labouratories, and even basic furniture. In remote areas, the absence of girls' schools further exacerbates gender inequality. Transportation issues and security concerns discourage families from sending their daughters to school. The Board of Intermediate and Secondary Education (BISE) often faces delays in exam results and staff deployment, leading to academic frustration.

4.4.6 Healthcare and Nutrition

Healthcare services in Sohbatpur District are inadequate and struggle to meet the needs of the local population. The district has a District Headquarters Hospital (DHQ Sohbatpur) and several Basic Health Units (BHUs) and Rural Health Centers (RHCs) in union councils such as Faridabad, Manjhipur, and Hairdin. Despite this, the majority of the population lacks access to quality medical care, particularly in remote areas. The shortage of specialist doctors, paramedics, and female medical staff further exacerbates the health crisis, especially for women and children.

Many health facilities operate with limited supplies of medicines, equipment, and ambulances. Pregnant women often face difficulties in receiving maternal care, and the absence of gynecologists in rural centers means many must travel to Jacobabad or Sibi for safe deliveries. Childhood diseases like measles, malaria, and diarrhea are common due to lack of vaccination programs and clean drinking water. The Expanded Programme on Immunization (EPI) is operational but faces issues of poor outreach and irregular staffing.

The situation was further worsened by the floods of 2022, which damaged healthcare infrastructure and led to outbreaks of waterborne diseases. Relief organizations like Médecins Sans Frontières (MSF) and Pakistan Red Crescent provided temporary mobile clinics, but long-term solutions remain elusive. The district administration has requested support from the Balochistan Health Department and federal authorities, but the response has been slow and inconsistent. To improve healthcare, local NGOs and public health programs are introducing community health workers, telemedicine pilots, and mobile health units. The Lady Health Worker (LHW) program, though active, is hampered by low retention and poor mobility due to security and cultural challenges. There is a growing recognition that healthcare must be integrated with education, water, and sanitation efforts to be effective. Investment in healthcare infrastructure and workforce training is critical for the wellbeing of the people of Sohbatpur.

4.4.7 Water Supply and Sanitation

Access to clean drinking water is a persistent problem in Sohbatpur, particularly in rural settlements. The district depends heavily on canal water, bore wells, and hand pumps, many of which are contaminated or non-functional. A 2019 survey by the Public Health Engineering Department (PHED) found that more than 60% of water sources were unfit for drinking due to bacterial and arsenic contamination. This has led to outbreaks of hepatitis, typhoid, and diarrhea, especially among children.

Most rural areas lack proper water filtration plants or chlorination systems. Women and children often walk several kilometers to fetch water from distant hand pumps or canal outlets, wasting hours that could be used for education or work. The urban population of Sohbatpur city fares slightly better due to motor pumps and private filtration units, but even these are affected by load shedding and poor maintenance. During summer, water scarcity becomes a major issue, resulting in conflicts between communities. Sanitation is equally neglected. The majority of homes in rural Sohbatpur use open defecation or pit latrines, and there is no formal sewerage system. Solid waste is dumped in open fields or along canal banks, causing blockages and mosquito breeding grounds. Drainage systems in the main town are outdated, with frequent sewage overflows during rainfall. Flooding worsens these conditions, spreading filth and disease in affected areas.

NGOs like WaterAid, UNICEF, and BRSP have implemented small-scale WASH (Water, Sanitation, and Hygiene) projects in selected schools and health centers, promoting toilet construction and handwashing stations. Yet, sustainable impact requires government-led planning, budget allocation, and community mobilization. A focus on low-cost, culturally appropriate sanitation solutions and solar-powered water pumps could provide a model for transforming public health in Sohbatpur.

4.4.8 Infrastructure

The infrastructure of Sohbatpur District is in a developing stage, with mixed progress across urban and rural areas. The main city, Sohbatpur, is connected by metaled roads to nearby towns such as Dera Allah Yar, Usta Muhammad, and Jacobabad. However, the interior villages suffer from poor road connectivity, especially during the monsoon season, when unpaved roads become mud tracks. This affects the transportation of agriculture goods, students, and patients to urban centers.

Electricity supply in the district is highly irregular. Frequent load shedding, low voltage, and damaged transformers are common complaints. The district receives power through SEPCO (Sukkur Electric Power Company), but outdated infrastructure and power theft result in unstable supply. Several villages remain off-grid, relying on solar panels or generators for limited energy use. This affects household activities and restricts small industries like flour mills, ice factories, and cold storage.

In terms of housing, most rural residents live in mud or brick houses, often with limited protection against extreme weather. The 2022 floods caused widespread damage, displacing hundreds and destroying livestock shelters, grain storage, and boundary walls. Reconstruction efforts have been slow due to lack of funds and bureaucratic delays. The district lacks public housing schemes, and only a few people benefit from Benazir Income Support Program (BISP) or Ehsaas housing grants.

Infrastructure development is being promoted through local government funds and projects under Balochistan Development Package. Road rehabilitation, small bridge construction, and school building renovations are in progress. However, corruption, lack of monitoring, and low contractor capacity hinder timely completion. For Sohbatpur to prosper, long-term infrastructure planning with community involvement and transparent governance is essential.

4.4.9 Communication

The communication system in Sohbatpur has improved marginally in recent years, but challenges remain in ensuring reliable and inclusive access. The main telecom providers such as Jazz, Zong, and Telenor offer mobile phone services in urban and semi-urban areas. However, signal strength fluctuates in far-flung union councils like Manjhipur, Hairdin, and Faridabad, causing disruptions in connectivity. Many students and freelancers complain about poor internet quality, which affects online education and remote work opportunities.

PTCL landline and broadband internet services are available in Sohbatpur city but not in rural areas. The introduction of 4G towers in 2023 has slightly improved connectivity in some union councils, but frequent network outages and power breakdowns continue to hinder progress. There are no public internet cafes or IT centers, limiting digital exposure for youth. Access to digital banking, e-learning platforms, and e-governance portals remains minimal. The local press operates at a very small scale, with no major newspapers published from Sohbatpur. Residents rely on national dailies from Quetta and Karachi or TV news channels such as Geo, ARY, and PTV. A few local WhatsApp groups and Facebook pages share community news, lost items, and job announcements, reflecting a gradual digital shift. However, misinformation and fake news are also concerns due to lack of media literacy.

Efforts are being made by civil society organizations and youth groups to introduce digital literacy workshops and communication awareness. Projects like Digital Sohbatpur Initiative, if supported by government and NGOs, could bridge the urban-rural communication gap. Equipping schools with computers, smartboards, and internet labs would open up new opportunities. Enhancing communication is not just about connectivity but about empowering people with information.

4.4.10 Economy and Agriculture

Agriculture is the lifeblood of Sohbatpur's economy, thanks to its location in the Green Belt of Balochistan. The region benefits from canal irrigation, which makes it more fertile compared to other parts of the province. The primary crops include wheat, cotton, sugarcane, rice, and various vegetables such as onions, tomatoes, and chilies. Wheat serves as the staple food, while cotton and sugarcane are major cash crops, contributing to trade and local industry. The fertile land and favorable climate make multiple crop cycles possible in a year.

The irrigation system in Sohbatpur is supported by major water channels such as the Pat Feeder Canal, Kirthar Canal, and the Desert Pat Feeder Sub-System. These canals draw water from the Guddu and Sukkur Barrages, which are vital for maintaining year-round cultivation. However, issues like seasonal flooding, water theft, and waterlogging often disrupt farming activities. The 2010 and 2022 floods severely damaged crops, prompting the need for better water management and canal maintenance strategies.

Livestock farming is another critical component of the rural economy. Households raise cattle, goats, sheep, and buffaloes, which provide milk, meat, and leather. These products are consumed locally and sold in neighboring districts like Naseerabad, Dera Allah Yar, and Jacobabad. Livestock also plays a ceremonial role, especially during religious festivals like Eid-ul-Adha, and dowry arrangements and tribal settlements. Women are often responsible for caring for animals, making livestock a source of female employment in rural homes.

Since 2020, organizations like the Institute for Development Studies and Practices (IDSP) have introduced organic farming practices to combat soil degradation and reliance on chemical fertilizers. Farmers are being trained in compost making, natural pest repellents, and seed saving techniques, which not only improve yields but also reduce environmental harm. This shift toward sustainable agriculture has received positive feedback, especially among small farmers looking to reduce costs. With proper support, organic farming could become a model for climate-smart agriculture in the region.

4.4.11 Tribes and Communities

Sohbatpur District is home to a diverse mix of tribes and ethnic groups that significantly shape its social, political, and economic landscape. Among the dominant tribes are the Gola, Bugti, Rind, Jamali, Khoso, Chandio, Leghari, and other Baloch sub-tribes. Each tribe maintains a strong internal structure led by a Sardar or tribal chief, whose influence extends beyond family matters into regional politics and conflict resolution. These tribes have deep historical roots in the region and continue to play a decisive role in the identity and governance of Sohbatpur.

The Gola tribe is known for its traditional leadership and cultural presence in central Sohbatpur. The Bugti tribe, often associated with Dera Bugti, has families that have migrated and settled in various parts of Sohbatpur. The Rind and Jamali tribes are agriculturally inclined and own vast tracts of land, using their resources to wield political influence. The Khoso and Chandio tribes are known for their engagement in public administration, while the Leghari maintain a presence in tribal mediation and land ownership. These affiliations often define local alliances, marriage practices, and even voting patterns. Tribal identity remains a vital part of daily life, dictating customary law (Riwayat), inheritance, dispute resolution, and community responsibilities. Issues such as land conflicts, marriage disputes, and political disagreements are often resolved by Jirgas, or tribal councils, where elders from each tribe convene to pass judgment. These informal systems work parallel to formal legal structures and are generally accepted by local communities, especially in rural areas. The role of elders is seen as sacred, and their decisions are rarely challenged publicly.

Despite some inter-tribal rivalries, there is a shared understanding among these groups, rooted in their Baloch cultural heritage. Festivals, religious events, and local gatherings often bring members of different tribes together, encouraging cooperation and mutual respect. In recent years, youth from these tribes have started engaging in education, sports, and local activism, hinting at a gradual evolution in tribal roles while maintaining their traditional identity. The tribal mosaic of Sohbatpur is thus both a source of strength and complexity, balancing age-old customs with emerging modern dynamics.

4.4.12 Religion

Sohbatpur District is overwhelmingly populated by Muslims, who constitute approximately 99.26% of the total population. The majority belong to the Sunni sect, with a smaller representation of Shia Muslims, who coexist peacefully within the same communities. Religion deeply influences daily life, with mosques serving not just as places of worship but also as community centers where social and educational matters are often discussed. Friday congregational prayers are significant weekly events, while Eid celebrations are observed with great enthusiasm across urban and rural areas.

Despite the dominant presence of Muslims, Hindus, accounting for 0.68% of the population, have a long-standing presence in the region. Many Hindu families are engaged in local trade, shopkeeping, and traditional crafts. Temples like the Shiv Mandir in the town area cater to their religious needs. While small in number, the Hindu community in Sohbatpur is known for its cultural contributions, especially during festivals such as Diwali and Holi, which are celebrated with color and music in a few localities. The remaining 0.06% fall under the category of Others, which includes Christians, Sikhs, and people with indigenous spiritual beliefs. Most of these individuals are engaged in public service, education, and healthcare sectors. Though limited in number, their religious practices are respected, and special arrangements are made during major events like Christmas or Baisakhi. There are a few churches and gurdwaras established through private or NGO support, and they continue to serve their small but significant congregations.

Historically, Sohbatpur has exhibited a high degree of religious tolerance and coexistence, distinguishing it from more conflict-prone regions. The local tribal elders and feudal landlords often play an informal but powerful role in promoting interfaith harmony, ensuring that minority communities feel protected. Schools generally promote inclusive education, and NGOs occasionally conduct interfaith dialogue programs. This social fabric of tolerance has allowed various communities to live side-by-side peacefully, reinforcing Sohbatpur's image as a culturally respectful and harmonious district.[2]

[2] https://digitalhubbalochistan.com/sohbatpur-district-a-comprehensive-overview/

4.4.13 Gender Aspect

Women of the Subproject area has potential to participate in every sphere of life but constraints to domestic chores rather than to serve the society beyond the boundaries of home with respect and dignity. Women are supposed to be remained within the boundaries of house. Tribal conventions in some ethnic groups do not allow property ownership on the part of women. Entitlements to common property resources in these ethnic groups are also regulated and measured with reference to male family members.

4.5 GENDER ASSESSMENT

Gender consultations were conducted in several villages falling along the road and data was collected from 17 female respondents during August and September 2025. Although limitations have been faced while consulting females in the Subproject area due to their tribal norms and values. Photographs of the female respondents are recorded in very limited number, considering the regional values. The female respondents belonged to farming and non-farming community. A structured questionnaire was used for interviews and data collection. The questionnaire comprised questions like role & responsibilities of women, decision making power regarding family size/ nos. of children, women serving in different institutions, gender preference in education and birth of male/female, women health issues, access to drinking water, quality of drinking water, power to sale & purchase of assets, finance and control over resources like land and other assets.

Other questions were included like access to earning opportunities and its usage, salary and its usage and control of women, male attitude with women, vulnerability and caring, gender violence, project benefits for women, project impact on women and pressing needs of women. Apart from these indicators, the data was also collected about their feedback and suggestions for the Subproject that will give an insight to views of females of the surrounding areas. The details of surveyed villages and participants are summarized in **Table 11** below.

Table 12: Surveyed villages & female participants

Sr. No.	Name of Village	Nos. of female participants
1	Goth Hazar Khan Chandia	02
2	Goth Dil Murad Khan	02
3	Goth Jan Muhammad	03
4	Goth Bahadur Khan	04
5	Goth Mehboob Ali Khan	02
6	Dirgi Village	02
7	Bhand Sharif	02
Total Nos.		**17**

The data is then interpreted and derived conclusions and recommendations, which are presented in the sections below:

4.5.1 Roles and Responsibilities of Women

The survey has revealed that the participation rate of women in socio-economic activities particularly farming in the project corridor is generally high. All household work related activities are being carried out by the females in the Subproject area. Women also take significant part in most labourious tasks including fetching water and collection of fuel wood. Information in respect of women participation and decision making in the routine socio-economic life is presented in **Table 12** below.

Table 13: Females' Roles and Responsibilities in the Subproject area (%)

Sr. No.	Name of village	Taking care of children	Preparing food	Washing clothes	Washing in kitchen	Cleaning house	Ironing	Water fetching	Collecting fuel wood
1	Goth Hazar Khan Chandia	100	100	100	100	100	100	90	60
2	Goth Dil Murad Khan	100	100	100	100	100	90	80	30
3	Goth Jan Muhammad	100	100	100	100	100	100	70	60
4	Goth Bahadur Khan	100	100	100	100	100	100	70	60
5	Goth Mehboob Ali Khan	100	100	100	100	100	100	80	60
6	Dirgi Village	100	100	100	100	100	100	70	80
7	Bhand Sharif	100	100	100	100	100	100	60	80

The findings of consultation with females are in line with socio-cultural norms of tribal belts of the country, including Balochistan province where family affairs are divided among males and females based on household preferences. Most of the housekeeping activities are watched and performed by women, whereas men are primarily involved in outdoor activities. Majority of the female respondents reported that due to low income and limited resources, their life is restless, and they do not get enough healthy food and nutrients which lead to health problems like body pain (joint pain), blood pressure and skin diseases. More importantly, they had severe concerns about clean drinking water in the area. They either buy clean water from a locally operated well by paying them fifty rupees against one gallon, or they use the same saline water coming from tributaries of Pat Feeder Canal.

4.5.2 Decision Making

Pakistan rural population is more than 70 percent and the female population is higher than male. As per socio-cultural traditions, the decision-making role is divided within the family. In some scenarios, only the male members decide the matters, while in others, the female members are contributing to the decision making. The assessment reflects that most of the decisions within the households are made by the male members of the family, while the decision about children's marriages is made in consultation with elderly women and men. The decision about the sale and purchase of assets is mostly made by men across all income groups but women are also consulted up to some extent. Community-level decisions are always taken by the male members through the customary Jirga system. Women are not part of the Jirgas and no women-specific jirgas exist in the Subproject area. Women related issues are mostly addressed by male Jirgas. Further information regarding decision making is being provided to **Table 13** below.

Table 14: Information on Decision-making Power

Sr. No.	Name of village	Education (Where to send?)			Education (Whom to send?)			Health facilities (Where to avail?)			No. of children to have			Marriages of children			Assets to buy & sell			Women to work outside home		
		M	F	Both	M	F	Both	M	F	Both	M	F	Both	M	F	Both	M	F	Both	M	F	Both
1	Goth Hazar Khan Chandia	√			√			√			√			√			√					√
2	Goth Dil Murad Khan	√			√			√			√			√			√					√
3	Goth Jan Muhammad	√			√					√	√			√			√					√
4	Goth Bahadur Khan	√			√					√	√				√		√					√

5	Goth Mehboob Ali Khan	√			√		√			√			√	√			√				√
6	Dirgi Village	√					√	√			√				√		√				√
7	Bhand Sharif	√			√			√					√		√		√				√

4.5.3 Roles & Responsibilities of Women on Livestock & Agriculture Management

It is generally observed in the farming and nearby villages/community of the Subproject, hat most of livestock and agriculture related activities are being performed by the females. Hence, it is mentioned that without participation of women, farmers cannot perform their farming activities efficiently. The related data was collected from the female respondents of surveyed villages and result is provided in the **Tables 14** and **Table 15** below.

Table 15: Roles/responsibilities of women on livestock

Sr. No.	Name of village	Preparing fodder	Feeding animals	Veterinary care	Cleaning	Making cow	Watering animals
1	Goth Hazar Khan Chandia	Yes	Yes	Yes	Yes	Yes	Yes
2	Goth Dil Murad Khan	Yes	Yes	Yes	Yes	No	No
3	Goth Jan Muhammad	Yes	Yes	Yes	Yes	Yes	Yes
4	Goth Bahadur Khan	Yes	Yes	Yes	Yes	Yes	Yes
5	Goth Mehboob Ali Khan	Yes	Yes	Yes	Yes	No	No
6	Dirgi Village	Yes	Yes	Yes	Yes	Yes	Yes
7	Bhand Sharif	Yes	Yes	Yes	Yes	Yes	Yes

Table 16: Roles/responsibilities of women on agriculture

Sr. No.	Name of village	Preparing land	Sowing	Harvesting	Picking vegetables	On-farm water management
1	Goth Hazar Khan Chandia	Yes	Yes	Yes	Yes	Yes
2	Goth Dil Murad Khan	Yes	Yes	Yes	Yes	Yes
3	Goth Jan Muhammad	Yes	Yes	Yes	Yes	Yes
4	Goth Bahadur Khan	Yes	Yes	Yes	Yes	Yes
5	Goth Mehboob Ali Khan	Yes	Yes	Yes	Yes	Yes
6	Dirgi Village	Yes	Yes	Yes	Yes	Yes
7	Bhand Sharif	Yes	Yes	Yes	Yes	Yes

4.5.5 Access to Health Facilities

Health facilities showed a disappointing situation in the area. All the respondents showed their serious concerns over health facilities. Data was collected from the targeted female participants to ascertain existing health facilities for the local population, especially the females. Basic Health Units (BHUs) are available in the Subproject area, whereas, the community is mostly dependent on major hospitals in Jacobabad of Sindh province, almost 30 to 35 km away from Subproject area. BHUs and private clinics are available in Bhand Sharif, Dirgi villages and

Sohbatpur bazar. However, it was found that almost 90 % of the contacted females reported that these BHUs are lacking the basic health facilities sometimes and remain non-operational. However, these are getting basic treatment from hospitals of Jacobabad, which are 30 to 35 kms away from their villages. As far as Gynecologist doctor is concerned, 100 % of respondents from the villages of Subproject area responded that no specialist doctor was available in their areas that causes many risks and heavy expenses, beyond the affordability of a common family. Data regarding common diseases and water-related diseases was also collected mention in **Table 16** below:

Table 17: Common Disease

Sr. No.	Name of Village	Major diseases
1	Goth Hazar Khan Chandia	Blood pressure, Diarrhea, eyes allergy
2	Goth Dil Murad Khan	Diarrhea, Scabies
3	Goth Jan Muhammad	Seasonal fever, Cough
4	Goth Bahadur Khan	Cough, Flue, Seasonal fever
5	Goth Mehboob Ali Khan	Seasonal fever, Cough, Flue, Diarrhea
6	Dirgi Village	Sugar, Blood pressure, Scabies, Diarrhea
7	Bhand Sharif	Sugar, Blood pressure, Seasonal fever, Cough

4.5.6 Access to drinking water

During the consultation, the source of clean drinking water was known followed by the issues facing by women of the Subproject area. The information collected on water quality situation was disappointing. It was found that 100% of respondents were of the view that the drinking water facility has been compromised, since they are either purchasing water from a local operational tube well or depends on the tributaries coming from Pat Feeder Canal for irrigation purposes.

4.5.7 Access and control over property or resources

Generally, the assets and property issues are managed and controlled by the male of the household. Although the property is owned by female of the Subproject area, yet she is not allowed to disclose to others. After the survey of seven villages, data was collected in this regard to ascertain the local situation. 100% of the respondents had the view that the females alone cannot sell or purchase their properties. However, a widow woman gets her property and has authority to sale it. Mostly the males manage such activities, or they can manage with mutual understanding.

4.5.8 Access to income opportunities

Income is considered main indicator to assessing socio-economic condition of the community or socio-economic status of an individual. The source of income was mostly from the agriculture activities in the Subproject area. The following **Table 17** shows the figures about women involved in generating income.

Table 18: income generating opportunities of women

Sr. No.	Name of village	Economic activities	
		Yes	No
1	Goth Hazar Khan Chandia		✓
2	Goth Dil Murad Khan	✓	
3	Goth Jan Muhammad		✓
4	Goth Bahadur Khan	✓	
5	Goth Mehboob Ali Khan		✓
6	Dirgi Village	✓	
7	Bhand Sharif	✓	

4.5.7 Gender Preference

Data was collected regarding "attitude of the husband, in-laws' family regarding the preference of gender in the family. The result indicated normal attitude of the husband or in-laws. However, it was found that the preference of baby boy in the family is most common.

4.5.8 Gender Violence

The data collected regarding violence of gender, except two cases in a village, no violence was faced by women from male side. However, if violence emerges, there is no way out to register in a police station, keeping in view the tribal norms. The details collected regarding gender violence is presented under **Table 18** below.

Table 19: Gender violence

Sr. No.	Name of Village	Violence		Type of Violence		Type of Issue	
		Yes	No	Physically	Mentally	Domestic	Economic
1	Goth Hazar Khan Chandia		✓				
2	Goth Dil Murad Khan		✓				
3	Goth Jan Muhammad		✓				
4	Goth Bahadur Khan	✓			✓		
5	Goth Mehboob Ali Khan		✓				
6	Dirgi Village		✓				
7	Bhand Sharif	✓				✓	

4.5.9 Women's opinion on Subproject

The women participants had positive views regarding the Subproject. Since they were facing mud and floods during rainy weather, they have difficulty in going to the agricultural fields for work. Moreover, it is also hard to work in waterlogged area. It has been a concern women showed that there should be complete privacy during construction or rehabilitation of existing road. The females of almost all the selected villages suggested that during the project implementation, their routine movement should not be disturbed. As far as pressing needs of the women of the Subproject area are listed as under:

Educational facility: There is need to establish more schools about population size. Moreover, the primary schools should be upgraded to high school and college, so that the maximum children can go to schools.

Health Facility: Sufficient and improved medical facilities are not available in the project area. The females highlighted their concerns that they never get reasonable treatment from the existing basic health unit in the area. No proper medical equipment is provided to the health institutions. They reported that there is serious issue of non-availability of a qualified gynecologist in the existing basic health units. Most of the cases are referred to Jacobabad causing many complications as well as heavy financial burden.

Vocational Training Centers: Keeping in view the training needs of the community, vocational institutions should be established at Union Council level for easy access of the female community.

4.6 CLIMATE CHANGE ASSESSMENT

The floods of 2022 were among the most devastating in recent history, with widespread damage reported across Balochistan and Sindh. Balochistan, the largest province by area, is increasingly vulnerable to climate-induced hazards, particularly floods and extreme weather events. The damage to the road infrastructure in floods 2022 highlighted the urgency to integrate climate change risks into road planning, design and rehabilitation.

The Subproject lies within a complex hydrological setting influenced by both natural drainage and large-scale irrigation infrastructure. The watershed draining towards the road is intersected by two major canals, namely the Pat Feeder Canal and the Kachhi Canal, in addition to a network of minor distributary canals. It is a well-known fact that most canals in this region are constructed at a raised level (on embankments or in fill), thereby functioning as barriers to overland flood flows unless adequately provided with cross-drainage structures. Although certain sections of the Kachhi Canal are cut into natural ground rather than in fill, most of its reaches within the watershed acts as a raised embankment.

In theory, such canal embankments should reduce peak flood flows reaching the road by retaining or redistributing runoff upstream. However, field surveys, local accounts and satellite imagery from the 2022 flood event reveal a contrasting reality. While the Kachhi Canal has been provided with relatively fair number of cross-drainage structures, this canal section within the watershed had not yet been constructed during the 2022 floods and therefore did not play a role in the event. In contrast, the Pat Feeder Canal was already functional but lacked major cross-drainage structures. As a result, it acted as a rigid barrier across the natural flood paths.

Instead of attenuating flows, the Pat Feeder Canal suffered multiple breaches during the storm, effectively redirecting floodwaters toward the road corridor. This explains why, despite the presence of canal embankments, the road was heavily damaged during the 2022 floods.

4.6.1 Observed impacts along the road

- At the starting point near Dera Allah Yaar, floodwaters inundated residential areas, with water depths of up to 1 ft reported by locals. In some locations, entire houses were submerged.
- Between RD 3+000, erosion along the road edge was observed, caused by overtopping floodwaters.
- From RD 17+000 to RD 20+000, a major flood channel crossed the road alignment, leaving extensive damage.
- Beyond RD 20+000, potholes and surface failures were noted, caused by prolonged submergence and flow concentration.
- At and around RD 28+000, another major flood path crossed the alignment, severely damaging the pavement and embankment.

4.6.2 Breach Information and Flood Pathways

Investigations confirm that the Pat Feeder Canal embankment was breached at multiple locations, which contributed directly to flooding of the road and adjacent settlements. Significant breaches include:

- Breach No. 1: RD 280+000 (28°29'32.02"N, 68°46'0.63"E)
- Breach No. 2: RD 267+000 (28°28'23.67"N, 68°48'31.90"E)
- Breach No. 3: RD 277+000 (28°28'46.79"N, 68°47'41.76"E)

Although these breaches were some distance from the road itself, the released floodwaters traveled downstream and spread widely, overwhelming the road embankment. It is also likely that additional ad hoc breaches were made along other canal sections to safely pass the flood water, which aligns with anecdotal accounts from local communities and the observed flood patterns.

4.6.3 Supporting evidence from satellite and reports

Satellite flood mapping produced by United Nation Food and Agriculture Organization (September 5, 2022) clearly shows large flood extents near Sohbatpur, which lies along the influence zone of the road corridor.

Similarly, news reports (Al Jazeera, September 2022) documented that Dera Allah Yaar as being severely affected, with floodwaters submerging entire houses and forcing large-scale displacement of residents.

4.6.4 Assessment and Attribution

The damage sustained along the road can be attributed to a combination of factors:

- The Pat Feeder Canal embankment, functioning as an unintended flood barrier, breached at multiple locations, channeling destructive flows toward the road.
- The absence of adequate cross-drainage structures across the canal prevented safe conveyance of floodwater.
- The road embankment itself lacked sufficient hydraulic openings to accommodate floodplain flows, resulting in overtopping, erosion, and pavement failure.

In conclusion, while the road alignment theoretically lies downstream of major canal embankments (which under normal circumstances could reduce flood peaks), the failure and intentional breaching of these embankments during extreme events transformed the 2022 flood into one of severe impact. Importantly, road design should not rely on canal embankments for protection, as these structures are under the control of the irrigation department and can be deliberately breached to safeguard the canal system. Therefore, the road infrastructure must be designed independently to withstand the full peak flows from the contributing watershed, whereas the road was not designed considering the actual peak storm flows, which resulted in widespread damage.

4.6.5 Proposed Mitigation

The 2022 floods clearly demonstrated the vulnerability of existing road and bridge infrastructure across the affected locations. In stated that damages occurred due to inadequate cross-drainage capacity, insufficient bridge opening sizes, and road embankments being overtopped or eroded under extreme flood conditions. These failures underline the need for a comprehensive strategy to develop flood-resilient road and bridge infrastructure that can withstand future flood events, particularly in the context of increasing climate variability. The following remedies and mitigation measures are proposed:

1. Design based on 100-year storm return period

- All future designs and rehabilitation works must adopt a 100-year return period storm event as the design standard for cross-drainage and bridge structures. This will ensure that the infrastructure is capable of safely passing extreme flood discharges without overtopping or structural failure.
- For existing structures, upsizing of culverts and bridge openings may be required and to be suggested based on detailed design, especially at locations where field evidence and hydrological analysis show repeated flooding or erosion.
- At road embankments, the formation level (FRL) to be raised sufficiently above the 100-year high flood level to minimize the risk of overtopping, which has been a primary cause of road washouts.

2. Increase in number and distribution of cross-drainage structures

- Long stretches of road that act as barriers to flood flow should be re-engineered with a higher frequency of cross-drainage structures (culverts, causeways, and small bridges).
- This will reduce ponding on the upstream side, minimize erosive forces along embankments, and ensure natural drainage paths are preserved.

3. Integration of climate change projections

- Considering the ongoing impacts of climate change in Pakistan, it is essential that storm design values are adjusted using a climate change factor. The World Bank's Climate Change Knowledge Portal, which

employs CMIP6 projections, should be used as a reference for incorporating future rainfall and flood extremes into design standards.

- This approach ensures that road and bridge infrastructure will remain resilient not only for present conditions but also under projected increases in flood intensity and frequency.

4. Adoption of flood-resilient road design principles

- Resilient embankments: Road embankments should be protected with stone pitching, or gabions to withstand erosive forces.
- Scour protection: Bridge abutments and piers should be equipped with adequate scour countermeasures (riprap, cutoff walls, aprons) to prevent undermining during high-velocity flows.
- Overland flow accommodation: Road alignments must avoid blocking natural drainage paths. In unavoidable cases, sufficient openings must be provided to pass overland sheet flow without damaging the roadway.

5. Policy and institutional coordination

- It is critical that road design standards do not rely on the safety of irrigation canals or embankments. Canal embankments fall under the irrigation department's jurisdiction and may be intentionally breached to protect canal structures, thereby exposing road infrastructure to direct flood flows as observed in the Subproject area. Road designs must therefore be independent and strong, based solely on hydrological and hydraulic criteria.
- A multi-agency approach should be encouraged, involving coordination between highway authorities, irrigation departments, and disaster management agencies, to ensure integrated flood management across sectors.
- Ecosystem-based solutions, such as catchment afforestation, watershed management, and small detention structures, should be promoted to reduce peak flows and improve natural infiltration.

By adopting these measures, the reconstructed and newly designed road and bridge infrastructure will not only be hydraulically efficient but also flood-resilient, capable of withstanding extreme events such as the 2022 floods. Designing for the 100-year return period, integrating climate change projections, and ensuring the provision of adequate cross-drainage structures are fundamental to achieving resilience. Such an approach will safeguard connectivity, protect communities, and reduce the economic burden of recurrent infrastructure losses in flood-prone regions of Pakistan.

4.7 SENSITIVE RECEPTORS

A list of sensitive receptors has been identified within the COI of impact of 100 m (50m on each side). These sensitive receptors are physical, social and ecological. Table below shows the receptors along the Subproject alignment. The impacts on sensitive receptors and mitigation measures are described in Chapter 6 of the report.

Table 20: List of sensitive receptors

Sr. No.	Type of receptors	List of receptors
1	Social and Cultural	Mosques were identified within proximity to the road alignment at several locations. Madrassahs and primary-level schools were observed near residential clusters. Other receptors include community gathering areas/chowk were noted near Sohbatpur Chowk. Furthermore, no formally declared heritage sites were observed during data collection. However, graveyards exist near settlements, away from the road alignment. These sensitive receptors are not found within the RoW of the Subproject. However, these are found in the corridor of Subproject. Mitigation measures to reduce the impact during construction to these receptors are briefly incorporated under Section 6.3.14

	Human and Community	Residential settlements comprising mud and burnt-brick houses were observed along the project corridor, particularly near Sohbatpur Chowk and scattered rural stretches (Villages along the RoW). Roadside commercial activities, including small shops, kiosks, and vendors, were noted mainly in built-up sections. Furthermore, pedestrian movement is significant due to local commuting and access to markets and services. Similarly, presence of vulnerable groups, including children and elderly residents, were observed near residential and commercial areas.
2	Infrastructure and Utilities	The existing road pavement is present throughout the corridor with varying surface conditions. Electric poles and overhead power lines run parallel to the road in several sections. Moreover, water supply pipelines and telecommunication lines were observed in built-up areas along the road alignment.
3	Economic and Livelihood	Small roadside businesses and vendors were observed relying on road access for daily income. Others include the agricultural activities adjacent to the road form, which is a key livelihood source for residents and livestock-based livelihoods are evident in rural sections of the corridor.
4	Environmental	Agricultural land with standing crops was observed adjacent to the road, particularly outside the urban stretch. Roadside trees and natural vegetation were noted intermittently along the corridor, which were away from the road alignment, but found within COI. The Hairdin Drainage, which is a significant surface water body, was observed, although not within the COI.

CHAPTER - 5: STAKEHOLDER CONSULTATIONS

Public participation and community consultations are considered an integral part of E&S safeguard process. Stakeholders are individuals and groups that may be affected by a project or can affect the outcome of a project. Stakeholder consultation is a vital part of ESMP for the rehabilitation of the Subproject. The purpose is to engage with all relevant stakeholders including local communities, government agencies, businesses and other affected parties to ensure that their concerns, input and knowledge are integrated into the planning, design and implementation of the Project.

This section documents the outcomes of public consultation carried out for the proposed Subproject with different stakeholders in accordance with national and WB guidelines and preliminary Stakeholder Engagement Plan (SEP) of the project.

5.1 OBJECTIVES OF STAKEHOLDER CONSULTATION

The overall objective of conducting consultations is to inform all stakeholders about the project, record and consider their opinions, suggestions and concerns and establish confidence amongst the project stakeholders that the project is developed in a responsible way. This is achieved by informing the stakeholders in a timely manner about the proposed Subproject and its potential consequences on the environment, connected or nearby population and by encouraging their feedback. Specific objectives are listed below:

- Share Subproject information with the stakeholders regarding the project and the expected impacts on the physical, biological and socioeconomic environment in the Subproject area.
- Provide an opportunity for those otherwise unrepresented to present their views and values, therefore allowing more sensitive consideration of mitigation measures and trade-offs. Particularly understanding stakeholder concerns regarding various aspects of the project and likely impacts of construction related activities and Project operation.
- Provide those involved with planning the proposal with an opportunity to ensure that the benefits of the proposal are maximized and that no major impacts have been overlooked.
- Provide opportunity for the public to influence project design in a positive manner
- Obtain local and traditional knowledge (corrective and creative), before decision making.
- Increase public confidence in the proponent, reviewers and decision-makers and ensuring better transparency and accountability in decision making.
- Reduce the possibility of conflict through the early identification of contentious issues and working through these to find acceptable solutions.
- Creating a sense of ownership of the subproject among stakeholders.

5.2 STAKEHOLDER IDENTIFICATION

Stakeholder identification was carried out during the scoping phase of the SS-ESMP to ensure stakeholders are consulted during the course of the consultation process. The focus of attention has been the community living around the Subproject area. These areas include, Sohbatpur Chowk, Goth Hazar Khan, Goth Dil Murad Khan, Goth Jan Mohammad, Goth Bahadur Khan, Goth Mehboob Ali Khan, Dirgi Village and Sohbatpur Bazar. The viewpoint of the stakeholders has been taken into account, and their concerns and suggestions for possible improvements have been included. The stakeholders involved in the process have been categorized as follows:

- Non-institutional stakeholders: individuals and groups of people residing in the Subproject area primarily consisting of residents of different settlements, business owners, shop owners, schools, and health care units.
- Institutional stakeholders: different governmental and non-governmental departments and organizations.

Stakeholder consultations were carried out with people of different backgrounds in the Subproject area e.g. business owners, employed persons etc. Details of community consultations held along the Subproject area are given in **Table 21 and Table 22.** However, detailed description of community consultations is placed under Table 2 of Annexure-8. Pictorial evidence of community consultation is attached as **Annexure-3.**

Table 21: Stakeholder Consultation (Males)

Sr. No.	Name of Village	Date of Consultation
1	Goth Hazar Khan Chandia (04)	15-7-2025
2	Goth Dil Murad Khan (05)	15-7-2025
3	Goth Jan Muhammad (09)	15-7-2025
4	Goth Bahadur Khan (06)	15-7-2025
5	Goth Mehboob Ali Khan (04)	15-7-2025
6	Dirgi Village (13)	14-7-2025
7	Bhand Sharif (06)	14-7-2025
8	Sohbatpur Chowk Dera Allah Yaar (17)	14-7-2025
9	Sohbatpur Bazar (14)	16-7-2025

Table 22: Stakeholder Consultation (Females)

Sr. No.	Name of Village	Nos. of female participants
1	Goth Hazar Khan Chandia	02
2	Goth Dil Murad Khan	02
3	Goth Jan Muhammad	03
4	Goth Bahadur Khan	04
5	Goth Mehboob Ali Khan	02
6	Dirgi Village	02
7	Bhand Sharif	02
Total Nos.		**17**

5.2.1 Keys Issues Discussed

The following keys issues and potential E&S impacts were discussed with the local community through public meetings:

- Environmental impacts (erosion, sedimentation habitat disruption etc.)
- Social impacts (land use changes, site restoration etc.)
- Employment opportunities for local populations
- Health and safety during construction activities
- Access to essential services during and after reconstruction
- Long-term climate resilience and flood mitigation measures
- Mobility of women to the fields for work
- Land acquisition and resettlement
- Timely completion of Subproject activities

5.3 THE CONSULTATION PROCESS

The preliminary consultations were undertaken during preparation of ESMP. All stakeholder consultations were recorded through public meetings, Key Informant Interviews (KIIs) and Focus Group Discussions (FGDs) to ensure their views and concerns are recorded. In addition to the national guidelines for public consultation, the

ESMP also adhered to WB ESF and SEP of the Project. The meaningful consultation is elabourated as those which:

- Ensure that all parties have a voice in consultation including private sector, nongovernmental organizations and people affected by the Subproject.
- Provide timely disclosure of relevant and adequate information that is understandable and readily accessible to the people affected by the Subproject and other stakeholders.
- Undertaken in an atmosphere free of intimidation and is accessible, responsive and tailored to the needs of vulnerable groups.
- Enable the consideration of relevant views of people affected by the Subproject and other stakeholders in decision-making.

5.4 KEY CONCERNS RAISED BY NON-INSTITUTIONAL STAKEHOLDERS

The main issues and concerns that emerged from these consultations are summarized below:

Climate Resilient Road: Concerns about future flood protection and whether the road will withstand extreme weather. Few urged with a view that there is need for climate-resilient design, including proper drainage and embankments, particularly in those sides where currently road level is down.
Transparency and Accountability: They had concerns about corruption, misuse of funds, or biased decision-making and demanded for a clear and accessible grievance redress mechanism during implementation of Subproject.
Safety and Security: Som of the community members showed concerns about speeding vehicles and lack of speed calming measures. Also noted their concern over the potential increase in accidents due to influx of outside workers.
Employment Opportunities and Local Benefits: They were expecting job opportunities for local labour during construction and desired the use of local materials and services to boost the local economy.

5.5 INSTITUTIONAL CONSULTATION

Consultation meetings have been conducted with local government of the Subproject area, basic health units, schools and regional representation from C&W department of Sohbatpur district. Furthermore, consultation has also been conducted with Minister C&W department of Blaochistan at his residence in Sohbatpur. During the consultation meetings, the stakeholders were found in favor of the Subproject with views as an ultimate relief in mobility after the floods 2022.

5.6 FUTURE CONSULTATIONS

Draft ESMP report shall be disclosed once again before the stakeholders and public to ensure that their concerns and remedial measures have been incorporated in the report. ESMP reports shall be accessible to interested parties on request, and the version of final report will be available in PMU/PIU of the Project.

It is essential to continue the consultation process to ensure that the community remains supportive and that they are fully informed of progress particularly before and during the construction period. As part of the consultation process and requirements of the Grievance Redress Mechanism (GRM), regular meetings with the community of the Subproject will be held during Project implementation.

Considering the consultation process important and effectively implementing the Subproject, a project-specific grievance redress mechanism (GRM) may be established to receive, evaluate, and facilitate the resolution of people's concerns, complaints, and grievances about the E&S performance. The GRM shall aim to provide a time-bound and transparent mechanism to voice and resolve E&S concerns linked to the Subproject.

CHAPTER - 6: IMPACT ASSESSMENT & MITIGATION MEASURES

6.1 GENERAL

The implementation and consequent operation of the Subproject is expected to impact the biophysical and social environment. These impacts will be minor, local, temporary, short-term and reversible as well positive impacts, since the scope is the rehabilitation of existing road.

The planning and design of Subproject is based on principles of sustainability including climate resilience. Therefore, in order to achieve the objectives, it is necessary to identify all potential impacts at the design stage that could possibly arise from Project activities (construction and operation). Once identified, the E&S impacts will be mitigated to avoid E&S disturbance, and additional measures will be employed to enhance the positive impacts from the Project activities. Majority of impacts in road infrastructure projects occur during the construction phase, therefore the success of mitigation is dependent upon compliance by the Construction Contractor (CC) with environmental controls and effective monitoring.

This section discusses the potential E&S impacts of the proposed Subproject activities, predicts the magnitude of the impact, assess their significance, identifies mitigation measures to minimize the adverse impacts, and evaluated the residual impacts, if any, of the Subproject.

6.2 ASSESSMENT METHODOLOGY

The potential E&S impact of a development activity is identified based on concerns raised by stakeholder, particularly the local community, technical guidelines, and professional opinion of the project team. The existing E&S conditions of the Subproject are categorized in the context of impact analysis by following a set of steps. The steps followed for impact assessment are described in **Table 21.**

Table 23: Stepwise Methodology for Impact Assessment

Step 1	**Criteria for Determining Significance**	The consequence of the proposed activity is evaluated by comparing it against recognized 'significance criteria'. The criteria are of the following types:
		Institutional: legislative requirements laid down by the environment for environmental protection including laws, standards, policies.
		Technical: guidelines, available technical or scientific knowledge, or judgment of experts.
		Public: social or cultural values in addition to views of a segment of society, especially the community directly affected by the Project.
Step 2	**Determine the magnitude of potential impacts**	Assessing the scale and describing the anticipated impacts either quantitatively (where possible) or qualitatively or both.
Step 3	**Identify of mitigation measures**	If the predicted impact is of significant nature when compared to the criteria for determining significance, suitable mitigation measures are identified. A range of mitigation measures can be applied to reduce the anticipated impact of a project, and these can be broadly classified into the following categories:
		Avoid the impact altogether by not taking a certain proposed activity or parts of an activity.

		Minimizing impacts by limiting the degree or magnitude of the activity.
		Rectifying the impact by repairing, rehabilitating, or restoring the affected environment and community.
		Compensating for the impact by replacing or providing substitute resources or environments.
Step 4	**Evaluating residual impact**	As the mitigation measures are implemented, the anticipated adverse impacts enter the acceptable limits. This step identifies the remaining impact after incorporation of mitigation measures, if any.
Step 5	**Identify monitoring requirements**	The final step in the impact assessment process is identification of minimum monitoring requirements. The scope and frequency of the monitoring required depends on the residual impact. The purpose of marching is to confirm that the impact is within the predicted limits and to provide timely information if an impact is exceeding acceptable limits.

6.2.1 Screening of Potential E&S Impacts

The preliminary environmental assessment for the Subproject has been undertaken using the Rapid Environmental Assessment (REA) Checklist for Roads and Highways. The REA is used identification and screening of likely E&S impacts. **Table 22** lists impacts against different Subproject activities.

Table 24: Stepwise Methodology for Impact Assessment

Activities	Impacts
Construction camps, workshops etc.	Waste generation
Leveling/cutting of bushes & earthwork operations	Flora damage, soil erosion, ecosystem deterioration
Excavation operations at burrow & quarry areas	Dust pollution
Construction material, storage and handling	Fumes emissions, chemical infiltrations and ground water contamination
Operation of concrete batching plant	Air pollutants emissions, wastewater generation and solid waste generation
Crushing operation	Noise pollution, vibration and dust emission
Use of generators	Particulate matter emission
Heavy equipment/machineries	Lubricants infiltration, noise and vibration.
Asphalt mixing plants	Air pollution and noise pollution, waste generation
Movement of vehicles	Dust emission
Generation of Wastewater	Contamination of soil and nearby vegetation, and disturbance of aesthetic
Generation of solid waste	Odor, disturbance of aesthetics

6.2.2 Impact Matrices

Leopold Matrix (LM) is a procedure for the evaluation of impact of a proposed development activity on the biophysical and socioeconomic environment. The LM provides a system for the analysis and numerical weighting of probable impacts. The analysis does not produce an overall quantitative rating; instead, it portrays many value judgments. A primary purpose is to ensure that the impact of alternative actions is evaluated and considered in the planning of Subproject.

This matrix has horizontal axis which has the impact characteristics, and the vertical axis has existing E&S components which may be affected during the Subproject implementation. This provides a format for comprehensive review of the interactions between proposed actions and environmental factors.

E&S impacts are evaluated against the existing environment and evaluating potential impacts through descriptions of how an environmental effect will occur, how the Subproject will interact with the E&S conditions, and how mitigation measures reduce or eliminate the effect. The anticipated impacts can be categorized as:

Direct Impacts: Direct impacts occur through direct interaction of an activity with E&S component. For example, a discharge of an effluent from concrete batching or asphalt plant during construction may lead to soil contamination.

Indirect Impacts: Indirect impacts are not a direct result of the project, often produced away from or because of a complex impact pathway. The indirect impacts are also termed as secondary or even third level impacts. For example, SO2 in ambient air rise due to any plant emissions during the project activities may deposit on land as SO4 and cause acidic soils.

Induced Impacts: The cumulative impacts can be, due to induced actions of projects and activities that may occur if the action under assessment is implemented such as growth inducing impacts and other effects related to induced changes to the pattern of future land use or additional road network, population density or growth rate. Increase in workforce and nearby communities contributes to this effect.

These groups of impacts can be further divided according to their nature into:

- Positive and negative impact
- Minor, major and moderate impact
- Local and widespread impact
- Temporary and permanent impact
- Short and long-term impact
- Reversible and irreversible impact

During construction and operation phases of Subproject the characterization of potential impact has been classified based on the above characteristics. The characterization of potential E&S impacts is given in **Table 23** for both construction and operation phases. Furthermore, to indicate the magnitude and frequency of impacts, both E&S impact evaluation matrices have also been formulated for construction and operational phase. The evaluation of E&S impacts during construction and operation phases is shown in **Table 24** and **Table 25.** Thus, the following scale has been used in evaluation of potential impacts:

Negligible or No Impact: The impact which has obscure and negligible influence on physical, ecological and socio-economic environment
Low Adverse Impact: The impact that has a slight influence on the physical, ecological and socioeconomic environment during construction and operation phases
Medium Adverse Impact: The impact which can be eliminated or mitigated after applying appropriate mitigation measures
High Adverse Impact: The impact which can be partially, but not fully mitigated by applying the mitigation measure
Positive Impact: The impact that enhances natural and socio-economic environment will be positive impact

Identification of a significant E&S indicators/parameters has been carried out based on the existing E&S conditions into the project phases, e.g. design, construction and operation phases.

Environmental Component	Impact Characteristics														
	Direction		Duration		Location		Frequency		Extent		Significance			Reversibility	
	Positive	Negative	Long	Short	Direct	Indirect	Cont	Intermittent	Wide	Local	High	Moderate	Low	Reversible	Irreversible
Topography		●		●	●			●		●		●		●	
Surface water quality		●		●	●			●		●		●		●	
Ground water quality		●		●	●			●		●		●		●	
Ambient air quality		●		●	●			●		●	●			●	
Noise level		●		●	●			●		●		●		●	
Soil quality		●		●	●			●		●		●		●	
Solid waste		●		●	●			●		●		●		●	
Construction Camps		●		●	●			●		●		●		●	
Flora:															
Shrubs		●		●	●			●		●			●	●	
Trees		●		●	●			●		●		●		●	
Fauna:															
Mammals		●		●	●			●		●		●		●	
Reptiles		●		●	●			●		●		●		●	
Birds		●		●	●			●		●		●		●	
Amphibians		●		●	●			●		●		●		●	
Fish		●		●	●			●		●		●		●	
Health and safety		●		●	●			●		●		●		●	
Traffic management		●		●	●			●		●		●		●	
Community health and safety		●		●	●			●		●		●		●	
Economic activity	●		●		●		●		●		●			●	
Gender		●		●	●			●	●			●		●	
Legend: **Negative Impact (●) Positive Impact (☆)**															

Table 25: Characterization of Potential E&S Impacts for Operation Phase

Environmental Component	**Impact Characteristics**														
	Direction		**Duration**		**Location**		**Frequency**		**Extent**		**Significance**			**Reversibility**	
	Positive	Negative	Long	Short	Direct	Indirect	Cont.	Intermittent	Wide	Local	Large	Moderate	Small	Reversible	Irreversible
Air quality	☆		☆		☆		☆			☆	☆			☆	
Water quality	☆		☆		☆		☆			☆	☆			☆	
Noise level	☆		☆		☆		☆			☆	☆			☆	
Road safety	☆		☆		☆		☆			☆	☆			☆	
Landscaping	☆		☆		☆		☆			☆		☆		☆	
Community development	☆		☆		☆		☆			☆		☆		☆	
Traffic condition	☆		☆												
Lifestyle of people	☆		☆		☆		☆			☆		☆		☆	
Gender	☆		☆		☆		☆			☆		☆		☆	
Flora:															
Shrubs	☆		☆		☆		☆			☆		☆		☆	
Trees	☆		☆		☆		☆			☆		☆		☆	
Fauna:															
Mammals	☆		☆		☆		☆			☆		☆		☆	
Reptiles	☆		☆		☆		☆			☆		☆		☆	
Birds	☆		☆		☆		☆			☆		☆		☆	
Amphibians	☆		☆		☆		☆			☆		☆		☆	
Fish	☆		☆		☆		☆			☆		☆		☆	
Legend: **Negative Impact (●) Positive Impact (☆)**															

Table 26: E&S Impacts Evaluation during Construction Phase

Sr. No.	Environmental Component / Project Activities	Physical Environment								Ecological Environment		Socio economic Environment					
		Topography	Soil quality	Landscape	Surface Water quality	Groundwater quality	Slope stability	Air quality	Noise & vibration	Flora	Fauna	Social disturbance	Disruption of Public utilities	Employment	Traffic issues	Economic activity	Health and safety
1	Construction camps, workshops etc.	MA	LA	MA	LA	LA	LA	MA	MA	MA	LA	LA	LA	0	LA	0	MA
2	Levelling/tree cutting	MA	MA	MA	LA	LA	LA	MA	MA	MA	LA	LA	LA	0	LA	0	LA
3	Excavation operations	MA	MA	MA	LA	0	LA	MA	LA	MA	LA	LA	LA	0	LA	0	LA
4	Construction material, storage and handling	0	LA	0	0	LA	0	0	0	0	0	0	0	0	LA	0	LA
5	Open storage of construction materials, fuel etc.	0	LA	0	0	LA	0	LA	0	0	0	0	0	0	LA	0	LA
6	Solid waste generation and handling	LA	LA	LA	LA	LA	0	MA	0	LA	LA	LA	0	0	0	0	MA
7	Use of Chemicals	0	MA	0	LA	LA	LA	LA	0	LA	LA	LA	0	0	0	0	HA
8	Earthwork operations	MA	MA	MA	LA	0	MA	LA	MA	LA	LA	LA	0	0	LA	0	LA
9	Operation of concrete batching plant	LA	LA	MA	LA	0	MA	0	MA	0	0	LA	0	0	0	0	LA
10	Crushing Operations	LA	LA	LA	MA	0	LA	0	HA	LA	LA	LA	0	0	0	0	LA
11	Use of generators	LA	LA	0	LA	0	LA	LA	MA	0	LA	LA	0	0	0	0	MA
12	Construction of Roads	HA	HA	HA	LA	LA	LA	LA	LA	LA	LA	LA	0	0	LA	0	MA
13	Heavy equipment/machineries	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	0	0	0	0	LA
14	Asphalt mixing plants	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	0	0	0	0	LA
15	Plantation along RoW	MB	MB	MB	0	0	MB	MB	MB	MB	MB	0	0	0	0	0	0

Legend:
O = No impact LA = Low Adverse MA = Medium Adverse HA = High Adverse MB = Medium Beneficial HB = High Beneficial LB = Low Beneficial NA=Not Applicable

Table 27: E&S Impacts Evaluation during Operation Phase

Sr. No.	Environmental Components / Project Activities	Physical Environment								Ecological Environment		Socio Economic Environment					
		Topography	Soil quality	Landscape	Surface water quality	Groundwater quality	Slope stability	Air quality	Noise & vibration	Flora	Fauna	Land use	Population disturbance	Employment	Communication system	Public safety	Economic activity
1	Movement of vehicles	0	0	0	MB	MB	MB	HB	HB	0	0	0	0	MB	HB	HB	MB
2	Stormwater	0	LA	0	LA	LA	LA	LA	LA	LA	LA	LA	LA	0	LA	0	0
3	Solid waste	0	LA	LA	LA	LA	0	LA	0	LA	LA	LA	LA	0	0	LA	0
4	Traffic control	0	0	0	0	0	0	HB	HB	0	0	0	0	0	0	HB	MB
5	Maintenance of infrastructure	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	0	LA	0	LA	LA	0
7	Maintenance of road	0	LA	0	0	0	0	LA	LA	MB	0	0	0	0	0	0	0
8	Road accidents	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	LA	MA	NA
9	Maintenance of flora species	0	MB	MB	0	0	0	HB	0	MB	0	0	0	0	0	NA	0
10	Conservation of faunal species	0	0	0	0	0	0	0	0	HB	HB	0	0	0	0	0	0

Legend:
O =No impact NA=Not Applicable LA = Low Adverse MA = Medium Adverse LB = Low Beneficial MB = Medium Beneficial HB = High Beneficial HA = High Adverse

6.3 ANTICIPATED ENVIRONMENTAL AND SOCIAL IMPACTS AND MITIGATION MEASURES

The anticipated impacts on the physical, ecological, and socioeconomic environment during various phases of the Project and the mitigation measures to address them are described below. The impacts of construction phase of the Project are more pronounced although short-term, local, reversible and low. The anticipated E&S impacts and their mitigation options during design, construction and operation phases of the Subproject are given below. These impacts were assessed on field and proposed mitigation measures against each impact (enclosed as **Annexure-4**).

6.3.1 Topography and Soil

The topography and soil quality of Subproject area is expected to be impacted negatively as this will involve extraction of construction material and soil pollution.

Design Phase	Construction Phase	Operation Phase

Design Phase Impacts

The topography will change but only to limited extent due to the construction of project related structures such as embankments etc. Visual changes to the topography will be permanent but minor in nature. Aesthetics will be considered in the design, i.e., potential plantation along the RoW to overcome and enhance the visual impacts.

Construction Phase Impacts

The works proposed for the roads may result in soil erosion and sedimentation. Spoils will be generated from the excavation activities, particularly during construction works. Potential impacts from spoils and their disposal are (i) land for disposal of spoil, (ii) potential erosion from the spoil areas and spoil material reaching the waterways, and (iii) aesthetic impacts.

During the Subproject, spills of fuel, lubricants and chemicals can take place while transferring from one container to another or during refuelling. Also, during maintenance of equipment and vehicles, through leakages from equipment and containers and because of traffic accidents. Depending on the nature of the material, location of spill and quantity of spill, the soil can get contaminated. Borrow areas may contaminate with oils and fuel and cause environmental impacts such as water and soils contamination Borrow areas with unplanned pit development may cause landslides in that area, rainwater can fill the pits (ponds) which would create breeding grounds of vectors.

Mitigation Measures

- Provision of impervious platform with oil and grease trap for collection of spillages during equipment and vehicle maintenance and collection of oil and tube drips in container during repairing construction equipment vehicles.
- All spoils may be disposed of as desired, and the site will be restored back to its original conditions before handing over.
- Non-bituminous waste from construction activities will be dumped in approved sites, in line with the legal prescriptions for dumpsites.
- In areas with strong sheet flow, high embankments will be provided with chutes and drains or culverts to minimize soil erosion.

- Non-productive, barren lands in broken terrain, nullahs and publicly recognized waste lands should be given preference for burrowing materials.
- Productive land or land adjacent to agricultural land may not be preferred for excavation.

Operation Phase Impacts

Waste generation can cause soil contamination during Subproject operation if not handled properly. As mitigation, proper solid waste management may be ensured throughout project implementation.

6.3.2 Climate

Pakistan falls in the list of top ten countries globally considered as most vulnerable to long-term impacts of climate change. Rainfall patterns are considered the most important factor. The global and regional trends of temperature, rainfall and humidity are changing due to global warming and greenhouse house gas emissions.

Design Phase	Construction Phase	Operation Phase

Mitigation Measures:

- Incorporate design features to survive prolonged rainfall patterns (only common in monsoon in the Project area. Design features include embankment height, pavement design, and increased size of drainage channels, and culverts to accommodate additional rainfall and potential flooding. Efficient design of culverts avoids potential hazards resulting from excessive rainfall and consequent flooding.

6.3.3 Ambient Air Quality

Air pollution has the potential to cause adverse impact on human health and infrastructure. The change in air quality may cause stress, nuisance in daily activities and several health effects such as respiratory problems, dust allergies, throat infections etc. This impact is temporary and moderate negative in nature.

Design Phase	Construction Phase	Operation Phase

Construction Phase Impacts

Mostly air pollution is expected during the construction phase of the Subproject which includes fugitive dust generation associated with construction activities. Dust is usually generated during demolition or dismantling of physical infrastructure and construction of associated project amenities. In addition, exhaust emissions from operation of construction machinery, fugitive emissions from aggregate, asphalt and concrete plants and burning of materials will also have negative impacts on the air quality.

During construction, the continuous operation of machinery and movement of heavy trucks and vehicles may generate gaseous emissions and have a minor negative impact on the surrounding environment. The overall impact on the quality of air during the construction phase will, however, be limited to the execution of project construction activities only. The significant sources of air pollution during the construction phase will be:

a) Asphalt plants that generate toxic emissions which contain sulfur compounds, dust, and un-burnt carbon particles from batch preparation.
b) Transportation of construction materials and other construction activities that create dust emissions.
c) Traffic diversion routes marked along dirt tracks that generate fugitive dust while used by heavy traffic movement during construction

Mitigation Measures:

- Incorporate technical design features that enable permanent traffic fluctuation and avoid congestions in the form of sign boards, speed limits and bays.
- Preventive measures against dust should be adopted for on-site mixing and unloading operations. Regular water sprinkling of the site should be carried out to suppress excessive dust emissions.
- Emissions from power generators and construction machinery are important point sources at the construction sites. Proper maintenance and repair is needed to minimize the hazardous emissions.
- All vehicles, machinery, equipment and generators used during construction activities should be kept in good working condition and be properly tuned and maintained in order to minimize the exhaust emissions.
- Asphalt plants areas should be located at least 500m downwind from populated areas, wildlife habitats and contractor's camps to minimize the impact of dust emissions.
- Batching and asphalt plants should be equipped with dust control equipment as a pollution preventive measure such as fabric filters or wet scrubbers to reduce level of dust emissions.
- BEQs and other applicable standards for gaseous emissions generated by construction vehicles, equipment and machinery should be enforced during construction activities.
- Most dust problems caused during the construction phase of the project could be effectively mitigated by the implementation of simple procedures by the contractor including but not limited to the following:

    a) Vehicles used for construction should be tuned properly and regularly to control emission of exhaust gases.
    b) Construction workers should be provided with masks for protection against the inhalation of dust.
    c) Service roads used for earthmoving equipment and general transport should be regularly sprayed with water
    d) All excavation work should be sprinkled with water.
    e) Open burning of solid waste from the contractor's camps should be strictly banned.
    f) Regular maintenance and cleaning of vehicles carrying construction material. Ensure use of good quality fuels; and lubricants and prohibit use of low-grade fuels and lubricants.
    g) Cover construction material vehicles when carrying loads
    h) Ensure stockpiles are covered during dry/windy weather.
    i) Maintain slow vehicular speed for vehicles travelling on unpaved roads in construction zones.
    j) Air quality monitoring in accordance with the ESMP.

Operation Phase Impacts

The operation is not anticipated to create major E&S impacts during project operation phase given adequate mitigation measures are implemented strictly. The air emissions from vehicles on the road is expected to be balanced and normal against the vehicles taken off the Jacobabad city and nearby existing routes.

Mitigation Measures:

1) Extensive plantation (feasible for harsh climatic conditions) may be carried out along the roadside to minimize the harmful effects of dust and vehicle emissions. Species to be selected in accordance with their ability to absorb emissions.
2) Regular maintenance to ensure good quality paved road to reduce vehicle emission during operation phase.
3) Periodic air quality monitoring to ensure compliance and flag necessary action in case of higher emission concentrations recorded.
4) Regular vehicle check-ups to control/ensure compliance with BEQs
5) Encouraging the nearby community to install sound barriers and take special measures to reduce the nuisance, such as hedges and vegetation to reduce air pollution.

6.3.4 Noise Pollution

Noise is most pervasive environmental problem in the urban areas especially on the roadside. Noise is a by-product of human activity, and area of exposure increases as function of mobility and construction activities. Noise pollution is expected to have a negative impact on sensitive receptors during construction and operation phase of the Subproject. Noise mitigation measures can be incorporated in design to avoid and/or reduce noise impacts particularly for sensitive receptors along the RoW such as schools and mosques/worship places.

Design Phase	Construction Phase	Operation Phase

Construction Phase Impacts

Construction equipment is heavy duty equipment (bulldozers, excavators, stabilizers, concrete mixing plant, pneumatic drills, stone crushers asphalt plants and other equipment) which generate noise pollution particularly pressure horns, which is a nuisance to nearby communities. While traveling on roads these pressure horns become a serious concern for the pedestrians and passengers of other vehicles when there is traffic congestion. Another source of noise which can potentially increase significantly in the Project area is the noise generated from construction machinery such as excavators, excavators, rock crushing rollers and generators. The impact from noise is likely to be temporary and limited to the construction phase of the Subproject, however, it can potentially be harmful to health and wellbeing with moderate intensity.

Mitigation Measures:

- Providing the construction workers with suitable hearing protection like ear cap, or earmuffs and training them in their use.
- Properly tune and maintain all project related vehicles particularly heavy vehicles and machinery.
- Regular monitoring of vehicle condition.
- To the extent possible, opt for latest model vehicles with lower noise emission with built in damping techniques and adequate muffling devices. Use of low noise machinery, or machinery with noise shielding and absorption.
- Contractors should comply with submitted work schedule, keeping noisy operations away from sensitive points, implement regular maintenance and repairs and employ strict implementation of operation procedures.
- Minimize use of horns while passing through settlements, near schools and mosques.
- Locate noise generating construction activities as far as possible from sensitive receptors, preferably where natural barrier for sound shielding is possible.
- Assign time limits to construction activities that generate excessive noise, usually conducted during the day.
- Prohibit use of pressure horns and noise monitoring in accordance with the Environmental Monitoring Plan.

Operation Phase Impacts

High standard geometric design with high quality pavement and smooth surfaces is expected to reduce the noise levels.

Mitigation Measures:

- Undertake road maintenance regularly.

- Ensure noise barriers (planting trees) where the sensitive receptors are in close proximity. Additional sound barriers in form of trees and hedges after consultation with the local community.
- Discourage the use of pressure horns especially in the sensitive zones.
- Enforcement of penalties against traffic rules violators.

6.3.5 Surface and Ground Water Contamination

Water sources (both surface and groundwater) may get contaminated due to improper disposal of liquid effluent and construction waste generated during the Subproject activities.

Design Phase	Construction Phase	Operation Phase

Construction Phase Impacts

Improper handling of liquid effluent and solid waste can pose a serious threat to the health of communities dependent on these water sources for domestic use and disturb aquatic life in nearby tributaries from pat Feeder Canal. In addition, waste, if left unattended will result in leachate formation that will percolate through the soil strata and will reach underground water.

There is a possibility that various materials like fuel, lubricant oil and other oily products, which are used during the construction phase may contaminate groundwater, if they are not handled properly. Sanitary wastewater generated at the workers' camps, if allowed to stagnate in water ponds on the site, can percolate into the soil and contaminate groundwater sources. This impact is temporary and minor negative in nature and can be handled with adequate mitigation measures.

Mitigation Measures:

- Protection of surface and groundwater reserves from any source of contamination such as the construction and oily waste that will degrade its potable quality.
- Implement controls on handling chemicals to avoid spillage and other hazards.
- The contractor may ensure that construction debris does not find their way into the drainage or irrigation canals which may get blocked or contaminated.
- Maintain the surface water flow/drainage.
- Prohibit washing of machinery and vehicles in or close to surface water bodies.
- Sanitary latrines in construction camps must be located at safe distance from water sources and hand tube wells.
- Maintenance workshop, material yard, crushers, asphalt plant and construction camps should not be located within 1 km of water resources.
- Septic tanks, settling ponds and washing yards will be established to control the wastewater and sediment loadings near construction camps.
- Wastage of water should be reduced by training the workers involved in water use.
- Water jets and sprays should be used for watering surfaces rather than using overflow system.
- Source of water should be carefully selected. Water use should not disturb the existing community water supplies.

Operation Phase Impacts

Groundwater is not likely to be affected during the operational phase.

6.3.6 Waste Disposal

Waste generation is expected with different Subproject activities. This includes solid waste, oil spillage, and liquid effluent from construction activities and sanitary wastewater. The amount of waste generated, and its impacts are more pronounced in the construction phase.

Design Phase	Construction Phase	Operation Phase

Construction Phase Impacts

Waste may be generated at active construction and camp site. Handling and storage of oil, asphalt and bitumen may be a source of environmental pollution as a hazardous waste. This will result in polluted conditions, health risk to workers and public at the camp site. These impacts are expected to be temporary and moderate negative in nature.

Mitigation Measures:

- Dumping sites may be planned away from residential setups.
- Allocating work camps and waste dumping sites at a distance of at least 1 km away from any residential setup and/or sensitive receptors.
- Formulate onsite plan for handling, storage and disposal of harmful materials.
- Contractor may ensure that solid waste is not disposed into agricultural lands.
- Solid waste generated during construction and camp sites may be safely disposed in demarcated waste disposal sites.
- Training of work force in storage and handling of materials and chemicals that can potentially cause soil contamination.
- Proper labelling of containers, including the identification and quantity of the contents, hazard contact information etc.
- Emergency Response Plan to address the accidental spillage of fuels and hazardous goods.
- Used oil should be collected in separate containers stored on impervious platform with restricted access and must be sold to licensed contractor and the burning of waste oil should be strictly restricted.
- Segregating and stockpiling scarified or milled bituminous material and reusing this material in sub grade and shoulders.
- Collecting and stockpiling excessive bituminous material for reuse or controlled disposal.
- Establish pit latrines and septic tanks in camp sites.

Operation Phase Impacts

Waste generation will not likely have any impact during operational phase as the quantity of waste generated may get reduced significantly. No hazardous waste is expected to generate in operation phase except during road maintenance works.

6.3.7 Traffic Management

Design Phase	Construction Phase	Operation Phase

Construction Phase Impacts

Traffic management can pose a challenge in the Subproject area during construction activities. This may result in traffic jams and cause inconvenience to the people passing through the Subproject area due to movement of vehicles carrying construction materials.

Mitigation Measures:

- Proper traffic management plan to avoid traffic jams and public inconvenience.
- Movement of vehicles carrying construction materials should be restricted during the daytime to reduce traffic load and inconvenience to the locals.
- Construction vehicles, machinery and equipment will move or be stationed in the designated RoW to avoid unnecessary compaction of soil.
- Availability of continuous services of traffic wardens for facilitating diversion and traffic control.
- A traffic management plan is prepared for the construction phase of the Subproject (enclosed as **Annexure-5**).
- The CC before commencement of work will prepare site specific TMP as part of C-ESMP

6.3.8 Occupational Health and Safety

The Subproject activities can potentially have health and safety concerns if not managed properly.

Design Phase	Construction Phase	Operation Phase

Construction Phase Impacts

Most of the health and safety issues are concentrated in the construction phase of the Subproject. These include, occupational health and safety of workers, handling of hazardous substances and waste, accidents, operation of heavy construction machinery generate air and noise pollution and traffic related issues. Poorly designed sanitary facilities may contaminate the soils and water quality, and improper disposal of garbage, rubbish and construction waste may pose a health threat and nuisance to the workers. Uncontrolled vending of food on the work site may also pose a risk with respect to the transmission of contagious diseases.

The health effects of noise and vibration can be significant; noise contributes to hearing loss but also triggers physiological and psychological body changes. Vibration can be a serious form of stress, causing anemia and lesions in the gastrointestinal tract, resulting in internal haemorrhaging. These impacts are related to potential health problems, undesirable social conditions and pollution of the environment.

Mitigation measures:

- Provision of Personal Protective Equipment (PPE) and safety kits for labours handling hazardous materials, for example, protective goggles, gloves, footwear, and helmet etc.
- Emergency response plan for tackling sudden accidents.
- Basic medical training to specified work staff and basic medical service and supplies to workers.
- Layout plan for camp site, indicating safety measures taken by the contractor e.g. firefighting equipment, safe storage of hazardous material, first aid, security, fencing, and contingency measures in case of accidents.
- Provision of adequate protective gears to workers exposed to large amount of dust.
- Proper planning, provision of adequate facilities and strict compliance with procedures and guidelines could prevent or at least minimize the adverse impacts.

- Provision of protective clothing for workers handling hazardous materials, e.g. helmet, adequate footwear for bituminous pavement works, protective goggles, gloves etc.
- Material Safety Data Sheet (MSDS) of hazardous chemical used during the construction will be provided by the contractor.
- Fire extinguishers may be provided throughout camps and work sites. These extinguishers may be inspected monthly and maintained as necessary.
- Instruct construction supervisor to strictly enforce the keeping out of non-working persons, particularly children.
- Adequate signage, lightning devices, barriers, yellow tape and persons with flags during construction to manage traffic at construction sites, haulage and access roads.
- Elabouration of a contingency planning in case of major accidents may be made mandatory.
- Display of emergency numbers on active construction site and camp site.
- The contractor will provide and maintain adequate hygienic kitchens which are sheltered and separated from the living quarters.
- The CC before commencement of work will prepare OHS Plan as part of C-ESMP

Operation Phase Impacts

Enhanced vehicular movement and speed in the long run may result in road safety issues like traffic accidents. This impact is permanent but moderately adverse in nature, since the frequency of accidents is lowered, but their intensity is severe due to enhanced speeds at which vehicles will move.

Mitigation measure will include strict enforcement of speed limits, installation of speed guns and channelization of traffic with respect to categories and enforcement of penalties for the violators.

6.3.9 Community Health and Safety

The construction activities and vehicular movement at construction sites may result in roadside accidents particularly inflicting local communities who are not familiar with presence of heavy equipment and machinery. In addition, spread of disease from construction camps and workers can also cause harm to the community health through spread of disease. This is a temporary and minor negative impact.

Design Phase	Construction Phase	Operation Phase

Mitigation Measures:

- Integrate applicable road safety features (e.g., speed bumps, pedestrian crossings etc.) into the final design, especially near settlements along the Subproject area.
- Timely public notification on planned construction works may be announced.
- Efforts may be made to create awareness about road safety among the drivers operating construction vehicles.
- Involve local educational facilities for road safety awareness.
- Provision of proper safety and diversion signage, particularly at sensitive/accident-prone spots in peak hours.
- Setting up speed limits in close consultation with the local stakeholders.
- Reducing the impacts of vector borne diseases on long-term health effect of workers should be accomplished through implementation of diverse interventions aimed at eliminating the factors that lead to disease, which includes prevention of larval and adult propagation of vectors through sanitary improvements and elimination of breeding habitat close to human settlements and by eliminating any unusable impounding of water.

- The CC before commencement of work will prepare community health and safety plan as part of C-ESMP.

6.3.10 Ecological Impacts

The Subproject consists predominantly of barren and agricultural land with intermittent settlements along the RoW. There are no forests, protected or otherwise or areas of conservation within 100 m of RoW. However, trees, shrubs and agriculture fields are found on both sides of the Subproject. The associated activities with Subproject is not expected to cause any potential threat to flora and fauna.

Design Phase	Construction Phase	Operation Phase

Construction Phase Impacts

Trees are vital ecosystem, which perform variety of functions for the improvement of environment such as reduction in air pollution, noise abatement, cooling effect on earth, supply of oxygen etc. Establishment of contractor's camps and warehouses for storage of construction equipment's and material will involve clearing of vegetation from the area causing a negative impact. During the entire construction period, dust laden polluted air will form a dust film on the leaves, thus blocking sunshine and stomata, thereby hindering photosynthesis process and causing detrimental effect on the plant health.

Mitigation Measures:

- An awareness campaign targeted on the neighbourhood farmers may be run to popularize the planting of trees.
- The contractor's staff and labour may be strictly directed not to damage any vegetation such as trees or bushes. They may use the paths and tracks for movement and will not be allowed to trespass through agriculture fields.
- New and good condition machinery with minimum noise may be used in construction.
- Noisy work may not be carried out in nighttime so that there should be no disturbance to local birds and animal.
- The camps may be properly fenced and gated to check the entry of wild animals in search of eatable goods. Similarly waste of the camps may be properly disposed of to prevent the chances of eating by wild animals, which may prove hazardous to them.

Operation Phase Impacts

Plants are primary producer in an ecosystem and play a significant role in ecological health. No negative impacts are envisaged on the flora of the area during operational phase of Subproject. Hence no mitigation is required.

6.3.11 Land Acquisition and Resettlement

Land acquisition and resettlement is not anticipated at this stage, however, if involved, that may result in social disturbances, loss of livelihoods and may exaggerate the social and cultural conflicts among the people. No private land acquisition requirement is envisaged at this stage. The Subproject is anticipated as the rehabilitation of existing road alignment since it's the upgradation of existing road that was damaged by floods, thus it is free from encroachment, economic activity and residential use. Therefore, no private land acquisition is envisaged at this stage. A RAP shall be prepared in case additional land is required during execution of Subproject.

6.3.12 Social and Cultural Impacts

It is expected that the Subproject is likely to generate economic activity in the region, as located almost at border of Balochistan province. Some minor impacts are expected to affect the local communities during construction phase. For example, change in local lifestyle and culture may occur when the local and migrant workers will come in contact during the construction works. This impact is temporary and minor negative only if disputes arise. In general, no such mitigation options are required.

Design Phase	Construction Phase	Operation Phase

6.3.13 Gender Based Violence

Construction Phase Impacts

During construction phase, gender-based violence might arise due to discrimination made against women by unequal work distribution and unequal pay structure among others. Sexual harassment against women might occur because of mixing of men and women. This impact is negative in nature during construction stage.

Mitigation Measures:

- Awareness should be created among the females at individual and community levels about the construction sites.
- During the timing of educational institutions workers should not be allowed to crowd in the surroundings.
- Alternative routes for pedestrian should be provided to avoid mixing of women with workers.
- Raise awareness among the communities of the potential risks of GBV and establish response services in the communities that can respond to instances of GBV (particularly those related to issues of labour influx).
- The CC should make sure that no discrimination is made based on gender while hiring of workers.
- Provisions of gender disaggregate bathing, changing and sanitation facilities.
- CC should take proper measures to address and resolve issues relating to harassment, intimidation and exploitation, especially in relation to women.
- Gender Action Plan (Annexure-9) should be implemented during execution stage of the Subproject.

6.3.14 Sensitive Receptors

Construction phase impacts and mitigation measures

Sr. No.	Type of receptors	List of receptors	Potential impacts	Mitigation measures
1	Social and Cultural	Mosques were identified within proximity to the road alignment at several locations. Madrassahs and primary-level schools were observed near residential clusters. Other receptors	Noise disturbance near mosques, madrassahs, and schools. Other impacts include the temporary obstruction of access during religious or school activities.	▪ Scheduling construction activities to avoid prayer times and school hours. ▪ Maintaining clear and safe access routes to all social facilities and use of low-

		include community gathering areas/chowk were noted near Sohbatpur Chowk. Furthermore, no formally declared heritage sites were observed during data collection. However, graveyards exist near settlements, away from the road alignment.		noise equipment where feasible.
2	Human and Community	Residential settlements comprising mud and burnt-brick houses were observed along the project corridor, particularly near Sohbatpur Chowk and scattered rural stretches (Villages along the RoW). Roadside commercial activities, including small shops, kiosks, and vendors, were noted mainly in built-up sections. Furthermore, pedestrian movement is significant due to local commuting and access to markets and services. Similarly, presence of vulnerable groups, including children and elderly residents, were observed near residential and commercial areas.	Generation of dust from earthworks, haulage and material handling affecting nearby houses, shops, schools and mosques. Other impacts can be noise and vibration from construction machinery causing disturbance to residents and worshippers. Similarly, restricted access to houses, shops, and community facilities due to excavation and material stockpiling and increased traffic safety risks for pedestrians, children, and elderly due to movement of construction vehicles.	▪ Regular water sprinkling on unpaved surfaces and material stockpiles. ▪ Restriction of noisy activities near mosques and schools, particularly during prayer and school hours. ▪ Provision of temporary access paths to houses and shops. ▪ Installation of warning signs, barricades, and flagmen in populated areas. ▪ Community coordination and advance notice of construction schedules.
3	Infrastructure and Utilities	The existing road pavement is present throughout the corridor with varying surface conditions. Electric poles and overhead power lines run parallel to the road in several sections. Moreover, water supply pipelines and telecommunication lines were observed in built-up areas along the road alignment.	Accidental damage to electric poles, water pipelines, and telecommunication lines and blockage or damage to existing side drains and culverts may occur during construction activities. Other may be deterioration of the existing road surface due to construction traffic.	▪ Identification and marking of utilities prior to construction and coordination with relevant utility departments for protection or relocation. ▪ Regular inspection and immediate repair of any damaged infrastructure. ▪ Maintenance of drainage paths to avoid water stagnation.
4	Economic and Livelihood	Small roadside businesses and vendors were observed relying on road access for daily income. Others include the agricultural activities adjacent to the road form, which is a key livelihood	Temporary restrictions on livestock movement may occur during construction of road. Moreover, temporary disruption to roadside businesses and vendors	▪ Phased construction to minimize disruption. ▪ Provision of alternative access to farmlands and grazing areas.

		source for residents and livestock-based livelihoods are evident in rural sections of the corridor.	and disturbance to agricultural activities due to access limitations and dust deposition.	▪ Timely completion of works in agricultural sections. ▪ Engagement with local communities to address livelihood concerns.
5	Environmental	Agricultural land with standing crops was observed adjacent to the road, particularly outside the urban stretch. Roadside trees and natural vegetation were noted intermittently along the corridor, which were away from the road alignment, but found within COI. The Hairdin Drainage, which is a significant surface water body, was observed, although not within the COI.	▪ Soil erosion and dust emissions due to excavation and embankment works. ▪ Risk of sedimentation and pollution of the Hairdin Drainage from construction spoil, runoff, and waste. ▪ Removal of roadside trees and vegetation. ▪ Disturbance to livestock movement and grazing areas. ▪ Risk of fuel and oil spills contaminating soil and water.	▪ Designated fueling areas with spill containment and immediate cleanup procedures. Controlled excavation and proper compaction of embankments. ▪ Prohibition of spoil dumping and waste disposal into Hairdin Drainage. ▪ Replantation/compensatory plantation for any removed trees. Construction of temporary drainage diversions where required.

6.4 CUMULATIVE IMPACT ASSESSMENT

The Subproject area is characterized by low elevation, poor drainage and frequent flood exposure. The damage to the existing road infrastructure due to floods 2022 requires not only a direct impact analysis but also a cumulative impact assessment, considering the combined impacts of environmental pressures, socio-economic vulnerabilities and other actual future developments in the Subproject area. The cumulative impacts that will result from a combination of the Subproject and other actual or future developments in the surrounding areas. The key cumulative impacts identified are tabulated **(Table 28)** as under:

- Impacts on surface water (hydrology)
- Air quality impacts
- Noise environment impacts
- Impacts on ecological environment
- Impacts on social environment

Table 28: Cumulative Impact Assessment

Sr. No.	Cumulative impacts	Mitigation strategies
1	**Hydrology:** Several surface water courses are present in the broader Subproject area. The civil work of the Subproject together with other road maintenance and development activities has the potential to interrupt these water bodies and result in cumulative negative impacts to the sensitive ecology. Similarly, the ad hoc maintenance of vehicles and machinery, washing of equipment and vehicles and potential spillages of fuels and chemicals may result in potential contamination of these water bodies.	The CC of the Subproject as well as the machinery used for routine maintenance work by irrigation or C&W department should apply good engineering and industry practice related to infrastructure siting and construction and maintenance activities across run-off channels, vehicle washing and maintenance and procedures around the storage and handling of fuels and chemicals.
2	**Air quality (Construction activities):** Construction activities associated with the Subproject together with construction or maintenance activities of local roads and other sectors have the potential to create significant negative cumulative impacts associated with the generation of total dust, PM10 and PM2.5. The magnitude of these potential impacts may be minor, moderate or major, depending upon how the impacts from other local routine activities combine with impacts arising from the Subproject activities. These impacts may be worsened by elevated wind speeds, increasing the potential for cumulative impacts during period of adverse weather.	As the construction activities are temporary and because suitable mitigation will be in place, the potential for significant impacts is reduced as dust raising activities will need to be coincidental on other development locations. The implementation of the mitigation measures included in coping up of air quality disturbance of the Subproject area during construction phase is considered likely to render the impacts associated with construction activities as having a negligible significance during most circumstances. However, during period of particularly adverse weather conditions (when the wind speed is particularly elevated), or when activities elsewhere are resulting in major emissions of dust, there may be a call to reduce other dust causing activities or defer particularly dusty activities until a time as other activities are ceased or weather conditions improve.
3	**Air quality (Traffic generated during construction & operational phases):** Significant cumulative impacts can arise due to emissions from vehicle exhausts and from dust dispersion lifted from unpaved road surfaces. Impacts at roadside sensitive receptors caused by the vehicles associated with the Subproject are however predicted to be of negligible negative significance (post-mitigation). On this basis, where air quality standards are to be approached or exceeded, these impacts would likely arise from vehicles other than the vehicular moment of the Subproject during both construction and operation phases.	The CC should collaborate and participate together with local government and local office of C&W department to establish agreements regarding the use and maintenance of unpaved haul roads, the use of dust-binding agents and in keeping the speed of all traffic using unpaved roads to below 20km/hr.

	Where unpaved access roads are used, major adverse impacts associated with dispersion of dust and PM10 and PM2.5 can potentially occur. These effects can be especially significant if the same unpaved road is used by the vehicles used in other normal routine maintenance activities.	
4	**Noise environment (Construction phase):** If construction activities of routine works are in parallel with the construction phase of the Subproject, it is possible that the cumulative noise impact of activities carried out in these phases may increase. However, this is dependent on how the impacts from other developments combine with the impacts from the Subproject and the respective timing of these impacts.	There is potential for cumulative noise impacts to arise because of potential noise contour overlap during construction. Therefore, the CC of the Subproject should collaborate with other regional C&W office to ensure that impacts (overlapping noise impacts) are discussed, and that (if necessary) appropriate mitigation are implemented. They collectively should ensure that the associated overlapping noise emissions is avoided or kept to a minimum.
5	**Ecological environment:** An influx of people will lead to pressures on the environment in the form of fuel wood, harvesting, increased demands for water and increased pressure on ecosystem.	The CC in collaboration with C&W regional office should take necessary measures including, prioritize local workers to reduce tensions and increase community buy-in. This will reduce the pressure on local resources.
6	**Social environment (Increased risk of road traffic accidents):** Existing vehicle traffic is not significant in the Project area. These people walk to their destinations or use bikes to transport their goods. However, implementation of the Subproject will increase heavy vehicles using the local roads throughout the duration of the construction period.	The CC of the Subproject should implement the mitigation options for traffic management under 6.3.7 of the chapter during construction phase.

Note: The cumulative environmental and social impacts described were assessed based on the information available, using information collected through site visits, consultation with regional C&W office and local community of the Subproject area. The cumulative impact assessment has a certain level of uncertainty, which is inevitable with a study of this type. For example, there is no detailed information available for other future projects in the area.

CHAPTER - 7: ENVIRONMENTAL & SOCIAL MANAGEMENT PLAN

The Environmental and Social Management Plan (ESMP) outlines the framework for identifying, mitigating, monitoring, and managing the environmental and social impacts of the rehabilitation or reconstruction of a road damaged by floods. It ensures that project activities are carried out in compliance with national regulations, international standards, and best practices for sustainability and disaster resilience.

The ESMP ensures that the flood-affected Subproject is implemented responsibly, minimizing negative environmental and social impacts while maximizing benefits for communities. It strengthens resilience, promotes sustainability, and ensures the road serves as a reliable and safe lifeline, even in future climate-related disasters.

7.1 OBJECTIVES OF ESMP

The main purpose of ESMP is to highlight the E&S objectives and targets to ensure a sustainable and climate resilient approach towards the construction of project. Stepwise environmental objectives, which can be contractual obligations of contractor are as under:

- **Familiarity with WB Safeguard Policies:** This is a donor funded project, contractor must be familiar with the Bank Environmental and Social Commitment Plan (ESCP) and other safeguards policies, guidelines, and standards.
- **Site selection for Facilities:** To ensure the environmental performance, site selection for different project facilities e.g., campsites, batching and or crushing plant, workshop and or machine yard need to be carefully selected as per the guidelines. All the activities within these facilities along with construction work on site also need to be in line with the World Bank requirements.
- **Human Resource**: ESMP identifies the human resource required for E&S compliance, better reporting and enhanced environmental performance.
- **Mitigation Measures**: Mitigation measures identified against each activity will maximize potential project benefits and control negative impacts.
- **Climate Resilient infrastructure:** ESMP emphasizes to combine grey and green infrastructure. Contractor needs to integrated E&S measures during the construction process for a sustainable, resilient, and socially inclusive execution.
- **Defining roles and responsibilities of Project Actors:** ESMP also defines liabilities of project actors like contractor's Environmental Engineer/specialist and E&S Specialist of supervisory consultant etc.
- **Environmental Trainings**: Need and frequency of environmental trainings to the contractor and other project staff is also comprehended and included in the plan.
- **Environmental Budgeting:** ESMP also calculates overall budget estimate along with its breakup for a sustainable execution.
- **Documentation requirements**: This also explains the requirements for communication and reporting during the Subproject activities.
- **Inspection and Supervision**: This document also mentions inspection and monitoring frequency by Construction Contractor (CC), Construction Supervision Consultant (CSC), Construction & Works Department (C&W) Balochistan and donor agency to make sure compliance to ESMP document.
- **Defining environmental monitoring and management plans:** This document also emphasized on environmental monitoring and management plans.
- **Contractor-ESMP:** The contractor will be required to prepare site specific ESMP inclusive
    - Campsite management plan (inclusive site plan)
    - Waste Management Plan
    - Occupational Health & Safety Plan (including Covid 19)
    - Emergency Response Plan
    - Traffic Safety and Diversion Management Plan
    - Solid & Liquid Waste Management Plan

7.2 INSTITUTIONAL ARRANGEMENTS FOR E&S IMPLEMENTATION

The proposed Subproject will be implemented at two levels, e.g. federal level and provincial level. The SS-ESMP implementation arrangements have been suggested to keep it well aligned with the overall Project implementation and institutional setup as described below:

1) Federal Level

The Ministry of Planning, Development & Special Initiatives (MoPDSI), being an implementing agency, will be responsible for managing the project's overall implementation, including SS-ESMP through Federal Project Management Unit (FPMU). An Environment and Social Management Unit (ESMU) will be established in the FPMU with designated E&S staff/ E&S Focal Persons (FPs). The ESMU will ensure plans and procedures mentioned in ESMF/E&S instruments are being followed and implemented during the project life cycle. The designated E&S FPs will implement ESMF/E&S instruments at the field level and report to the ESMU of FPMU.

2) Provincial Level

The provincial Project Implementation Unit (PIU) of IFRAP will be responsible for the implementation of Subproject. The dedicated E&S staff of the PIUs will be responsible for implementing the ESMF/E&S instrument with the support of designated E&S FPs at the district and field levels. The E&S staff of the PIUs will report to respective Project Directors and maintain liaison with the ESMU of the FPMU for the effective implementation of the ESMF/E&S instrument. The E&S Team (in each PIU) shall supervise the implementation and monitoring of the ESMF/E&S instruments using the E&S monitoring Checklist. The E&S Specialists of PIUs will ensure the effective implementation of E&S instruments, where required.

7.3 ROLES AND RESPONSIBILITIES OF ENTITIES INVOLVED IN E&S MANAGEMENT

7.3.1 Construction Contractor (CC) of Project

- Environmental Engineer (EE) of Construction Contractor (CC) will prepare and submit Contractor ESMP (C-ESMP) before commencement of construction work. This includes map of site plan.
- EE will prepare independent management plans as mentioned above for health and safety, traffic control/diversion plan, camps site, solid & liquid waste, community health and safety, emergency response etc.
- CC will select location for camps sites, batching plants, machine yard, waste disposal etc as per ESMP requirement.
- EE of CC will provide trainings to the staff and labour on quarterly basis related to environment and social issues, communicable diseases, community privacy and ESMP implementation issues.
- CC will acquire services for Environmental testing and monitoring on quarterly basis at the project sites.
- EE of Contractor will be responsible to supervise and manage day to day activities as per ESMP requirement.
- EE of contractor will be responsible for the implementation of ESMP and to take effective measures against corrective actions plan
- EE will be responsible to submit monthly report to CSC PIU.
- EE will submit quarterly monitoring reports to the CSC.
- EE will ensure proper provision and usage of Personal Protective Equipment (PPEs) to the workers and train them for fire extinguishers, emergency exit plan etc.

7.3.2 Construction Supervision Consultant (CSC)

- CSC will ensure the approval of C-ESMP from the Bank prior construction.
- CSC will ensure implementation of ESMP on the site.
- CSC will be responsible to submit quarterly monitoring report to the World Bank within the reporting period.
- CSC will notify any kind of accident to the implementing body and World Bank within 48 hours. Subsequent report on the incident and mitigation measure adopted must be submitted within 30 days.
- CSC of the Subproject will inspect, supervise, and monitor all the construction and allied activities related to ESMP
- CSC will be responsible to prepare corrective action plan if required.
- Visiting construction sites including incomplete construction work sites, where there is no contractor's activities, active construction work sites, completed areas of work sites as well as ancillary sites such as burrow areas, quarries, asphalt and crusher sites, construction camps and workshop to ensure contractors' compliance with ESMP stipulations and conditions of legal authorities.
- CSC will conduct internal audits of the site after 6 months to evaluate the compliance of ESMP on the site.
- Preparing and submitting monthly and quarterly environmental compliance reports to the World and implementing agency Bank for approval.

7.3.3 Project Implementation Unit (PIU)

- Provide support, oversight, and quality control to field staff (FPs) working on E&S risk management.
- Review and provide quality assurance and approval to E&S Screening checklist and ESMPs as relevant. Keep documentation of all progress.
- Oversee overall implementation and monitoring of E&S mitigation and management activities, compile progress reports from subprojects, and report to the World Bank on a quarterly basis.
- Train field staff, contractors and communities who will be responsible for implementing the E&S instruments.
- Ensure that all bidding and contract documents include all relevant E&S screening checklists and other E&S instruments.
- Ensure project activities do not fall under the exclusion List.
- Maintain the close liaison with the World Bank, Government Departments (where applicable), E&S FPs at field level and E&S unit of FPMU for smooth and effective implementation of E&S aspects.
- The PIU will also track grievances/beneficiary feedback (in line with the SEP) during implementation of Subproject to use as a monitoring tool for implementation of project activities and E&S mitigation measures.

The PIU/FPMU becomes aware of a serious incident in connection with the project, which may have significant adverse effects on the environment, the affected communities, the public, or workers, it should notify the World Bank within 48 hours of becoming aware of such incident.

Upon completion of Subproject activities, the PIU will review and evaluate progress and completion of project activities and all required E&S mitigation measures. Especially for civil works, the PIU will monitor activities with regard to site restoration and landscaping in the affected areas to ensure that the activities are done to an appropriate and acceptable standard before closing the contracts, in accordance with measures identified in the ESMP and other plans. The sites must be restored to at least the same condition and standard that existed prior to commencement of works. Any pending issues must be resolved before a Subproject is considered fully completed.

7.4 INCLUSION OF ESMP IN CONTRACT DOCUMENTS

The approved ESMP of the Subproject will be included as part of Request for Proposal (RFP) document issued by implementing body will be made obligatory requirement by contractor in its bid document, and same may be reflected in the construction contracts. The technical specifications of the bid documents will contain the ESMP that contractor will comply with the mitigation measures provided in it.

The implementation of ESMP should be carefully coordinated with the design and construction program of the project to ensure that relevant mitigation measures are implemented at the appropriate stage and that adequate resources are properly allocated to achieve the desired results.

7.5 GRIEVANCE REDRESS MECHANISM (GRM)

An effective grievance mechanism is fundamental not only to facilitate an effective and responsive resettlement process, but also to ensuring that project can proceed on schedule, without delays induced by affected community disaffection.

7.5.1 Proposed GRM

To ensure timely and effective handling of stakeholder grievances under the Subproject, following administrative committees/roles will be established/appointed:

1) Public Complaint Cell (PCC): Responsible for receiving, logging, resolving, coordinating and follow ups on complaints
2) Grievance Redress Committee (GRC): Responsible to oversee the functioning of the PCC as well as the final non-judicial authority on resolving grievances that cannot be resolved by the PCC
3) Grievance Focal Persons (GFPs): Consists of educated people from each community that can be approached by the community members for their grievances against the project. The GFPs will be responsible for representing their local community's grievances and coordinate with the project team.

7.5.2 Public Complaint Cell

PCC will be established under the E&S section of the PMU which will be responsible for receiving complaints and resolve grievances. Since female community members have restricted mobility outside of their villages and homes. Therefore, female PCC staff will be required to undertake visits to the local communities. The frequency of visits will depend on the nature and magnitude of activity in an area and the frequency of grievances.

7.5.3 Grievance Redress Committee

The GRC is an independent body that will regulate the functioning of PCC and the entire grievance redress process. It will address the grievances which remain unresolved by the PCC. This committee will be notified by implementing body as required by World Bank as part of ESMP implementation during Project execution.

The GRC will consist of the following members:

- Project Director (PD)
- E&S Specialist, PIU
- Chief Resident Engineer (CRE) of CSC
- Resident Engineer (RE) of CSC

- Project Manager (PM) of CC
- Representatives from labours/workers
- Representative of GFPs (both male and female)
- Social Specialist, PIU

Keeping in view the tribal norms and values of the Subproject area, it is stated that the GRC should be chaired by an influential person from the community of the Subproject area. Considering this, the implementing body will notify the GRC before initiation of implementation stage.

7.5.4 Filing and Resolving Grievances

Following steps will be followed to log and resolve grievances:

Stage 1: The complaint once received at the PCC either directly (in-person, via phone, email) or through GFPs will be logged with following details:

- Unique complaint tracking number for both parties' record
- Name and contact information of the affected person
- Date of complaint
- Written or oral complaint
- To whom the claim has been addressed initially
- Description of the claim

The complaint will be acknowledged, and confirmation of receipt will be sent to the complainant within two working days. The grievance log/register will remain available to the public at the PCC office, construction site and other key public offices.

Stage 2: As the complaint is logged, PCC will then investigate the reasons behind the grievance. The staff may need to contact the complainant to obtain further details. The PCC will be required to complete preliminary investigation within 7 working days of the receipt of the complaint and send a response to the affected person with details on the outcomes of the investigation and the actions PCC intends to take ahead. Following investigation and response to the complainant, if the complainant considers that the grievance has been resolved satisfactorily, the PCC will log the complaint as resolved.

Stage 3: In case the grievance remains unresolved it will be reassessed and GRC will have further dialogue with the complainant to discuss if there are any further steps, which may be taken to reach a mutually agreed resolution to the problem. The GRC will conduct a hearing, if necessary, where the affected person(s) can present concerns. Mediation will be used as a method to resolve pending complaints. The GRC will meet as and when necessary, in case the grievances need to be addressed. The GRC will recommend corrective measures and assign responsibilities for implementing its decision within 14 working days. A sample of grievance log is shown under **Table 27** below.

Stage 4: If the complainant is not satisfied with the decision of the GRC then they can further pursue their complaint by submitting their case to the appropriate concerned government department or court of law.

Table 29: Grievance log

Level	Contact Person PIU	How to submit grievance	Expected response time	Contact information complainant
PCC	Name/ Position	Written/verbal at local office/suggestion box/ phone	7 days	Phone/email/postal address
GRC	Name/Position	Written/verbal at local office/suggestion box/ phone	14 days	Contact details
	Concerned deptt. /Court	Through official channels	-	Contact details
Complaint as resolved				
Role		**Name**	**Signature**	**Date**
PD/PIU Representative				
E&S Specialist				
GFPs				

7.5.5 Record Keeping

Maintaining records of project grievances is critical for ensuring transparency, accountability and follow ups for timely action on closing the project related complaints. The PCC will maintain all records and will be made available to the public and made part of the national and World Bank monitoring reports indicating the number of grievances received, resolved and the outcomes.

7.5.6 Periodic Review

The GRC will conduct quarterly review of PCC's performance, grievances received and processed, and the overall GRM to ensure effectiveness of the mechanism and, where necessary, propose changes for enhancing project's ability to prevent and address grievances.

7.6 ENVIRONMENTAL AND SOCIAL MITIGATION AND MONITORING PLAN

Environmental and Social mitigation and Monitoring Plan, refer **Table 28** will be used as the management tool for mitigation measures. The plan includes the envisaged impacts and their recommended mitigation measures and the functionaries directly responsible for adhering to or executing the required mitigation measures and suggest frequency of monitoring the mitigation measures. Detailed E&S impacts and mitigation measures have been provided in Chapter 7. A monitoring mechanism is developed, tabulated as below

Table 30: Environmental and Social Mitigation and Monitoring Plan

Sr. No.	Project impacts	Mitigation measures	Monitoring Frequency	Implemented by	Performance Monitoring Indicators	Monitored by
Environmental Mitigation and Monitoring						
	Soil erosion and contamination: construction and rehabilitation activities may disturb the surrounding soil and degrading its quality due to waste generation.	▪ Embankments and excavated slopes will not be left untreated/unattended. ▪ Ensure training and awareness sessions for the project staff. ▪ Approved Engineering design will be followed. ▪ Avoid or minimize vegetation removal/clearing. ▪ Waste generated at sites will be properly managed. ▪ Vehicles must be properly maintained and regularly checked. ▪ Sites will be restored upon completion of project.	Daily/Monthly	CC	Visual checks & photographic record	PMU/CSC
	Waste generation: Wastes including discarded construction material, asphalt, steel, oil, fuel, empty containers and bags, excavated material and municipal waste will likely be generated during the civil work/construction activities.	▪ Compliance with site specific waste management plan and ensure proper waste management including storage, handling, transportation and disposal. ▪ MSDS shall be followed strictly, where applicable. Left over construction and demolition waste materials will be reused, where possible.	Daily/Monthly	CC	Visual checks & photographic record.	PMU/CSC
	Ambient air quality: Movement of construction machinery (operation of concrete batching and concrete mixer, diesel generator etc.) and activities (excavation, site clearance and levelling, filling of earth material, loading/unloading of material etc.) may cause decline in air quality of the Subproject area.	▪ Construction material will be transported in a covered truck. Vehicle speed will be kept low, i.e. 10 to 20 km/hr along active construction sites and camp areas. ▪ Ensure provision of PPEs to workers and train them on their use. ▪ All dust raising locations will be kept wet with water sprinkling, where required, at least three times a day. ▪ Ensure compliance with the BEQs and IFC/WHO guidelines. ▪ Vehicles and other equipment will be properly tuned and maintained.	Daily/Monthly	CC	Visual checks/maintenance of vehicles record/water sprinkling	PMU/CSC

	Noise Pollution: Operation of heavy construction machinery, e.g. bulldozers, excavators, pneumatic machinery, etc., generators, offloading of materials and construction activities may increase the level of noise.	▪ Vehicles and machinery shall be properly tuned and maintained. ▪ Noisy construction work shall be limited to normal working hours. ▪ Main roads will be used to the maximum extent possible. ▪ Noisy construction activities will be displaced to a fair distance from the nearest sensitive receptors construction schedules shall be disclosed to the nearby communities, where required. ▪ Ensure the compliance with BEQs and IFC/WHO guidelines. ▪ Avoid excessive use of horns and vehicle speeds will be kept low. ▪ Ensure the effective implementation of GRM.	Daily/Monthly	CC	Site observation/training record/vehicular maintenance record & GRM feedback	PMU/CSC
	Water contamination: Water resources like the irrigation canals coming from Pat Feeder Canal may be at risk of contamination from construction site runoff and wastes, if not managed properly, impacting aquatic life and also pose health and livelihood risks to communities.	▪ Construction camp may not be located within 500m of existing canals. ▪ Ensure the compliance with BEQs and IFC/WHO guidelines. ▪ It will be ensured that the wastes are not released into any water bodies, cultivation fields, or critical habitat. ▪ Fuels and chemicals will be stored on concrete-floored, bounded, covered to provide shade and prevent the ingress of rain and should be located away from the existing canals. ▪ Construction machinery will be kept properly tuned and maintained. ▪ Wastewater from the work site will be disposed through a settling tank of appropriate capacity, which will be levelled back after completion of construction work.	Daily/Monthly	CC	Site observation/waste management plan	PMU/CSC
	Flora and fauna: Activities such as clearing of sites, establishment construction camps and mobility of construction machinery increase in noise level and decline in ambient	▪ Construction camp may be stablished in a rented building with closed corridor to avoid any land clearance and restrict the movement of birds and mammals. ▪ The Subproject will specifically exclude physical investments that could have significant adverse ▪ impacts to natural and critical habitats.	Daily/Monthly	CC	Regular audits & monitoring/visual checks	PMU/CSC

	air quality may disturb the flora and fauna. Moreover, birds and animals may tend to move away due to fear of being hunted or trapped.	▪ Project staff shall be strictly directed not to damage any nearby agriculture land and vegetation. ▪ Vehicle speed shall be kept low, i.e. 10 to 20 km/h along active construction/rehabilitation sites. ▪ Hunting, poaching and harassing of wild animals and birds will be strictly prohibited ▪ Ensure the compliance with the relevant measures provided for air, noise pollution and waste management.				
Social Mitigation and Monitoring						
	OHS risks: Movement of various heavy machines, manual handling during loading-unloading operation, deep excavations, steel fixing, installation of a batching plant, concrete pouring, during installation of contractor camps installation of solar panels, bad housekeeping and improper management of hazardous and non-hazardous wastes etc., may cause OHS risks.	▪ Ensure compliance with the LMP and approved C-ESMP. ▪ Ensure the training of workers in construction safety procedures, use of PPEs, fire safety, waste management, defensive driving, hygienic conditions, emergency prevention, preparedness and response arrangements, communicable diseases. ▪ Community liaison will be maintained during the construction stage and ensure compliance with GRM. ▪ Ensure that the site will be restricted for the entry of irrelevant people and appropriate safety signs at sites. ▪ Ensure compliance with the Worker's Code of Conduct. ▪ All the occupational incidents, accidents and diseases will be recorded and reported. ▪ Ensure the provision of fire prevention and firefighting equipment.	Daily/Monthly	CC	Implementation of HSE & ERP Plan/Accident reporting & GRM record/training Records	PMU/CSC
	Community Health and Safety: Dust and noise, roadside accidents/incidents, physical injuries due to falls in excavated sites, exposure to hazardous materials, inappropriate disposal of liquid and solid wastes, conflicts between local	▪ Ensure compliance with site specific community health and safety plan. ▪ Site will be restricted for the entry of irrelevant people particularly children, disabled and elderly peoples. Ensure the use of appropriate safety signs at the construction site. ▪ Provide adequate fencing around the working areas and excavations. ▪ Ensure the compliance with the mitigation measures provided for air, noise and waste management.	Daily/Monthly	CC	Implementation of CH&S Plan/record of community concerns/record of trainings conducted/GRM implementation record/accident, incident reported/	PMU/CSC

	community and the workers, spread out of communicable diseases.	▪ Vehicular limit shall be kept low, and horns will not be used while passing through or near the communities. ▪ Effective implementation of GRM will be ensured to timely address the issues. ▪ Ensure due care of the local community and observe sanctity of local customs and traditions. ▪ Warn the staff strictly not to involve in any unethical activities and to obey the local norms and cultural restrictions. ▪ Training and awareness sessions will be conducted regularly.			medical reports of worker.	
	Site Security: Security risks may arise during the implementation of project, particularly in the remote regions since the law-and-order situation is not good and it is not entirely normal. This may lead to security related issues including travel safety and premises safety.	▪ Compliance with Security Management Plan, also reviewed and updated periodically in view of the current security situation of the area. ▪ Maintain communication through implementing body with local police and law enforcement agencies and inform about construction activities particularly for sensitive areas. ▪ Ensure the effective implementation of GRM. ▪ Project will continue to rigorously engage with the local communities.	Daily/Monthly	CC	Implementation of Security Plan/regular consultation with security agencies	PMU/CSC
	Labour Influx: Conflicts between local communities and outside labour, increased illicit behaviour and crime, increased burden on local public services and utilities, the spread of communicable diseases and GBV.	▪ Ensure compliance with LMP and workers code of conduct and ensure compliance with GRM. ▪ Locals will be given preference in hiring where possible, for both skilled and unskilled labour. ▪ Respect local cultural norms and will receive training on cultural sensitivity and conduct.	Daily/Monthly	CC	Implementation of LMP&GRM/visual checks/training record	PMU/CSC
	Force/Child Labour: The Subproject may involve the use of child forced/child labour. These risks are likely to be higher in the Subproject area.	▪ Hiring children below the age of 15 for any type of labour, and below the age of 18 for hazardous work will be prohibited. ▪ Ensure regular monitoring to check for child labour and will hold regular consultations to keep a check on forced labour. Follow the provincial labour laws and World Bank requirements during hiring the labour force.	Daily/Monthly	CC	Compliance with LMP/ record of grievances	PMU/CSC

		▪ Awareness will be created among the local communities and staff of Subproject.				
	Vulnerable Groups and Elite Capture: Influential people might interfere in the selection of beneficiaries. There is a risk that vulnerable groups and communities may be excluded from stakeholder consultations, limiting their ability to provide feedback on design of Subproject and impacts, and potentially preventing them from fully benefiting.	▪ A comprehensive Stakeholder Engagement Plan (SEP) has been developed and will be implemented during course of project. ▪ Ensure the compliance with GRM and criteria for the beneficiaries of Subproject. ▪ Project staff will be trained on social inclusion and stakeholder engagement. ▪ Ensure that only the genuine beneficiaries are enlisted for the support.	Daily/Monthly	CC	Compliance with SEP/record of grievances	PMU/CSC
	Chance findings of important physical and cultural resources: Project may encounter the chance finding of important physical cultural resources during the implementation.	▪ Subprojects sites will be screened prior to commencement of civil work and ensure the compliance with the chance find procedure provided.	Daily/Monthly	CC	Compliance with Chance find Procedures/visual checks and monitoring	PMU/CSC
	Land acquisition and involuntary resettlement: Land acquisition and resettlement is not anticipated at this stage, however, if involved then this may result in social disturbances, loss of livelihoods and may exaggerate the social and cultural conflicts among the people.	▪ In case of land acquisition and displacement issues, a resettlement action plan will be established and implemented accordingly as per national and World Bank guidelines.	Daily/Monthly	CC	Regular checks & monitoring	PMU/CSC

7.6.1 Reporting and Non-Compliance of ESMP

The CC of the Subproject will prepare and submit the environmental compliance reports to the CSC. The CSC will take it further, signed and approved by ES, RE, CRE and submit the Environmental Performance Reports to implementing body (C&W department Balochistan) on monthly, quarterly, and bi-annual basis. Hereafter, C&W department will proceed with the submission after approval with World Bank for due diligence and public disclosure.

The implementation of the ESMP involves inputs from CC, CSC, and C&W. The CC will be primarily responsible for ensuring implementation of mitigation measures proposed in the ESMP, which will be part of the contract documents. Hence, provision of environmental mitigation cost as separate head in Bill of Quantities (BOQs) will be made mandatory in contract documents by C&W department of Balochistan. 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 World Bank operational policies.

7.6.2 Environmental Management Budget

The ESMP budget is an integral part of the overall project cost and ensures that all E&S risks are adequately addressed. Refer **Table 29** below, a tentative budget for ESMP implementation is proposed.

Table 31: Environmental Management Budget

Sr. No.	Environmental components	Description	Estimated Cost (PKR)
1	Environmental mitigation options	Waste management (Solid/hazardous)	1,000,000
		Erosion control (drainage, fences for silt)	800,000
		Noise and vibration control	560,000
		Plantation on both sides of the road	1,200,000
		Water sprinkling (water trucks/boozers, spraying) for dust suppression	500,000
			4,060,000/-
2	Social mitigation options	Community consultation & grievance redress	500,000
		Livelihood restoration (temporary loss of income)	500,000
		HSE cost (PPEs, sanitation)	1,500,000
			2,500,000/-
3	Training & capacity building	E&S including gender training for contractor of Subproject	2,000,000
		Awareness campaigns (traffic safety, Covid-19)	500,000
			2,500,000/-
4	Monitoring & Reporting	Monitoring of environmental quality (air, water, soil)	2,400,000
		Social impact monitoring (surveys, FGDs)	500,000
		Independent audits (bi-annually)	2,000,000
		Reporting & documentation	1,000,000
			5,900,000/-
5	E&S Staff	ES@200,000/monthly	**4,800,000/-**
		HSE Engineer/officer@100,000/monthly	**2,400,000/-**
			22,160,000/-
6	Contingency (5%)	Unforeseen environmental/social issues	1,108,000
Total ESMP Budget			**23,268,000/-**

7.6.3 Training and Skill Development Programs

The CC will organize sessions for skill development and training to maintain awareness of relevant E&S aspects for staff and workers. It is proposed that skill development by the CC be considered in the Subproject. One-week job-specific skill development training may be provided. The CC will provide training in the following areas:

(a) **Communication Skills:** Communication forms the backbone of almost any construction project. Whether it is to present an idea to the supervisor or foreman, discuss an alternate plan when construction hits a snag, or even just request new supplies, communication is important to make sure the project stays on track. The CC will always prefer construction workers who already have this soft skill; therefore, a good communicator will pay off the construction site by this skill.
(b) **Teamwork Skills:** Construction workers must work in teams. Teamwork skills help get the job done. Much like good communication skills keep everyone on the same page, good teamwork skills allow everyone to work together harmoniously. The job stays on track and will likely be finished sooner if everyone works together.
(c) **Time Management Skills:** Time management skills are incredibly important for construction workers in any number of roles. Construction work has deadlines to meet. Some tasks are time-sensitive (e.g., concrete creeping). Delays are very common on the sites of construction projects. CC need workers who can manage their time effectively.
(d) **Technical Skills:** Specific construction skills include manual and mechanical excavation, stone-laying, pouring cement, erecting, and installing specific types of equipment. Construction tasks may include:

Table 32: Construction Tasks

(i)	Masonry	(vii)	OSHA safety requirements
(ii)	Electrical	(viii)	Reading and interpreting drawings
(iii)	Framing	(ix)	Erecting
(iv)	Concrete	(x)	Crane and Rigging
(v)	Sheet metal work	(xi)	Operation of Construction equipment
(vi)	Environmental codes	(xii)	Use of Power tools

7.7 DEVELOPMENT OF OTHER E&S PLANS/INSTRUMENTS

The CC will be required to prepare C-ESMP within one month after the award of the contract, approved by CSC and implementing body before mobilization and commencement of rehabilitation works. The C-ESMP may include:

7.7.1 Occupational Health and Safety Plan

The CC will prepare an occupational health and safety plan devising the general guidelines for the identified hazards and preventive measures presented in the SSEMP. OHS Plan will be furnished (a) when there is a change in the scope of the project, (b) there is a change in construction methodology/technique based on site condition, (c) following significant OHS hazard or a major accident, and (d) at the end of the project to allow for improvements in subsequent projects.

OHS Plan should contain general guidance for all identified hazards under each work activities and they should be presented in three discrete headings, (a) Contractor's Standards on the identified hazard management, (b) expected site-specific OHS hazard and risks during construction, and (c) Control and preventive measures proposed.

7.7.2 Worker Accommodation and Camp Site Management Plan

Worker Accommodation and Camp Site Management Plan (WACSMP) for the project shall be prepared and implemented by the CC and CSC. The scope and applicability of the plan is limited to the design and management of the worker accommodations provided during the construction stage of the project. CC will ensure sufficient resources are allocated on an on-going basis to achieve the effective implementation of the worker accommodation plan.

7.7.3 Waste and Spoil Management Plan

Waste and Spoil Management Plan (WSMP) provides the key elements to be included in a waste disposal plan or operating procedure to be developed by CC that will be employed during the construction activities of the project. The Licensed Contractor will be hired, who will collect waste on regular basis and disposed off on a designated area declared by local Tehsil Municipal Authority (TMA) of Subproject's jurisdiction. Practicable efforts will be made to minimize the waste generated while the project is in progress. The solid and liquid waste to be generated from the project activities and camps is to be disposed of as per measures discussed above. The excessive spoils will be managed from various excavation activities during the construction period.

7.7.4 Material Transportation Plan

Material Transportation Plan (MTP) will be prepared by the CC to prevent accidents during transportation by using vehicles to work locations using other means. The plan should address specific details on the site conditions of the plain area and mountainous terrain and the complexity of transporting construction materials. Extreme precautions will be required in terms of safety and security.

7.7.5 Emergency Response management Plan

Emergency response management plan will be prepared by the CC and implemented after getting it approved by CC, implementing body and World Bank after assessing potential risks and hazards that could be encountered during construction.

7.7.6 Communicable Disease Management plan

Pakistan is a signatory to several international environment and social related treaties, conventions, declarations, and protocols which are applicable to the project as per national laws. Communicable disease management and COVID-19 Guidelines of World Bank for construction activities and labour camps are also applicable to the project. Therefore, the CC will formulate the site-specific Covid-19 guidelines in accordance with World Bank guidelines and CSC will implement them accordingly.

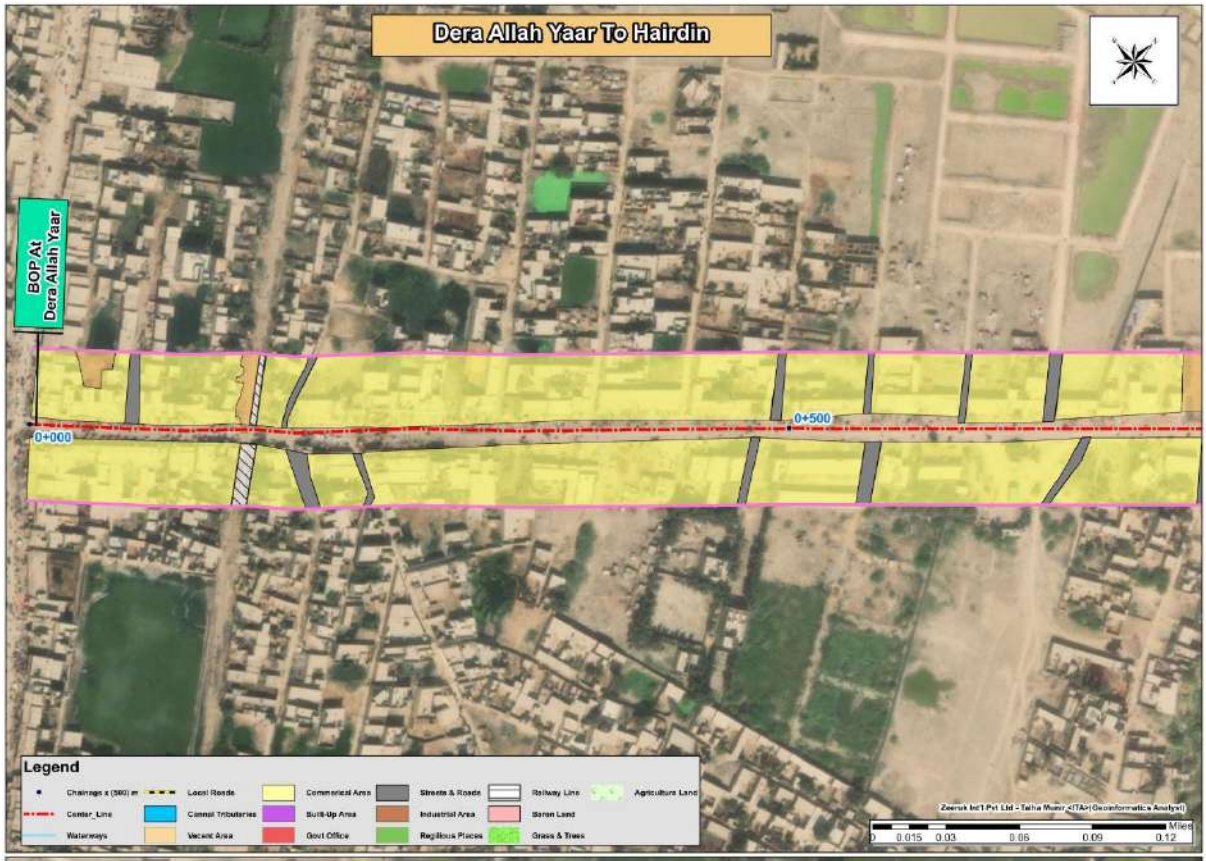
In addition to the above plans, other plans including Resources Utilization Plans (RUP) etc will be prepared by the CC as part of C-ESMP before mobilization to the project site. These plans will be approved by CSC, PIUs and World Bank ensuring compliance as per the guidelines and relevant documents during the Subproject life. These commitment plans will be part of C-ESMP.

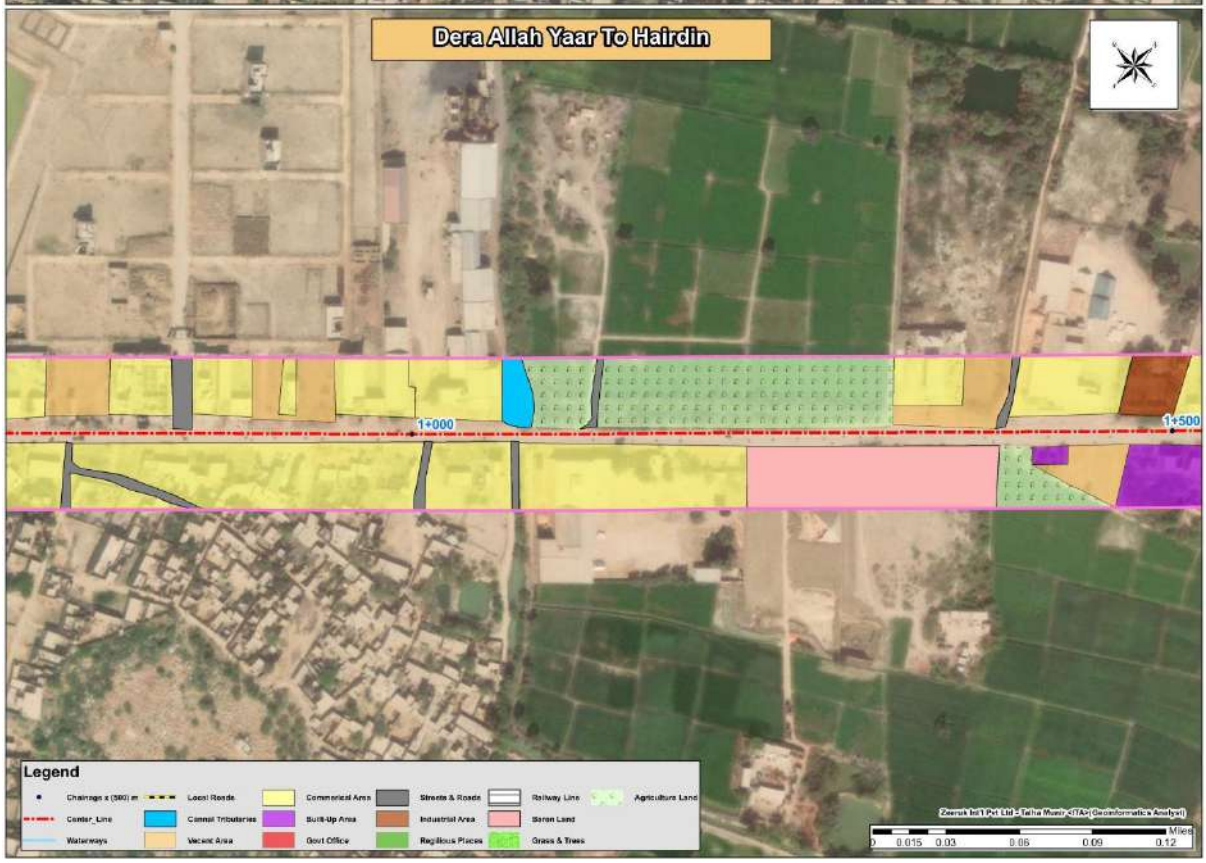
CHAPTER - 8: CONCLUSIONS

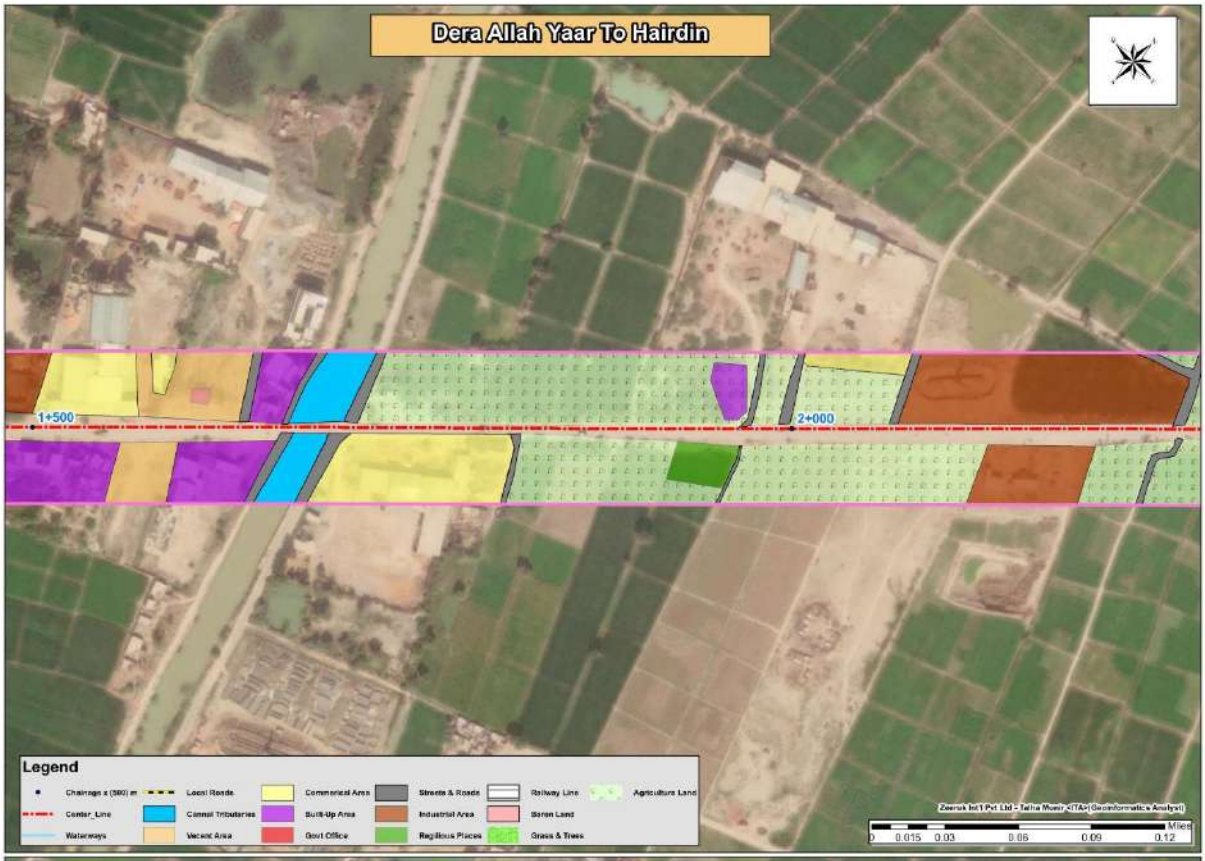
The Site-Specific ESMP prepared for the Subproject outlines a comprehensive framework to ensure that the rehabilitation and reconstruction activities are conducted in an environmentally sustainable and socially responsible manner. The plan identifies key E&S risks associated with the rehabilitation and construction of existing road. Furthermore, successful implementation of the ESMP requires the active participation of all stakeholders, including government agencies, contractors, local communities, and monitoring authorities. Regular E&S monitoring, coupled with adaptive management, will ensure that unforeseen issues are promptly addressed and objectives of Subproject are achieved without causing long-term harm to the environment and nearby populations.

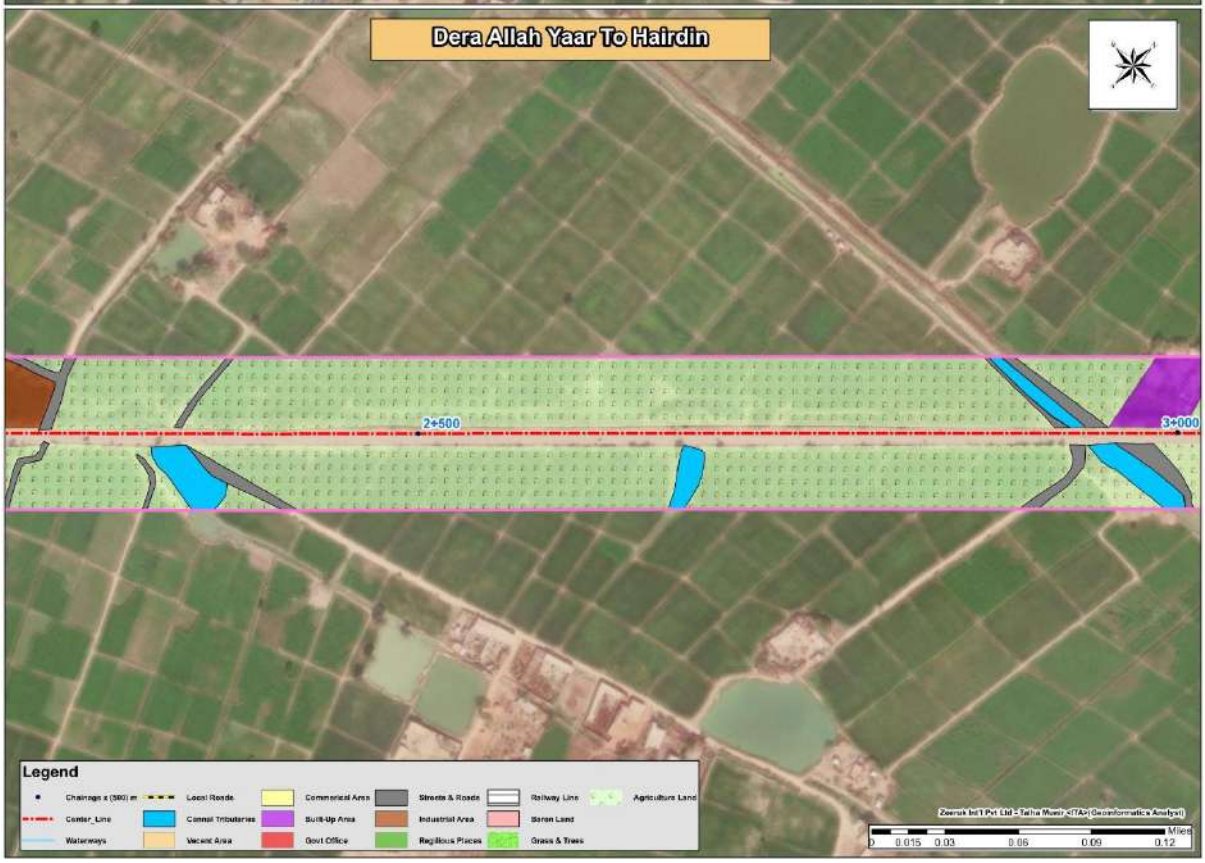
CC will have to comply with all national and World Bank guidelines during the implementation of the Subproject. The CC will submit for approval and subsequently implementation C-ESMP to CSC, implementing agency and World Bank. The C-ESMP will be submitted prior to the commencement of civil/construction works, and no construction activities will be carried out until its approval by the CSC, implementing body and World Bank.

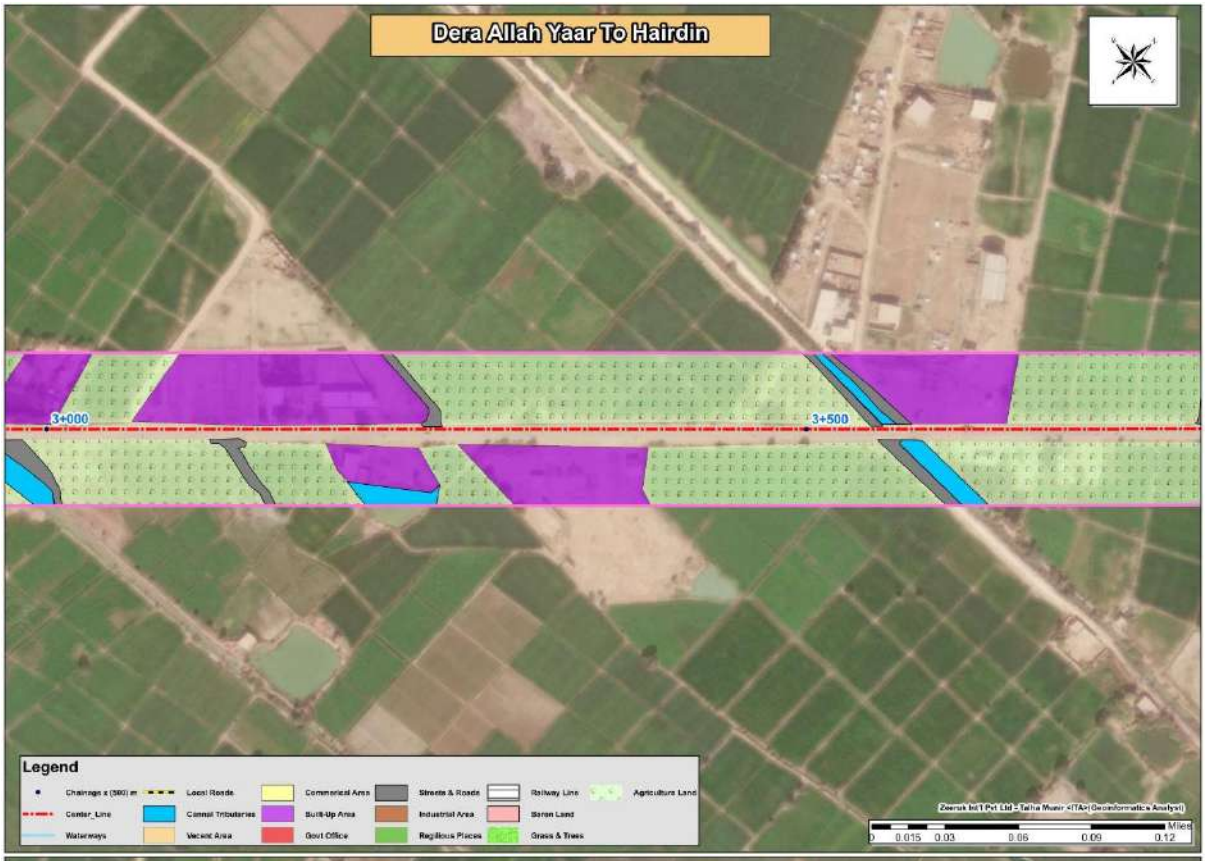
ANNEXURE – 1:
LAND USE MAPS

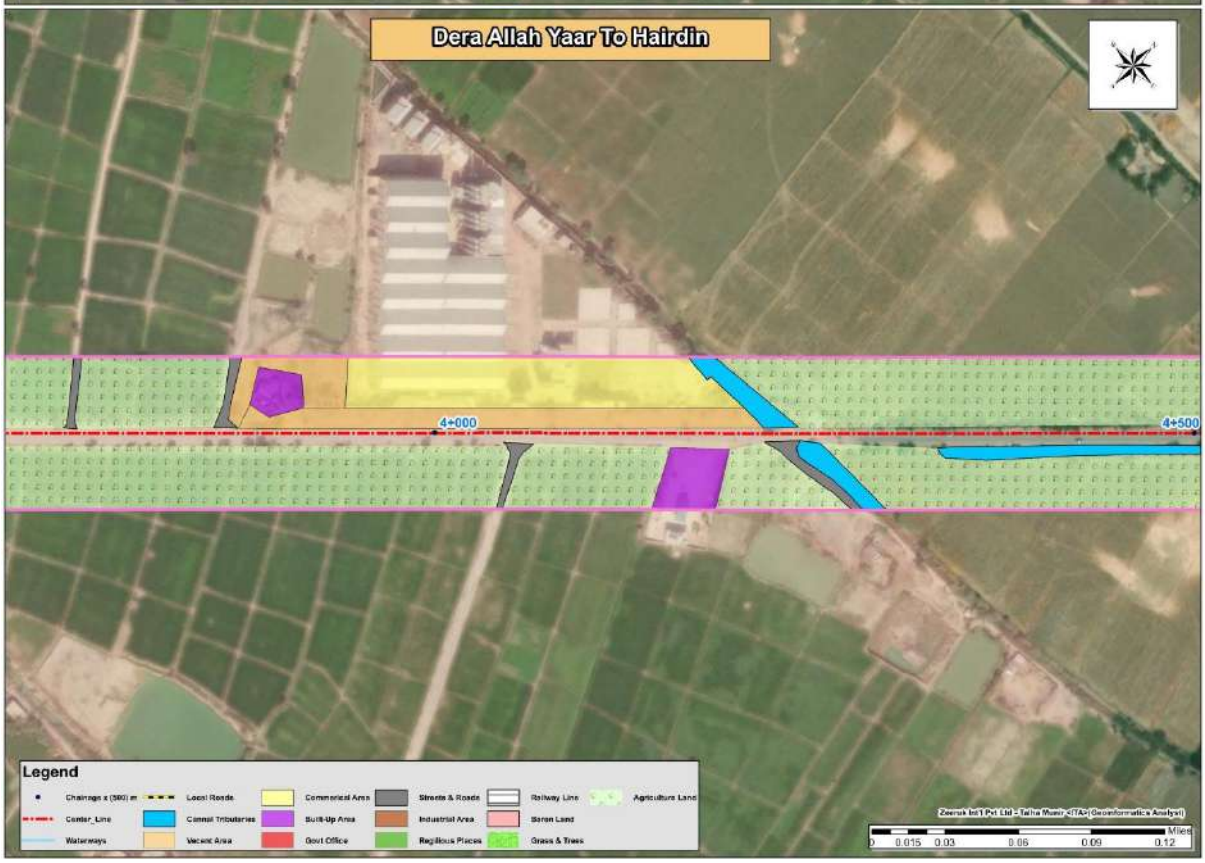


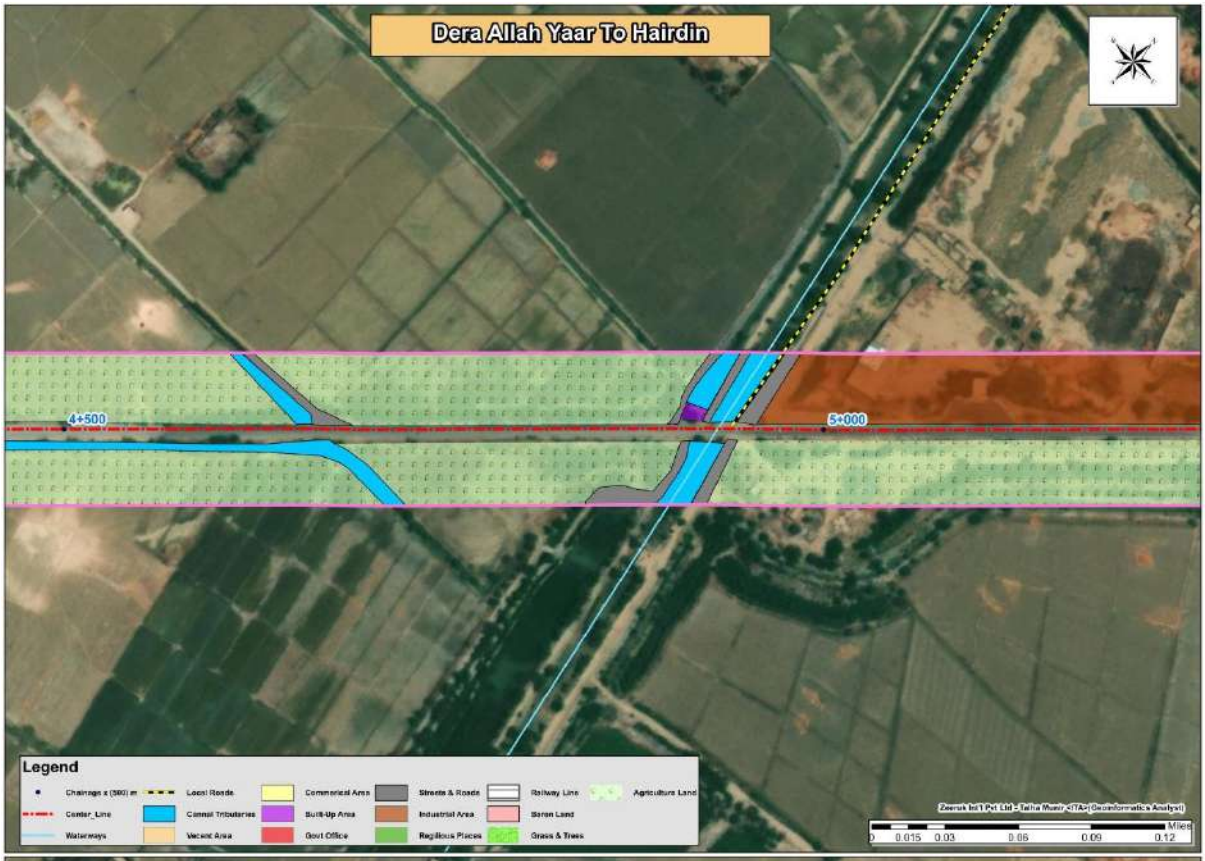


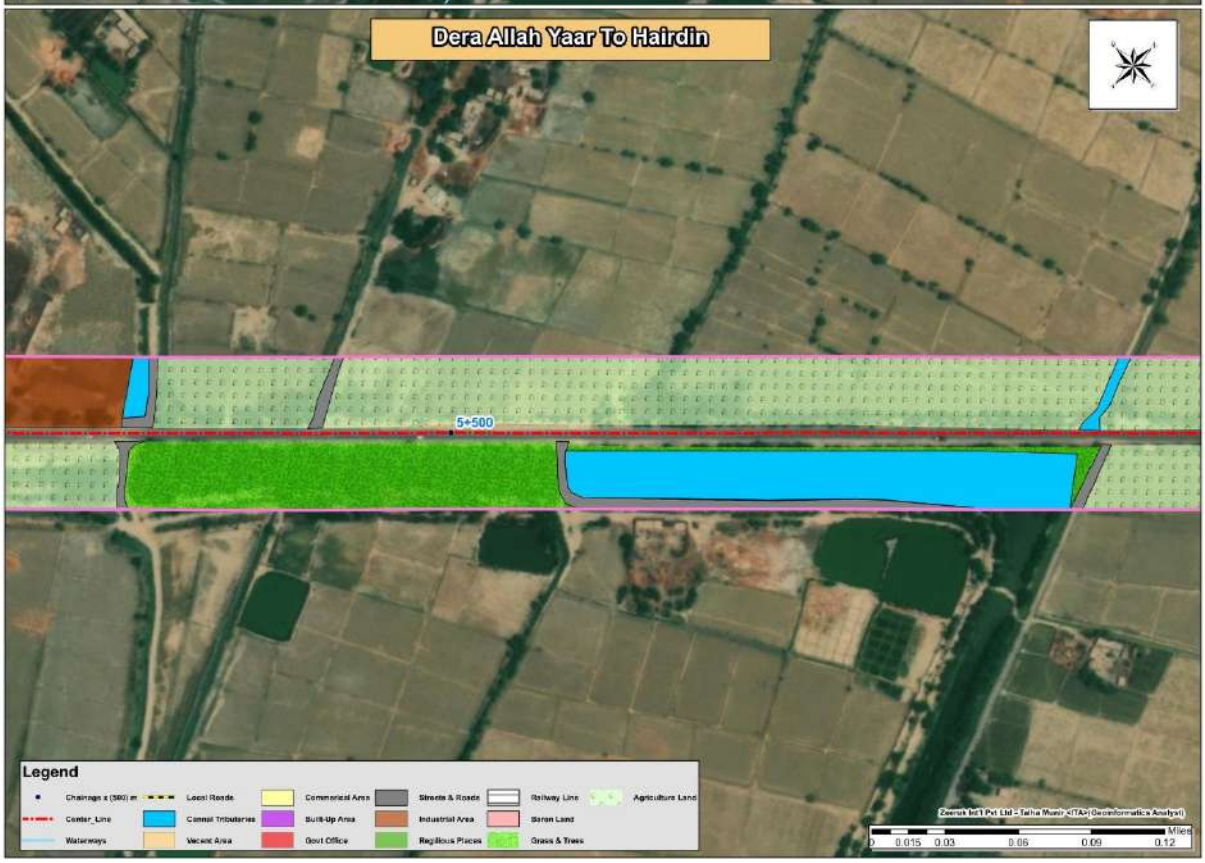


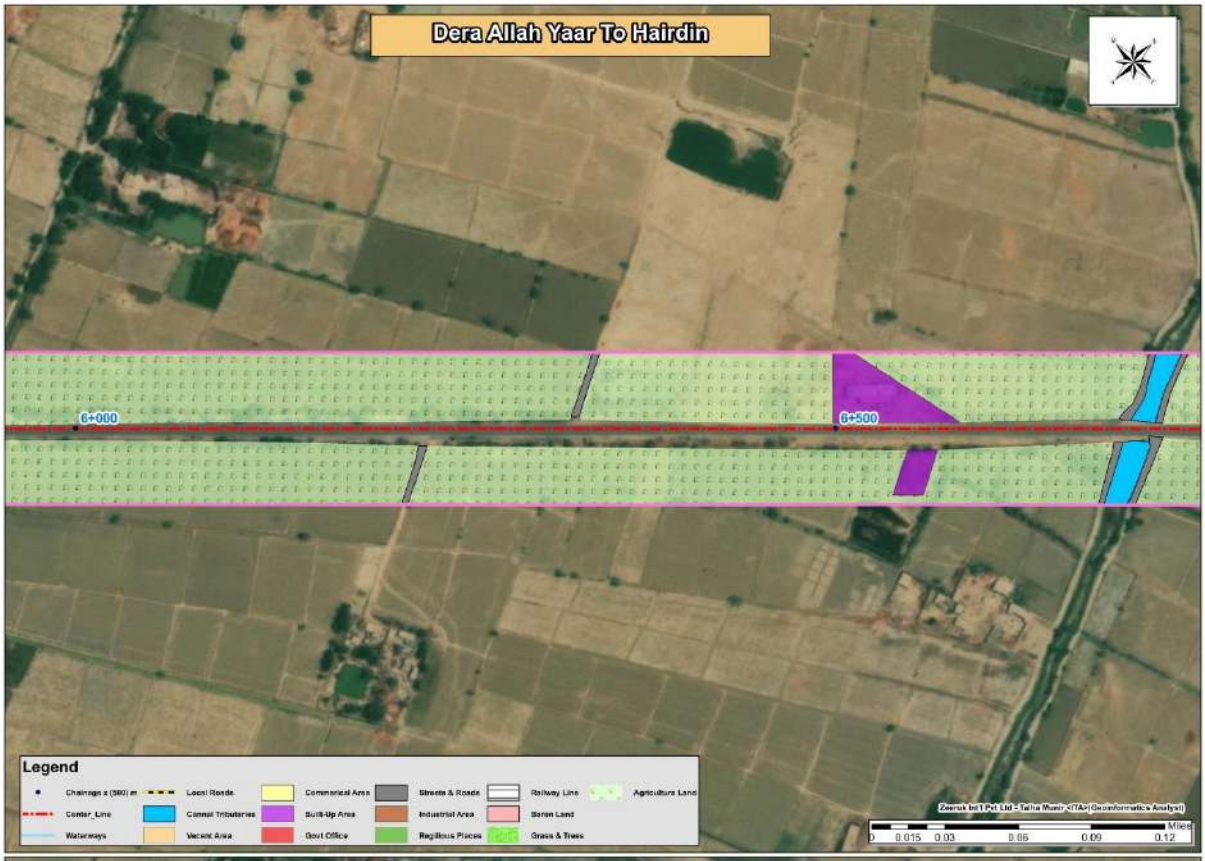


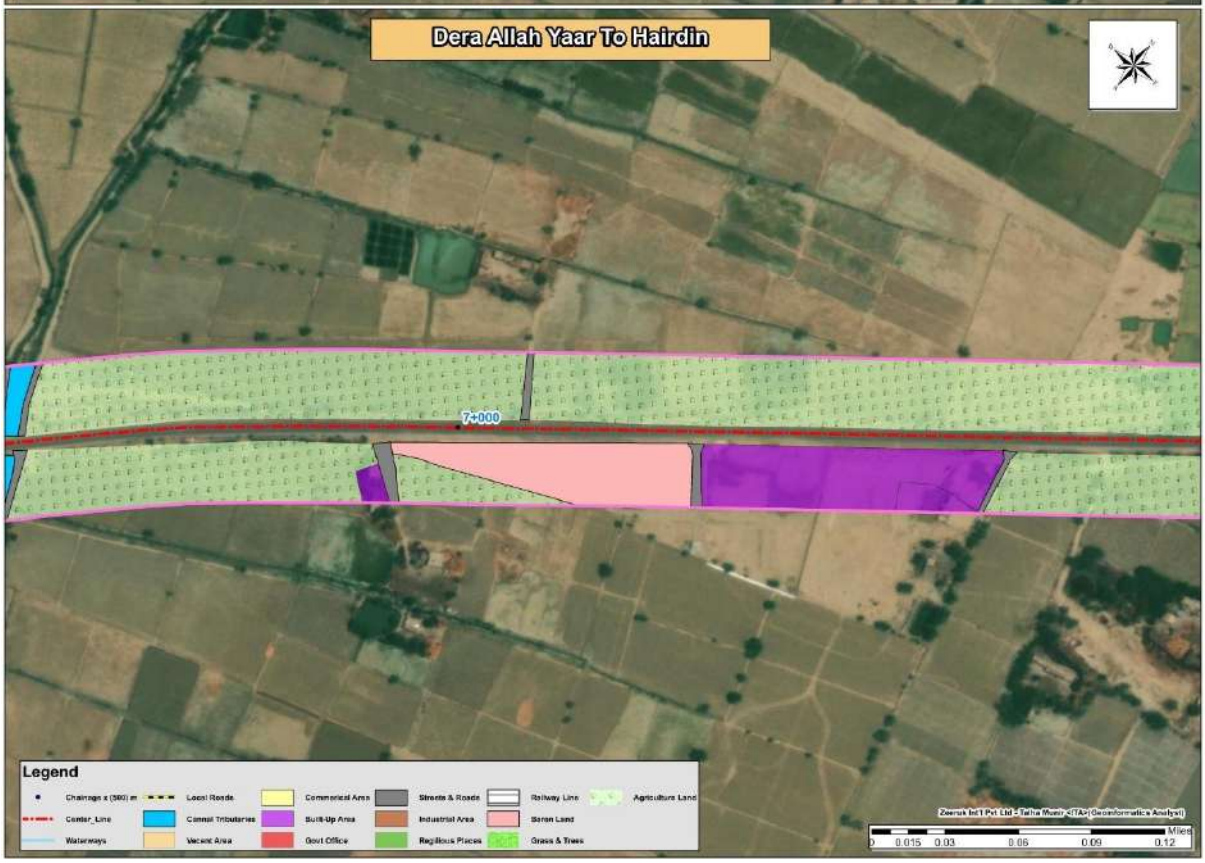


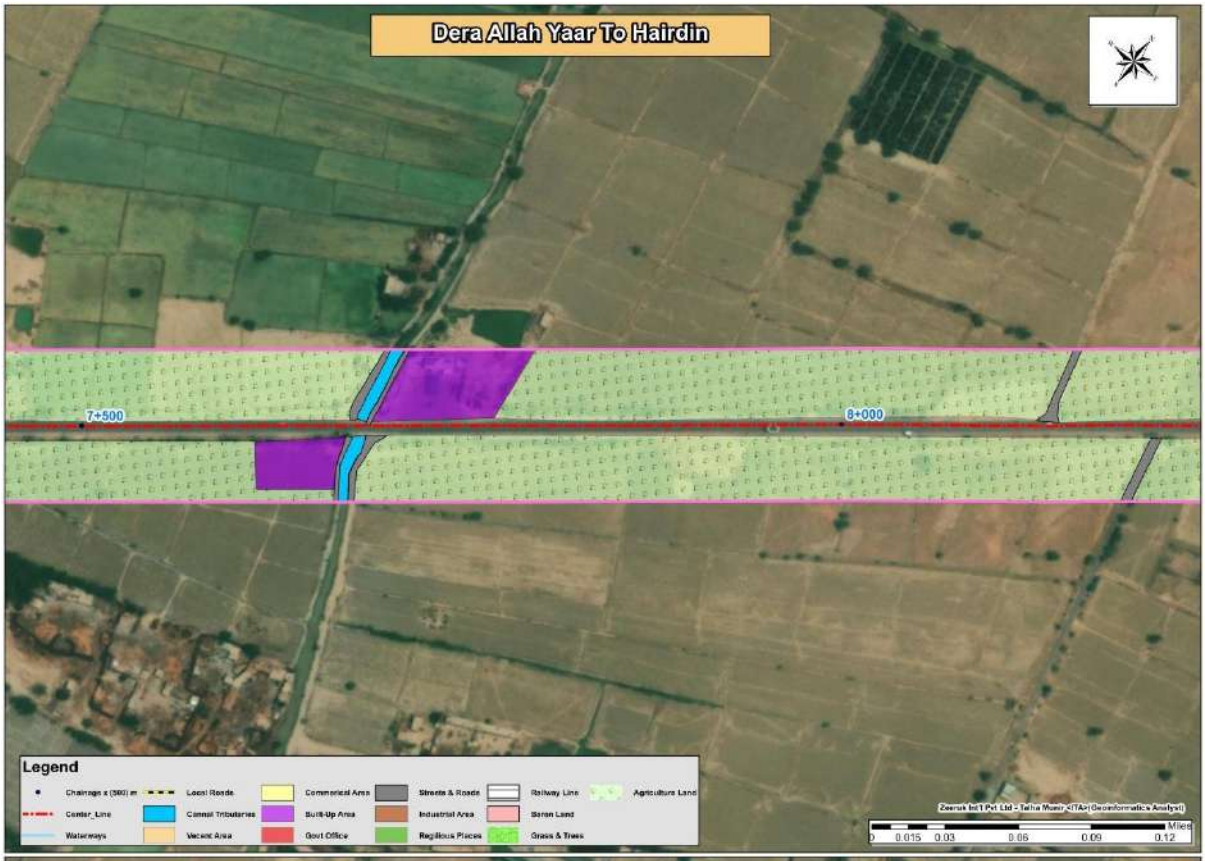


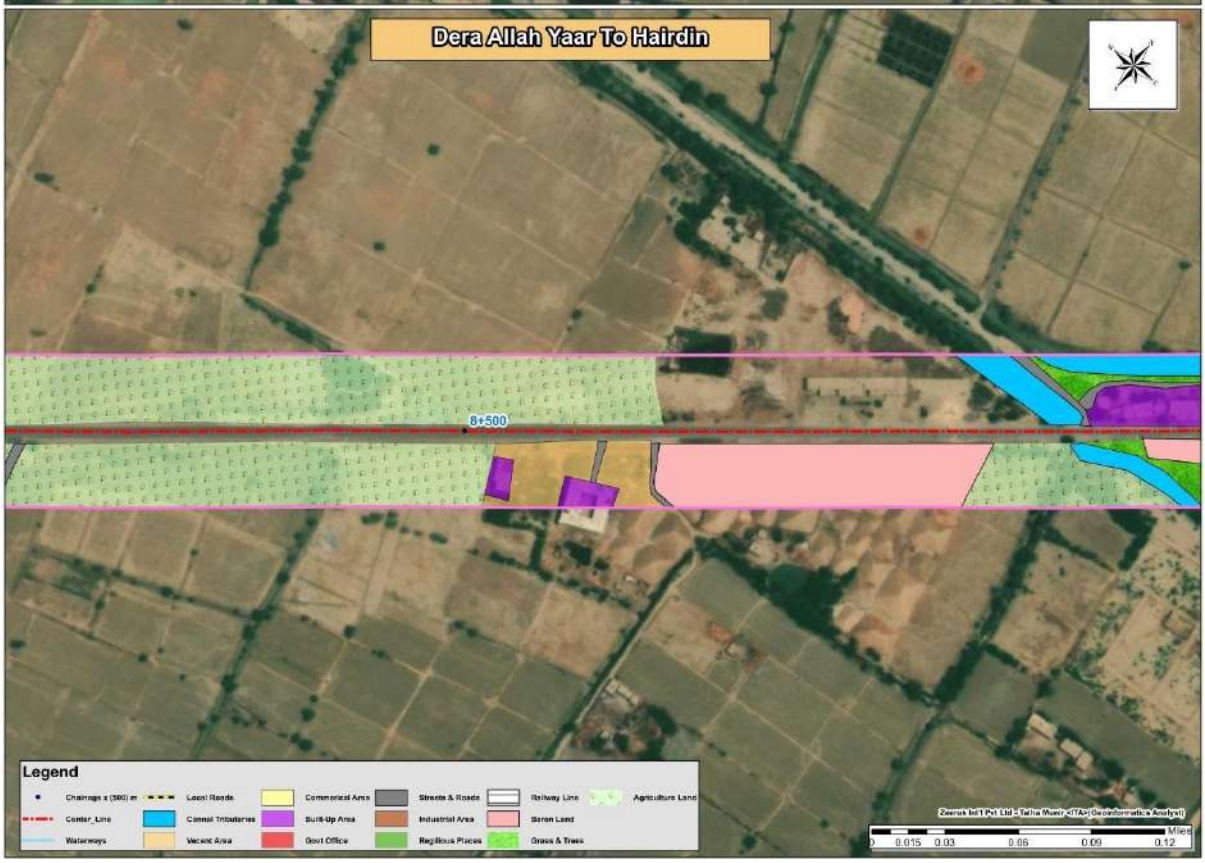


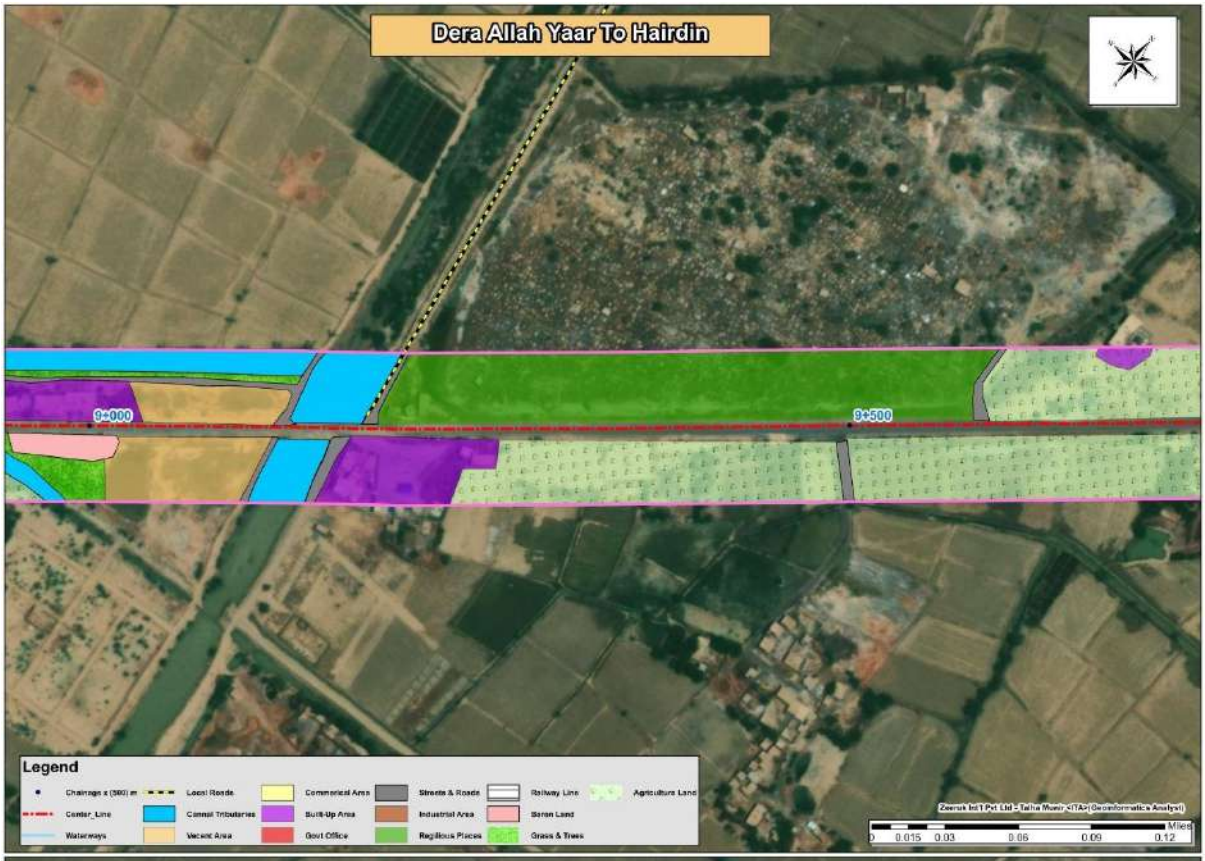


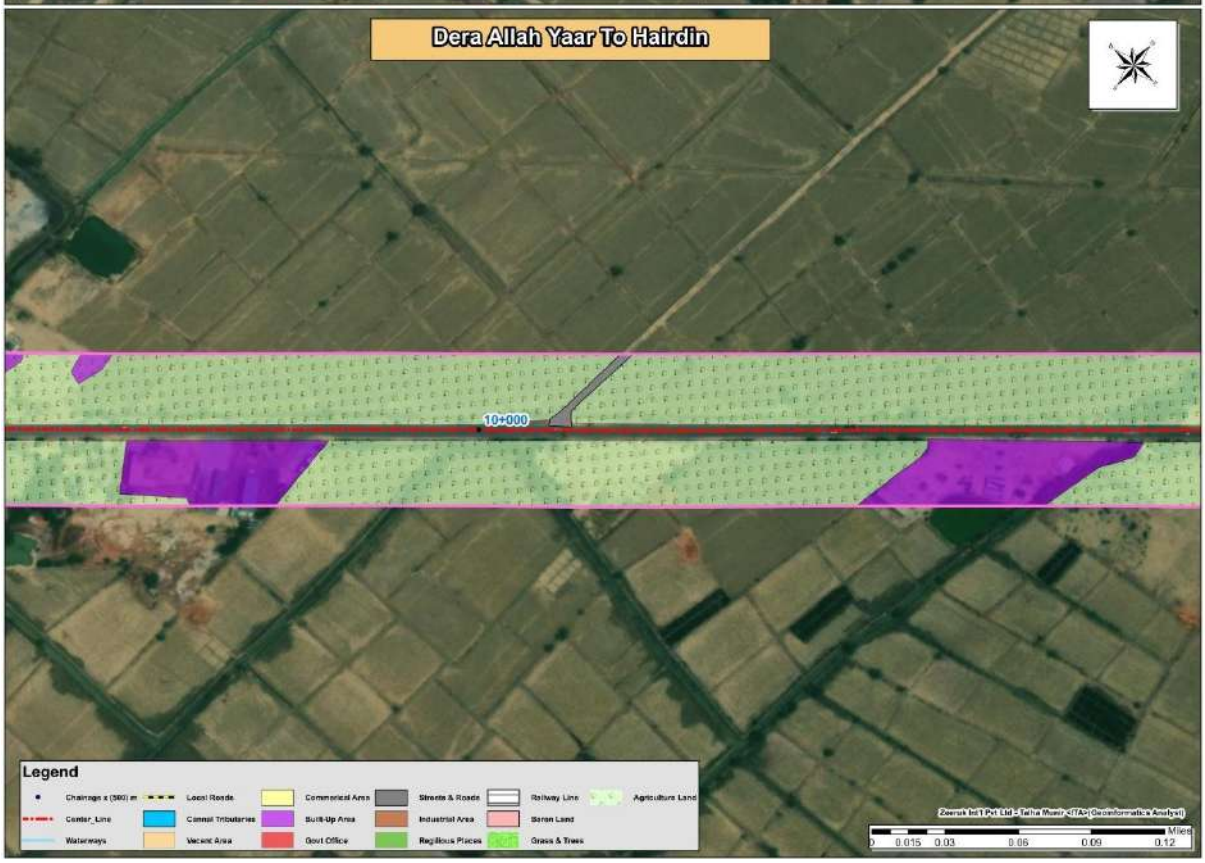


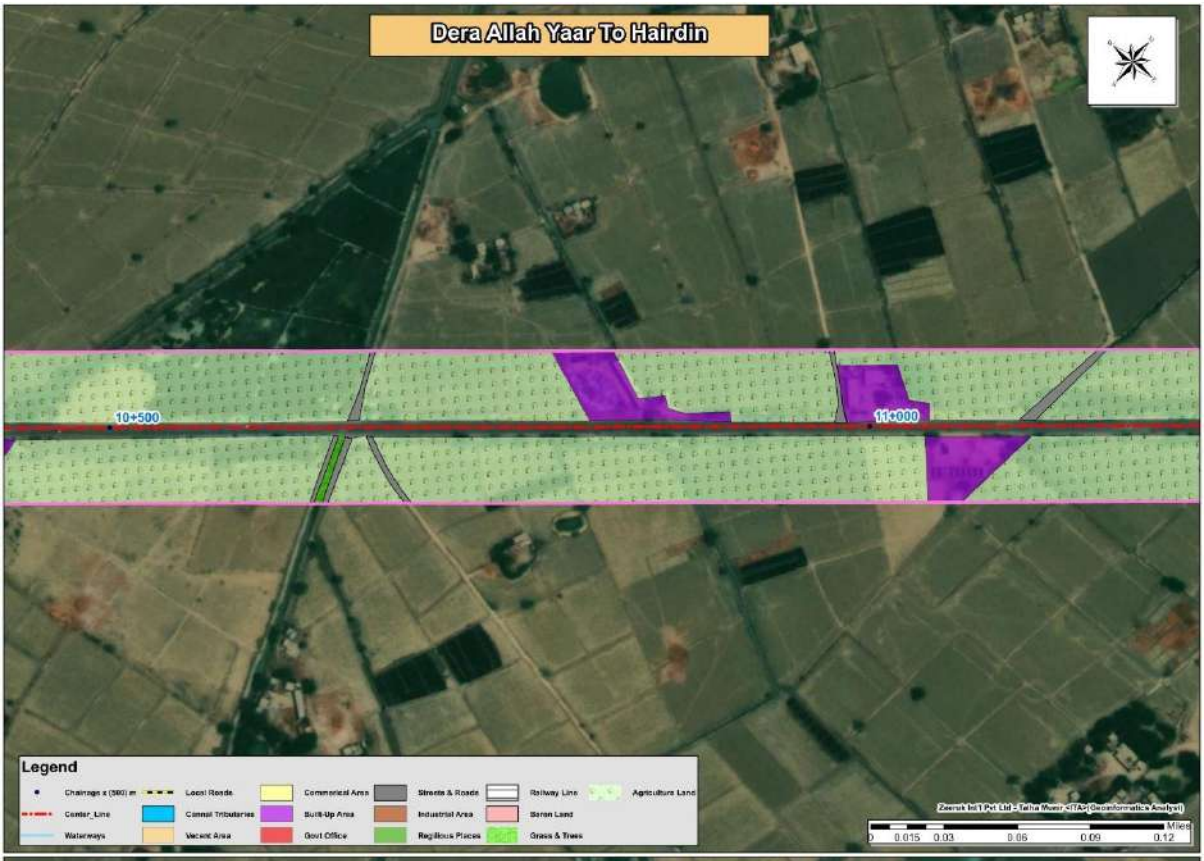


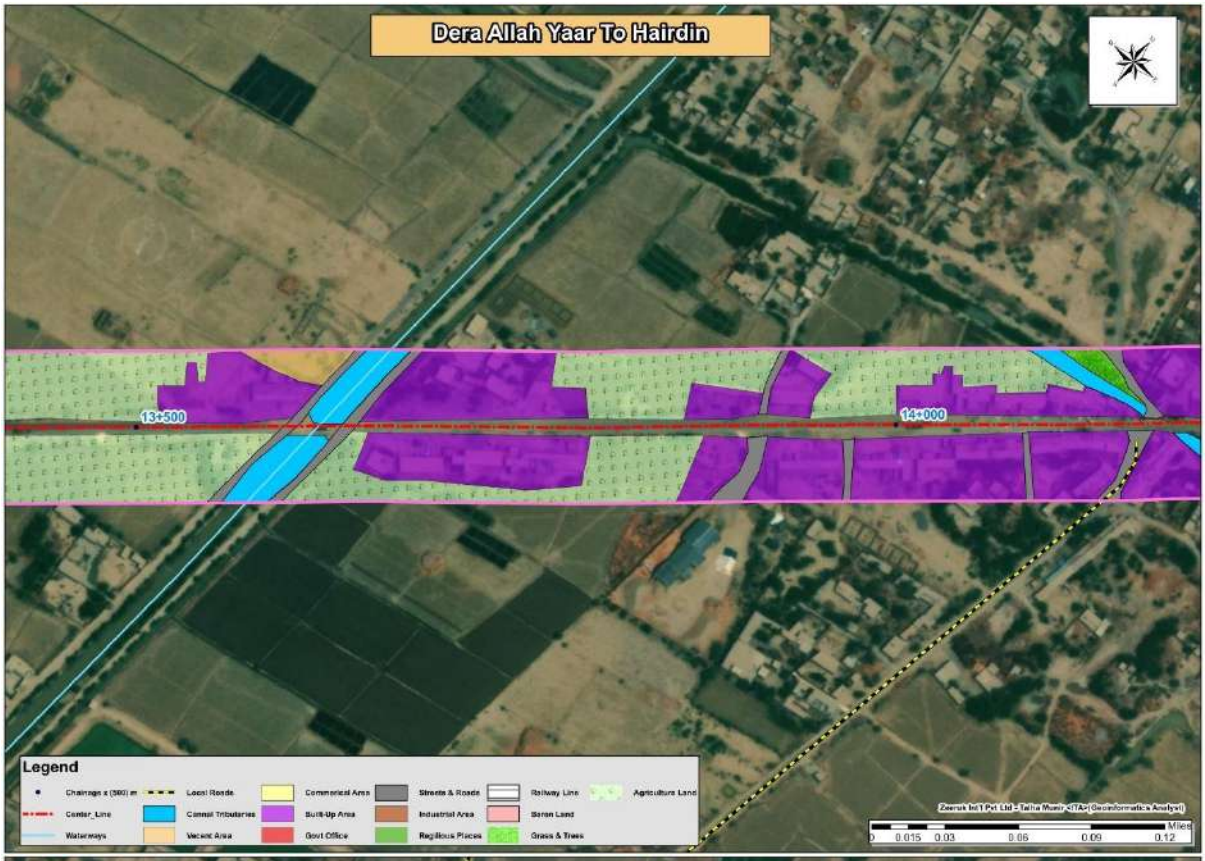


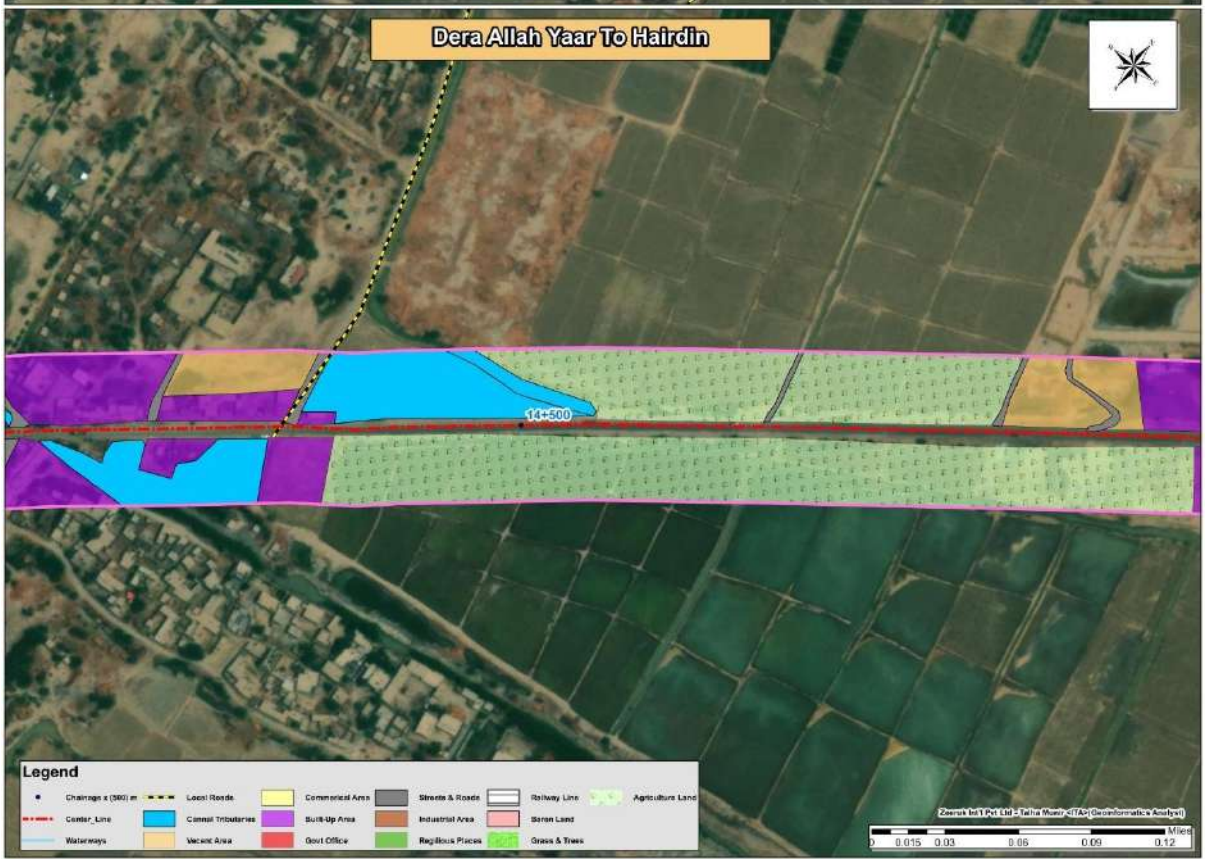


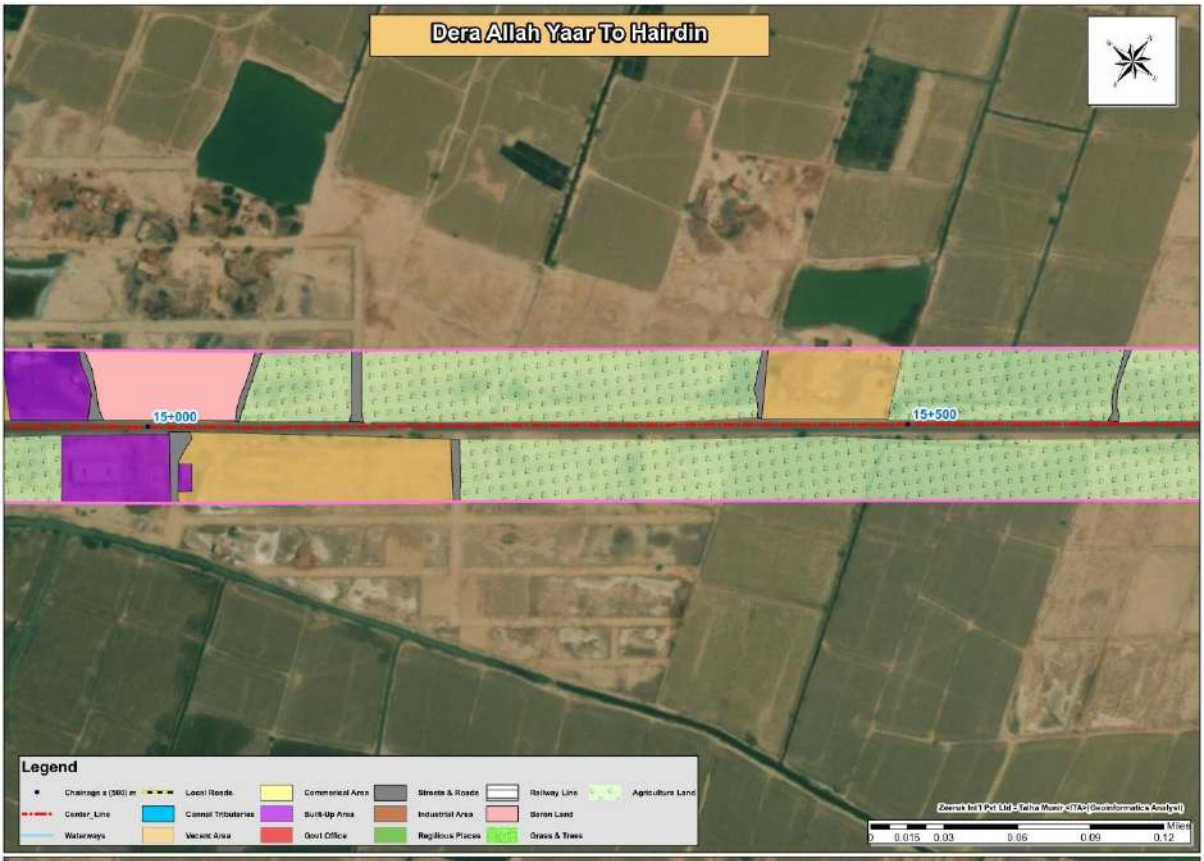


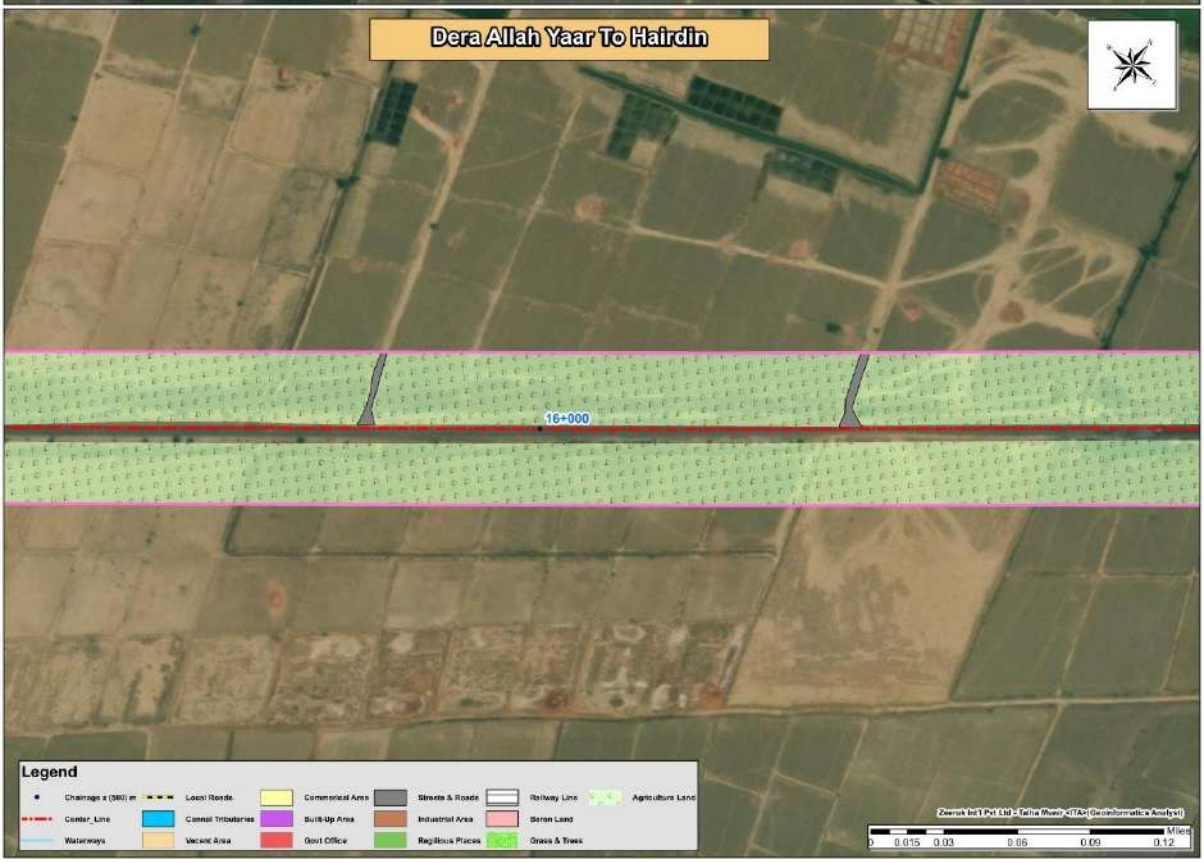


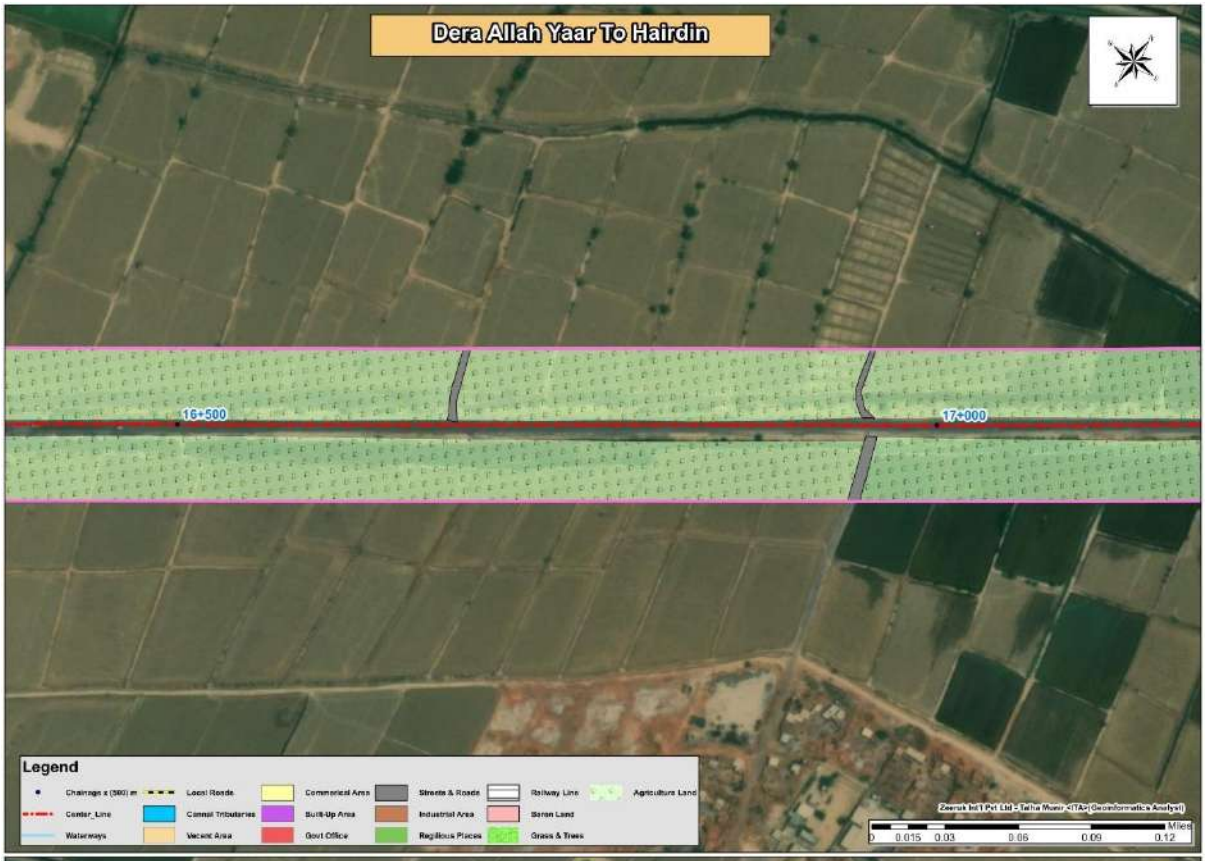


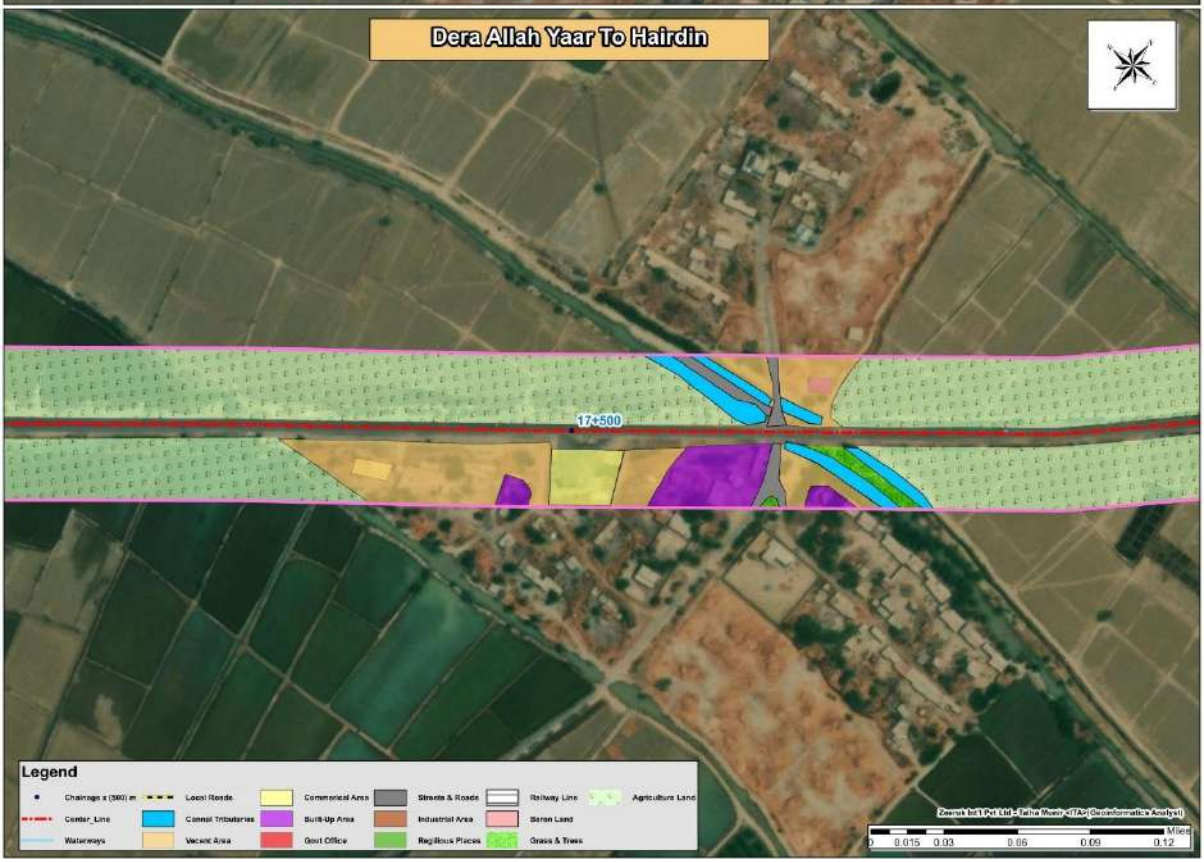


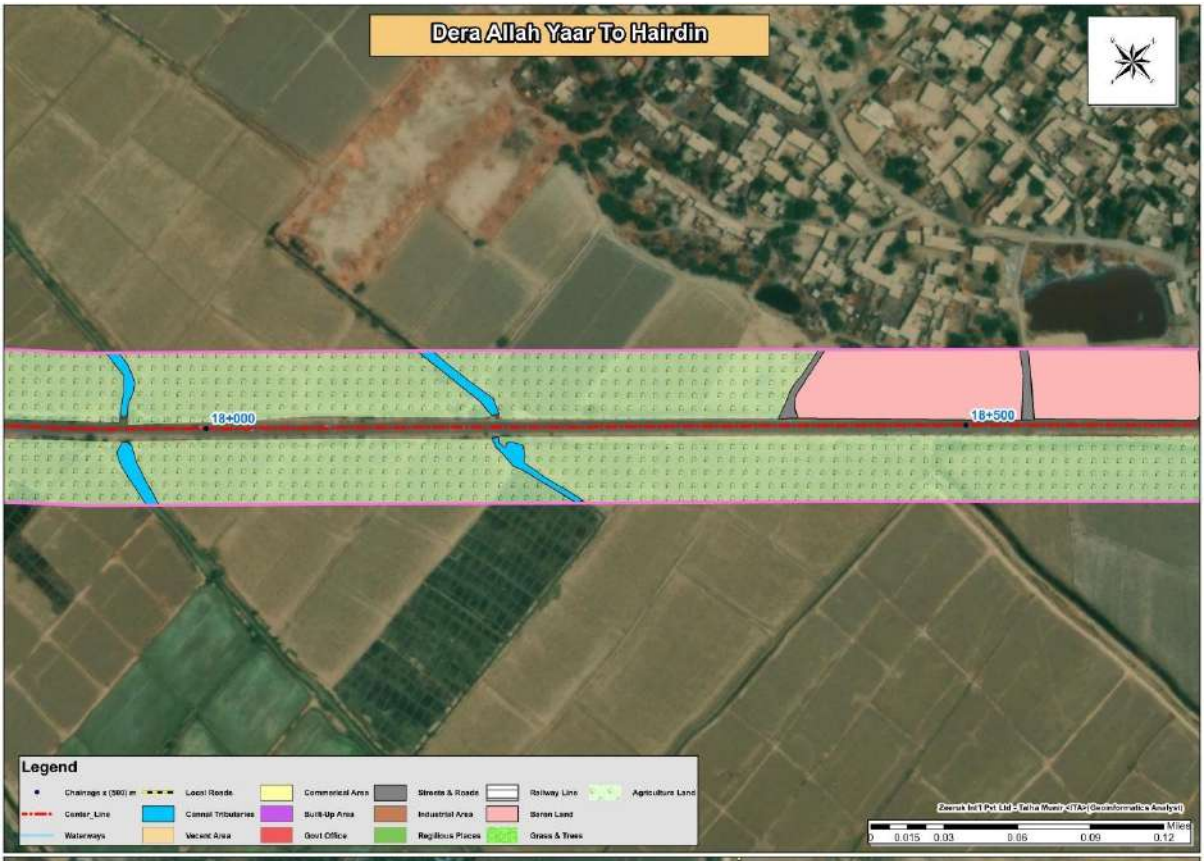


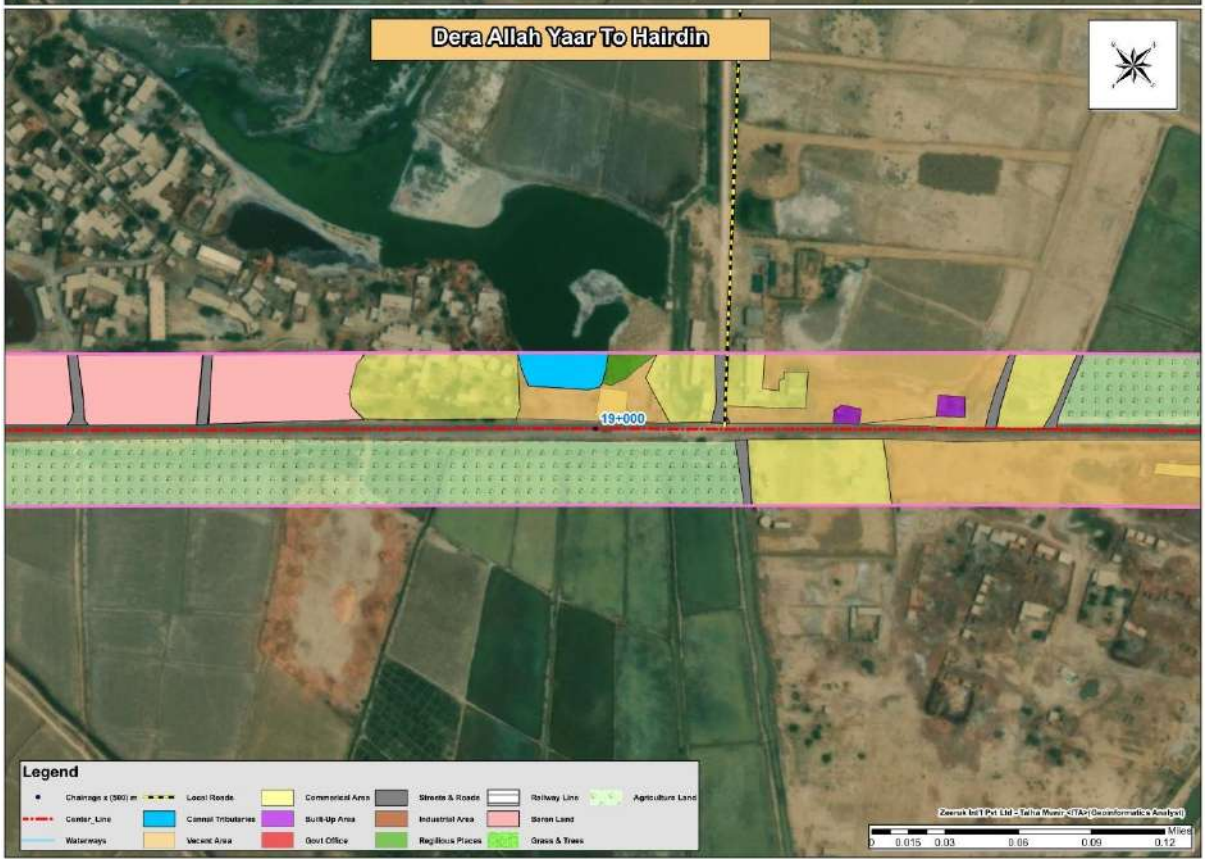


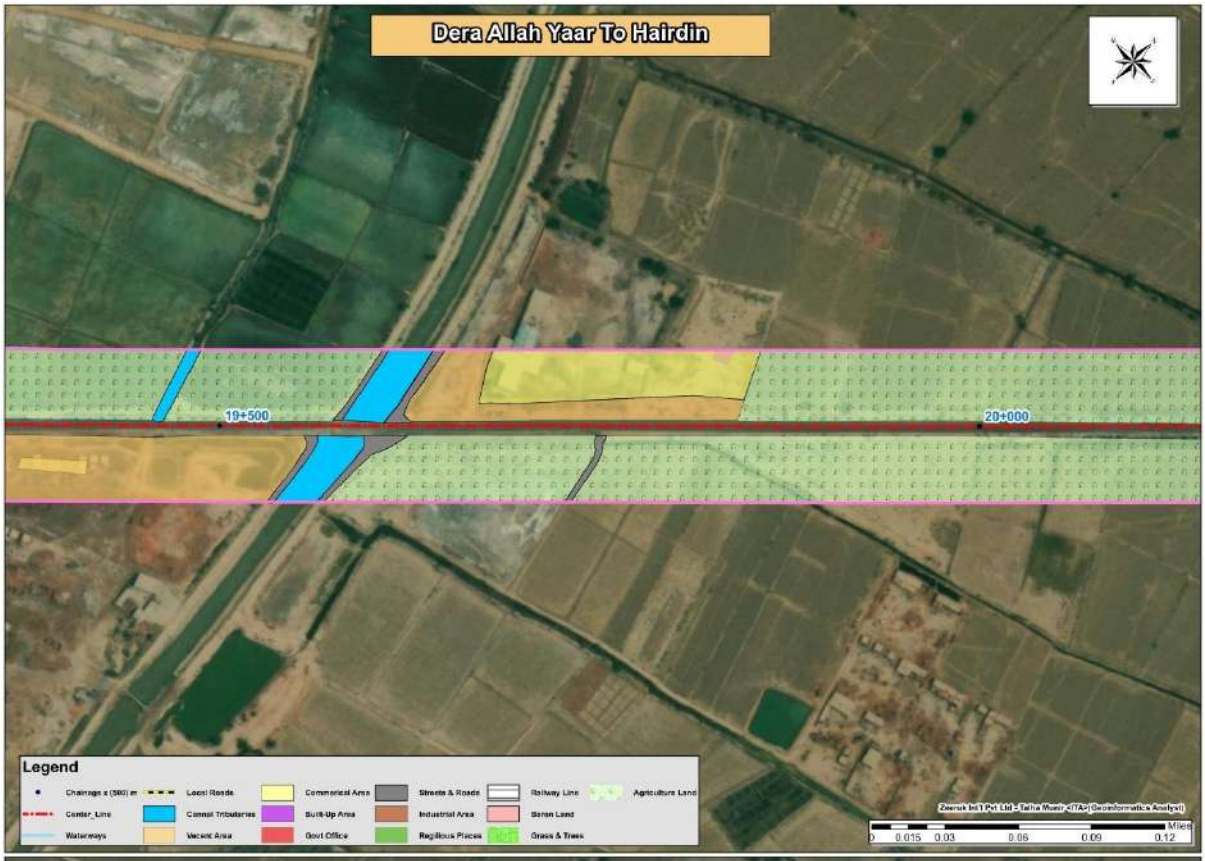


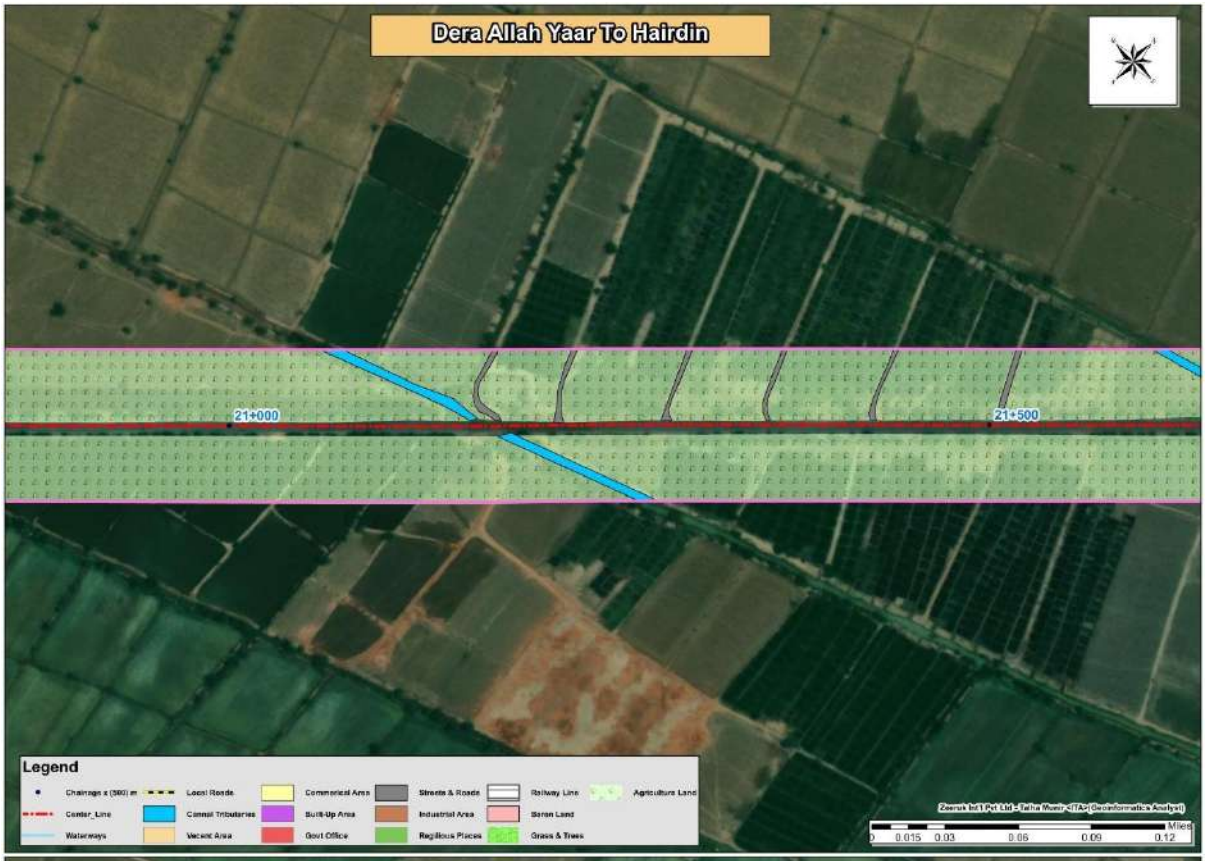


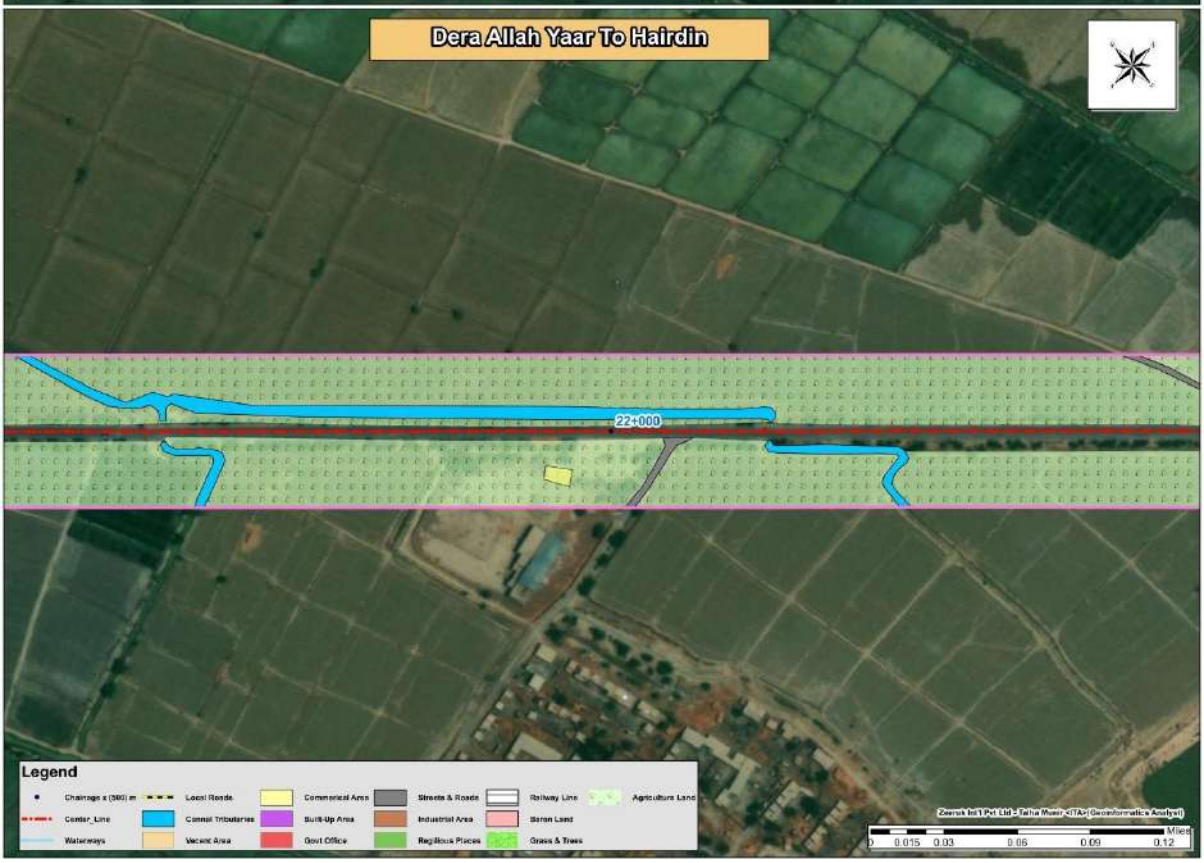


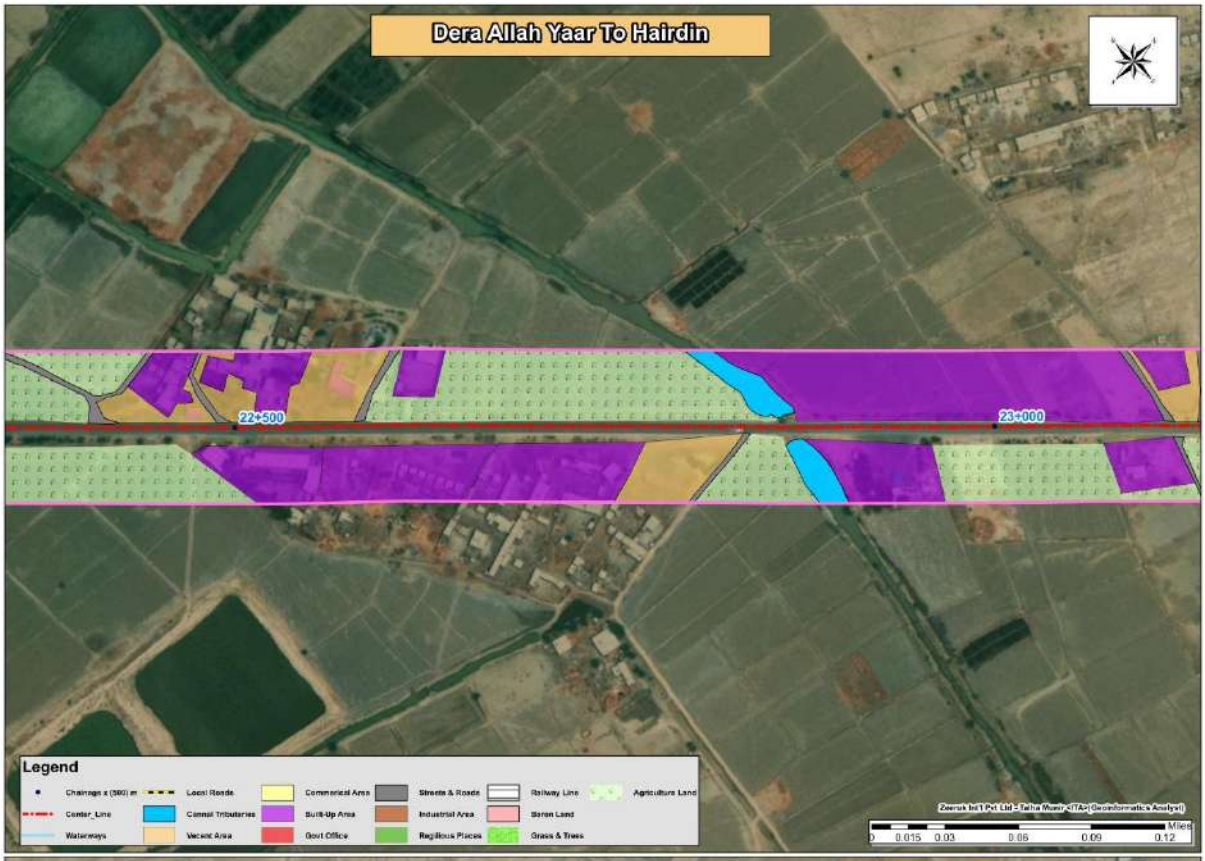


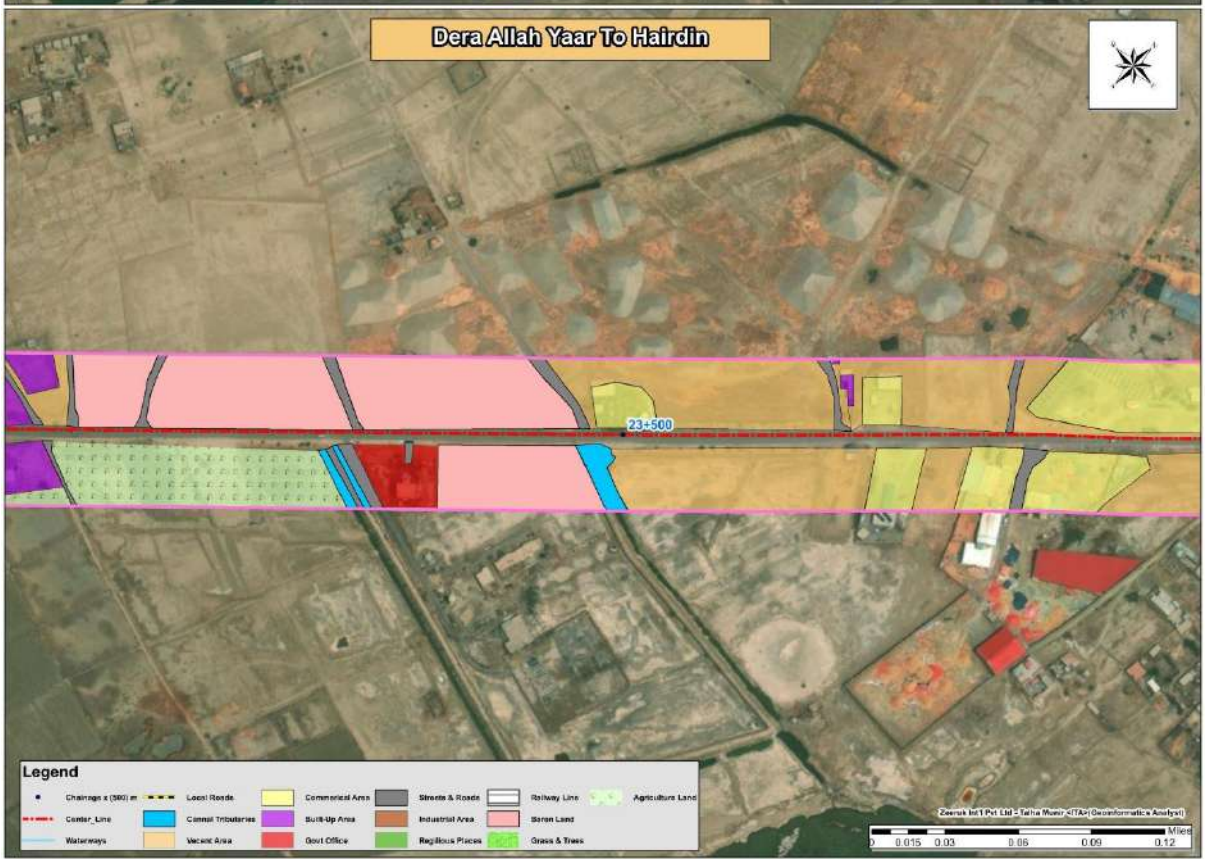


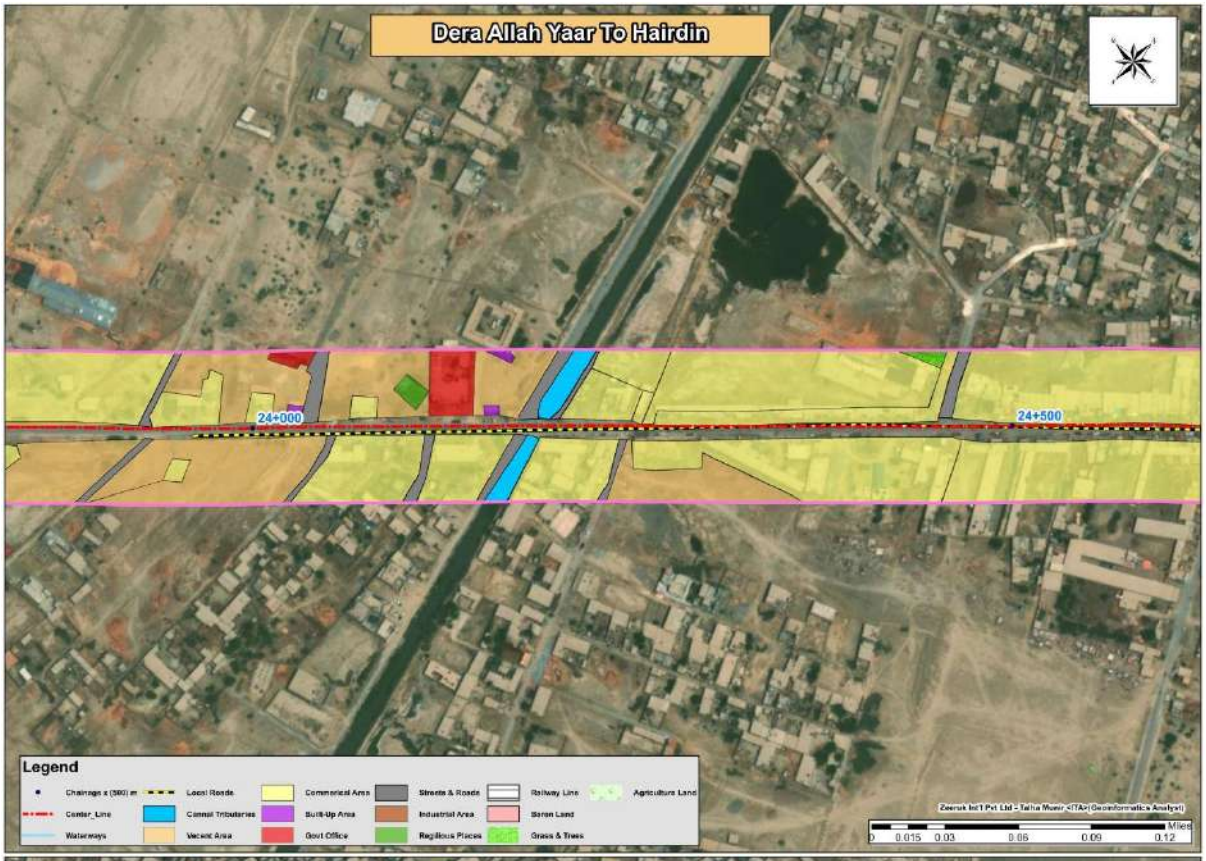


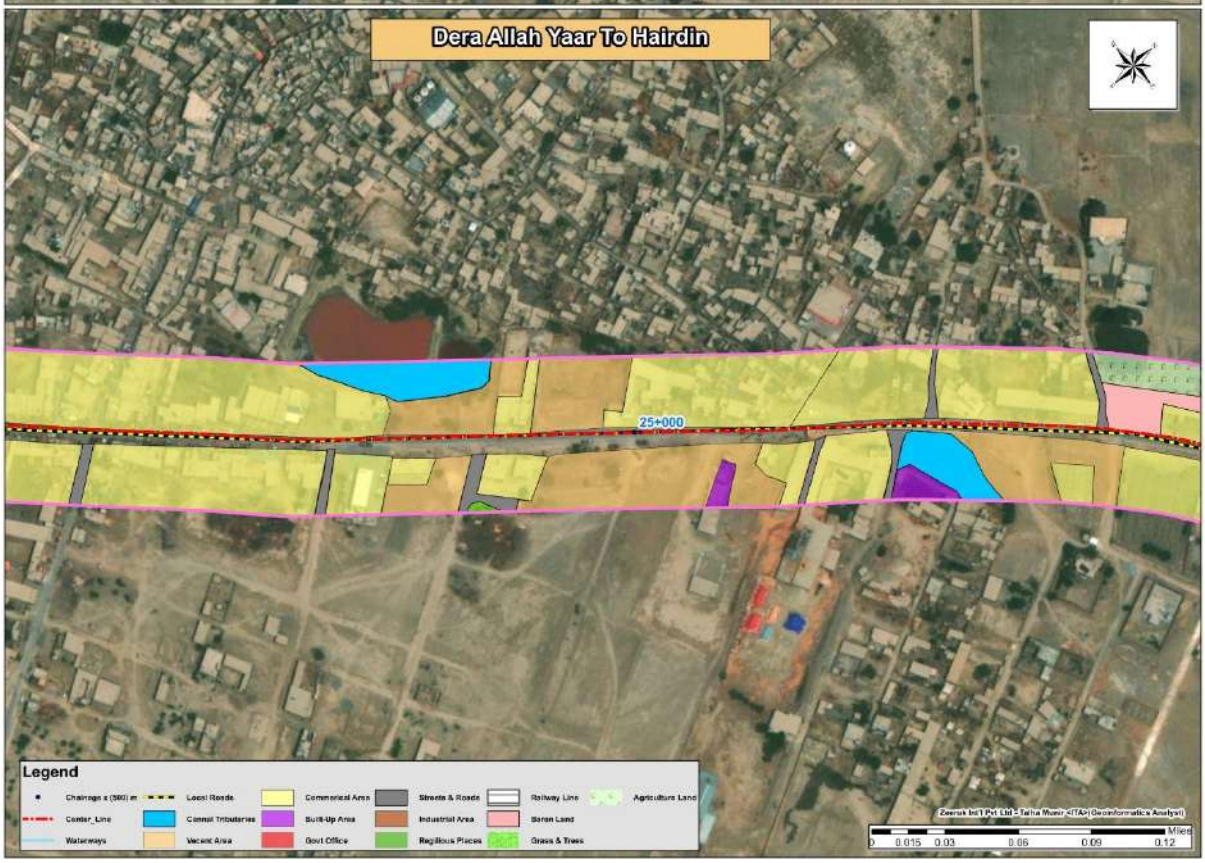


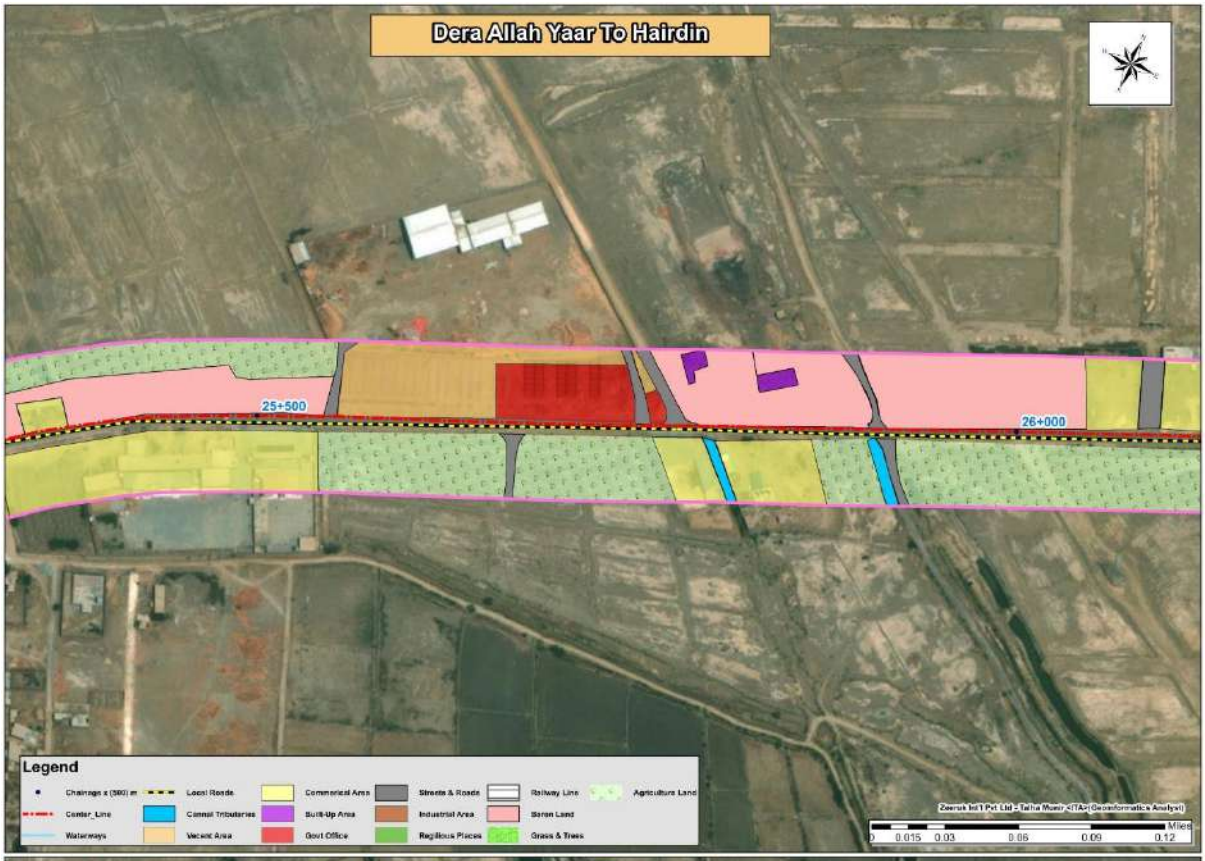


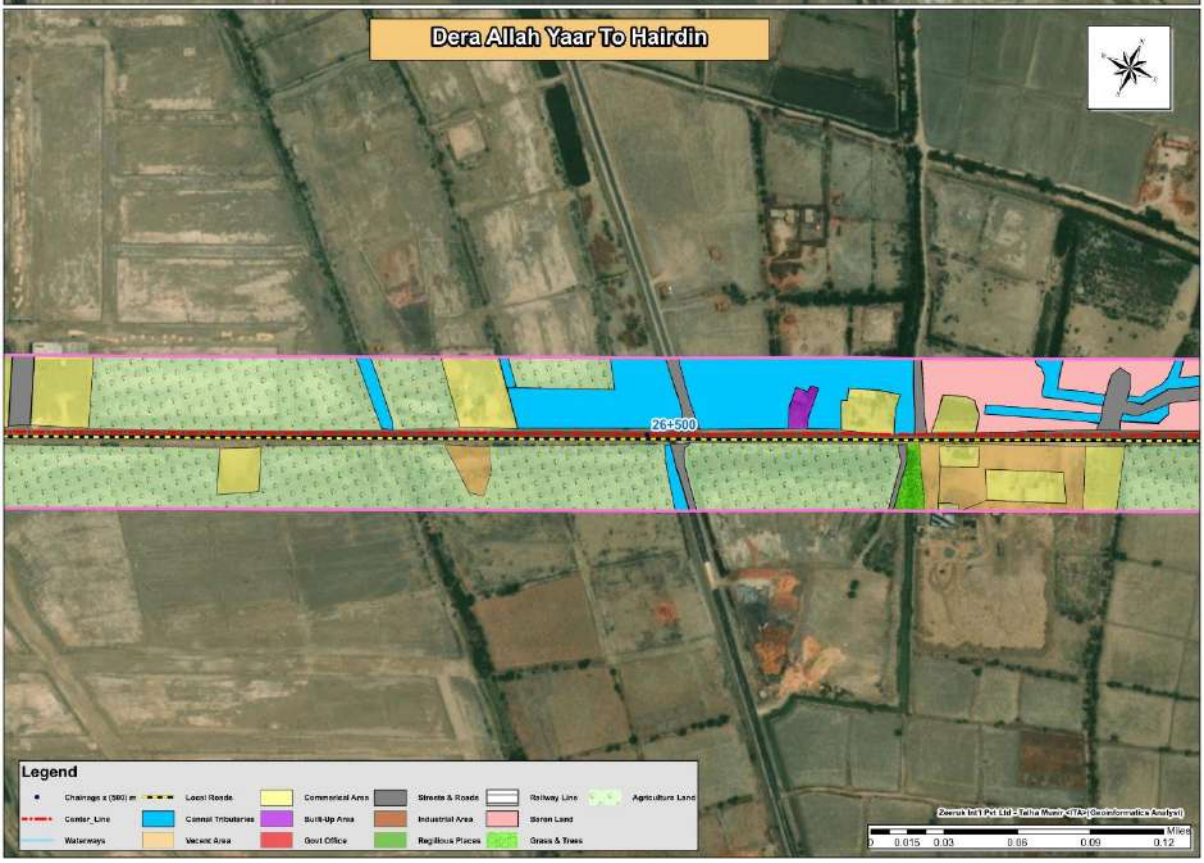


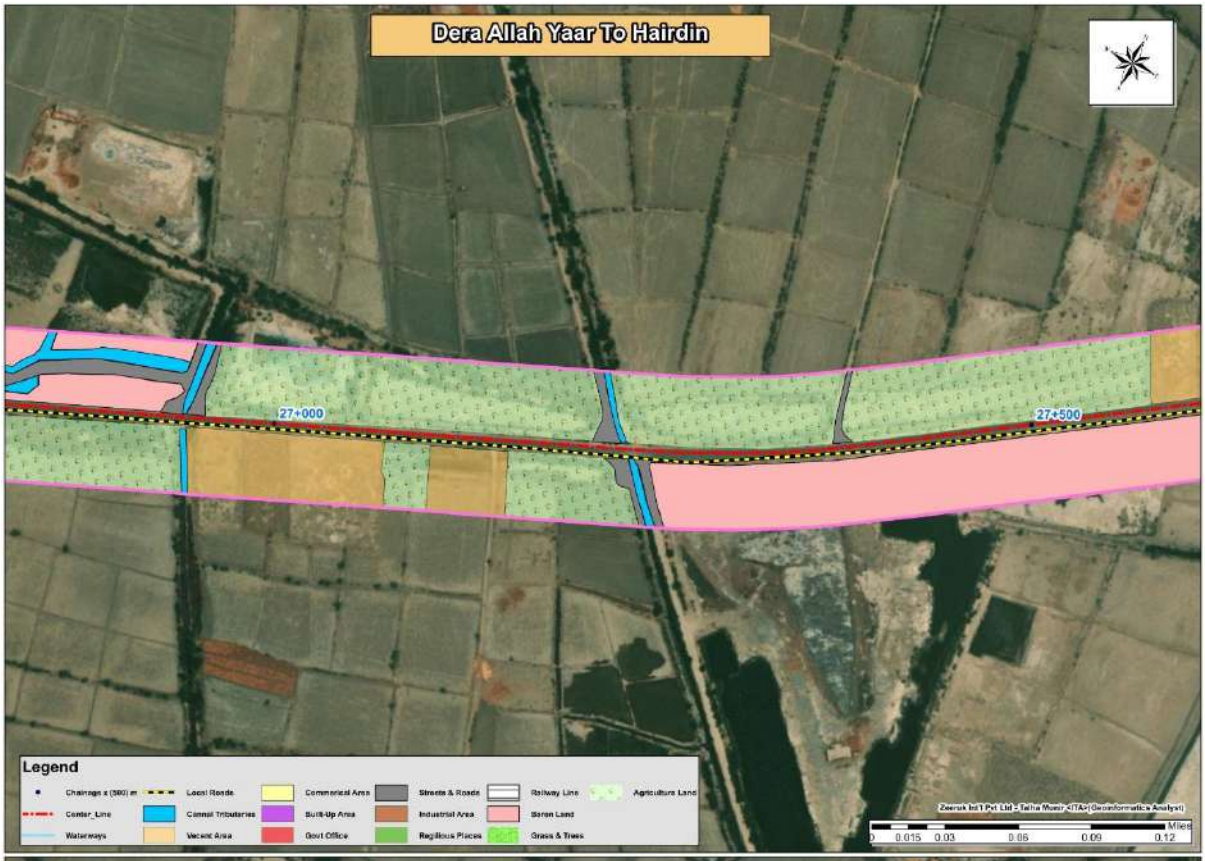


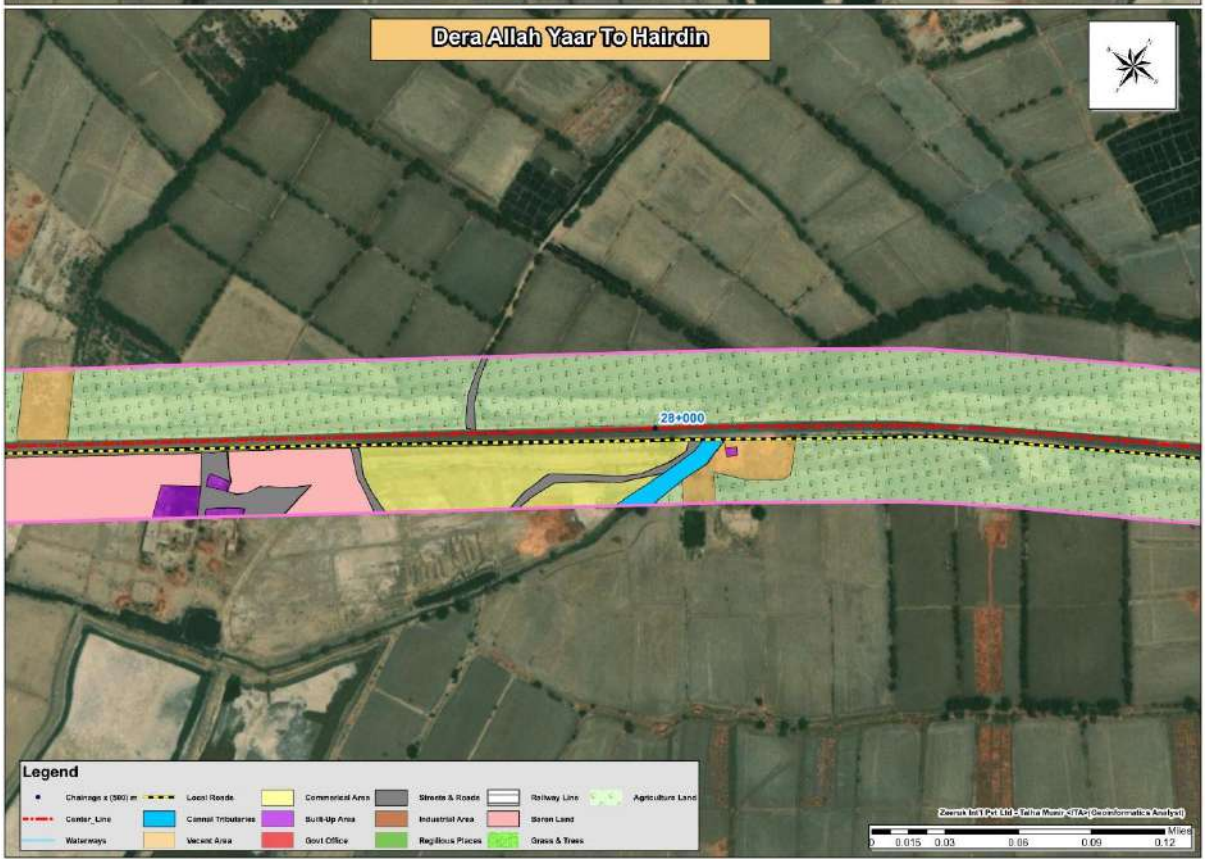


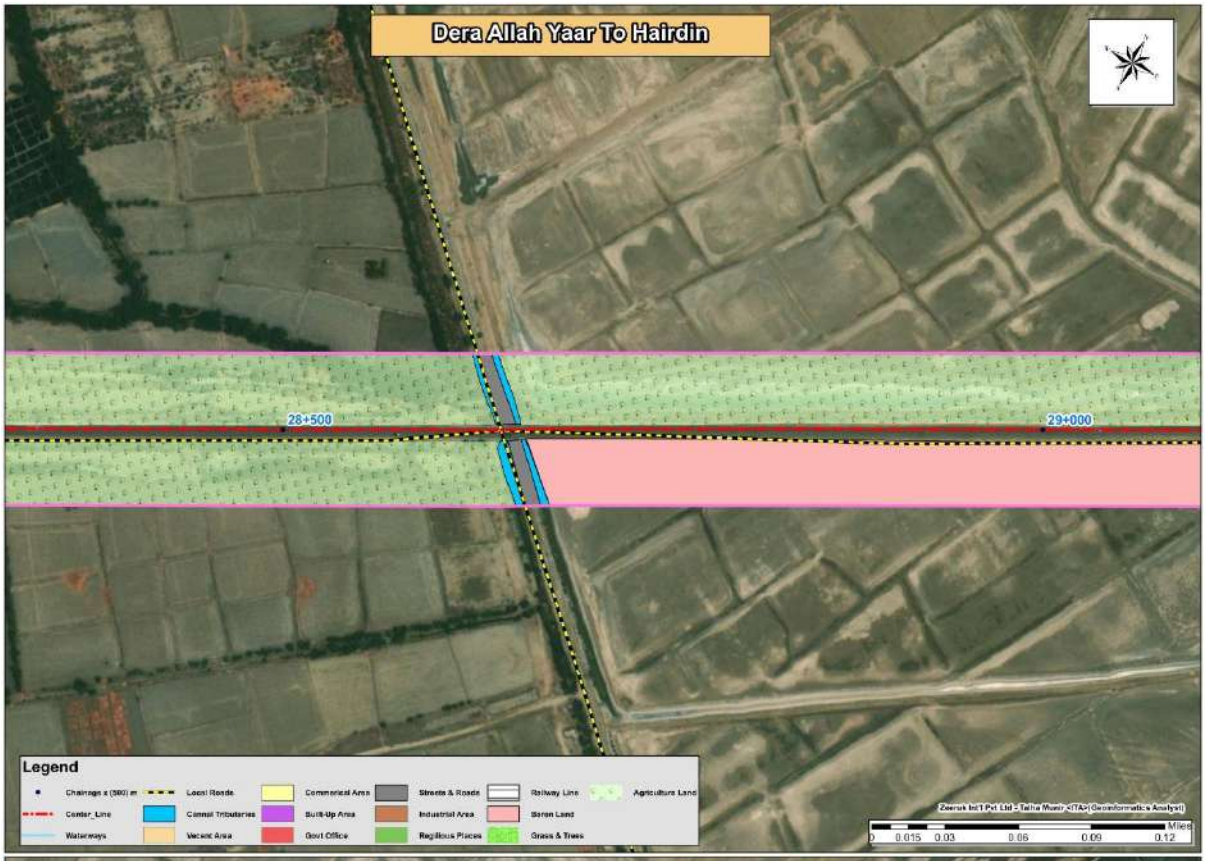


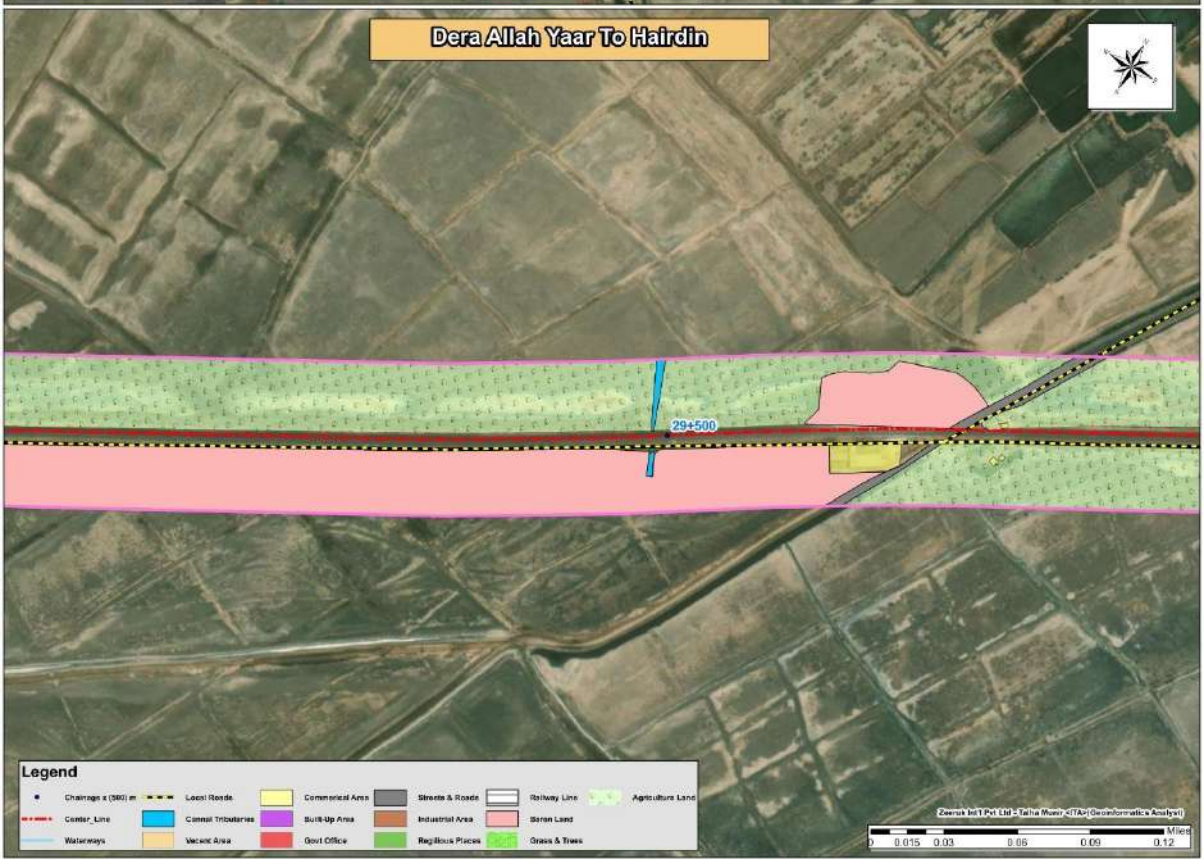


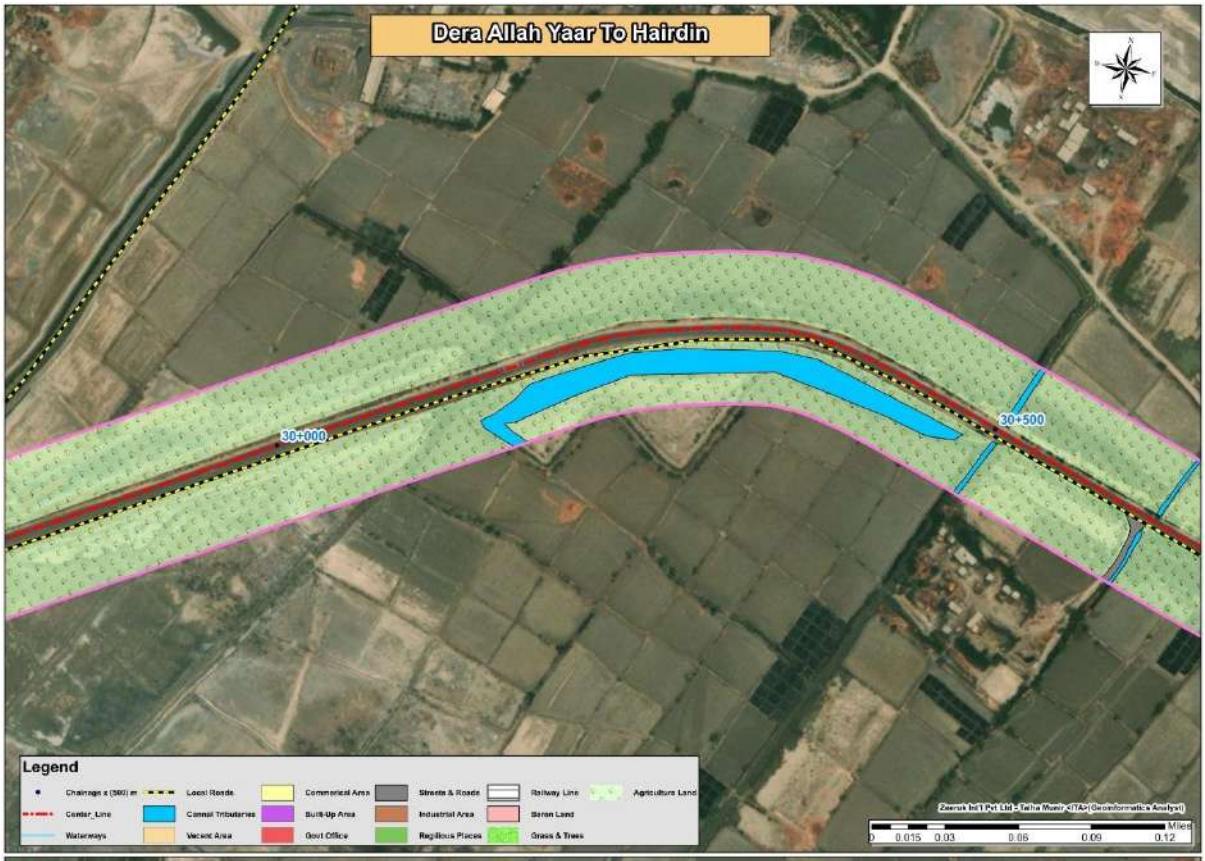


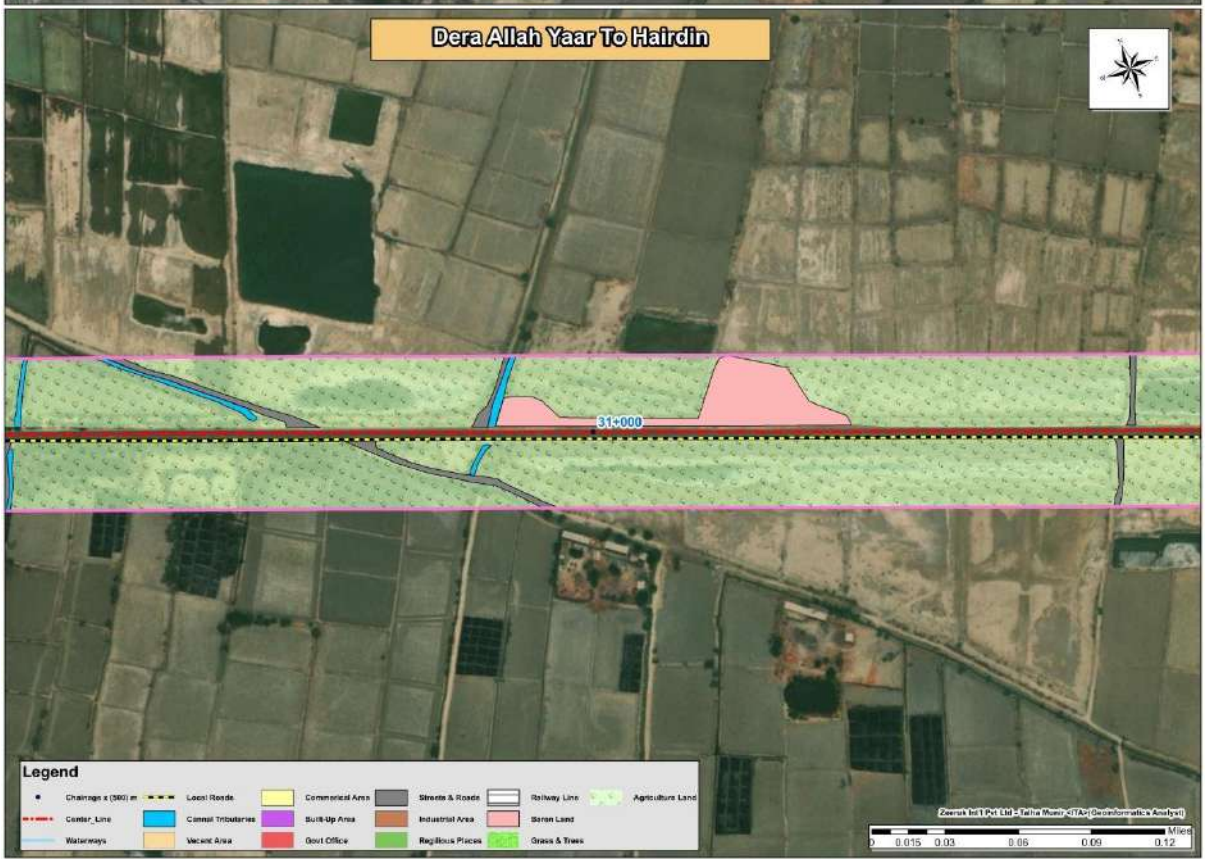


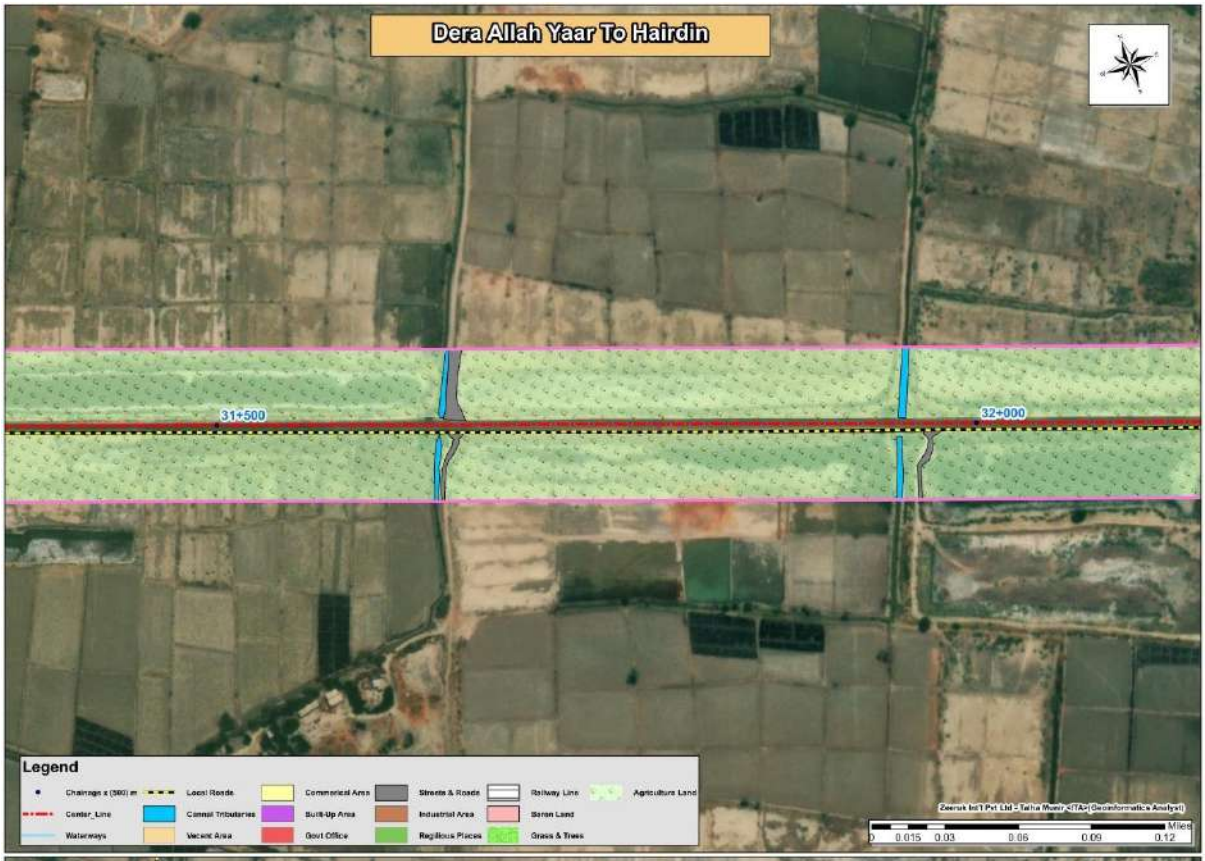


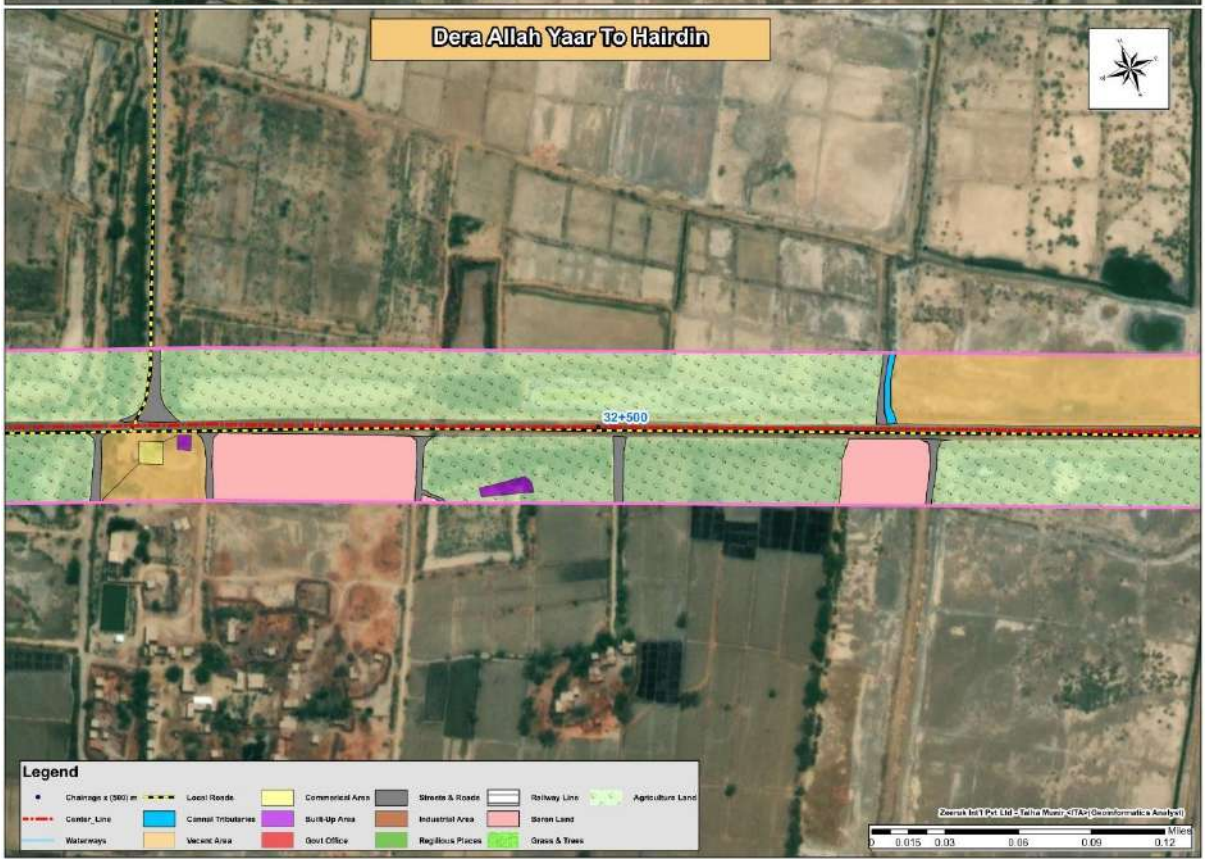


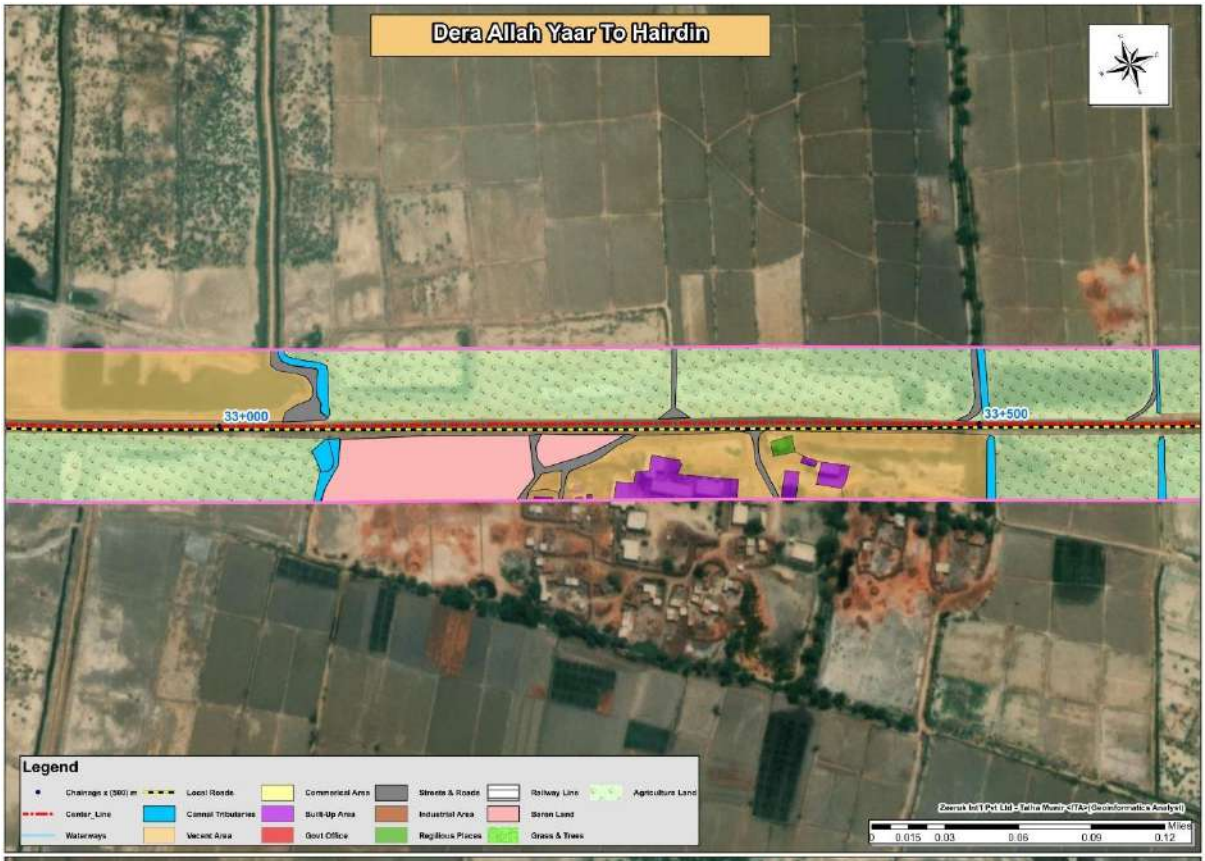


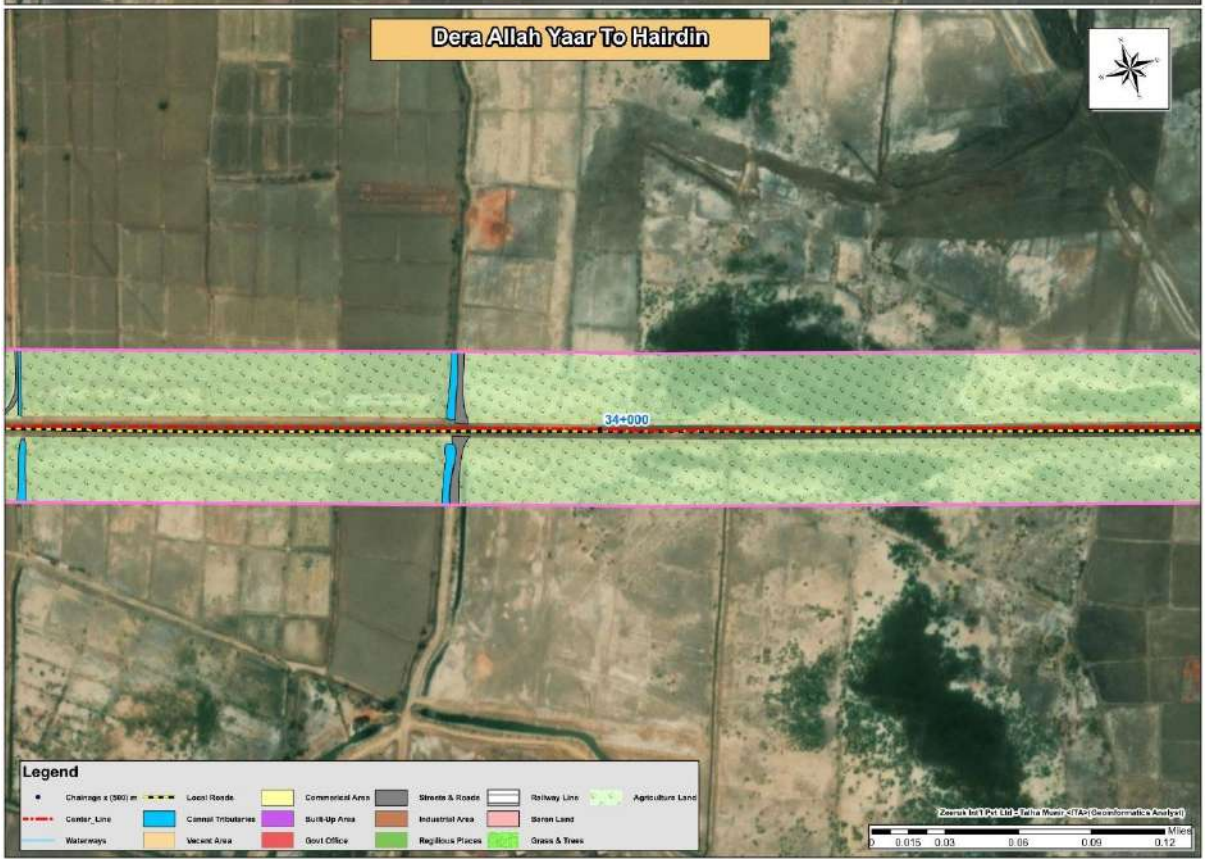


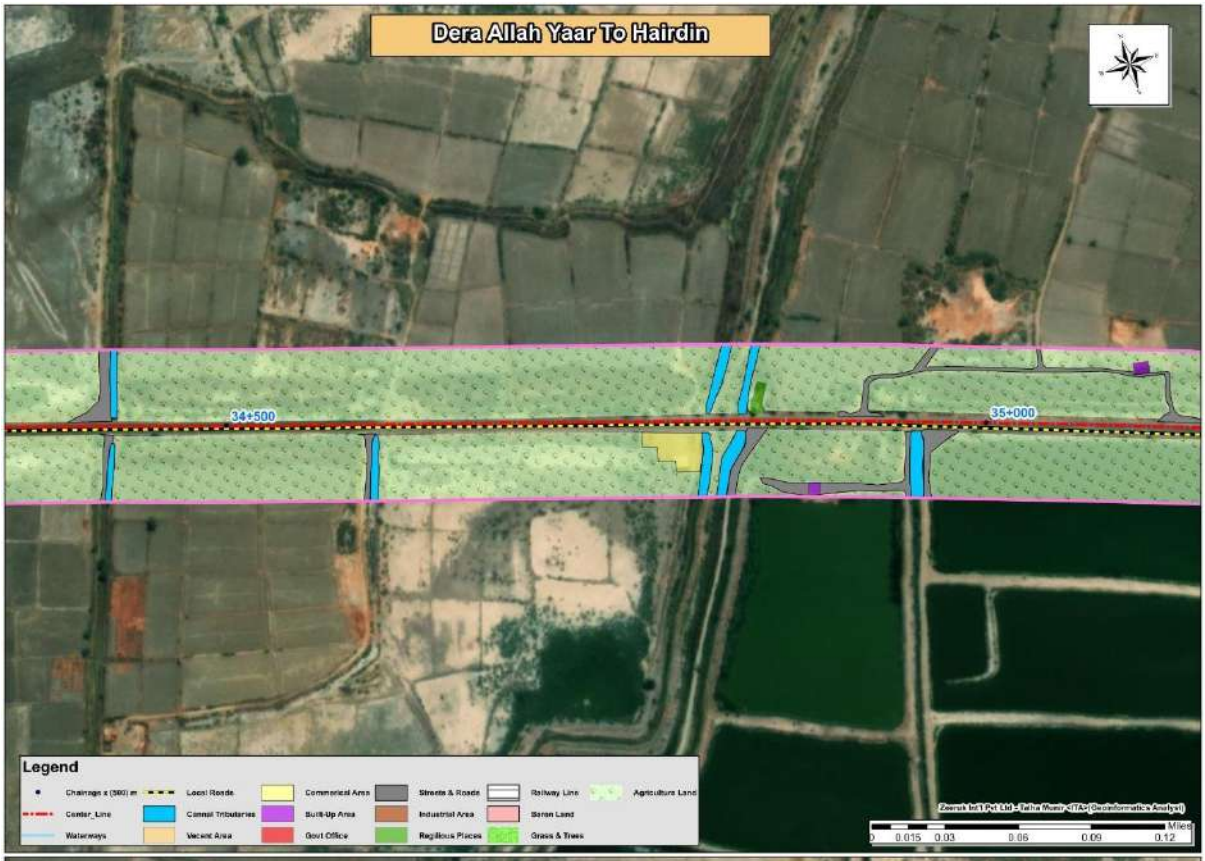


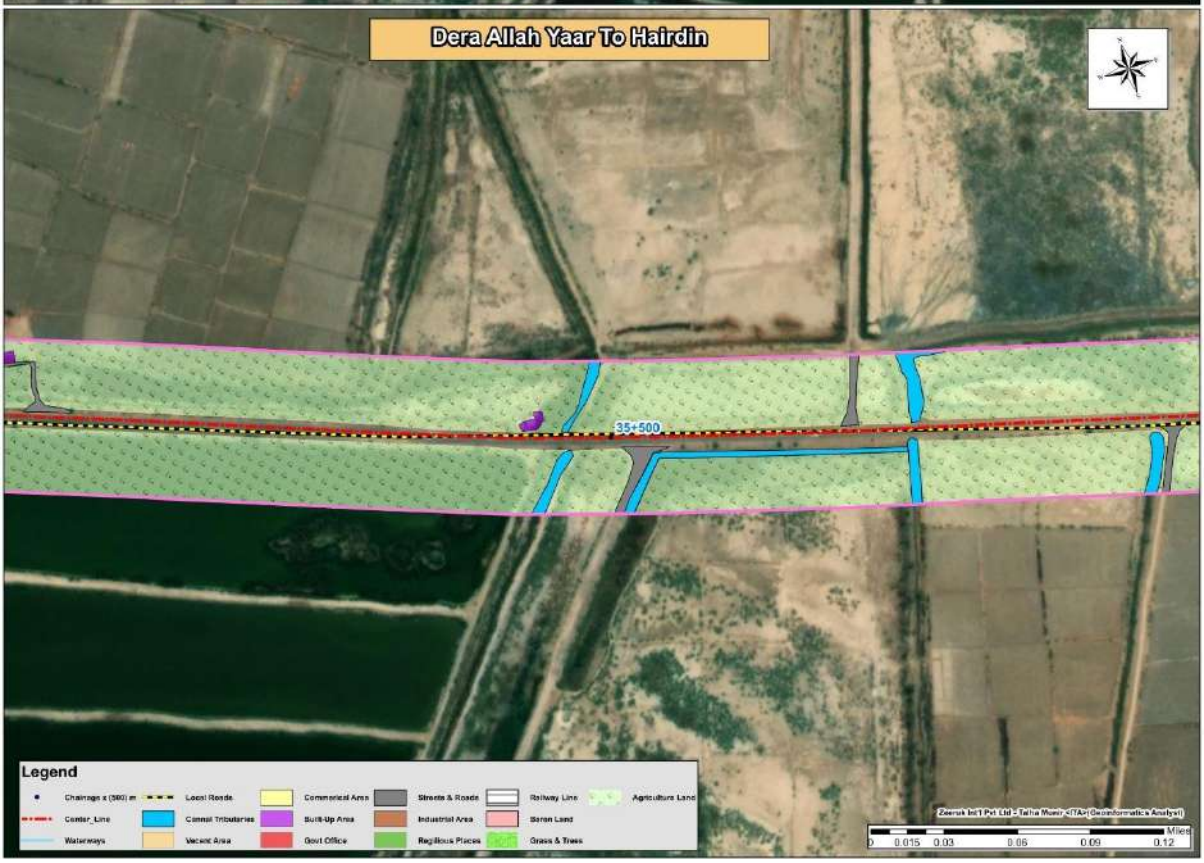


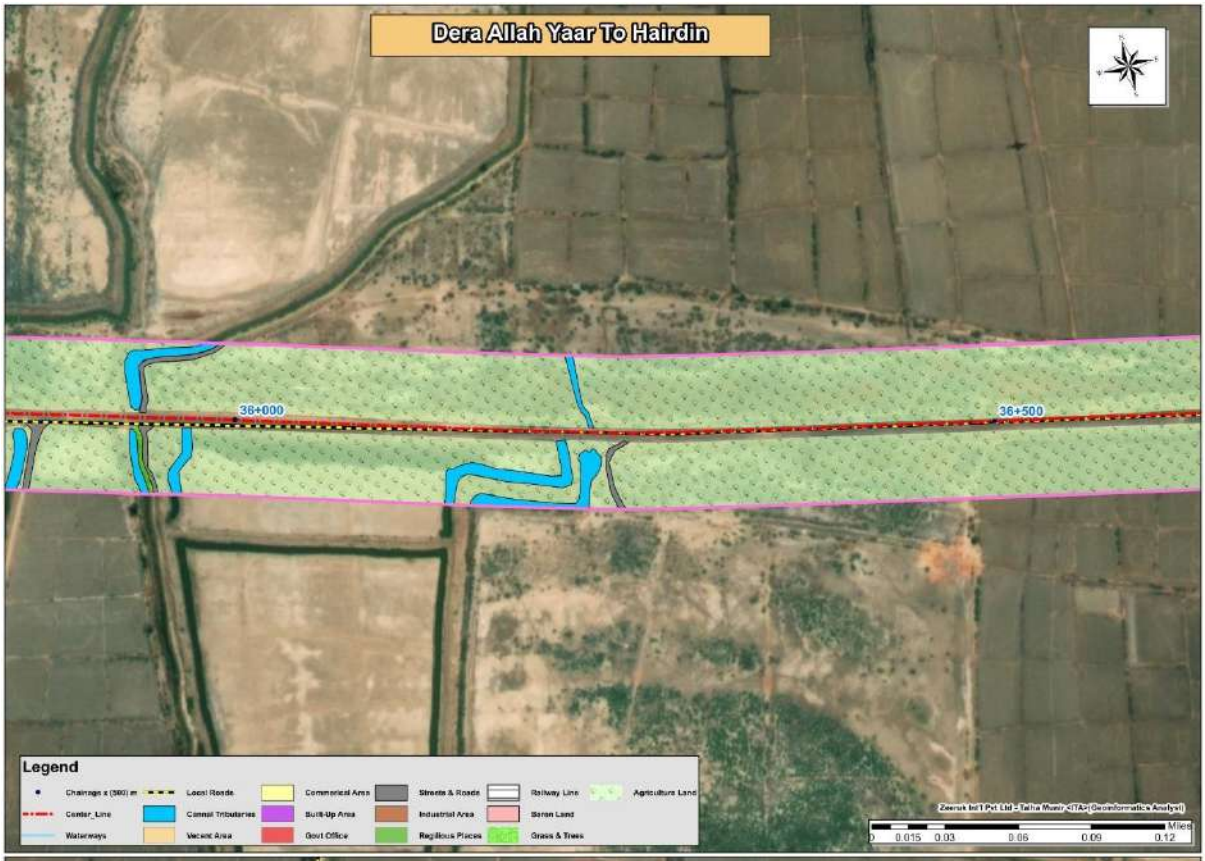


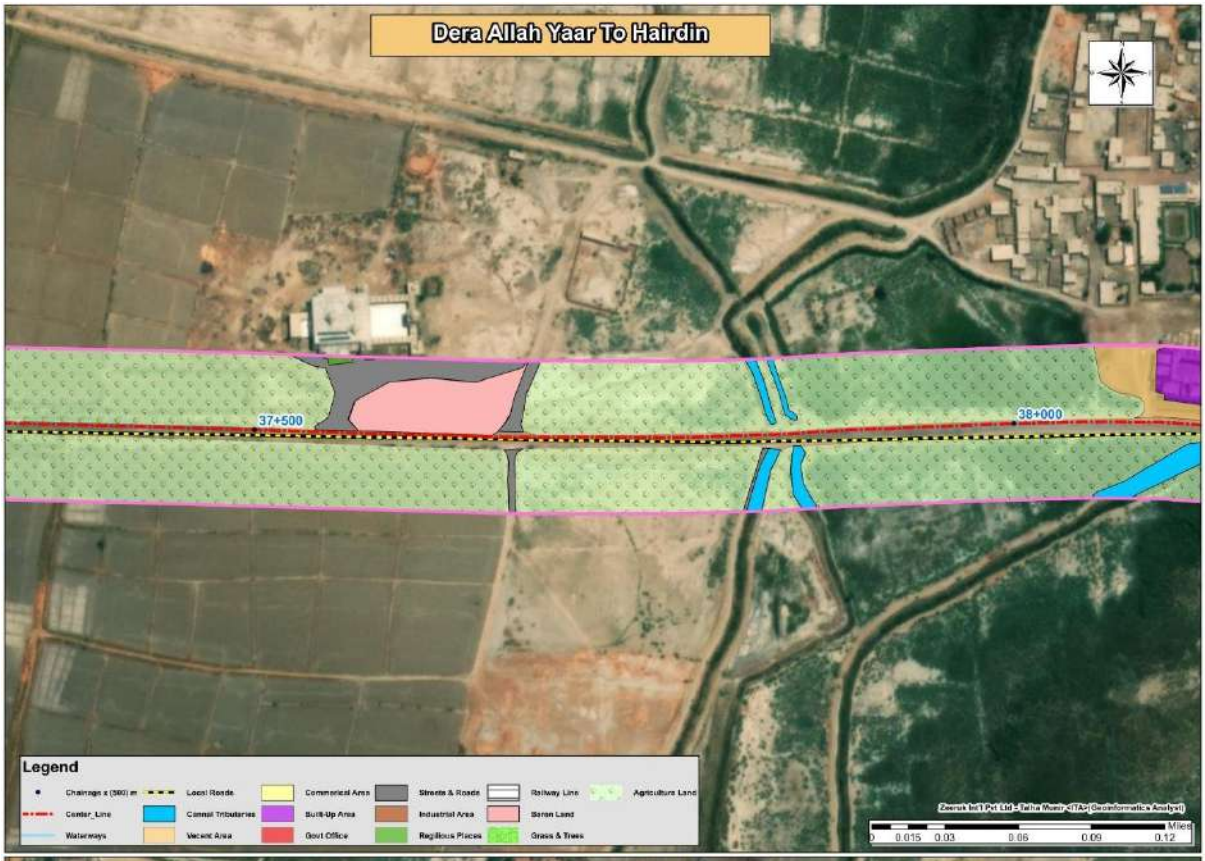


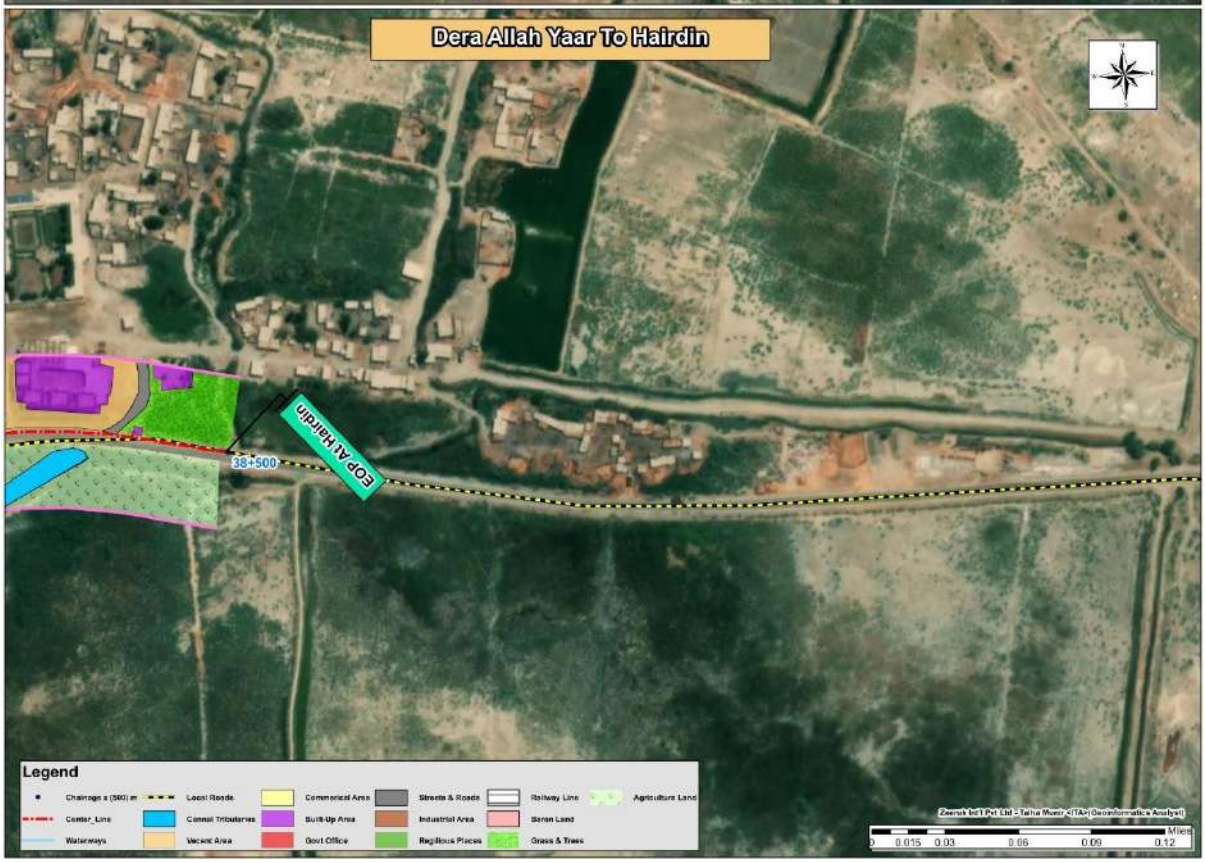












ANNEXURE – 2:
ENVIRONMENTAL MONITORING REPORTS

Green Crescent
Environmental Consultants (Pvt) Ltd.

Punjab-EPA Certified
Lahore Laboratory
Federal-EPA Certified
Islamabad Laboratory

Monitoring & Test Report

- Ground Water
- Surface Water
- Ambient Air
- Meteorological Data
- Noise Monitoring

INTEGRATED FLOOD RESILIENCE & ADAPTATION PROJECT

(Suhbatpur Chowk to Haidrine Drainage Road)

23rd Aug. 2025

Job Reference No.: GCEC-PK-LHR-123/2025

Green Crescent
Environmental Consultants (Pvt) Ltd.

Punjab-EPA Certified
Lahore Laboratory
Federal-EPA Certified
Islamabad Laboratory

CHEMICAL ANALYSIS TEST REPORT (GROUND WATER)

Sample Details			
Job Ref. No:	GCEC-PK-LHR-123/2025	**Client Name:**	**Zeeruk International Pvt. Ltd.**
Telephone No. :	-	**Sample Matrix:**	Ground Water Sample
Sample Date:	09-08-2025	**Sampled By:**	GCEC
Sample Receipt Date:	11-08-2025	**Date of Completion of Analysis:**	23-08-2025
Grab/Composite:	Grab Sampling		

Sample Identification

01 | Ground Water from Tubewell

Parameters	Analysis Method	Unit	LOR	Result 01	BEQS
PHYSICAL & CHEMICAL ANALYSIS					
pH	APHA-4500H+ B	-	0.01	7.87	6.5-8.5
Odor	In-house	-	-	Odorless	Non-Objectionable
Taste	In-house	-	-	Sweet	Non-Objectionable
Color	APHA-2120 B/C	Pt/Co	1.0	<1.0	≤15 TCU
Turbidity	APHA-2130 B	NTU	-	ND	<5 NTU
Total Hardness	APHA-2340 B&C	mg/l	0.1	356.0	< 500 mg/l
Total Dissolved Solid (TDS)	APHA-2540 C	mg/l	1.0	884.0	< 1000
Ammonia	APHA-4500-NH_3-B	mg/l	0.002	<0.002	-
Chloride	APHA-4500 B	mg/l	0.24	49.27	< 250
Cyanide (CN)	APHA-4500CN E	mg/l	0.01	<0.01	≤ 0.05
Fluoride (F)	APHA-4500F- D	mg/l	0.01	<0.01	≤ 1.5
Nitrite	APHA-4500NO2 B	mg/l	0.01	<0.01	≤ 3 (P)
Nitrate	APHA-4500NO_3 C	mg/l	0.1	2.4	≤ 50
Phenolic Compound	APHA-5530 D	mg/l	0.01	<0.01	-
Residual Chlorine	APHA-4500Cl G	mg/l	0.1	<0.1	0.2-0.5
Aluminum (Al)	APHA-3111Al B	mg/l	0.028	<0.028	≤ 0.2
Cadmium	APHA-3111 B	mg/l	0.0028	<0.0028	0.01
Copper	APHA-3111 B	mg/l	0.0045	<0.0045	2
Chromium	APHA-3111 B	mg/l	0.0054	<0.0054	≤ 0.05 (P)
Mercury	APHA-3112Hg B	mg/l	0.0008	<0.0008	≤ 0.001
Antimony (Sb)	APHA-3111 B	mg/l	-	ND	≤ 0.005 (P)
Nickel	APHA-3111 C	mg/l	0.008	<0.008	≤ 0.02
Zinc	APHA-3111 B	mg/l	0.0033	<0.0033	5.0
Arsenic	APHA-3111As B	mg/l	0.01	<0.01	≤ 0.05 (P)
Barium	APHA-3111Ba B	mg/l	0.031	<0.031	0.7
Manganese	APHA-3111 B	mg/l	0.0016	<0.0016	≤ 0.5
Iron	APHA-3111 B	mg/l	0.1	<0.1	-
Boron	APHA-4500-B (C)	mg/l	0.1	<0.1	0.3
Lead	APHA-3111 B	mg/l	0.013	<0.013	≤ 0.05
Selenium	APHA-3111Se B	mg/l	-	ND	0.01 (P)
Polynuclear Aromatic Hydrocarbons	ASTM-D-7678	mg/l	1.0	<1.0	-
MICROBIOLOGICAL ANALYSIS					
Total Coliforms	APHA:9222 B	CFU/100ml		Absent	0/100ml
Faecal Coliforms (Ecoli)	APHA:9222 D	CFU/100ml		Absent	0/100ml

Abbreviations:
ND: Not Detected **LOR:** Limit of Reporting **BEQS:** Balochistan Environmental Quality Standards

Note:
** Uncertainty of all the parameters and laboratory conditions at the time of analysis will be provided as per client's requirement. The lab environmental conditions are maintained at 25±5C° and humidity at 50±20%.*

Disclaimer: *This report is not valid for legal or court purpose.*

Prepared By: **Reviewed By:** **Approved By:**

Green Crescent
Environmental Consultants (Pvt) Ltd.

Punjab-EPA Certified
Lahore Laboratory
Federal-EPA Certified
Islamabad Laboratory

CHEMICAL ANALYSIS TEST REPORT (SURFACE WATER)

Sample Details			
Job Ref. No:	GCEC-PK-LHR-123/2025	**Client Name:**	**Zeeruk International Pvt. Ltd.**
Telephone No.	-	**Sample Matrix:**	Surface Water Sample
Sample Date:	09-08-2025	**Sampled By:**	GCEC
Sample Receipt Date:	11-08-2025	**Date of Completion of Analysis:**	23-08-2025
Grab/Composite:	Grab Sampling		

Sample Identification	
01	Surface Water from Haidrine Drainage

Parameters	Analysis Method	Unit	LOR	Result 01
PHYSICAL & CHEMICAL ANALYSIS				
Temperature	APHA-2550 B	°C	-	1.6
pH	APHA-4500-H^+ B	pH unit	0.01	7.91
Total Dissolved Solid (TDS)	APHA-2540 C	mg/l	1.0	2127.0
Oil and Grease	USEPA-1664	mg/l	0.2	<0.2
Biological Oxygen Demand	APHA-5210 B	mg/l	1.0	14.0
Chemical Oxygen Demand	APHA-5220 D	mg/l	1.0	31.0
Total Suspended Solid	APHA-2540 C	mg/l	1.0	54.0
Phenolic Compound	APHA-5530 D	mg/l	0.01	<0.01
Chloride (Cl)	APHA-4500 B	mg/l	0.24	98.55
Fluoride (F)	APHA-4500F- D	mg/l	0.01	0.07
Cyanide (CN)	APHA-4500CN E	mg/l	0.01	<0.01
Detergent	APHA-5540 C	mg/l	-	ND
Sulphate	APHA-4500-SO_4^{-2} C	mg/l	0.41	56.38
Sulphide	APHA-4500-S_2 F	mg/l	0.2	<0.2
Ammonia	APHA-4500-NH_3-B,C	mg/l	0.002	<0.002
Silver	APHA-3500Ag B	mg/l	0.0032	<0.0032
Cadmium	APHA-3111 B	mg/l	0.0028	<0.0028
Chromium	APHA-3111 B	mg/l	0.0054	<0.0054
Copper	APHA-3111 B	mg/l	0.0045	0.0113
Lead	APHA-3111 B	mg/l	0.013	<0.013
Mercury	APHA-3112Hg B	mg/l	0.0008	<0.0008
Nickel	APHA-3111 C	mg/l	0.008	0.0118
Zinc	APHA-3111 B	mg/l	0.0033	0.0251
Arsenic	APHA-3111As B	mg/l	0.01	<0.01
Barium	APHA-3500Ba B	mg/l	0.031	<0.031
Manganese	APHA-3111 B	mg/l	0.0016	0.0157
Iron	APHA-3111 B	mg/l	0.1	1.3456
Boron	APHA-4500B C	mg/l	0.1	<0.1
Total Chlorine	APHA-4500 Cl B	mg/l	0.1	<0.1
Selenium	APHA-3111 Se B	mg/l	-	ND
Pesticides	APHA-6630 B	mg/l	-	ND
Total Toxic Metals	-	mg/l	-	0.0231

Abbreviations:
ND: Not Detected **LOR:** Limit of Reporting

Note:
** Uncertainty of all the parameters and laboratory conditions at the time of analysis will be provided as per client's requirement. The lab environmental conditions are maintained at 25±5C° and humidity at 50±20%.*

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Prepared By: **Reviewed By:** **Approved By:**

Ambient Air & Noise Monitoring
Location-01

POINT 1

(Dera Allah Yar)

Ambient Air Quality Monitoring

Job Reference Number	GCEC-PK-LHR-123/2025
Monitoring Point	Point 1
Date of Intervention	08-Aug-2025
Monitoring Coordinates	28°22'37.2"N 68°21'03.6"E

Sr. #	Time	CO (mg/m³)	NO (µg/m³)	NO_2 (µg/m³)	NO_x (µg/m³)	SO_2 (µg/m³)
1.	07:35	1.17	16.50	25.55	42.06	17.00
2.	08:35	1.12	16.69	25.91	42.60	18.96
3.	09:35	1.12	15.13	25.61	40.75	21.96
4.	10:35	1.15	16.82	23.28	40.10	20.98
5.	11:35	1.21	15.18	27.74	42.92	17.03
6.	12:35	1.13	15.47	26.35	41.82	15.97
7.	13:35	1.22	17.07	24.59	41.66	23.04
8.	14:35	1.09	16.31	23.03	39.34	21.94
Average Concentration		**1.15**	**16.15**	**25.26**	**41.41**	**19.61**

Disclaimer: *This report is not valid for legal or court purpose.*

Deputy Analyst: a.b. aleem.

Reviewed By:

Approved By:

Ambient Air Quality Monitoring

Job Reference Number	GCEC-PK-LHR-123/2025
Monitoring Point	Point 1
Date of Intervention	08-Aug-2025
Monitoring Coordinates	28°22'37.2"N 68°21'03.6"E

Parameter	Unit	Monitoring Duration	LDL	Average Obtained Concentration
Nitrogen Dioxide (NO_2)	µg/m³	08 Hours	1.00	25.26
Nitrogen Oxide (NO)	µg/m³	08 Hours	1.00	16.15
NOx	µg/m³	08 Hours	1.00	41.41
Sulphur Dioxide (SO_2)	µg/m³	08 Hours	1.00	19.61
Carbon Monoxide (CO)	mg/m³	08 Hours	0.01	1.15
Ozone (O_3)	µg/m³	08 Hours	-	16.52
Particulate Matter ($PM_{2.5}$)	µg/m³	08 Hours	1.00	21.43
Particulate Matter (PM_{10})	µg/m³	08 Hours	1.00	102.95
Suspended Particulate Matter (SPM)	µg/m³	08 Hours	1.00	159.38

Abbreviations:
µg/m³= Micrograms per Cubic Meter
mg/m³= Milligrams per Cubic Meter
LDL= Lowest Detection Limit
Disclaimer: *This report is not valid for legal or court purpose.*

Deputy Analyst: a.b. aleem

Reviewed By:

Approved By:

Ambient Air & Noise Monitoring Location-02

POINT 2

(Village Mushtaq Ahmed Buledi)

Ambient Air Quality Monitoring

Job Reference Number	GCEC-PK-LHR-123/2025
Monitoring Point	Point 2
Date of Intervention	09-Aug-2025
Monitoring Coordinates	28°30'56.3"N 68°41'06.7"E

Sr. #	Time	CO (mg/m³)	NO (µg/m³)	NO_2 (µg/m³)	NO_x (µg/m³)	SO_2 (µg/m³)
1.	07:30	1.26	18.20	22.60	40.80	20.70
2.	08:30	1.29	16.88	26.70	43.58	20.60
3.	09:30	1.25	18.65	24.59	43.24	20.54
4.	10:30	1.24	19.62	23.41	43.03	14.58
5.	11:30	1.27	14.84	23.83	38.66	19.52
6.	12:30	1.33	18.04	25.80	43.83	12.51
7.	13:30	1.38	14.99	24.26	39.24	15.55
8.	14:30	1.31	18.09	25.95	44.04	20.63
Average Concentration		**1.29**	**17.41**	**24.64**	**42.05**	**18.08**

Disclaimer: *This report is not valid for legal or court purpose.*

Deputy Analyst: a.b. aleem.

Reviewed By:

Approved By:

Ambient Air Quality Monitoring

Job Reference Number	GCEC-PK-LHR-123/2025
Monitoring Point	Point 2
Date of Intervention	09-Aug-2025
Monitoring Coordinates	28°30'56.3"N 68°41'06.7"E

Parameter	Unit	Monitoring Duration	LDL	Average Obtained Concentration
Nitrogen Dioxide (NO_2)	µg/m³	08 Hours	1.00	24.64
Nitrogen Oxide (NO)	µg/m³	08 Hours	1.00	17.41
NOx	µg/m³	08 Hours	1.00	42.05
Sulphur Dioxide (SO_2)	µg/m³	08 Hours	1.00	18.08
Carbon Monoxide (CO)	mg/m³	08 Hours	0.01	1.29
Ozone (O_3)	µg/m³	08 Hours	-	17.38
Particulate Matter ($PM_{2.5}$)	µg/m³	08 Hours	1.00	23.46
Particulate Matter (PM_{10})	µg/m³	08 Hours	1.00	105.40
Suspended Particulate Matter (SPM)	µg/m³	08 Hours	1.00	163.86

Abbreviations:
µg/m³= Micrograms per Cubic Meter
mg/m³= Milligrams per Cubic Meter
LDL= Lowest Detection Limit
Disclaimer: *This report is not valid for legal or court purpose.*

Deputy Analyst: a.b. aleem

Reviewed By:

Approved By:

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Islamabad Laboratory

Noise Level Monitoring Report

Job Reference Number	GCEC-PK-LHR-123/2025
Monitoring Point	Point 2
Date of Intervention	09-Aug-2025
Monitoring Coordinates	28°30'56.3"N 68°41'06.7"E

Sr. #	Time	Method/Technique	Unit	Results LAavg	BEQS (Commercial)
Day Time					
1.	07:30	Noise Meter	dB	57.0	65.0
2.	08:30	Noise Meter	dB	60.3	
3.	09:30	Noise Meter	dB	58.3	
4.	10:30	Noise Meter	dB	56.3	
5.	11:30	Noise Meter	dB	55.3	
6.	12:30	Noise Meter	dB	52.1	
7.	13:30	Noise Meter	dB	55.2	
8.	14:30	Noise Meter	dB	56.1	
Day Time Average			**dB**	**56.32**	**65.0**

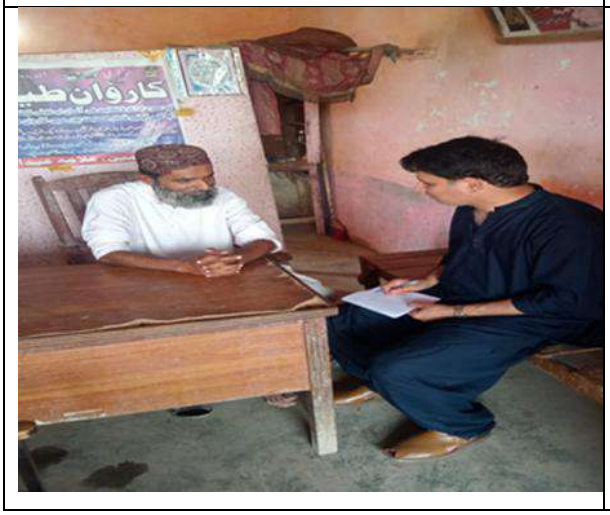
Disclaimer: *This report is not valid for legal or court purpose.*

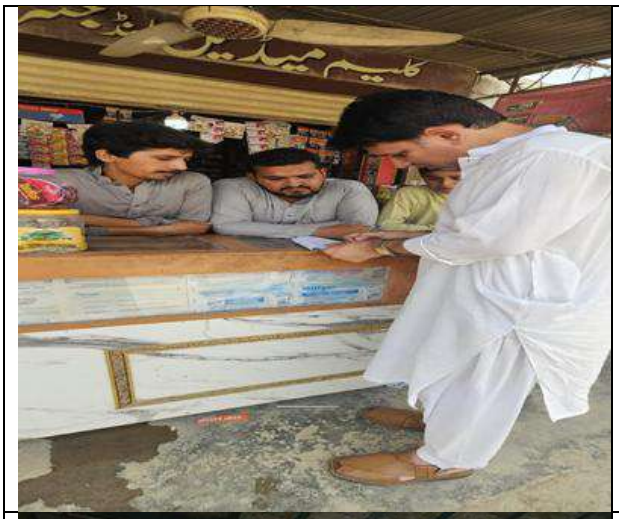
Deputy Analyst: ab. aleem.

Reviewed By:

Approved By:

ANNEXURE – 3:
PHOTOGRAPHS OF CONSULTATIONS
(Villages along COI)







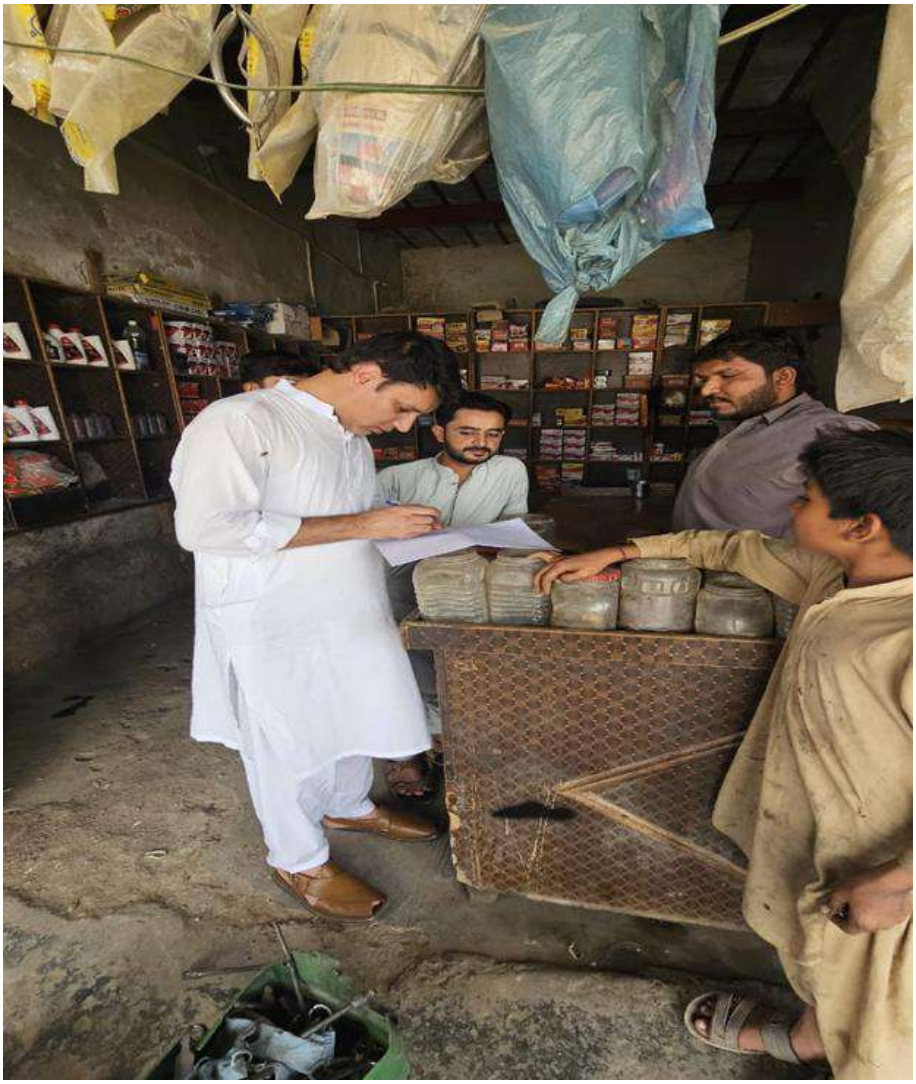


Figure: Consultation at Sohbatpur Bazar

Figure 1: Female consultation at Dirgi village

Figure 2: Female consultation at Dirgi village

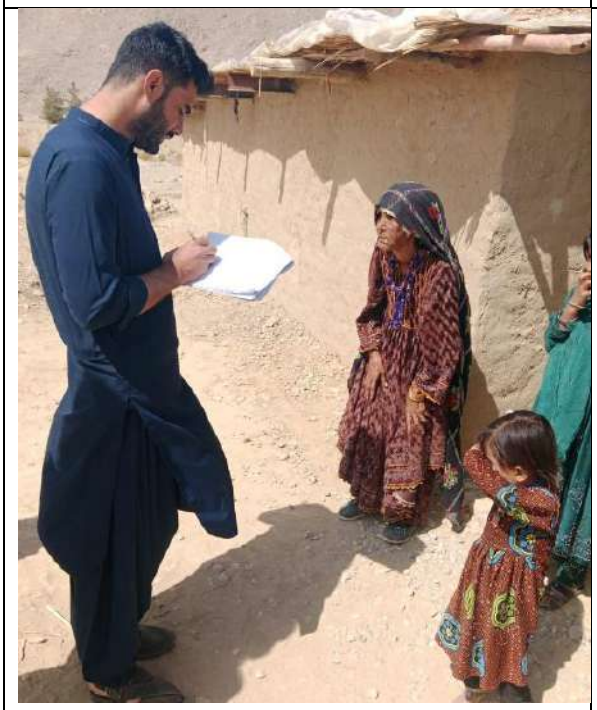


Figure 3: Female consultation at Bhand Sharif

Figure 4: Female consultation at Goth Mehboob Ali Khan

ANNEXURE – 4:
LIKELY E&S IMPACTS & MITIGATION MEASURES

Number of Subproject: Rehabilitation of Road – Dera Allah Yaar to Hairdin Drainage

Implementing Agency: Construction & Works Department, Government of Balochistan

Subproject Location: Start point: 28.376987, 68.350996, End point: 28.515624, 68.685187

Subproject Objective: Rehabilitation of existing road

Further Assessment Needs: Site-specific-Environmental & Social Management Plan (SS-ESMP) is required

I. Subproject Related Issues

Sr. No.	Issues	None	Minor/ Small	Moderate/ Medium	Significant/ Large	Mitigation Measures/Remarks
1.	Will the subproject affect land use zoning and planning or conflict with prevalent land use patterns?	√				In case of any conflict with prevalent land use patterns during design stage, must be reflected in the ESMP.
2.	Will the subproject involve significant land disturbance or site clearance?	√				The subproject is not expected to involve significant land disturbance or extensive site clearance. If required site preparation will be limited to the designated project area and will follow standard environmental management practices to minimize impact. If land disturbance is necessary, appropriate mitigation measures such as erosion control, vegetation preservation, and proper waste disposal may be implemented

Sr. No.	Issues	None	Minor/ Small	Moderate/ Medium	Significant/ Large	Mitigation Measures/Remarks
						in accordance with environmental regulations and best practices. This must be presented in detailed ESMP.
3.	Will the subproject land be subject to potential encroachment by urban or industrial use or located in an area intended for urban or industrial development?	√				Reference is made to the ToRs and the scope of subproject is rehabilitation of existing road, it is stated that land is not located in an area currently designated for urban or industrial development, nor is it expected to be subject to encroachment from such uses in the foreseeable future. Land use zoning and local development plans (If any) should be reviewed to ensure that the site is appropriately situated and aligned with long-term planning objectives. However, this should be confirmed with Construction and Works (C&W) department, Government of Balochistan (GoB), as being the client. This will help to avoid any conflict with urban expansion or industrial activities, thereby reducing the risk of future land-use pressure.
1.	Will the subproject require the setting up of ancillary facilities?			√		The subproject may require the establishment of limited ancillary facilities to support implementation and operation. For example, access roads, temporary storage areas and labour camp for accommodation. These facilities may be carefully planned to minimize E&S impacts and be located at 500m from population. Ancillary infrastructure should comply with relevant regulations and best practices, and any temporary setups may be fully dismantled and the site restored upon completion of the project.
2.	Will the subproject make significant impacts on demands/supply for utilities and services?		√			The subproject is not expected to place significant or unsustainable demands on local utilities and services. Preliminary assessments indicate that existing infrastructure like water supply, electricity, waste management and transportation networks can accommodate the subproject's requirements without adverse effects.

Sr. No.	Issues	None	Minor/ Small	Moderate/ Medium	Significant/ Large	Mitigation Measures/Remarks
						However, where additional capacity is needed during the project implementation, appropriate coordination with local service providers may be undertaken to ensure that all needs are met efficiently and without disruption to existing local populations. Measures may also be implemented to promote resource efficiency and reduce overall utility consumption. This should be reflected in detailed Site-Specific ESMP.
3.	Will the subproject require significant levels of accommodation or service amenities to support the workforce during construction (e.g., contractor will need more than 20 workers)?			√		The subproject is expected to require a moderate workforce during the construction phase, potentially exceeding 20 workers at peak periods. However, the need for significant levels of accommodation or service amenities may be carefully managed. However, local labour may be prioritized to reduce the need for temporary housing. A labour camp may be established at 500m from population in accordance with labour standards and health and safety regulations, ensuring adequate living conditions and access to essential services.
1.	Will the subproject require large amounts of raw materials or construction materials?			√		The subproject will require a standard volume of raw and construction materials appropriate for its scope and scale. However, the quantities may be substantial during peak construction but may not exceed typical requirements. Material procurement/transportation may be planned carefully to ensure timely availability while minimizing environmental impact. Where possible, materials may also be sourced locally to reduce transportation costs and support the local economy. All sourcing and usage will follow sustainable practices and relevant standards.
2.	Will the subproject generate large amounts of residual wastes, construction material			√		The subproject is expected to generate a manageable amount of construction waste and residual materials. All waste may be handled in accordance with established waste management practices and Waste Management Plan (WMP) as part of the Site-Specific ESMP. The WMP should include segregation, recycling, and proper disposal through

Sr. No.	Issues	None	Minor/ Small	Moderate/ Medium	Significant/ Large	Mitigation Measures/Remarks
	waste or cause soil erosion?					licensed facilities. Moreover, measures may also be taken to minimize waste generation through efficient material use and site management. To prevent soil erosion, appropriate mitigation strategies: (1. Temporary drainage systems, 2. Silt fences, 3. Phased excavation) may be implemented during construction. These measures may help protect soil stability and prevent sediment runoff, particularly during periods of heavy rainfall.
3.	Will the subproject result in potential soil or water contamination (e.g., from oil, grease and fuel from equipment yards)?		√			The subproject activities may pose a limited risk of soil or water contamination, primarily from the use and maintenance of construction equipment/machinery and labour camp. However, strict management measures may be implemented to prevent such contamination. These may also include proper storage and handling of hazardous materials, designated maintenance areas with spill containment systems, regular equipment inspections, and spill response plans. Moreover, the construction activities may also comply with environmental regulations and international best practices to ensure that potential impacts on soil and water resources are minimized and effectively controlled.
4.	Will the subproject lead to an increase in suspended sediments in streams affected by road cut erosion, decline in water quality and increased sedimentation downstream?		√			While the subproject may involve activities such as road construction or land clearing that have the potential to increase suspended sediments in nearby tributaries of Pat Feeder Canal, comprehensive mitigation measures may be put in place to minimize these impacts. Erosion control practices may be introduced in construction stage of the project. These are: ▪ Slope stabilization ▪ Proper drainage systems ▪ Silt fences ▪ Sediment basins ▪ Timely re-vegetation

Sr. No.	Issues	None	Minor/ Small	Moderate/ Medium	Significant/ Large	Mitigation Measures/Remarks
						Construction activities may be carefully planned and monitored to avoid deterioration of water quality and downstream sedimentation. The project should adhere strictly to World Bank and national guidelines/requirements and best management practices to protect aquatic ecosystems and ensure that any potential increase in sediment load is temporary, controlled, and reversible.
5.	Will the subproject involve the use of chemicals or solvents?	√				The subproject is not expected to involve significant or hazardous use of chemicals or solvents. However, if any such substances are required for equipment maintenance or dust control, they may be handled in strict compliance with environmental and safety regulations. Proper storage, usage, and disposal protocols may be followed to prevent any contamination environmental matrices (soil, water and air). Material Safety Data Sheets (MSDS) may be maintained on-site, and the Safety Engineer of Construction Contractor (CC) may be trained in safe handling procedures.
6.	Will the subproject lead to the destruction of vegetation and soil in the right-of-way, borrow pits, waste dumps, and equipment yards?		√			The subproject may require limited vegetation clearing and soil disturbance in few locations along Right of Way (RoW), borrow pits, waste disposal sites, and machinery/equipment yard. However, all such activities may be carefully planned and confined to the minimum area necessary for construction. Environmental management measures including topsoil preservation, controlled clearing, erosion control, and post-construction site restoration may be implemented to minimize long-term impacts.
7.	Will the subproject lead to the creation of stagnant water bodies in borrow pits, quarries, etc., encouraging for	√				The subproject is not expected to result in the long-term creation of stagnant water bodies. However, temporary water accumulation in borrow pits, quarries or low-lying areas may occur during construction. To prevent mosquito breeding and the spread of waterborne diseases, effective drainage and site management practices may be implemented.

Sr. No.	Issues	None	Minor/ Small	Moderate/ Medium	Significant/ Large	Mitigation Measures/Remarks
	mosquito breeding and other disease vectors?					These measures may include proper grading of borrow pits, timely backfilling or conversion to safe, planned land uses and ensuring that no standing water remains after construction. Where water retention is unavoidable, the subproject may coordinate with local health authorities to apply appropriate vector control measures to ensure community safety and minimize the risk of disease transmission.
D.						
1.	Will the subproject increase the levels of harmful air emissions?			√		The subproject may result in a temporary and localized increase in air emissions during the construction phase, primarily from the operation of machinery, vehicles and the handling of construction materials. However, these emissions are expected to remain within acceptable regulatory limits by strict implementation of best construction practices and considering the National Environmental Quality Standards (NEQs) for air emissions. A detailed environmental monitoring plan as part of ESMP may help in proper management of these components. The subproject is not expected to produce long-term or significant harmful air emissions, and construction activities may comply with NEQs and other applicable air quality standards to protect workers of the subproject and nearby population. Mitigation measures may also include regular maintenance of equipment/machinery to reduce exhaust emissions, dust control techniques such as water spraying on unpaved roads, and minimizing idling of vehicles.
2.	Will the subproject increase ambient noise levels?			√		The subproject may result in a temporary increase in ambient noise levels during the construction phase, primarily due to the use of heavy machinery/equipment and construction-related vehicular movement.

Sr. No.	Issues	None	Minor/ Small	Moderate/ Medium	Significant/ Large	Mitigation Measures/Remarks
						However, these noise impacts may be short-term and restricted to designated working hours to minimize disturbance to surrounding populations. The subproject should comply with NEQs during construction phase in particular to ensure that noise levels remain within permissible limits and do not pose a risk to human health and local environment. Furthermore, to mitigate noise impacts, project may implement several control measures: ▪ Use of well-maintained machinery/equipment with noise suppression systems ▪ Limiting high-noise activities to daytime hours ▪ Installing temporary noise barriers or buffers where necessary.
3.	Will the subproject involve the storage, handling or transport of hazardous substances?			√		The subproject may involve the limited storage, handling, or transport of hazardous substances such as fuel, lubricants or construction-related waste. These materials may be managed in strict compliance considering the safety guidelines of World Bank and other applicable standards. Appropriate safety measures may be implemented, including the use of secure, labelled storage facilities, spill containment system and trained personnel to handle hazardous materials. Transport of these materials may be made using certified containers and vehicles, with emergency response procedures in place. Regular inspections and monitoring may ensure safe handling throughout the project lifecycle. This may be reflected in environmental monitoring plan of ESMP.
E.						

Sr. No.	Issues	None	Minor/ Small	Moderate/ Medium	Significant/ Large	Mitigation Measures/Remarks
1.	Will the subproject involve the disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes)?	√				The subproject is not expected to significantly disturb or modify existing drainage channels or surface water bodies like the existing tributary canals coming from Pat Feeder Canal. However, if any interaction with these water bodies is required, such as for crossings, culverts or drainage improvements, it should be carefully designed to avoid adverse impacts in implementation. Measures like preservation of natural flow of water, maintaining ecological balance and prevention of erosion or sedimentation may be taken into consideration. This should also be reflected in hydrological assessment that is also part of the subproject feasibility assessment prior to implementation to ensure the protection of aquatic environment.
2.	Will the subproject lead to the destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development?	√				The subproject is not expected to cause significant destruction or damage to terrestrial or aquatic ecosystems, nor to impact endangered species directly or indirectly. At this stage, a thorough assessment has been undertaken, and no sensitive receptors have been observed in 100m Corridor of Impact (COI). Measures to be incorporated at design stage that should avoid ecologically sensitive zones, minimize habitat disturbance, and implement site-specific conservation actions. It is stated that the subproject may comply with biodiversity protection standards, and continuous monitoring may be carried out during implementation stage to ensure that ecosystems and species are not adversely affected by project activities.

Sr. No.	Issues	None	Minor/ Small	Moderate/ Medium	Significant/ Large	Mitigation Measures/Remarks
3.	Will the subproject lead to the disruption/destruction of wildlife through interruption of migratory routes, disturbance of wildlife habitats, and noise-related problems?	√				The subproject is not expected to cause significant disruption or destruction of wildlife, migratory routes or habitats. However, as part of the environmental and social due diligence process, measures may be provided in Site-Specific ESMP to ensure the safe paths for birds' migration. Mitigation measures may include: ▪ Maintaining wildlife corridors ▪ Scheduling construction activities to avoid sensitive periods (e.g., breeding or migration seasons) ▪ Implementing noise control strategies ▪ Restricting activities near known habitats.
F.						
1.	Will the subproject lead to long-term or semi-permanent destruction of soils in cleared areas not suited for agriculture?	√				Since the subproject is basically rehabilitation of existing road affected in flood 2022, it is not expected to result in long-term or semi-permanent destruction of soils in cleared areas, including those not suitable for agriculture. . Where soil clearing is necessary during implementation stage, proper land management and erosion control measures may be implemented. For example, phased clearing, topsoil preservation, and post-construction rehabilitation/restoration of site. Cleared areas may be stabilized through re-vegetation or other appropriate land restoration techniques to prevent soil degradation and ensure long-term environmental sustainability.
2.	Will the subproject lead to the interruption of subsoil and overland drainage patterns (in areas of cuts and fills)?			√		The subproject may involve earthworks such as cuts and fills that have the potential to alter local subsoil and overland drainage patterns. However, careful planning may be employed to minimize any such interruptions. The design of the subproject should go through all technical parameters and climate resilient factors to be incorporated that should maintain natural flow paths, incorporating features like culverts,

Sr. No.	Issues	None	Minor/ Small	Moderate/ Medium	Significant/ Large	Mitigation Measures/Remarks
						drainage channels, and retention basins where needed. These measures may also be reflected in SS-ESMP. The project may comply with the measures to be proposed in the SS-ESMP to ensure that drainage alterations do not negatively impact surrounding land or water bodies.
3.	Will the subproject lead to landslides, slips and other mass movements in road cuts?	√				The subproject has gone thorough geotechnical assessment to identify areas at risk of landslides, slips and other mass movements, particularly in road cut sections. Where such risks are identified, appropriate engineering solutions, like slope stabilization, retaining structures, drainage control, and revegetation may be implemented to mitigate the hazards. With these measures in place, the subproject aims to minimize the potential for mass movements and ensure the safety and stability of road infrastructure. Regular monitoring during and after construction may help detect and address any emerging slope stability issues promptly.
4.	Will the subproject lead to long-term or semi-permanent destruction of soils in cleared areas not suited for agriculture?	√				The subproject is not anticipated to cause long-term or semi-permanent destruction of soils in cleared areas, including those not suited for agriculture. Any necessary clearing may be minimized and carefully managed to reduce soil degradation. Where soil disturbance occurs, appropriate mitigation measures, such as soil stabilization, erosion control, and site rehabilitation may be implemented to restore soil function and prevent damage.
5.	Will the subproject lead to health hazards and interference of plant growth adjacent to roads by dust raised and blown by vehicles?			√		During the construction and initial operational phases, the subproject may cause temporary increases in dust levels due to vehicular movement and earthworks. This dust could potentially affect air quality and nearby vegetation. However, dust control measures such as regular water sprinkling on unpaved surfaces, limiting vehicular speeds up to 10 to 20 km/hr during

Sr. No.	Issues	None	Minor/ Small	Moderate/ Medium	Significant/ Large	Mitigation Measures/Remarks
						construction and covering exposed soil may be implemented to minimize dust generation. These measures may help reduce health risks to workers and local populations/communities and protect the growth of plants adjacent to roads. Over the longer term, once construction is completed and surfaces are stabilized or paved, dust-related impacts are expected to decline significantly, and dust emissions may remain within acceptable limits.
G.						
1.	Will the subproject have an impact on archaeological or historical sites, including historic urban areas?	√				The subproject has been visited, and thorough assessment is carried out to identify any archaeological or historical sites, including historic urban areas, within or near the project footprint.
2.	Will the subproject have an impact on religious monuments, structures and/or cemeteries?	√				The subproject has been gone by a thorough survey to identify any religious monuments, structures or cemeteries within or near the project area. No significant impact on religious structures were observed.
3.	Have Chance Finds procedures been prepared for use in the subproject?				√	The SS-ESMP may include Chance Finds procedures that should be strictly implemented during the subproject. These procedures may provide a clear protocol for the identification, protection, and management of any unexpected archaeological, cultural or historical materials discovered during construction activities. The procedures may include immediate work stoppage in the area of discovery, notification of relevant authorities and experts, and measures to safeguard the finds until proper assessment and documentation is conducted. All project personnel and contractors may be aware on these

Sr. No.	Issues	None	Minor/ Small	Moderate/ Medium	Significant/ Large	Mitigation Measures/Remarks
						procedures to ensure compliance and respectful handling of any chance finds.
H.						
1.	Will the subproject involve land expropriation or demolition of existing structures?					Since the subproject does not possess a new alignment, and it is the rehabilitation of existing road. If any demolition is required during implementation of subproject, the SS-ESMP may be revised with inclusion of fair compensation and appropriate resettlement measures for affected individuals or communities.
2.	Will the subproject lead to induced settlements by workers and others causing social and economic disruption?	√				The subproject does not anticipate significant induced settlements by workers that could lead to social or economic disruption. Workforce accommodation and facilities may be managed to avoid the establishment of informal settlements. However, the CC may take measures during implementation of subproject to monitor and manage any population influx, coordinating closely with local authorities and communities to mitigate potential social impacts. This approach may aim to ensure that any temporary workforce presence does not lead to long-term settlement pressures or strain on local resources.
3.	Will the subproject lead to environmental and social disturbance by construction camps?			√		It is assumed that construction camps can potentially cause environmental and social disturbances, such as waste generation, increased resource demand and community interactions. To minimize these impacts, construction camps may be carefully planned and managed by the CC during implementation stage. However, other measures like proper waste management, controlled water and energy use, provision of adequate sanitation facilities, and clear guidelines for workforce conduct to respect local communities may be incorporated in the SS-ESMP.

Sr. No.	Issues	None	Minor/ Small	Moderate/ Medium	Significant/ Large	Mitigation Measures/Remarks
						Moreover, the subproject may also engage with nearby communities to address concerns and ensure that construction activities do not negatively affect their quality of life, that may result mitigate environmental and social disturbances associated with construction/labour camps.

Sr. No	OHS issues	None	Minor/ Small	Moderate/ Medium	Significant / Large	Mitigation Measures/Remarks
	Will the subproject lead to the fatal/ non-fatal incident / injuries of the workers?			√		The subproject may prioritize the health and safety of workers and may be committed to minimizing the risk of both fatal and non-fatal incidents. Comprehensive occupational health and safety (OHS) measures may be implemented in accordance with national regulations and international best practices. Same may be reflected in a separate OHS plan as part of Contractor's ESMP. Measures like regular safety training, provision of personal protective equipment (PPE), strict enforcement of safety protocols, hazard identification and risk assessments, and continuous monitoring throughout the project may be incorporated in the OHS plan.
	Will the Subproject pose any threat / Risk to the safety of nearby community?			√		The subproject is designed and managed with the safety of nearby communities as a top priority. While construction activities can pose temporary risks such as increased traffic, noise, and dust. To minimize the impacts, comprehensive safety measures may be implemented in subproject execution. These measures include controlled site access, clear signage, traffic management plans, dust suppression techniques and regular communication with local populations/communities.

II. Site Related Issues

Sr. No	Issues	Yes	No	Don't Know	Mitigation Measures/Remarks
1	Does the subproject require land acquisition?		√		
2	Will the subproject negatively impact livelihoods?		√		
3	Is the sub project located on land with contested ownership?		√		
4	Is the sub project located in an area with security problems	√			The subproject site has been assessed for security conditions as part of the planning process. Currently, the area possesses significant security risks that may affect project implementation. However, security may be continuously monitored throughout the project duration to promptly address any emerging issues. A Security Management Plan (SMP) should be part of Site-Specific ESMP. SMP should contain components like coordination with local authorities and community stakeholders that may ensure a safe working environment for personnel and minimize risks to assets and operations.
6	Is the subproject located in an area with designated natural reserves?		√		
7	Is the subproject located in an area with unique natural features?		√		The subproject site has been carefully evaluated for the presence of unique natural features such as rare landscapes, distinctive geological formations, or ecologically significant habitats. Based on preliminary assessments, the area does not encompass any highly sensitive or unique natural features that will be adversely impacted by the subproject. Similarly, environmental considerations may remain a priority throughout project planning and implementation. Any identified natural features may be protected through appropriate design adjustments and mitigation measures, ensuring the conservation of local biodiversity and natural heritage.

8	Is the subproject located in an area with endangered or conservation-worthy ecosystems, fauna or flora?		√		The subproject area has been assessed for the presence of endangered or conservation-worthy ecosystems, as well as vulnerable fauna and flora. Initial surveys indicate that the site does not overlap with any critical habitats or protected areas of significant conservation value. However, if any sensitive species or ecosystems be identified during implementation of the subproject, appropriate mitigation measures may be taken to avoid or minimize impacts. Hence CC may be responsible to ensure the protection of biodiversity and natural resources.
9	Is the subproject located in an area falling within 500 meters of national forests, protected areas, wilderness areas, wetlands, biodiversity, critical habitats, or sites of historical or cultural importance?		√		
10	Is the subproject located in an area which will create a barrier for the movement of conservation-worthy wildlife or livestock?		√		
11	Is the subproject located close to groundwater sources, surface water bodies, water courses or wetlands?	√			The subproject site is located in proximity to Pat Feeder Canal coming from Guddu Barrage. This canal is a source of irrigation for district Jafarabad, Suhbatpur, Naseer Abad etc. Although Pat Feeder Canal is more than 10 kilometres away from the subproject, however, the tributaries are passing by the subproject. Recognizing the ecological and social importance of these water channels, the project design may include measures to prevent contamination. Careful planning may ensure that construction activities do not adversely affect groundwater recharge areas and the closer surface water bodies. Appropriate safeguard, like buffer zones, erosion control, and wastewater management may be implemented to minimize potential impacts.
12	Is the subproject located in an area with designated cultural properties such as archaeological, historical and/or religious sites?		√		

13	Is the subproject in an area with religious monuments, structures and/or cemeteries?		√		
14	Is the project located in an area from where people have been displaced?		√		
15	Is the project located in an area where IDPs are temporarily settled?		√		
16	Is the project in a politically sensitive area?		√		
17	Is the subproject in a polluted or contaminated area?		√		
18	Is the subproject located in an area of high visual and landscape quality?		√		The subproject area has been evaluated for its visual and landscape qualities. Considering the site features like natural and scenic elements, it is not situated within a formally designated area of high visual or landscape quality, such as protected scenic zones or heritage landscapes. However, the project design may also consider aesthetic impacts, aiming to minimize visual disturbance through sensitive planning, landscaping, and restoration efforts. These measures may help maintain the character and appeal of the surrounding environment for local communities and visitors. The same may be reflected in the Site-Specific ESMP of the subproject.
19	Is the subproject located in an area susceptible to landslides or erosion?		√		
20	Is the subproject located in a densely populated area?		√		The subproject is located in a sparsely populated area of District Jafarabad and Suhbatpur. The subproject may carefully manage construction activities to minimize disruption to local residents, including controlling noise, dust, and traffic impacts. Stakeholder engagement and communication may be prioritized to address community concerns and ensure that the project benefits are aligned with local needs. Safety and access measures may also be implemented to protect both the community and workers during project execution. Same measure may be reflected in Site-Specific ESMP.
22	Is the subproject located on prime agricultural land?		√		The subproject is not expected to be located on or directly impact prime agricultural land, since it is a rehabilitation of existing road network.

23	Is the subproject located in an area of tourist importance?		√		
24	Is the subproject located near a waste dump?		√		
26	Is the subproject located far (1-2 kms) from accessible roads?		√		
27	Is the subproject located in an area with a wastewater network?		√		
28	Is the subproject located in the urban plan of the city?		√		

ANNEXURE – 5:
TRAFFIC MANAGEMENT PLAN

1 Traffic Management

Since the time schedule of Subproject is 24 months, therefore, vehicular movement and heavy machinery is expected on site for transpiration of material and other works, hereby interrupting the local traffic situation. Thus, it is important to manage the traffic for smooth execution of Subproject and avoid the nuisance to residents in the form of dust generation, congestion and increase in noise level during construction activities. An effective Traffic Management Plan (TMP) is prepared to define the requirements that should be implemented to mitigate potential negative impacts to the environment, workers and surrounding community resulting from construction activities.

2 Plan of Action

The following actions should be taken by the CC during implementation stage of the Subproject. However, not limited to the below, CC will prepare and submit C-ESMP to the CSC, reflecting the site-specific traffic issues and their management. The TMP will be classed as living document and therefore be subjected to updates as required during the construction activities.

CC before commencement of construction activities will prepare a comprehensive site-specific TMP in coordination with local traffic police department, PIU, emergency services and local administrative department. The PIU and CSC will review and approve TMP of CC as part of C-ESMP. TMP should include following mitigation measures during its preparation:

- Undertake a road conditions assessment prior to and following the peak construction hours to assess any damage to road infrastructure.
- Repair damage as appropriate or enter into a voluntary agreement with the relevant roads authority to reimburse the cost of any repairs required to the public road network because of the Subproject.
- Concrete mixing plant should be placed at active construction site that ultimately limits extra traffic movements associated with concrete delivery.
- Schedule the movements of construction workers, deliveries and road moments to avoid the rush hours of the day.
- Run a safety campaign to improve the people's knowledge of the traffic hazard on their roads, public information and other activities to address the issues.
- Maintain the route used for material transportation and restrict the speed level up to 10 to 20 km on along active construction sites of Subproject.

3 Traffic Management Signage

Traffic management signage should be placed at appropriate places of the Subproject. Table below presents the list of details to be placed during the implementation stage. A list and signage of traffic management to be followed for traffic management during the construction activities are presented under Table 1 and Figure 1 below.

Table 1: Signage for traffic management

Sr. No.	Type of signage	Purpose of installing
1	**Warning signs**	
	Construction ahead	This will warn that road maintenance or construction is in progress
	Flagger ahead	The flagger will warn drivers that flaggers are controlling traffic
	Detour ahead	This sign will direct traffic to an alternate route
	Lan closed ahead	This will notify drivers of lane closures
	Reduced speed limit	This sign will indicate a temporary lower speed limit within the work zone
	Uneven surface/ bump/dip	This sign will warn of rough or uneven pavement
	Men at work	The sign will indicate workers are present near the roadway
	Loose gravel	This sign will alert drivers to lose surface materials
2	**Guide and informational signs**	
	Lane merge signs	This will show where lanes merge or shift
	End road work	Indicates the end of the construction zone
	Pedestrian detour	Guides pedestrians safely around the work site
	Lane merge signs	Show where lanes merge or shift
	Work zone speed limit ends	Indicates return to normal speed limits
3	**Regulatory signs**	
	Speed limit signs	Specify the legal speed limit in the work zone
	No entry/Do not enter	Restricts unauthorized access
	Stop	Controls RoW at intersections or flagger stations
	No parking	Restricts parking near the construction area
	One way	Directs traffic flow
4	**Temporary traffic control devices**	
	Barriers & barricades	Physically block off areas
	Flaggers with signs	Manually control traffic flow when necessary
	Cones & drums	Mark lanes and boundaries
	Arrow boards	Direct traffic to merge or shift lanes

4 Public Access Routes

The use of public road for site access may be restricted in terms of vehicle size, width and type of load, time limits, pedestrian conflicts, parking areas etc. However, CC should have consultation with the local police or local authority to address these issues and to effectively manage them before mobilizing to the site for execution, which should also be reflected in the C-ESMP of the CC.

5 Rules for Subproject Site

The CC should set out certain rules for site and traffic management to maintain traffic flow during working activities. A list of the rules is as under:

- Access to and from the site must be only via the specified entrance.
- On leaving the site, vehicles must be directed to follow the directions given.
- Drivers must adhere to the site speed limits.
- All material deliveries to site must keep allocated time limits.
- No material or rubbish should be left in the loading-unloading area.
- Develop a map for alternate routes showing material delivery services.
- Assign designated personnel on site to receive deliveries and to direct the vehicles.
- Monitor vehicle movement to reduce the likelihood of queuing or causing congestion in and around the area.

- Project vehicles should have a unanimous badge or logo on windscreen displaying that they belong to the Subproject.

6 Obligation of CC

A site-specific TMP of the CC should be part of C-ESMP. The CC will be bound to prepare and submit to CSC for review and improvement and goes on with the approval of C&W Balochistan and World Bank before mobilization to the site for commencement of Subproject.

Figure 1: Traffic management signage

ANNEXURE – 6:
OCCUPATIONAL HEALTH & SAFETY PLAN

Occupational Health and Safety cover all personnel working under the Subproject and will be in line with the World Bank/IFC EHS guidelines on health and safety. The Occupational Health and Safety program will aim to ensure that the workplace is safe and healthy by: addressing the hazards and risks at the workplace; outlining the procedures and responsibilities for preventing, eliminating and minimizing the effects of those hazards and risks; identifying the emergency management plans for the workplace or workplaces; and, specifying how consultation, training and information are to be provided to employees at various workplaces. Some of the risks/hazards associated with workplaces are due to working close to or at sites associated with the various construction activities.

The following sections will be implemented during the construction phase to address and ensure workers' health and safety.

1 Screening and regular unannounced checking of workers

As per the procedure for hiring workers, all contractors and labour agencies are required to make all prospective workers undergo medical tests to screen for diseases and sicknesses, prior to selection and employment of any worker. The contractor is also responsible for ensuring that no worker who has a criminal record is employed at the project site. It will be ensured that all workers undergo medical tests to screen diseases at source and at sites in consultation with the designated Health Officer.

In addition to this, the PIU will also undertake sudden, unannounced checks on workers to look for diseases such as HIV, STDs, and hepatitis and take necessary steps as mandated by the Contractual agreement between the Contractor and the Worker(s).

2 Minimizing hazards and risks at the workplace

To ensure safety at all work sites, the following will be carried out:

- Installation of signboards and symbols in risky and hazardous areas, to inform workers to be careful.
- Construction of barricades around construction sites and deep excavated pits, to cordon off and deter entry of unauthorized personnel and workers into these areas.
- Providing a safe storage site/area for large equipment such as power tools and chains, to prevent misuse and loss.
- Proper Housekeeping: Ensuring that materials are all stacked, racked, blocked, interlocked, or otherwise secured to prevent sliding, falling, or collapse. Brick stacks will not be more than 7 feet in height and for concrete blocks they will not be more than 6 feet high.
- Removing all scrap timber, waste material and rubbish from the immediate work area as the work progresses.
- Where scaffolds are required, ensuring that each scaffold or its components shall be capable of supporting its own weight and at least 4 times the maximum intended load applied or transmitted to it. The platform/scaffold plank shall be at least 15 inches wide and 1.5 inches thick. The rope should be capable of supporting at least 6 times the maximum intended load applied or transmitted to that rope. Pole scaffolds over 60 feet in height shall be designed by a registered professional engineer and shall be constructed and loaded in accordance with that design. Where scaffolds are not provided, safety belts/safety nets shall be provided.
- Ensure that all ramps or walkways are at least 6 feet wide, having slip resistance threads and not inclined at more than a slope of 1 vertical and 3 horizontals.

- Stacking away all excavated earth at least 2 feet from the pit to avoid material such as loose rocks from falling back into the excavated area and injuring those working inside excavated sites.
- Constructing support systems, such as bracing to adjoining structures that may be endangered by excavation works nearby.
- Install fire extinguishers and/or other fire-fighting equipment at every work site to prepare for any accidental fire hazards.

3 Provision of Personal Protective Equipment

- Risks to the health and safety of workers can be prevented by provision of Personal Protective Equipment (PPEs) to all workers. This will be included in the construction cost for each Contractor. Depending on the nature of work and the risks involved, contractors must provide without any cost to the workers, the following protective equipment:
- High visibility clothing for all personnel during road works must be mandatory.
- Helmet shall be provided to all workers, or visitors visiting the site, for protection of the head against impact or penetration of falling or flying objects.
- Safety belt shall be provided to workers working at heights (more than 20 ft.) such as roofing, painting, and plastering.
- Safety boots shall be provided to all workers for protection of feet from impact or penetration of falling objects on feet.
- Ear protection devices shall be provided to all workers and will be used during the occurrence of extensive noise.
- Eye and face protection equipment shall be provided to all welders to protect against sparks.
- Respiratory protection devices shall be provided to all workers during occurrence of release of particulate matter, or vehicular emissions.
- Safety nets shall be provided when workplaces are more than 25 feet (7.5 m) above the ground or other surfaces where the use of ladders, scaffolds, catch platforms, temporary floors or safety belts is impractical.
- The specific PPE requirements for each type of work are summarized below.

PPE Requirement List

Type of Work	PPE
Handling work safety	Helmet, leather safety shoes, work gloves.
Welding and cutting work	Eye protectors, shield and helmet, protective gloves.
Grinding Work	Respirator, earplugs, eye protectors.
Work involving handling of chemical substances	Respirator, gas mask, chemical-proof gloves. Chemical proof clothing, air-lined mask, eye protectors.
Wood working	Hard hat, eye protectors, hearing protection, safety footwear, leather gloves and respirator.
Concrete and masonry work	Hard hat, eye protectors, hearing protection, safety footwear, leather gloves and respirator.
Excavation, heavy equipment, motor graders, and bulldozer operation	Hard hat, safety boots, gloves, hearing protection.

Proposed Personal Protective Equipment's

4 Procedures to Deal with Emergencies such as Accidents, Sudden Illness of Workers

First aid kits will be always made available throughout the entire construction period by the respective contractors. This is very important, because most work sites will be at some distance from the nearest hospital. In addition to the first aid kits, the following measures should be in place:

- **Provision of dispensaries by the individual contractor**

A vehicle shall be on standby from the Project Office so that emergency transportation can be arranged to take severely injured/sick workers to the nearest hospital for immediate medical attention.
A designated Health Officer/worker for the Project will be identified as a focal person to attend to all health and safety related issues. This employee's contact number will be posted at all work sites for speedy delivery of emergency services. The focal person shall be well versed with the medical system and facilities available at the hospital.

Communication arrangements, such a provision of radios or mobile communication for all work sites, for efficient handling of emergencies, will be made.

- **Record Maintenance and Remedial action**

The PIU will maintain a record of all accidents and injuries that occur at the work site. This work will be delegated by the contractor to the site supervisor and regularly reviewed every quarter by project management. Reports prepared by the contractor shall include information on the place, date and time of the incident, name of persons involved, cause of incident, witnesses present and their statements. Based on such reports, the management can jointly identify any unsafe conditions, acts or procedures and recommend for the contractor to undertake certain mitigate actions to change any unsafe or harmful conditions.

- **Compensation for Injuries and Death**

Any casualty or injury resulting from occupational activities should be compensated as per the local labour laws. Where compensation is sought by the injured party, proper procedures for documentation of the case will be followed, including a detailed report on the accident, written reports from witnesses, report of the examining

doctor and his/her recommendation for treatment. Each individual contractor will be responsible for ensuring compensation for the respective workers.

- **Awareness Programs**

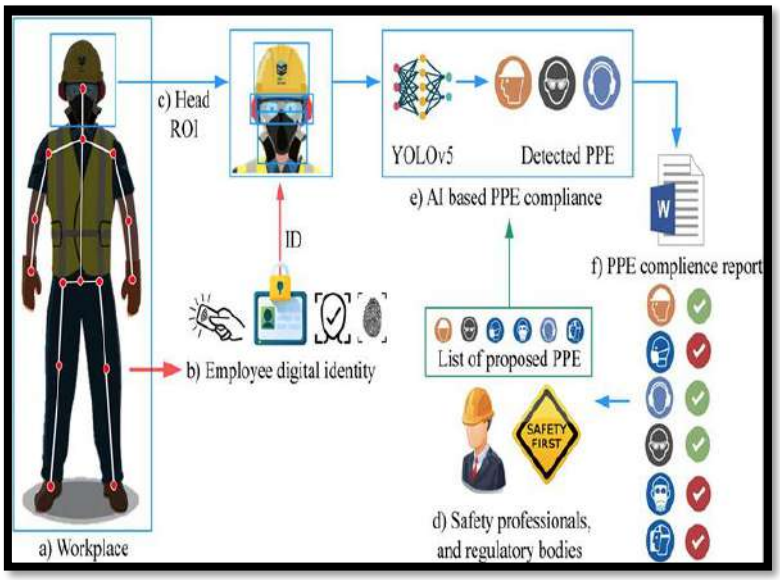
The PIU will undertake awareness programs through posters, talks, and meetings with the contractors to undertake the following activities:

Dissemination sessions will clarify the rights and responsibilities of the workers regarding interactions with local people (including communicable disease risks, such as HIV/AIDS), work site health and safety, waste management (waste separation, recycling, and composting), and the illegality of poaching.
Make workers aware of procedures to be followed in case of emergencies such as informing the focal health person who in turn will arrange the necessary emergency transportation or treatment.

5 Nomination of a Health and Safety Focal Person

Within each site (especially if different sites are being implemented by different contractors), a Health and Safety Focal Person will be appointed. The Terms of Reference for the focal person will mainly be as follows:

- Function as the focal person/representative for all health and safety matters at the workplace.
- Responsible for maintaining records of all accidents and all health and safety issues at each site, the number of accidents and its cause, actions taken and remedial measures undertaken in case of safety issues.
- Be the link between the contractor and all workers and submit grievances of the workers to the contractor and instructions/directives on proper health care and safety from the contractors back to the workers.
- Ensure that all workers are adequately informed on the requirement to use Personal Protective Equipment and its correct use.
- Also responsible for the first aid kit and making sure that the basic immediate medicines are readily available.



PPEs Management Plan

6 General Guidelines for Health and Safety

The following points are vital to a successful health and safety program:

- No person shall be instructed or required to work under conditions that are dangerous to their health.
- Each employee is responsible to carry out works in a safe manner, including the use of Personal Protective Equipment (PPE) when required and general personal safe work practices. Each employee shall report unsafe conducts of work, preventing avoidable accidents to site personnel. Reporting shall be made to the designated, safety representative (EHS), PM on site.
- Worksite shall have person(s) available on site that can translate information in relevant languages when required.
- Inductions shall take place for everyone employed at the project site, together with visitors. The induction will identify the known site safety and health risks as well as mitigating measures.

7 Ensuring Site Safety

- The most valued resources are employees, the client and the communities. It must provide a safe and healthful environment for employees and customers, protecting the public, and preserving contractors' properties and assets.
- The Safety Plan will assist management and employees in controlling hazards and minimizing employee and customer injuries, damage to resident's property and damage to contractors, clients and community's properties.
- All employees of the project and sub-contractors will follow this program. Noncompliance to this program by employees or sub-contractors will result in one of the following:

  - Verbal Warning: If minor violation (i.e. violation resulting in non-injury/damage).
  - Written Warning: if second minor violation or minor injury/damage caused.
  - Immediate dismissal: If third minor violation, or second minor injury/damage caused, or first Major injury/damage caused.

8 Engineering Personnel

- All Engineers and site personnel shall undertake training based upon this Safety Plan prior to startup of the project. Contractor shall employ an Engineer to undertake the task of monitoring safety (the post will be officially called "Health & Safety Engineer – hereinafter HSE").
- The HSE will report to the Project Manager. The role will include visiting all sites on a regular basis, conducting safety training, and ensuring all sites are functioning in accordance with the safety manual.
- Will conduct special trainings for leading site personnel and as well for the subcontractor's foreman, supervisor, engineers etc.
- Will brief all its workers and subcontractors entering the worksite, if necessary, on daily base. All names shall be recorded on an induction form and signed by the employees. It shall be highlighted that everyone has a duty of care with regards to safety.

9 Site Safety Meetings

9.1 Inductions

- Employees shall be provided a health and safety Induction by the assigned HSE prior to start of work. Inductions shall include personal requirements and responsibilities for accident prevention and general policies outlined in this document.

- Contractor (Safety Engineer) and Construction Supervision Engineer responsibilities for reporting all accidents.
- Information relating to medical facilities/personnel and emergency responses.
- Procedures for reporting and correcting unsafe conditions or work practices.
- Relevant job hazards (Activity Hazard Analysis (AHA) may be presented).
- Upon completion of Inductions, each worker shall be assigned a specific number. This number will be displayed on the worker's hard hat. The number will be filed on a master register with the name of the employee. The employee will be required to note his/her number on a daily log sheet (upon arrival and leaving), to show the Site Engineer or any other contractors' representative in charge who is on site on each day. This has the added benefit of carrying out a number check should the site be evacuated.

9.2 Weekly Safety Meetings

- On a weekly basis the UMDS consultant staff shall meet at the Site/Sub Office to discuss safety matters with the Contractors Quality and Safety representative. The meeting will follow an officially documented site safety inspection between the two representatives.
- The form "weekly safety assessment" must be filled out by the contractors H&S rep. and submitted to the Construction Supervision Engineer.

Note: Meetings between contractor supervisors/foremen and workers will be encouraged to meet at least on a weekly basis, and if required daily, in the form of a "toolbox talk". Notes from this meeting may be presented in the weekly safety meetings with the CSC.

9.3 Monthly Safety Updates

- All workers, site supervisory staff and other relevant representatives shall meet every six months to discuss safety issues. These meetings will provide an opportunity to update the safety requirements, resolve safety concerns and improve general site safety conditions.

10 Communicable Disease Management

Communicable disease management with special relevance to the Subproject, where an influx of workers can pose public health risks to local communities. The communicable disease can be COVID-19, Hepatitis A & E, Malaria, Dengue, Tuberculosis (TB), Diarrheal diseases and respiratory infections.

Table below gives a brief approach to the disease management and the management hierarchy for the control and effective management.

Table: Communicable disease management

Items	Action to be taken	Core responsibility
Risk Assessment	Assess disease risks due to worker influx and living conditions	CC (Doctor/HSE officer)
Screening of worker's health	Pre-employment screening, periodic health checks, vaccination (if applicable)	CC (Either through employing a doctor at site or availing the services of a local hospital)
Sanitation & hygiene of camp site	Ensure clean water, waste disposal, vector control and food safety	CC (Camp manager)
Community awareness	Health education for locals through materials, sessions and local leaders	ESS team of CC, CSC & PIU or availing service of a local NGO
Surveillance of disease	Daily symptom monitoring, health logbooks and early detection protocols	CC (Camp manager)

Isolation & treatment protocols	Procedures for isolation of suspected cases, medical referral	CC (Doctor/HSE officer)
Reporting & coordination	Immediate reporting to health authorities and project management	CC (Doctor/HSE officer)
Training & capacity building	Training workers, supervisors and community representation on disease prevention	HSE officer or availing service of a local NGO

ANNEXURE – 7:
LABOUR MANAGEMENT PLAN

1. INTRODUCTION

1.1. Preamble

The Labour Working Conditions and Management Plan (hereinafter referred in short as Labour Management Plan (LMP) as an integral part of the project's environmental and social impact assessment (ESMP) and project design and implementation. This Plan describes the requirements for the Subproject (Dera Allah Yaar to Hairdin Drainage) about labour and working conditions applicable during the implementation phase of the Project. It aims to ensure the management and control of activities that may pose labour-related risks. This plan sets out potential impacts and consequences and describes how they will be mitigated. Construction and Works Department (C&W) of Balochistan as an Implementing Agency (IA) will use commercially reasonable efforts to require contractors, or other intermediaries procuring labour, to apply comparable standards.

The objectives of this LMP are to:

Promote fair and equitable labour practices for the fair treatment, non-discrimination and equal opportunity of male and female workers.
Establish, manage and promote a healthy management -worker relationship.
Promote healthy, safe, secure working environment that does not impact negatively on the communities in the project area.
Regulate the flow of migrant workers' influx into the project area to ensure that the needs of the local labour market are met.
Manage the impact of migrant workers on the domestic labour market, including wages and employment opportunities of local workers.
Protect the rights and welfare of migrant workers, including providing access to fair working conditions and ensuring that they are not exploited by employers.

The purpose of this LMP is to outline the approach of Subproject and to set out the terms and conditions for employment or engagement of workers on the project, specifies the requirements and standards to be met and the policies and procedures to be followed, assesses risks and proposes the implementation of compliance measures and promotes fair treatment, non-discrimination and equal opportunity of project workers. Various laws, policies, systems, standards and international good practice codes are applicable to the implementation of the plan.

2. LEGAL AND OTHER REQUIREMENTS

All applicable national and provincial laws and regulations will apply, especially those that concern employees' and workers' wages, benefits, living conditions, occupational health and safety. In some situations, The C&W department of Balochistan may apply pursuant to these laws for exemptions to align working conditions with operational contingencies and global best practice and WB. The Constitution of Pakistan contains a range of provisions with regards to labour rights found in Part II: Fundamental Rights and Principles of Policy.

Article 11 of the Constitution prohibits all forms of slavery, forced labour and child labour; Article 17 provides for a fundamental right to exercise the freedom of association and the right to form unions.
Article 18 proscribes the right of its citizens to enter upon any lawful profession or occupation and to conduct any lawful trade or business.

Article 25 lays down the right to equality before the law and prohibition of discrimination on the grounds of sex alone.
Article 37(e) makes provision for securing just and humane conditions of work, ensuring that children and women are not employed in vocations unsuited to their age or sex, and for maternity benefits for women in employment.

Legislation has its basis from the law of contract (the law of "master and servant") and industrial relations regulations are considered departure from common law. Since creation of Pakistan, five labour policies have been announced by the governments in the year 1955, 1959, 1969, 1972 and 2002. All these polices basically laid down the parameters for the growth of trade unionism; the protection of workers' rights; the settlement of industrial disputes and Redressal of worker grievances. Approximately 20 laws were consolidated into following 6 draft laws in 2000.

Industrial Relations Ordinance
Conditions of Employment Ordinance
Payment of Wages Ordinance
Occupational Safety & Health Ordinance
Labour Welfare & Social Security Ordinance
Human Resources Development & Control of Employment Ordinance

In 2010, subjects of labour and employment devolved to Provinces under the 18th Amendment to the Constitution of Pakistan, because of which the Federal labour laws made applicable on Provinces under Article 270AA (6) of the Constitution of Pakistan until replaced, amended or repealed by Provinces. Labour Policy 2010 announced on 1 May was noted by analysts as grossly lacking on all grounds. It fell short of a policy document, lacking in research and insights on ground realities and ignorant of the government's own past and current initiatives. Constitutional experts raised the question of its validity after the abolition of the concurrent list under the 18th Amendment which rendered labour a provincial subject.

The labour Policy 2010 aimed to merge and downsize labour laws into five core laws. The writers of the policy missed that in 2001 the Labour and Manpower Division shared six drafts of consolidated proposed laws with the stakeholders. The drafts included the Industrial Relations Ordinance, the Wages Ordinance, Conditions of Employment Ordinance, Occupational Health and Safety Ordinance, the Human Resource Development Ordinance, and the Labour Welfare and Social Security Ordinance.

2.1. National Overview of Labour Laws and Guidelines

The overview of national laws on labour and workforce is outlined below:

The West Pakistan Shops and Establishments Ordinance 1969: The West Pakistan Shops and Establishments Ordinance 1969 (the "1969 Ordinance") regulates the work hours and other conditions of work and employment of persons employed in shops and commercial, industrial and other establishments in Pakistan. Applicable to employees.
The West Pakistan Industrial and Commercial Employment (Standing Orders) Ordinance 1968: The West Pakistan Industrial and Commercial Employment (Standing Orders) Ordinance 1968 (the "Standing Orders") applies to all industrial and commercial establishments in Pakistan wherein twenty or more workmen are employed, directly or through any other person, whether on behalf of himself or another person. This is specifically applicable on workmen.
The West Pakistan Maternity Benefit Ordinance 1958: The West Pakistan Maternity Benefit Ordinance 1958 (the "1958 Ordinance") regulates the employment of women in establishments in Pakistan. It does not specify if woman include the white-collar working woman.
The Employers' Liability Act, 1938: The Employers' Liability Act, 1938 (the "1938 Act") provides that certain defenses shall not be raised in suits for damages in Pakistan in respect of injuries sustained by workmen.

The Employees Old-Age Benefits Act 1976: The Employees Old- Age Benefits Act 1976 (the "EOAB") provides for certain old age benefits for the persons who are employed in industrial, commercial and other organizations. Applicable on workman.
The Disabled Persons (Employment and Rehabilitation) Ordinance 1981: The Disabled Persons (Employment and Rehabilitation) Ordinance 1981 (the "1981 Ordinance") provides for the employment, rehabilitation and welfare of disabled persons and for matter connected therewith. Applicable on employees.
The Employment of Children Act 1991: The Employment of Children Act 1991 (the "1991 Act") prohibits the employment of children in certain occupations and to regulate the conditions of work of children.
The Essential Personnel (Registration) Ordinance 1948: The Essential Personnel (Registration) Ordinance 1948 (the "Registration Ordinance") provides for the compulsory registration of essential personnel (as defined herein below) at Employment Exchanges (as defined herein below) in Pakistan.
The Companies Profits (Workers Participation) Act, 1968: The Companies Profits (Workers Participation) Act, 1968 (the "CPA") provides for the participation of workers in the profits of companies.
The Workers' Welfare Fund Ordinance, 1971: The Workers' Welfare Fund Ordinance, 1971 (the "WWF") provides for the establishment of a Workers' Welfare Fund providing residential accommodation and other facilities for workers and for matters connected therewith or incidental thereto.
The Workmen's Compensation Act 1923: The Workmen's Compensation Act 1923 (the "WCA") provides for the payment by certain classes of employers of compensation for injury caused to a workman by accident arising out of or in the course of his employment.
The Provincial Employees' Social Security Ordinance 1965: The Provincial Employees' Social Security Ordinance 1965 (the "PESSO") introduces a scheme of social security for providing benefits to certain employees or their dependents in the event of sickness, maternity, employment injury or death and for matters ancillary thereto.
The Employee Cost of Living (Relief) Act 1973: The Employee Cost of Living (Relief) Act 1973 (the "1973 Act") provides for the payment of a cost-of-living allowance to employees and applies to all "undertakings" in Pakistan.
The Workers' Children (Education) Ordinance 1972: The Workers' Children (Education) Ordinance 1972 (the "WCO") provides for the education of workers' children and matters ancillary thereto.

2.1.1 Special Provisions on Occupational Health and Safety

Special provisions related to OHS and working conditions have been stipulated in the National Labour Act and Labour Rules. The legal obligation applies to LIMP are listed below:

Provision to demonstrate OHS policy at workplace.
Responsibility of employers towards workers such as information, facility, personal protective equipment and training on all kinds of OHS related training and responsibility of workers for work and use of safety gears.
Provision regarding the protection of non-labours such as visitors and others.
Appointment of person responsible at the workplace for OHS implementation.
Obligation of manufacturers, importers and suppliers to ensure OHS for their goods and services.
Responsibility of labourers for work and use of safety gears.
Formation of safety and health committee at worksite.
Provision for immediate shutdown of work and machinery in case of severe OHS concern.
Special provision for OHS for eye protection, protection against harmful chemicals, operation of pressurized machine/vessel, machine guarding, handling/lifting of load, fire protection, provision against fatigue.
Information to respective Labour Office against accidents, fatality and disease happened due to work.
Provision for treatment and prevention of communicable diseases.
Provision for easy and harmless work for special conditions of labour such as pregnancy.

Specifies requirements for workplace in terms of health and safety such as (a) proper cleanliness, (b) passage of fresh air, proper light and temperature, (c) solid waste management, (d) noise control measures, (e) 15 cubic meter space to Workers to the extent possible as per the nature of work, (f) healthy drinking water, (g) bathroom or

modern toilet, (h) tobacco free zone, (g) mandatory medical check-up for the entities undertaking health hazardous activities, (i) provide appropriate time for the lunch to the Workers, (j) child care center for children under three years.
Provision of onsite first aid and primary health care.
Provision of accident investigation, inventory of work-related diseases and compensation
There are two components of Community Health and Safety (CHS). One is the physical safety of project communities who are exposed to the project activities during construction and operation, including risks of accidents and risks of violence due to increase in crimes and cultural conflict between locals and migrant population.

The other pertains to the exposure and/or increased risks of diseases by the community due to influx of people during construction and operation and due to the changes in the project area, including pollution and ecological change. The physical safety aspects are partly addressed by the OHS provisions of Labour Act. Other laws have specific provisions that address part of ESHS Guidelines and OH&S management plans developed by contractors may be subject to review and due diligence by the World Bank.

2.1.2 Health and Safety Offences

The Labour laws of Pakistan provide more stringent sanctions for the violation of the provisions of provincial law. The Sanctions include fine, imprisonment and both. The authority to impose sanctions also depends on the nature of the violation. There are three institutions, i.e. the labour office, labour department and labour court.

2.2. International Labour Policies and Legislation

1	International Finance Corporation Performance Standards & Guidance Notes	IFC PS2: Labour and Working Conditions (2012) IFC Guidance Note 2: Labour and Working Condition (2012) IFC Measures & Improve Your Labour Standards Performance Handbook (2010).
2	International Labour Organization (ILO)	The Conventions that have been ratified by Pakistan and have been considered in developing this LMP include: Convention 029 (1930) - Forced or Compulsory Labour. Convention 098 (1949) - the Application of the Principles of the Right to Organize and to Bargain Collectively. Convention 100 (1951) - Equal Remuneration for Men and Women Workers for Work of Equal Value. Convention 111 (1958) - Discrimination in Respect of Employment and Occupation. Convention 138 (1973) - Minimum Age for Admission to Employment; and Convention 182 (1999) - The Prohibition and Immediate Action for the Elimination of the Worst Forms of Child Labour.
3	Other International Standards	Japan International Cooperation Agency's Guidelines for Environmental and Social Considerations. European Bank for Reconstruction and Development (EBRD) Performance Requirement 2 - Labour and Working Conditions (2014); and EBRD Performance Requirement 4 – Health and Safety (2014).

2.3. Provincial Overview of Labour Laws

1	The Balochistan Occupational Safety and	The purpose of the provision is to ensure occupational safety and health conditions in all workplaces, protecting individuals from the risk of work-

	Health Act, 2022	related injuries and promoting a safe, healthy, and suitable working environment that considers the physical, physiological, and psychological needs of all employees. The law deals with health and safety provisions at workplace and determines duties of employers and workers for promotion of health and safety culture.
	The Balochistan Shops and Establishment (Amendment) Act, 2022	The Balochistan Shops and Establishments (Amendment) Bill, 2022 (Bill No.19 of 2022), having been passed by the Provincial Assembly of Balochistan on 26th April 2022 and assented to by the Governor Balochistan, on 28th April 2022 is hereby published as an Act of the Balochistan Provincial Assembly. This Act regulates working conditions, hours of work, overtime, rest and holidays and leaves for the workers engaged. in shops and establishments.
	The Balochistan Factories Act, 2021.	The working conditions, hours of work, overtime, rest, holidays, leaves, health and safety of workers, reporting of accidents, and provision of facilities to workers engaged in factories are mainly regulated by the Balochistan Factories Act 2021.
	The Balochistan Industrial and Commercial Employment (Standing Orders) Act, 2021	Balochistan Industrial and Commercial Employment Act 2021, this law pertains to various aspects/terms of employment, including terms of employment, appointment letters, protection of existing employment conditions, protection against discrimination, written documentation of terms and conditions of service, inquiries, disciplinary proceedings, dismissal, gratuity, group insurance, and the closure of establishments. Also focus on leaves, late comings and payment of wages.
	The Balochistan Payment of Wages Act, 2021	This law focuses on the payment of wages to workers, addressing issues related to deductions, fines, and the resolution of worker grievances in cases of nonpayment, delayed payment, or underpayment of wages. It sets out provisions and mechanisms to ensure that workers receive their rightful wages and provides avenues for workers to seek redress in situations where they have not been paid in full, faced unjustified deductions, or have experienced delays in receiving their wages. The law aims to protect the rights of workers regarding fair and timely payment for their labour and provides mechanisms to address any disputes or grievances related to wage payments.
	The Balochistan Minimum Wages Act, 2021	The purpose of this Act is to establish regulations regarding the minimum rates of wages and allowances for different categories of workers employed in specific industrial and commercial undertakings and establishments. The aim is to ensure that workers are provided with fair compensation that enables them to maintain decent living conditions.
	The Balochistan Employment of Children (Prohibition and Regulations) Act, 2021	The law prohibits employment of children under 14 years of age and engagement of adolescents (persons below 18 years) in hazardous work.
	The Balochistan Bonded Labour System (Abolition) Act, 2021	The Bill prohibits forced and bonded labour and abolishes bonded labour system.
	The Balochistan Employees' Social Security Act, 2022	This law provides health coverage, sick leave and work injury benefits to secure workers. It also covers medical treatment of dependents of secured workers.
	Employees' Old-age Benefits Act, 1976	It is a federal law and deals with Old-Age Pension of employees in the private sector.

	The Workers' Compensation Act, 2022	This law deals with worker's compensation in case of injury and death.
	The Balochistan Maternity Benefits Act, 2022	Maternity Benefits law regulates conditions of employment, paid leave, pre- and post- delivery medical care, nursing and special work arrangements for entitled women. Under section 4 of the Act, an entitled woman worker must be granted mandatory maternity paid leave of 6 weeks before and 8 weeks after delivering child. Four weeks' additional leave in the case of any other medical complications in cases where the life of mother or child is at risk, as certified by a medical practitioner; and four weeks in the event of miscarriage or medical termination of pregnancy, as certified by a medical practitioner.
	Road Transport Workers Ordinance, 1961	The law deals with hours of work and other conditions of employment of workers engaged in road transport i.e. vehicles involved in carrying goods and people for business purposes.
	The Balochistan Industrial Relations Act, 2022	This law deals with registration of trade unions and regulation of industrial relations in Balochistan. Further this law covers the best industrial relations practices based on trust relationship between employers and workers to know the effect of ever continuing conflicting situation between them and to attain the goal of higher productivity and economic prosperity through schemes of workers' participation in the management and to continue to resort to the mechanism of social dialogue to resolve differences or disputes arising between them or in matters connected therewith and ancillary thereto
	Industrial Relations Act, 2012	It is a federal law which relates to formulation of trade unions and regulation of industrial relations in the trans-provincial establishments in Pakistan and is also applicable in Balochistan.

3. ROLES AND RESPONSIBILITIES

The IA has the overall responsibility for project management to oversee all aspects of the implementation of the LMP, to ensure contractor compliance. PIU of IA will address all LMP aspects as part of procurement for works as well as during contractor induction. The contractor is subsequently responsible for management in accordance with LMP, implementation of which will be supervised by PIU on monthly basis or at shorter intervals as defined by specific Plans.

The detailed approach is described in the following sections. The E&S team in PIU should implement and monitor the provision of this LMP as follows. It is the employees' responsibility to understand and comply with all procedures stated herein and seek clarification if needed.

Roles	Responsibilities
Project Director	Ensure the Projects' LMP implementation are aligned with National & Provisional regulations and international practices (e.g., WB and IFC) that the Projects has committed to. Ensure compliance with the safeguard requirements, including the LMP and OHS provisions for the workers. Ensure that the obligations are met towards direct workers as included in this LMP, ESMP and other applicable procurement documents.

	Ensure provision of necessary resources, including budget and competent personnel are provided to manage labour issues being aligned with requirements and commitments. Follow up on potential risks of serious safety issues in the conduct of activities. Report to the World Bank on labour and occupational health and safety performance and any incident or accident related to the Project involving project workers.
Implementation and Supervision Consultants	Review contractors' monitoring report to be submitted to PD. Provide induction and regular training to direct workers on environmental, social and occupational health and safety issues. Taking part in the settlement of labour disputes together with the competent agencies, organizations and personnel. Prepare annual budget to implement LMP. Ensure the Projects' LMP is monitored and reviewed regularly. Monitor the training of the project workers. Ensure that all the employees, contractors, subcontractors and primary suppliers always have access to the most recent LMP in a language understood by them. Implement LMP of the Projects. Review and update the LMP. Prepare external report for Lenders (if needed). Prepare training plan for newly hired and on-job employees and coordinate with other departments on implementation training plan.
Contractors and sub-contractors	Develop and implement the grievance mechanism for direct workers, including ensuring that grievances received from the workers are addressed promptly, and report the status of grievances and resolutions. Ensure that the project workers are informed of the grievance mechanism. Maintain records of recruitment and employment of hired workers, with age and gender verification. Communicate contractor's grievance mechanism to all contractor's and its subcontractor's workers and implement the mechanism accordingly. Prepare and submit monthly reports to PIU during construction and operation phases respectively.
All employees	Participate in related training. Comply with requirements in the Plan. Cooperate with the employer and others to enable them to fulfil their legal obligations.

4. LABOUR POLICY & PROCEDURES

The Projects' Labour Policy takes into consideration its type of business processes. It is a wide-range strategic document to reflect the Projects' commitment to comply with internationally recognized standards and applicable local laws and regulations, and are complied with by all employees, contractors, subcontractors and primary suppliers of the Projects.

Decisions relating to the employment or treatment of project workers will not be made based on personal characteristics unrelated to inherent job requirements. The employment of project workers will be based on the principle of equal opportunity and fair treatment, and there will be no discrimination with respect to any aspects of the employment relationship, such as recruitment and hiring, compensation (including wages and benefits), working conditions and terms of employment, access to training, job assignment, promotion, termination of employment or retirement, or disciplinary practices. The Projects endeavors to enhance effective human resources management practices in all its activities with a special focus on the following:

4.1. Working Relationship

The IA will provide all employees with documented information that is clear and understandable, regarding their rights under relevant laws and regulations in Balochistan province and any applicable collective agreements, including their rights related to hours of work, wages, overtime, compensation, and benefits upon beginning the working relationship and when any material changes occur.

4.2. Working Conditions & Terms of Employment

C&W department of Balochistan province will provide all employees with reasonable working conditions and terms of employment. The Subproject will meet the local regulatory requirements on working hours and wages, including aspects related to working hours per week, adequate days off, overtime and related compensation, minimum wages and social benefits. All employees are entitled to local holidays and annual leave. The Project shall follow the local regulatory requirements and internationally recognized standards on working conditions, including the physical environment, health, and safety precautions, and access to sanitary facilities.

The Project commits to the implementation of fair and consistent disciplinary procedures to deal with non-compliance with The Projects' management system behavior. The Project and its employees can terminate the labour contract based on the local regulatory requirements and The Projects' policy but shall provide notification in advance. Notice period shall be referred to the employment contract. The Project commits to respecting employees' personal dignity, including refraining from physical punishment or abusive language.

4.3. Gender Equity

The IA commits to promoting and applying equal opportunity between women, men, and women and men regardless of sexual orientation individuals by providing an inclusive working, learning and social environment in which the rights and dignity of all employees are equal and respected. The Project commits to fostering this through promoting and encouraging gender equity at all stages of the employment lifecycle including recruitment, retention, performance management, professional development, promotion, talent identification, succession planning, remuneration and resignation.

4.4. Harassment and Abuse

The Project commits to providing a workplace free from harassment and abuse to all employees. Employees are encouraged to report harassment and abuse issues through The Projects' Worker Grievance Mechanism.

4.5. Workers' Organizations

The Project commits to respect employees' rights to freely associate, organize and bargain collectively in accordance with applicable laws and regulations.

4.6. Non-Discrimination & Equal Opportunity

The Projects commit to ensure all employees are not discriminated against based on their gender, age, race, religion, physical ability, political opinion, social or ethnic origin or sexual orientation, or any other characteristics that do not pertain directly to their work performance.

4.7. Retrenchment

The Project commits to undertaking an alternative analysis prior to implementation of retrenchment. If the alternative analysis shows the retrenchment cannot be avoided, a retrenchment plan will be developed based on consultation with employees.

4.8. Grievance Mechanism

The Projects commit to providing a grievance mechanism for employees and their organization, where they exist, to raise workplace concerns. This mechanism allows for anonymous complaints to be raised and addressed and ensures that all information related to grievances will be treated confidentially. Third party, i.e., contractor, subcontractor, and supplier) shall provide a grievance mechanism for their employees, which shall be as per the applicable standards for the Projects and at par with that provided by the Projects. In case a third party cannot provide a grievance mechanism, The Subprojects' Workers' GRM will extend to serve workers engaged by the third party.

4.9. Child Labour and Forced Labour

The Project applies strict management on prohibition of child labour and forced labour.

4.10. Occupational Health & Safety

The Project will provide a safe and healthy work environment, considering inherent risks in its sector and specific classes of hazards in The Projects' work areas, including physical, chemical, biological, and radiological hazards, and specific threats to women. The Project shall establish a program to implement, check and review health and safety status including occupational health, workplace safety, and fire safety and emergency response.
The conditions of the workplace need to be explained to employees prior to employment and should be documented in the employment contract.

4.11. Workers Engaged by Third Parties

The Project shall ensure the third parties who engage these workers are reputable and legitimate enterprises and have appropriate labour policies and procedures that will allow them to operate in accordance with the requirements of applicable national laws and regulations and international recognized standards.

4.12. Supply Chain

The Project applies management procedures over its primary suppliers, to identify child labour, forced labour and significant safety issues related to supply chain workers. For these identified risks, The Projects will take appropriate steps to remedy them. Where remedy is not possible, The Projects will shift the certain primary supply

chain over time to suppliers that can demonstrate that they are complying with the requirements of prohibition of child labour and forced labour, and prevention of significant safety issues.

4.13. COVID-19 Considerations

It is imperative to assess and mitigate the risks of COVID transmission among workers and to provide a safe environment for project workers and local communities. As a first step, contractors and workers on this project will:

- Adhere to all COVID control protocols imposed by the Government of Pakistan and provincial authorities.
- Where necessary, prepare and implement site-specific measures (as part of the project OHS plan) to mitigate the risks of COVID transmission among workers
- Promote measures for preventing the spread of COVID among host communities.

As part of E&S screening, contractors will assess the risks of COVID transmission before undertaking project activities: site access, construction of labour camps, consultations with project stakeholders, and based on the assessment, ensure that ensure that basic COVID-19 protocols are observed such as maintaining social distancing and practicing safe hygiene. The OH&S Specialist will perform additional roles as the focal point for COVID-19 and coordinate site specific measures with local health authorities and community leaders. The World Bank's Technical notes and draft protocols may be referenced for further guidance on the assessment and management of COVID-19 risks at construction sites. Further to enforcing the compliance of environmental management, contractors are responsible and liable for the safety of site equipment, labourers and daily workers attending the construction site and safety of citizens for each subproject site, as mandatory measures.

4.14. Grievance Mechanism

In any working environment it is essential for both employers and workers to be fully conversant with all aspects of disciplinary processes, the grievance handling procedures and the legal requirements and rights involved. In implementing an effective dispute management system consideration must be given to the disputes resulting from the following:

- Disciplinary action
- Individual grievances
- Collective grievances and negotiation of collective grievances
- Gender-based violence, sexual exploitation and workplace sexual harassment, recognizing that SEA/SH cases require prompt response with a survivor centric approach (assuring quick access to services, confidentiality, safety, consent, non-discrimination and respect to any of the survivor)

4.15. Disciplinary Procedure

The starting point for all disciplinary action is rules. These rules may be implied or explicit and of course will vary from workplace to workplace. Some rules are implied in the contract of employment (e.g., rule against stealing from the employer), however it is advisable that even implied rules be included in the disciplinary code or schedule of offences. In an organized workplace these rules ideally are negotiated with the trade union and are often included in the Recognition Agreements signed by the employer and trade union. These workplace rules must be:

- Valid or reasonable
- Clear and unambiguous
- The worker is aware, or could reasonably be aware of the rules or standard
- The procedure to be applied in the event the worker contravenes any of these rules

The Project Manager will establish a fair and effective disciplinary procedure in the workplace, as follows:

- Investigate to determine whether there are grounds for a hearing to be held.
- If a hearing is to be held, the employer will notify the worker of the allegations using a form and language that the worker can understand.
- The worker is to be given reasonable time to prepare for the hearing and to be represented by a fellow worker or a union representative.
- The worker must be given an opportunity to respond to the allegations, question the witnesses of the employer and to lead witnesses.
- If a worker fails to attend the hearing the employer may proceed with the hearing in the absence of the worker.
- The hearing must be held and concluded within a reasonable time and is to be chaired by an impartial representative.

If a worker is dismissed, it must be given the reasons for dismissal and the right to refer to the dispute concerning the fairness of the dismissal. Therefore, it is incumbent upon the contractors to ensure that they have a disciplinary procedure and Code and standards which the workers are aware of. Each contractor will be required to produce this procedure to ensure that workers are not treated unfairly.

4.16. Contractor Management

Project Management requires that contractors/Sub-contractor/third party labour suppliers, keep records and report on terms and conditions related to labour management. The contractor must provide workers with evidence of all payments made, including social security benefits, pension contributions or other entitlements regardless of the worker being engaged on a fixed term contract, full-time, part-time or temporary. Where the contractor uses supplier for the provision of labour, the contractor will be responsible for ensuring that the supplier complies with the labour requirements contained within the contractor's C-ESMP, including ensuring that the supplier maintains a list of all workers, and that all workers are above the age of 18. The application of this requirement will be proportionate to the activities and to the size of the contract, in a manner acceptable to the World Bank and IA:

Labour conditions: Records of workers engaged under the Project, including contracts, registry of induction of workers including CoC, hours worked, remuneration and deductions (including overtime), collective bargaining agreements.

Safety: Recordable incidents and corresponding Root Cause Analysis (lost time incidents, medical treatment cases), first aid cases, high potential near misses, and remedial and preventive activities required (for example, revised job safety analysis, new or different equipment, skills training, and so forth).

Workers: Number of workers, indication of origin (expatriate, local, nonlocal nationals), gender, age with evidence that no child labour, forced labour and no trafficked labour is involved, and skill level (unskilled, skilled, supervisory, professional, management).

Training/ induction: Dates, number of trainees, and topics.
Details of any security risks: Details of risks the contractor may be exposed to while performing its work, the threats may come from third parties external to the project.

Worker grievances: Details including occurrence date, grievance, and date submitted, actions taken and dates, resolution (if any) and date and follow-up yet to be taken. The grievances listed should include those received since the preceding report and those that were unresolved at the time of that report.

COVID-19 Consideration: Detail assessment and mitigation of the risks of COVID transmission among workers and providing a safe environment for project workers and local communities.

5. RISK ASSESSMENT

The specific causality, magnitude and interconnectedness of effects related to labour influx depends on project's attributes and the local project context. Careful consideration is required in every case to understand the drivers that influence influx.

5.1. Project Configuration and Activities that Drive Labour Influx

- Size and skill need of the construction workforce
- Mobility requirements of construction workforce (geographic spread of the project)
- Types of goods and services needed during construction
- Approaches to local hiring and procurement
- Land required (e.g., opportunities for compensation)
- Service needs and plans of the project, including waste, water, and worker accommodation.

Local socio-economic context drivers, on the other hand, include:

- Size, skill mix and unemployment level of the local labour market
- Mix and structure of local businesses and industries
- Population density (rural versus urban context)
- Mobility/transiency of local population
- Geographic context, including proximity to other locations and regions
- Accessibility and transport route
- Political climate and governance structures and capacity
- Overall absorptive capacity of host communities
- Existing social patterns such as poverty, crime or vulnerability patterns.

5.2. Risk Management Approaches for Labour Influx

Comprehensive Baseline: Baseline local labour market dynamics to characterize the likelihood, significance and level of risk of labour influx.

Timely Availability of Workforce Estimates: Ensure that project information and planning documentation includes project workforce estimates (e.g., the size, origin, phasing and duration of the required workforce, range of skills required, workforce recruitment policy and management, procurement of goods and services, and approaches to worker housing and other utilities/services.

Relevance of Mitigation to Identified Risk: Mitigation measures need to be appropriately scaled to the identified risk. In high-risk cases, the project characteristics and the socio-economic setting warrant prepare a specific Influx Management Plan, though in most cases it would be sufficient to consider influx-related issues as part of the ESMP process.

Monitoring: Monitor for change throughout the project cycle on labour influx- related mitigation compliance and on mitigation effectiveness from projects/contractors. Ensure a documented monitoring program that tracks key social outcomes, changes and issues at regular intervals throughout the project lifecycle is in place.

Training: Ensure key staff, including contractors, receive training regarding the likelihood, significance and management of influx-related issues.

5.3. Assessment of Key Potential Labour Risks

The main labour risks associated with the Subproject are assessed to be related to the potentially hazardous work environment, the associated risk of accidents and incidents at the workplace, child labour and forced labour, labour influx and associated community health and safety risks, including SEA risks.

Child and Forced Labour: Based on current conditions in the infrastructure sector it is assessed that the risk of a child or forced labour is not significant and prohibited by national legislation. Workers below the age of 18 will not be hired to work on the project. Workers will need to provide legally recognized documents such as Citizenship Card or Birth Certificate. Further, awareness- raising sessions will be conducted regularly to the communities to sensitize on prohibition and negative impacts of child and forced Labour. However, in practice in some sectors of works there might be the risk of non-compliance. As per the labour act special work permits need to be taken from Labour Office for using any migrant workers to prevent the risk of child labour and forced labour.

Labour Influx: Given the employment and supply chain opportunities that will be created from the project, labour influx in project areas is expected and assessed as substantial risk. The focus of the Subproject is to localize the economic benefits with minimal opportunities for outside labour to service work that require specialized/skilled labour that is not present in project localities. The priority for local labour (dependent on skill, experience capacity) is expected to minimize the risk of influx, where there is a requirement for special skills. For external workers, dedicated labour camps will be established for worker accommodation where required. Specific requirements to manage risks associated with labour influx, related to the interaction between project workers and local communities, such as communicable diseases and gender-based violence most specifically sexual exploitation and abuse and sexual harassment, will be managed through contractual requirements, code of conduct and training set out in this document. These procedures are guided by national legislation, ESS2 and ESS4.

Sexual Abuse and Exploitation/Sexual Harassment (SAE/SH): The SEA/SH risk assessment for the project is substantial, indicating the potential for labour to create or exacerbate patterns of SEA including SEA risk. All Construction workers will be males. Those who are away from home on the construction job are typically separated from their family and act outside their normal sphere of social control. This can lead to inappropriate and criminal behavior, such as sexual harassment of women and girls etc.
Occupational Health and Safety: OHS risk is likely to be high based on previous project experience. The expected risks relate to potential for injury, traffic-related accidents, falling from heights, poor working and living conditions of workers, and lack of PPEs.

COVID-19 considerations: The COVID-19 pandemic brings additional health and safety risks and challenges to the project due to the risk of COVID-19 transmission amongst workers and with the host community. State-imposed COVID control measures including movement restrictions, physical and social distancing can derail stakeholder engagement and consultations. It is therefore imperative to assess and mitigate the risks of COVID transmission among workers and to provide a safe environment for project workers and local communities.

Trafficking: Trafficking in persons is defined as the recruitment, transportation, transfer, harboring or receipt of persons by means of the threat or use of force or other forms of coercion, abduction, fraud, deception, abuse of power, or of a position of vulnerability, or of the giving or receiving of payments or benefits to achieve the consent of a person having control over another person, for the purposes of exploitation. Women and children are particularly vulnerable to trafficking practices. The project will enforce stringent requirements to ensure the contractor, sub-contractors; labour supply contracting agency will not hire trafficked workers. These requirements will be spelled out in the bidding document, contract and C-ESMP and in case of non-compliance, contractor will be subject to legal prosecution by applicable national laws.

Mitigation Measures: Table below summarizes Impacts and mitigation measures that can be used to mitigate the impacts of labour influx the table is organized according to the type of impact and delineates the different mitigation measures and responsibilities of the contractor, the Borrower and the Bank.

Table: Impacts and mitigation options

Activity/Impact	Mitigation Measures	Responsibility		
		Implementing	Supervision	Monitoring
Community				
Disturbance of Privacy due to influx of labour	▪ Provide adequate knowledge to the Subproject workers on relevant government regulations and require non-locals employed by the Subproject to adhere to a social 'code of conduct' in terms of relations with local communities. ▪ Provide employees and visitors with cultural awareness training. ▪ Establish construction camps away from the residential areas.	CC	CSC	PIU
Community Safety	• A speed limit of 30 km/h shall be imposed on unpaved roads and link roads for reducing traffic accident risks and dust generation. • Traffic warning signs will be placed at community roads used for the movement of Subproject vehicles • The camping sites of the Subproject site will be completely fenced off before the commencement of any other construction activities. Access to the site will be controlled and unauthorized people will not be allowed to enter. Children will not be allowed to enter the site under any circumstances • Dust emissions due to vehicular traffic will be minimized by enforcing the speed limit. Water will be sprinkled on unpaved surfaces where necessary. • All vehicles used by the Subproject will undergo regular maintenance and will be tuned in accordance with the requirements of the BEQs.	CC	CSC	PIU

Activity/Impact	Mitigation Measures	Responsibility		
		Implementing	Supervision	Monitoring
Religious, Cultural and Historical Sites	• No damage to religious, cultural and historical sites anticipated during construction phase.	CC	CSC	PIU
Sanitation, Solid Waste Disposal, Communicable Diseases	• To maintain proper sanitation around construction sites, access to the nearby lavatories will be allowed or provision of temporary toilets will be made. Construction camps will be necessary, based on the scale of the work needed. The construction camp will be provided with toilets with soakage pits or portable lavatories or at least pit latrines. • Disposal of surplus materials must also be negotiated through local authority approvals prior to the commencement of construction. If surplus materials arise from the removal of the existing surfaces from specific areas, it will be used elsewhere on the Subproject before additional soil, rock, gravel or sand is brought in. The use of immediately available material will generally minimize the need for additional rock-based materials extraction from outside. • Contractual clauses will require the Contractor to produce a materials management plan (one month before construction commences) to identify all sources of cement and aggregates and to balance cut and fill. The plan should clearly state the methods to be employed prior to and during the extraction of materials and all the mitigation measures to be employed to mitigate nuisances to residents. Financial compensation shall not be allowed as mitigation for environmental impacts or environmental nuisance. • Contractual clauses will require the Contractor to produce a solid waste management plan so that the proper disposal of	CC	CSC	PIU

Activity/Impact	Mitigation Measures	Responsibility		
		Implementing	Supervision	Monitoring
	waste can be ensured.			
Labor issues				
Recruitment and selection	• Human Resources policy and/or procedure that covers recruitment and selection processes including at least: ➢ Selection criteria for each position ➢ Method of recruitment ➢ Places of recruitment ➢ Transparency clauses • Selection of skilled workers on merit, no religious prohibition. • Need-based selection of workers to avoid more hiring than desired.	CC	CSC	PIU
Keeping up with compliance regulations	• General orientation of the labour before entering in camp site. • Training of the labour on rules and regulations on daily basis. • Display all the implementation regulations on noticeboard which can easily be approachable. • Display in Urdu and English language to avoid communication barriers.	CC	CSC	PIU
Communication problems	• Prefer the hiring of local workers to avoid language barriers. • Hired a worker who can speak and understand the local language • Restriction on politically influence grouping among the labour that can affect the Subproject. Displacement of	CC	CSC	PIU

Activity/Impact	Mitigation Measures	Responsibility		
		Implementing	Supervision	Monitoring
	information on multiple languages to avoid language problem.			
Accommodation and Transportation	• Design camp by following WB/IFC and OSHA standards to accommodate labour at camp site. • Not more than three workers accommodated in the same room, with separate beds for each worker, partitions to ensure privacy and a minimum distance of one meter between beds. • Not more than one worker per five squares meters (surface) and one worker per ten cubic meters (volume). • one hand wash sinks per ten persons. • one toilet per ten persons • one urinal per fifteen persons • one shower per ten persons. • regular cleaning of soil and sanitary facilities and regular washing of bed linen; and • Separate storage provided for boots and PPE. • Buses for daily picking and dropping from camp to site and vice versa.	CC	CSC	PIU
Kitchen Facilities	• Proper kitchen facilities at camp site such as sitting arrangement • Hygienic food should be provided at camp site on subsidies rate/free of cost • Kitchen should be at walking distance • Kitchen staff should be enough to facilitate the capacity of labour	CC	CSC	PIU

Activity/Impact	Mitigation Measures	Responsibility		
		Implementing	Supervision	Monitoring
	• Behavioural training of the kitchen staff • Kitchen should be clean and up to the standard • Contractor should provide gas cylinder for cooking purpose and avoid use of wood as a fuel			
Lighting	• Light should be enough at each labour camp • Use of white light inside labour camp to avoid irritation • Generator should be there to cut-up electricity off • Proper lightening on the watch tower & fencing of the camp boundary.	CC	CSC	PIU
Waste Generation	• The waste generated from the camp site should be disposed of at approved sites. • Burning of waste shall be prohibited. • Proper labelling of waste containers, including the identification and quantity of the contents, hazard contact information should be carried out. • Training of employees involved in the transportation of hazardous material regarding emergency procedures should be ensured. • Waste piles should be controlled so that they do not spread and start to impede other activities and stay at a height that it does not become a safety hazard. Barricades may also be placed around the pile to delineate the safe distance for other workers. • Residual and hazardous waste such as oils, fuels, and lubricants should be disposed of via licensed third parties.	CC	CSC	PIU

Activity/Impact	Mitigation Measures	Responsibility		
		Implementing	Supervision	Monitoring
	• Liquid waste, such as grey water, sewage, and other wastewater should be disposed of in nearby drains. • The construction camp will be provided with toilets with soakage pits or portable lavatories or at least pit latrines.			
Drinking Water Supply	• Always supply enough water, either from regular taps if drinking water quality can be ensured or in bottles. • Free water supply in case of bottled water • Administration must ensure the availability of water 24/h. • At each labour camp water cooler should be provided	CC	CSC	PIU
Pest Management	• Contractors must ensure hygiene conditions at camp site before the labour mobilization • Pest extermination, vector control and disinfection are carried out throughout the living facilities on site as required and pests and vectors are monitored on a regular basis • Pest control spray on regular basis to avoid any incident • Tree plantation to enhance scenery beauty	CC	CSC	PIU
Washroom Facilities	• Suitable and sufficient sanitary conveniences shall be provided at readily accessible places • Allow workers to leave their work locations to use a restroom when needed. • Provide an adequate number of restrooms for the size of the workforce to prevent long lines. • Avoid imposing unreasonable restrictions on restroom use. • Ensure restrictions, such as locking doors or requiring workers to sign out a key, do not cause extended delays • Must ensure 6 to 7 washrooms for 150-160 labor	CC	CSC	PIU

Activity/Impact	Mitigation Measures	Responsibility		
		Implementing	Supervision	Monitoring
	• Washing of washrooms on regular basis to avoid spreading any infectious disease • Ensure the supply of water at washroom 24/7			
Fencing	• Fencing and creating a sound barrier between camp site and other residences. • Labor camp should be away from the community • Eliminate unsightly views to avoid any unconformity • Properly fence the camp site to avoid the entrance of unauthorized person • Keep away wild animals that can cause harm to the labour • Contractor must install security cameras and guards at all the camp sites • Identification of labour/person before entering the camp site • Camping opening and closing times should be properly displayed at the camp site and instructions on regular basis must be provided to labour • Use appropriate sign boards on the entrance of the camp site	CC	CSC	PIU
Emergency Response Plan/Terrorism	• Contractor must ensure the Emergency response plan at camp site • Proper training of the labourer to handle any unconformity. • Emergency numbers such as Police, FC, Rescue 1122 etc. should be displayed at camp site • Mock drills at camp site by third party such as Rescue 1122	CC	CSC	PIU

Activity/Impact	Mitigation Measures	Responsibility		
		Implementing	Supervision	Monitoring
Violations, including inappropriate behaviour and crime (including prostitution, theft and substance abuse)	• Sourcing of local workforce. • Creation of supervised leisure areas in workers' camp. • Cooperation with local law enforcement. • Introduction of sanctions (e.g., dismissal) for workers involved in criminal activities. • Provision of substance abuse prevention and management programs.	CC	CSC	PIU
Adverse impacts on community dynamics	• Provision of services in the workers' camp to reduce the need for workers to use local community facilities (internet, sports). • Provision of entertainment and events for workers within camps to reduce incentives for mixing with local community.	CC	CSC	PIU
Influx of Additional Population	• Contractor to hire workers through recruitment offices and avoid hiring "at the gate" to discourage spontaneous influx of job seekers.	CC	CSC	PIU
Increased burden on public service Provision	• Workers' camp to include electricity • wastewater disposal and septic systems, dedicated healthcare facilities or support of local healthcare services. • Identification of authorized water supply sources and prohibition of use from other community sources. • Separate service providers for community and workers' camp/construction site. • Code of Conduct or worksite procedures on personal water and electricity consumption.	CC	CSC	PIU

Activity/Impact	Mitigation Measures	Responsibility		
		Implementing	Supervision	Monitoring
Increased risk of communicable diseases (including STDs and HIV/AIDS)5	• Screening worker influx for • communicable disease and providing treatment, as appropriate, to reduce exposure to local population • Vaccinating workers against common and endemic (locally prevalent) diseases. • Contracting of an HIV service provider to be available on-site in high-risk areas, where worker numbers are above a certain threshold. • Implementation of HIV/AIDS education program. • Information campaigns on STDs among the workers and local community. • Education about the transmission of diseases, age of consent in Subproject area, and reminder about Code of Conduct commitments and sanctions for non-compliance;	CC	CSC	PIU
Gender-based violence, including sexual harassment, child abuse and exploitation	• Contractor Code of Conduct developed, incorporated into workers' contracts, and training and socialization on it provided to workers • Mandatory and regular training for workers on required lawful conduct in local community and legal consequences for failure to comply with laws. • Commitment / policy to cooperate with law enforcement agencies investigating perpetrators of gender-based violence. • Creation of partnership with local civil society organizations to report workers' misconduct and complaints/reports on gender-based violence or harassment. • Provision of opportunities for workers to regularly return to their families.	CC	CSC	PIU

Activity/Impact	Mitigation Measures	Responsibility		
		Implementing	Supervision	Monitoring
	• Provision of opportunities for workers to take advantage of entertainment opportunities away from rural local communities.			
Child labor and school drop out	• Local community provided information on contractor's policies and Code of Conduct • Ensuring that children and minors are not employed directly or indirectly on the Subproject.	CC	CSC	PIU
Local inflation of prices and crowding out of local consumers	• Appropriate mix of locally and non-locally procured goods to allow local project benefits while reducing risk of crowding out of and price hikes for local consumers.	CC	CSC	PIU
Increased pressure on accommodation and rents	• When accommodation supply is limited establishment of workers' camp facilities with sufficient capacity for workers— including sub-contractors—and associated support staff.	CC	CSC	PIU
Increased traffic and rise in accidents	• Preparation and implementation of a traffic management plan to be approved by supervision engineer. • Building additional/separate roads to Subproject and workers' camp sites. • Organization of commute from camp to Subproject to reduce traffic. • Road safety training and defensive driving training for staff. • Sanctions for reckless driving, speed limits on Subproject vehicles, and route/time management were in proximity to populations, such as lower speed limits near schools and	CC	CSC	PIU

Activity/Impact	Mitigation Measures	Responsibility		
		Implementing	Supervision	Monitoring
	avoidance of certain times of day when more pedestrians are on the road.			

5.4. Monitoring, Reporting and Supervision during Implementation

Monitoring and Reporting

As part of the ESMP or related management plans, a monitoring and reporting system is required as PIU IFRAP, CSC and CC of the Subproject will have to monitor implementation progress and report to the WB.

- Help identify the presence and significance of project-related impacts on local communities.
- Ensure that adequate mitigation measures are established (and modified as needed) and implemented in a timely manner.
- Ensure that the mitigation measures are achieving their objectives of addressing corresponding impacts.
- Provide information to adjust the ESMP, related management plans or Operation Manual according to the results achieved and new circumstances or findings (including reporting on accident rates, traffic incidents, fatalities, grievance management, etc.).
- Monitoring of and reporting on the project to be complemented by an effective GRM to address issues arising from project implementation. An effective GRM also helps to detect unanticipated or recurring problems, and to manage them. The project will set up and support the GRM, in a manner satisfactory to the Bank, to receive, manage and facilitate resolution of stakeholders' concerns and grievances in a timely manner.
- The IA ensures contractor compliance with the applicable management plans (ESMP, C-ESMP, LMP and Workers' Camp Management Plan). This includes a regular review of progress and compliance reports issued by the supervision engineer and contractor, facilitating consultation meetings with the host community during site visits, and tracking and recording the number of project workers recruited by contractors within and from outside the communities.

Mitigation Planning

a. Planning for the mitigation of influx-related social impacts is something that should show up in the ESMP or related documents prepared by the project proponent, such as an ESMP or C-ESMP. Where the risk of significant influx and associated negative social impacts is found to be high, it may be appropriate to prepare a stand-alone influx management plan.

b. There are several mitigation measures put forward in the planning stage that are particularly important for minimizing adverse social effects stemming from labor influx. Although many of these mitigations are developed to address other issues, they also provide benefit in managing influx-related issues, and include the following:

- Camp-based worker housing.
- Provision of camp-based medical services to avoid strains on local services.
- Ensuring adequate health and safety conditions for workers and promoting HIV/AIDS awareness.
- Worker codes of conduct, including training on conduct expectations.
- Social and cultural awareness training for workers.
- GRMs for community members (not limited to resettlement).
- Maximizing local employment.
- Special initiatives to support women's economic opportunities and protections, particularly for Indigenous women.

Performance Indicators

Performance indicators are used to measure and track performance against the effectiveness of mitigation and control measures described in this Plan. Indicators can be divided into two groups: leading indicators and lagging indicators. Leading indicators predict actions to be taken to prevent a risk from escalating - such as complaints from workers about, for example, the quality of camp food. An example of a lagging indicator would be a work

stoppage over camp conditions. General performance indicators may also be relevant, such as training and awareness numbers. Performance indicators must be measurable against a specified target. The performance indicators outlined in table below apply to this Plan.

Table: Labor and working conditions performance indicators

Performance Indicator	**Measurement**	**Target/Benchmark**	**Frequency of Report**
Grievances lodged	Type and number	Closed or adequately responded to within 30 days	Monthly
Disciplinary cases	Type and number	Reduction in disciplinary breaches	Monthly
Pay slip queries	Type and number	Downward trend	Monthly

Includes grievances the employee grievance process and community grievances relevant to labor and working conditions.

Lost hours due to site working action	Lost hours	Zero	Monthly
Camp committee issues raised	Type and number	Closed before next meeting	Monthly
Food or lodging complaints	Type and number	Reduction and/or downward trend	Monthly

Performance indicators should be carefully recorded and graphed where relevant for remedial action to reduce potential risks. They will form a key component of monthly reporting to PIU/PMU of IFRAP.

Non-conformance and Corrective Action

An Environmental and Social Action Tracking System will be used for tracking and stewardship of non-conformances identified as part of assessment and audit activities described in this Plan.

Reporting

A periodic report will be compiled to address the labor and working conditions aspects contained in this Plan, including the following for both IA and contractor activities:

Workplace

- Grievances lodged by type and number, illustrated with graphs. Open grievances by type and number
- Disciplinary action by type and number, including graphs
- Induction training numbers, queries and comments
- Issues raised by workers' committees and action taken
- Workforce numbers by local and foreign workers - actual against planned
- Actual demobilization numbers against planned targets, Industrial relations incidents - stoppages go slow, threats, damage to property, violence
- Lost hours by category
- Absenteeism, sick leave and late arrivals

Camp

- Grievances lodged by type and number, illustrated with graphs. Open grievances by type and number
- Disciplinary action by type and number, including graphs
- Induction training numbers, queries and comments

- Issues raised by camp committees and action taken
- Camp numbers by local and foreign workers - actual against planned
- Camp incidents
- Food or lodging complaints
- Recreation activities

Training and Awareness

Before the development of a training and awareness program, a needs analysis will be conducted. The needs analysis will be based on requirements of this Plan. It involves a basic assessment of the knowledge and skills of the people involved in training implementation. Regardless of the outcome of the need's analysis, the training and awareness program will over, at a minimum, the areas outlined in Table 3.

Table: Training and awareness plan

What	Who	When	Frequency
Mitigation measures including all procedures	• Supervisors and senior camp management • Personnel who will be involved in training, reporting or monitoring	Prior to commencement of work	Once prior to commencement of work
Workplace induction including: • Pay slips • Disciplinary and grievance procedures • Cultural awareness • Code of conduct	All workers	Prior to commencement of work	Annually
Camp induction including: • Rules and regulations • Code of conduct • Camp committee system • Camp food complaints system • Interaction with communities • Health, safety and security	All camp residents	Prior to commencement of work	Annually
Monitoring	Personnel who will be conducting monitoring events	Before monitoring commences	Annually
Reporting and performance indicators	Personnel who will be compiling reports relating to labor and working conditions	Before reporting commences	Annually
Human rights awareness	Senior Management, Supervisors, security personnel (staff and contracted)	Prior to commencement of work	As required by changes in training materials or awareness topics

LABOR INFLUX MANAGEMENT PLAN (LIMP)

6.1. Introduction

The Labor Influx Management Plan (LIMP) sets out the project's approach to meeting national requirements as well as the objectives of the relevant World Bank's Environmental and Socials operational policies and

Environmental, Social, Health and Safety (EHSS) guidelines and Managing the Risks of Adverse Impacts on Communities from Temporary Project Induced Labor Influx 2016 guidelines. The proposed LIMP comprises of the implementation mechanism, compliance measures and promotes fair treatment, non-discrimination and equal opportunity of project workers.

Since labor influx is temporary and transient. Therefore, it typically occurs during or just prior to construction of a project or over a finite time-period when significant excess labor capacity is required. Project-induced labor influx may be direct, indirect or associated which are discussed as under:

Direct labor influx: non-local people induced to the project area by employment just before or during the construction stage, and who are hired or contracted directly by the proponent and/or the main contractors.
Indirect labor influx: non-local people who have been induced to the project area by the prospect of employment and are hired by sub-contractors and local businesses who provide goods and services to the main contactors or to the mobile workforce.
Labor-associated influx: Non-local people induced to the project area who have or are seeking association with the direct or indirect project workforce and may include workers' families or relations, sex trade workers, local businesses, speculative job seekers and others.

6.2. Scope of LIMP

The construction of civil works for which the required labor force and associated goods and services cannot be fully supplied locally. The reason for this may be the lack of technical skills and capacity in the locality. In such cases, the labor force either totally or partially needs to be brought in from outside the project area. Therefore, this influx is compounded by an influx of other people ("followers") who follow the incoming workforce with the aim of selling them goods and services, or in pursuit of job or business opportunities and thus may affect the project area negatively in terms of public infrastructure, utilities, housing, sustainable resource management and social dynamics.

In this regard, the LIMP is required to be furnished and implemented during construction activities as part of Environmental and Social Management Plan (ESMP) keeping in view World Bank operational and safeguards policies, and WB Social Management Framework (SMF).

6.3. Objectives of LIMP

The objective of LIMP is to ensure appropriate workers' management procedures and enhance the development benefits of Subproject by treating workers in the project fairly and providing safe and healthy working conditions for project sustainability. The specific objectives of the plan are to:

- Promote fair and equitable labor practices for fair treatment, non-discrimination and equal opportunity of workers.
- Establish, manage and promote a healthy management-worker relationship
- Protect workers' rights including migrant and third-party workers
- Promote healthy, safe, secure and comfortable accommodation that does not impact negatively on the communities in the surrounding area.

6.4. Assessment and Management of Impacts of Labor Influx on Communities

- Screening and assessment of the type and significance of potential social and environmental impacts that may be generated by labor influx.
- Development of a management plan for social and environmental impacts in consultation with affected communities.

- Implementation of appropriate mitigation and monitoring programs, which includes development and implementation of a stakeholder engagement program.
- Establishment of a grievance redress mechanism (GRM) for workers and host community; and
- Monitoring and supervision, and, as needed, adaptive management actions.

Initial Screening

Key Screening questions	Aspects to Consider	Observation
1. Will the Subproject potentially involve an influx of workers to the project location, and will the influx be considered significant for the local community?	• How many workers will be needed for the project, with what skill set, and for what period?	• Quantity of workers and skilled labor will be finalized after the hiring of EPC contractor.
	• Can the project hire workers from the local workforce?	• It depends on the availability of workforce. During hiring priority will be to hire from the local manpower.
	• What is the size and skill level of the existing local workforce?	• During survey it is observed that majority people are farmers that will count on unskilled labor. The second observed occupation is truck and car drivers.
	• If the skill level of the local workforce does not match the needs of the project, can they be trained within a reasonable timeframe to meet project requirements?	• It depends upon the availability of the workforce. Staff training will be a part of the contractor bid document, and it will be the responsibility of the supervision consultant to ensure worker training.
	• How will the workers be accommodated? Will they commute or reside on site? If so, what size of camp will be required?	• The workers will be accommodated on site. As per OSHA standard 1910.142 for labor accommodation 50 square feet space is required for each worker. Therefore, in a camp of 10 labor 500 square feet area is required.
2. Is the project located in a rural or remote area?	• What is the size of local population in the project area?	• It is estimated that more than 50 thousand (approx..) people are living in the Subproject area, but direct affect people will be few thousand.
	• Is the project located / being carried out in an area that is not usually frequented by outsiders?	• Yes, the project area is not frequently used by outsiders.
	• What is the frequency and extent of contact between the local community and outsiders?	• As most of the area is rural and tribal area is very low frequency of contact between local community and outsiders.
	• Are there sensitive environmental conditions that need to be considered?	• The Subproject area is in agricultural land and passing through rural settlement. No, there is no sensitive environmental condition that needs to be given special attention.

3. Based on the socio-economic, cultural, religious and demographic qualities of the local community and the incoming workers, is there a possibility that their presence or interaction with the local community could create adverse impacts?	• Is it likely that the incoming workers and the local community come from a shared socio-economic, cultural, religious or demographic background? • What is the level of existing resources, and will the incoming workers use or create competition for these resources? • What is the expected duration of the incoming workers' presence in the community? • Given the characteristics of the local community, are there any specific adverse impacts that may be anticipated?	• Majority of the workers should be hired by the local community to avoid any conflict among the locals and outsiders. The area is rich in educational and technical people and semi urban so there will be no or very limited requirement of unskilled labor from outside. • There are plenty of resources like water availability, food and other basic facilities in the project area. The toilet facility is the major concern as there are no toilets in the project area. • It depends upon the duration of the construction and desired quantity of the workers. • The local people belong to a rural area; due to labor influx there will be a privacy disturbance issue for locals that will create an adverse impact.

Detailed Screening

Factors relating to	Aspects or information to consider	Observation
Project and civil works	• Size of the project, the duration of construction (and possible stages)	• The size of the project is 38 km in length
	• Type of Subproject footprint (single site, linear, clustered)	• The project alignment is linear in nature but not directly impact on the agriculture, residential and commercial areas, since it's the rehabilitation of existing roads.
	• Community experience with similar projects in the area, including possible legacy issues from other projects	• No, not yet
	• Likely number of contractors and sub-contractors	• There is abundance of manpower in the area and can fulfill the work force requirement.

Incoming labor force and migrants	• Ability to provide local workers to reduce labor influx • Likely numbers of expected incoming workers and where they would come from (non-local, national, foreign, rural, urban) • Proposed accommodation options for workers • Proposed mode of transport from point of origin, and between labor camp(s) and site(s) • Likelihood that family members accompany workers (visiting, resident) • Service providers, including businesses and individuals aiming to provide goods and services to the project, contractors, sub-contractors, and workers	• Yes, it's possible to hire both unskilled and skilled labor locally available to reduce outside labor hiring. In the area, there is sufficient labor force. • Mostly workers will be hired locally but also from other parts of the province that's depends on the requirement. Currently, it's not possible to anticipate the number of expected workers. After the hiring of EPC contractor, he can give an estimate. • Most of the workers will be local; however, labor camps will be established at two places. These camps are proposed; contractors can change camp suit as per site suitability. • This is the contractor responsibility for safe pick/drop of labor at work sites. • Only male visitors can come in camp area but not for night stay. • Yes, there are many services providers available in the market. They have no hesitation in providing good project staff.
Labor issues and conditions	• National legislation on employment of workers relevant to projects (migrant workers, minimum age, etc.) • Country- and sector-specific considerations, including coverage and enforcement of legislation • Borrower capacity to manage labor influx issues with support from supervision engineer • Capacity and track record of contractors and sub-contractors to manage labor influx issues	• All the acts National and International Acts/legislation are given in above sections. • C&W department of Balochistan and PIU of the Subproject will bind the EPC contractor to follow the national legislation written in this report. • It is expected that borrowers will have full capacity to handle, and the support of client will fully cooperate and supervise.

		• It will be considered at the time hiring to see the contractor's reputation in case of capacity and track records of contractors.
Local community	• Size of working-age population and capacity (education, skills, experience) • Capacity of local public infrastructure, services and utilities (including health, education, transportation, water and sanitation, electricity, etc.) and budget supporting their provision • Local government capacity and track record in the project area, including law enforcement • Socio-economic and cultural characteristics of local population • Availability of worker accommodation in the community and related cultural rules • Level of local food supply and possible shortages and cost issues • Existing health or environmental issues and potential for deterioration	• The workers having age between 18 to 60 will be hired for unskilled labor. All types of labor with relevant education, skills and experience are available in the area. • The facilities like health, education, electricity, sanitation and transportation are not enough to meet the demands of the local. These require further improvement. • The track records show compliance of labor enforcement is some extent appropriate but not excellent • The mostly people are dependents on agriculture. Joint family system is common in Pakistan villages, but villagers are friendly by nature. The people are financially not sound, and a lot of people are below poverty line. • The space for worker accommodation will be available and there will be no cultural difference, as the worker will be either from project area or surrounding area. • As the project area is both rural and urban, there are no such shortages and cost issues. • There are no major health or environmental issues observed during field visits. • Yes, there will be security/ conflict risks in the area.

	• Existing security or conflict risks, and potential for exacerbation	
Borrower / Government	• Capacity of the responsible line ministry or agency for the preparation and implementation of the project • Capacity and track-record of entities responsible for managing labor issues, including project-specific labor influx • Capacity to assess and manage social and environmental risks	• C&W department (PIU/PMU) Balochistan has full capacity and capability to implement the project. • This has been discussed in report in detail. • The PIU/PMU of the Subproject has E&S personnel to tackle any kind of social/environmental issues. Before hiring a contractor, this must be considered to have a good background and social and environment team to tackle any unconformities.

6.5. How to Minimize Labor Influx/Management

If contractors can identify a suitable labor pool locally, they will not need to bring in large numbers of laborers, which will not only limit negative impacts, but also reduce the contractors' costs as they will not need to provide as large a labor camp. The recruitment criteria should be transparent and fair to local communities to avoid conflicts.

Contract between the Borrower and the contractor: The Borrower, with advice from the WB, needs to ensure that labor influx issues are adequately covered in the contract between the Borrower and the construction contractor during the bid submission, bid evaluation and contract awarding. Standard bidding documents and construction works contracts do not fully address all the details or project-specific aspects related to labor influx and associated social and environmental risks, impacts and mitigation measures. It is the responsibility of the Borrower, with advice from the Bank, to conduct due diligence and address these risks. This is done by: (i) including "particular conditions of contract" (PCCs) relating to labor influx, and (ii) ensuring that the key safeguard documents such as the ESMP, Labor Influx Management Plan and/or Workers' Camp Management Plan, or other relevant documents, are included in the bidding document.

Contract between the Borrower and the supervision consultant: During construction, the CSC acts on behalf of the Borrower (C&W Department) and is assigned to the contractual authority on behalf of the client implementing the project. The terms of reference for the CSC need to be specific about their responsibilities for managing safeguards, in particular labor influx, and they should have appropriate staff on their team to ensure this is done effectively. For major projects an independent supervision engineer solely for safeguards oversight should be considered.

The proposed measures require: (i) enhanced disclosure by bidders about their past social and environmental performance, (ii) demonstration in the bid by the bidder of how social and environmental issues will be addressed, and (iii) contract provisions that would allow financial penalties and incentives for social and environmental non-performance.

6.6. Labor Influx and SEA/SH

The CC will need to maintain labor relations with local communities through a code of conduct (CoC). The CoC commits all people engaged by the contractor, including sub-contractors and suppliers, to acceptable standards of behavior. The CoC must include sanctions for non-compliance, including non-compliance with specific policies related to SEA/SH (e.g., suspension, termination). The CoC should be written in plain language and signed by each worker to indicate that they have:

- Received a copy of the CoC as part of their contract.
- Had the CoC explained to them as part of the induction process.
- Acknowledged that adherence to this CoC is a mandatory condition of employment.
- Understood that violations of the CoC can result in serious consequences, up to and including dismissal, or referral to legal authorities.

A copy of the CoC shall be displayed in a location easily accessible to the community and project- affected people. It shall be provided in Urdu.

6.7. Community Engagement

1) Information disclosure, community involvement, and GRMs are fundamental for projects that have potentially significant social and environmental impacts. Extensive guidance has been given on community engagement in general, and specifically regarding labor influx issues. The section below highlights some key elements.

2) Transparent local community engagement and participation shall be considered during initial project decision-making and continue routinely throughout the life of the project. The key objectives for a project's community engagement are to:

- Provide accurate and timely information
- Help manage community expectations
- Help promote widespread awareness and understanding of potential issues and measures to address them
- Harness local knowledge about potential risks and pre-existing problems.

In this context, it is important to specifically target vulnerable groups, including women and children. Engaging community service organizations active in these areas may help to provide such outreach.

3) Collecting timely feedback from local communities on the project's social and environmental performance is an invaluable tool for risk management. To allow for such feedback, the project requires an effective communication system to disseminate relevant information and receive input in a timely manner.

4) A working project-level GRM that is known to and accessible by the host community is indispensable to manage labor influx related risks. This GRM will be part of the Borrower's and contractor's community engagement efforts. It is important that the GRM be sensitive to all reported concerns and not be limited to dealing with specific issues only (i.e., compensation or land acquisition). An effective GRM shall be able to refer complainants to police and other service providers where appropriate (e.g., in case of gender-based violence complaints).

ANNEXURE – 8:
STAKEHOLDER ENGAGEMENT PLAN

Stakeholders' Identification

Stakeholders of the project include the nearby communities and their formal and informal representatives, regional government authorities, civil society organizations and groups with special interests, the academic community, or business owners. Stakeholders were classified into primary stakeholders, who will be directly affected negatively or positively by the Subproject, and secondary stakeholders who will be indirectly affected.

Stakeholder identification was carried out to ensure stakeholders are consulted during the consultation process. Stakeholder consultations were carried out with people of different backgrounds in the Subproject area e.g. business owners, employed persons etc. The focus of attention has been the community living around the Subproject area. These areas include, Sohbatpur Chowk, Goth Hazar Khan, Goth Dil Murad Khan, Goth Jan Mohammad, Goth Bahadur Khan, Goth Mehboob Ali Khan, Dirgi Village and Sohbatpur Bazar. The viewpoint of the stakeholders has been considered, and their concerns and suggestions for possible improvements have been included. The consultations were made with the following key stakeholders using various methods as identified in **Table 1** below.

Table 1: Stakeholders Identified

Stakeholder category	Stakeholder	Consultation method
General population	▪ Academic community ▪ Influential people ▪ Civil Society Organizations	▪ Group meetings ▪ Individual meetings ▪ Community meetings
Government & other offices	▪ Regional C&W office ▪ Wildlife department ▪ Forest department ▪ Irrigation department ▪ District commissioner office Sohbatpur	▪ Formal consultative meetings

2 Design of the Subproject

Since it is the rehabilitation and upgradation of existing road damaged by floods 2022. Therefore, the Subproject is considered sustainable, as it will be designed with a criterion that shows the resilience to floods and harsh weather conditions. The other purpose is also to make the Subproject economically viable, socially acceptable and environmentally just. The E&S surveys have been conducted in July, August and September of this year, and the team of experts was assisted by regional C&W department office Sohbatpur and Jafarabad.

The findings of the surveys and site visits have confirmed that the Subproject will not require any additional land, rather this will be designed on the existing route, with the same declared RoW as given by Deputy Commissioner Office Sohbatpur, which is 110 Running Feet (RFT). Investigations confirmed that the Pat Feeder Canal embankment was breached at multiple locations, which contributed directly to flooding of the road and adjacent settlements. Significant breaches include:

- Breach No. 1: RD 280+000 (28°29'32.02"N, 68°46'0.63"E)
- Breach No. 2: RD 267+000 (28°28'23.67"N, 68°48'31.90"E)
- Breach No. 3: RD 277+000 (28°28'46.79"N, 68°47'41.76"E)

Although these breaches were some distance from the road itself, the released floodwaters travelled downstream and spread widely, overwhelming the road embankment. It is also likely that additional ad hoc breaches were made along other canal sections to safely pass the flood water, which aligns with anecdotal accounts from local communities and the observed flood patterns.

3 Consultation with Stakeholders

The following list of stakeholders, consulted during the month of July and September 2025. It is mentioned that female consultation.

Table 2: Consultation with stakeholders

Sr. No.	Name of Village	Date of Consultation	Concerns/feedback of Stakeholders	Responses/replies
1	Goth Hazar Khan Chandia (04)	15-7-2025	▪ Showed concerns beyond land loss, this will bring noise, disruption of daily life, possibly increased traffic through villages which may bring both bad effects. However, they also showed their support to the Subproject. ▪ They believed this will improve their life and revive a better road condition for them. ▪ They were found very disappointing over the substandard work, a common practice in the society.	Ensured a smooth and responsible implementation of the Subproject by strengthening the contractor's capacity in proper execution of project activities. A check and balance on quality of work will be ensured by the team of consultant, C&W, and World Bank. Welcomed their positive feedback and appreciated their support and demanded their support for proper execution of project activities.
2	Goth Dil Murad Khan (05)	15-7-2025	▪ Dust from construction, damage to water sources, loss of vegetation, erosion, etc. ▪ Also worried about land. ▪ Showed concerns about benefits like jobs, trade, business may go to outsiders or elites and not locals. There are complaints locals are not involved in decision-making generally.	Ensured proper dust management by contractor. Told them about the procedures we follow for environmental management and monitoring. Briefed them that no land is going to be damaged or acquired for the design. If needed at later stage, will be compensated properly, as per the applicable laws and standard procedures. Also ensured locals will play a major role in implementation, as they should be aware of their rights. They were briefed about GRM procedures.
3	Goth Jan Muhammad (09)	15-7-2025	▪ The project staff, contractors and other people who will work on the project should not disturb the mobility of local women in their routine activities like, collecting firewood, fetching drinking water from nearby area (in some cases) and others. ▪ Job opportunities should be provided to male members of the village. ▪ The project should provide the timely compensation to affected people for damaged assets/ structures, proper assistance in re-construction of similar structures, if there is found any land acquisition.	Contractor will be responsible not to restrict women mobility. The contractors will provide jobs to the locals on priority basis. Compensation will be paid before taking possession of land, if required for the design. However, described them the scope of work on the same road from Sohbatpur to Hairdine Drainage. Briefed them about the rehabilitation only and no ensured them that no displacement will happen during implementation.
4	Goth Bahadur Khan (06)	15-7-2025	▪ Women are too much worried about their lands and houses. ▪ Influx of outside labour will lead to further restriction on women's mobility. ▪ Without proper legal documentation, community members may face difficulties in proving their property ownership, which can hinder their ability to receive fair compensation for their land. ▪ Overall, showed worry about their properties.	Measures were proposed to minimize impact on houses. Where unavoidable, compensation will be paid as per replace cost. Also assured there will not be any damage to their properties. Contractor will be responsible not to restrict women mobility.

				Contractor will sprinkle water to suppress dust. Contractor will be responsible to train his workers regarding local norms and culture and to respect it.
5	Goth Mehboob Ali Khan (04)	15-7-2025	▪ The project staff, contractors and other people who will work on the project should not disturb the mobility of local women in their routine activities like, collecting firewood, fetching drinking water from nearby area (in some cases) and others. ▪ Job opportunities should be provided to male members of the village.	This is rehabilitation of road project that will bring and revive many benefits for the local communities. However, the contractor will make sure the security and protection to local norms and values. There will priority of hiring the unskilled workforce from the local villages, to give them income source and to avoid labour influx to the Subproject site.
6	Dirgi Village (13)	14-7-2025	▪ Privacy of women should be utmost priority, as it is a tribal area, and showed concerns on the violation of their norms and values. This should not be affected due to road construction. ▪ If assured their privacy will not be disturbed, they are very happy with the subproject. ▪ They also showed some positive feedback regarding the upgradation of road, that will save them from mud in the rain and dust in clear weather, while going to get necessities from the market.	Adequate compensation will be provided for the construction of new houses, and a grievance redressal mechanism will be established to address their concerns in a timely manner. Due compensation will be paid before taking possession of the road alignment. Mitigation measures will be proposed to ensure women purdah and privacy.
7	Bhand Sharif (06)	14-7-2025	▪ Women also shared their concerns over security in the area particularly for young girls. ▪ The presence of outside labour should not restrict the movement of local women working in nearby fields.	This is rehabilitation of road project that will bring and revive many benefits for the local communities. However, the contractor will make sure the security and protection to local norms and values. The women will not be restricted to go on work in the fields. Their concerns can be shared by their representative (a female leader) to PCC of GRM and will be resolved immediately giving priority to the females' concerns during implementation of the Subproject.
8	Sohbatpur Chowk Dera Allah Yaar (17)	14-7-2025	▪ Displacement will lead to social disconnection of the community ▪ Houses should not be affected. ▪ The presence of outside labour should not restrict the movement of local women working in nearby fields. ▪ There will be increase in respiratory diseases due to heavy dust during construction.	Contractor will provide awareness and train his labour about how to respect local norms/values. The contractor will also be responsible not to restrict women mobility. A grievance redressal mechanism will be established, that can be approached by the community members, and their

				representation will be ensured in the grievance redress committee. Affected individuals can reach out anytime while compensation will be transparently provided according to the LAA 1984 and as per ESS-5.
9	Sohbatpur Bazar (14)	16-7-2025	▪ Compensation should be adequate and in the shape of house, money and land. ▪ Delay in completing road works often causes traffic congestion, blocked routes, delays in traveling to markets, schools and hospitals. ▪ Showed concerns that contractor use low-quality materials, do poor finishing, or do not follow engineering standards. This may lead to roads deteriorating soon after completion, frequent potholes etc.	Briefed them about no land acquisition is required. However, if required at later stage, will be compensated as per the applicable laws. Ensured about the timely completion of work and emphasized on not increasing the project cost if it gets delayed. Showed commitment to give them a better road access to the markets, schools and hospitals

Information Dissemination

During the consultation meetings, following information was shared with the communities in several villages of the Subproject area.

- Introduction to the Subproject.
- Discussed about the Subproject
- Description of activities and impacts
- Discuss social and environmental impacts
- Discuss resettlement related impacts of the Subproject, if emerges
- Discussed about the approach and methodology if additional land is required for the design
- Description of criteria of evaluation of buildings and other infrastructure
- Description of criteria of evaluation of business losses
- Compensating procedures against the loss of assets

5 Stakeholder Engagement and Participation Framework

After suggesting the possible solutions of the stakeholders' concerns, the draft and final ESMP Reports will be disclosed to the stakeholders and public. These reports (draft and final) will be accessible to interested stakeholders on request, and the version of final reports will be available online and in the nearest regional office of C&W department Balochistan and its summary will be available in Urdu language. The stakeholder consultation and engagement are an ongoing process and will continue throughout the project's construction as well as operation and maintenance phases.

The ongoing consultation process could be scheduled on quarterly basis with the stakeholders, including but not limited to the concerned C&W regional office, local administration and the community representatives from the Subproject area. The overarching goal of consultations and community engagement is to support and facilitate the project's design and implementation, to reduce conflicts and to increase project's acceptability. The process of such consultation is to be continued during project implementation and even during O&M stage. Stakeholder consultations and participation will take place through different means and the proposed plan for public consultation is described below.

6 Plans for Further Consultation and Community Participation

6.1 Consultations during project implementation stage:

- Interaction with community, PAPs and relevant departments for information disclosure.
- Awareness campaign for all stakeholders and inhabitants of the Project COI.
- Grievance Redress Mechanism at the community level.
- Formal interactions through periodic meetings/workshops, consultation sessions with wider stakeholders' especially institutional ones such as other government department and relevant NGOs etc.
- Localized group meetings, pamphlet/Information brochures, public display.
- Consultations will be conducted with PAPs for formulating and implementing detailed livelihood restoration activities involving activities related to improving access to project related jobs, training (if planned), development and other related.
- Female social staff will also be involved during implementation of the Subproject to ensure further consultations with women and address their issues and ensure that they are equally benefitted from the project
- C&W department through the ESS team of PIU/PMU, consultant and contractor staff will keep a close liaison with the stakeholders including women, with PAPs; record and address their concerns relating to the implementation of ESMP Report and construction related works.

• Maintain a functioning Grievance Resolution Mechanism to deal with complaints and concerns about community health and safety.

6.2 Consultations during operation and maintenance phase:

Stakeholder consultation will continue throughout the project operation to guide information disclosure, consultation, and feedback as and when required about the long-term operation and maintenance of project infrastructure to achieve desired results. For the consultations and information sharing, following techniques will be adopted:

- Project information disclosure in a timely and effective manner.
- Consultation meetings at appropriate times, at least annually to review the performance of the project and to offices, response to public enquiries, Press release etc.
- Consultations with livelihood of displaced people (if) to assess their livelihood restored or enhanced.

7 Grievance Redress Mechanism

An effective grievance mechanism is fundamental not only to facilitate an effective and responsive land acquisition and resettlement process, but also to ensuring that project can proceed on schedule, without delays induced by affected community disaffection. The main objective of the Grievance Redressal procedure will be to provide mechanisms to resolve project related grievances to avoid delays. It will also provide to PAPs a public forum to raise their objections and through conflict resolution, address these issues adequately. Major possible grievances noted during the consultation process are:

- Privacy in free mobility of women to work in fields
- Delay in work completion and substandard work
- Local communities to be involved in decision making, which is not happening in general
- Worried about their property damage

To address any concerns and grievances of PAPs, an effective grievance redress mechanism that is fully commensurate with local customs and legal framework is required for timely recourse of grievances and achieving transparency in resolving the dispute. In view of the applicable legal and administrative framework, a grievance redress mechanism that is fully responsive to local customs and applicable legal framework is already proposed for the project.

7.1 Procedures for Grievance Handling

A project specific grievance mechanism will be available to allow PAPs to complain and seek resolution for any decision, practice or activity arising from land or other assets compensation. PAPs will be fully informed of their rights and the procedures for addressing complaints whether verbally or in writing during the disclosure process. Care will always be taken to prevent grievances rather than going through a redress process. The grievance committee will focus on the following:

- Recording grievances, both written and oral, of the affected people, categorizing and prioritizing them, and providing solutions within an agreed timeframe.
- Discussing the grievances on a regular basis at the Jirga or with the Project Implementation Unit (PIU) and identifying decisions/actions for issues that can be resolved at that level.
- Reporting to the aggrieved parties about the developments regarding their grievances and the decisions of the GRC and PIU.

To address the complaints and grievance that may arise during project implementation, a three-tier grievance redress process, first at PIU Level, then at the level of the GRC, and finally at the level of the PMU (Provincial

and federal). This process will provide the PAPs with a forum to register their complaints and seek resolution to their concerns. The procedures for three-tier system for grievance handling and resolution. If the complainant is not satisfied and the issue is not resolved at PIU and GRC will forward the complaint to PMU for remedial measures and decisions/grievances will be resolved accordingly. Upon receipt of complaint, the PMU will review the record and call the complaint/complainants to hear and record their concerns and initiate any further investigations (if required) for resolution of the complaint. The PMU will decide regarding the complaint and inform the aggrieved person, PIU, GRC for required execution on-ground and closure of the grievance process.

7.2 GRM for Women

The contractor' contract will include provisions for mandatory reporting of all incidents having any gender related aspects. The GRM will be gender sensitive and it will ensure that women can register all types of grievances they may have related to the Subproject. These grievances may relate to the payment of compensation, restrictions in their movement during construction, impact of the privacy, issues related to Sexual Exploitation and Abuse/Sexual Harassment (SEA/SH) or any other project related issues. To facilitate the aggrieved women (if any) to lodge their complaints and get their concerns resolved through GRM, female project affected persons committees will be formed.

For SEA/SH related issues, the project will partner with a local organization with in-depth expertise in gender issues, strong local presence in and trust, by the communities. The organization will become a member of the GRM Committee and will undertake a range of related activities including but not limited to referring the women's complaints to the relevant tier of the GRM system. The local partner will:

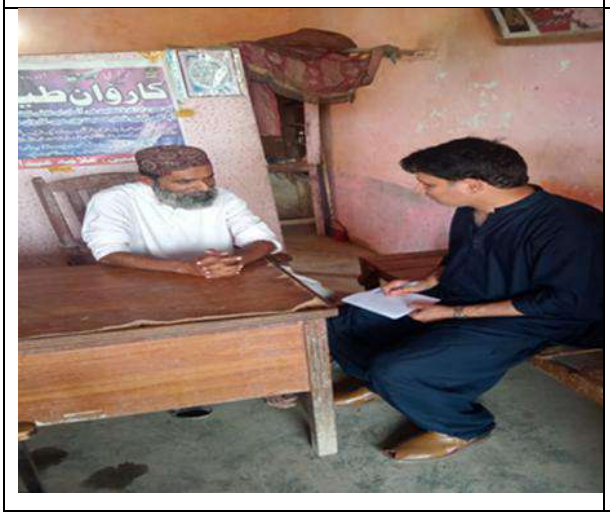
- Educate and raise awareness of communities about equitable and fair treatment to all genders, and their legal rights and services available to them.
- Monitor the contractor's relevant contractual obligations and the implementation of mandatory and repeat trainings of workers on gender and sexual harassment policies etc.
- Undertake gender related issues awareness and prevention trainings of workers.
- GRM will have protocols for recording and addressing complaints by the womenfolk. This will include appropriate mechanisms for referral to the service provider. GRM will be enhanced with the feedback received from the service providers. The project will disseminate GRM procedures in the communities.

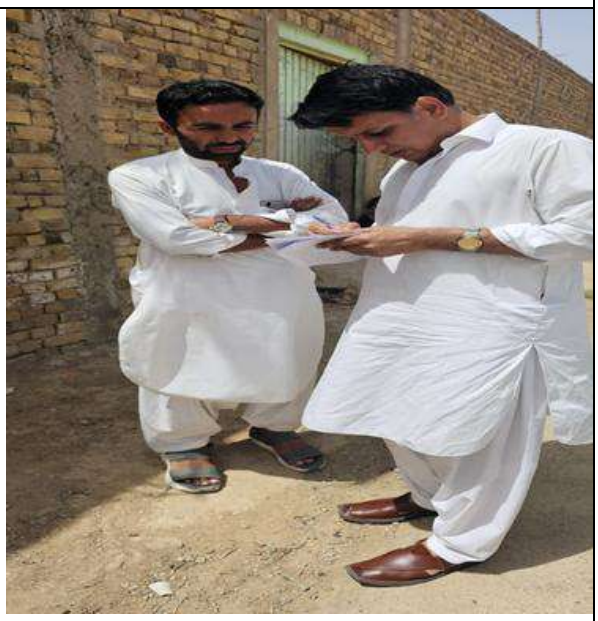
7.3 Community Outreach and Information Dissemination

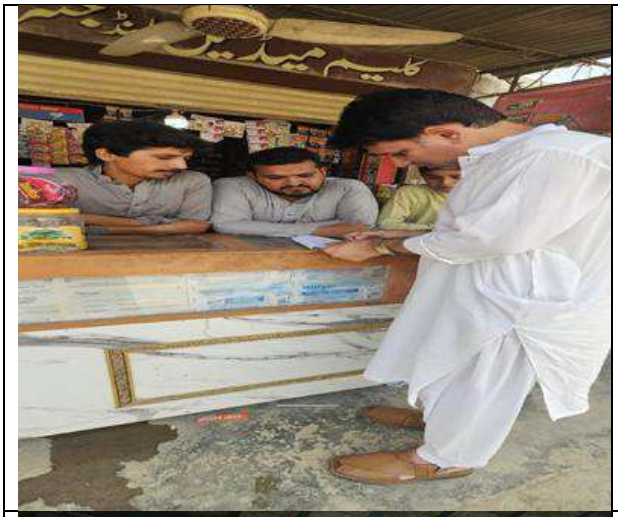
The GRM for the Sub project will be complimented by a robust information dissemination and community outreach component. As part of this component, the EA will be required to provide relevant information regarding their rights to the PAPs as per the policies and regulations outlined in World Bank's OP 4.12, ES-5 and the approved ESMP.

All relevant information will be translated in Urdu to ensure acceptance by local communities. The PAPs will be informed about the three different tiers of the grievance redress procedure, including the roles of the PIU, GRC and the PMU in grievance resolution. The PAPs will be provided information about contact details of the focal points for each of the three tiers. All expenses incurred in arranging grievance negotiations and meetings of GRC as well as logistics required, shall be arranged by C& W department of Balochistan.

7.4 Photographs of Consultations







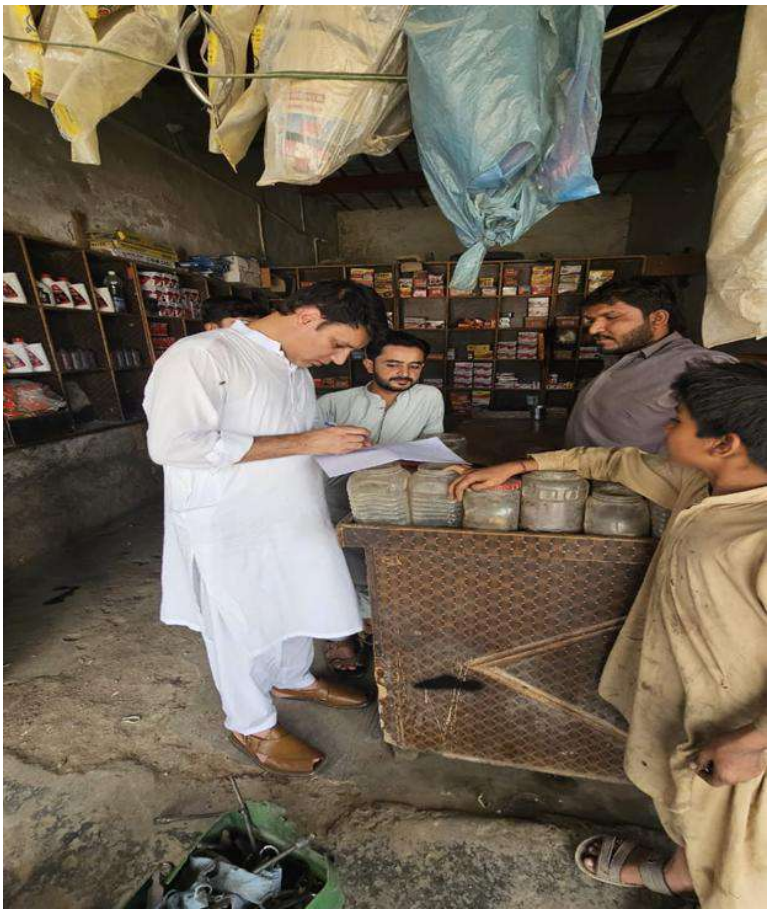


Figure: Consultation at Sohbatpur Bazar

Figure 1: Female consultation at Dirgi village

Figure 2: Female consultation at Dirgi village

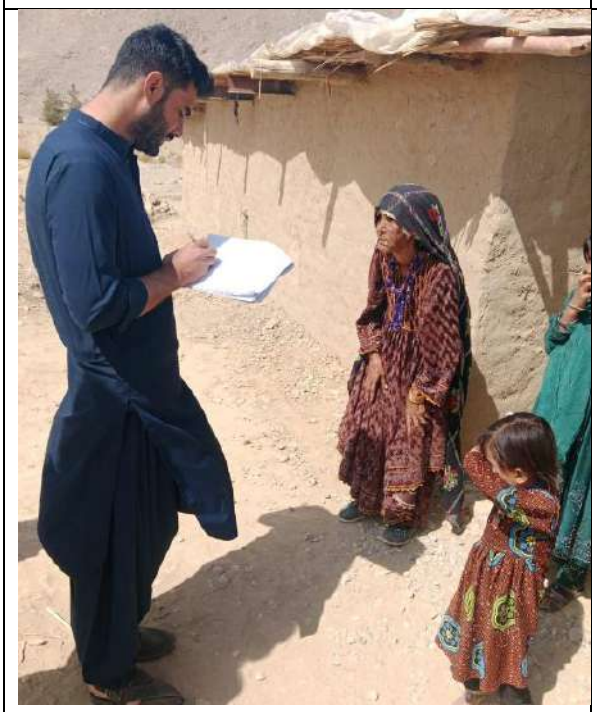


Figure 3: Female consultation at Bhand Sharif

Figure 4: Female consultation at Goth Mehboob Ali Khan

ANNEXURE - 9:
GENDER ACTION PLAN

1.1 Overview

The 2022 floods in Balochistan had disproportionate impacts on women and girls due to existing gender inequalities, socioeconomic vulnerabilities, and limited access to resources and services. In response, the Integrated Flood Resilience and Adaptation Project (IFRAP), through Component 1, aims to strengthen flood-resilient infrastructure, enhance community preparedness, and reinforce institutional capacity.

This Gender Action Plan (GAP) ensures that gender equality and women's empowerment are systematically mainstreamed across Component 1 interventions, in line with the World Bank Gender Strategy, Environmental and Social Framework (ESF), the Post-Disaster Needs Assessment (PDNA), and the Resilient Recovery, Rehabilitation, and Reconstruction Framework (4RF).

Gender inclusion is a core element of the Environmental and Social Management Plan (ESMP), ensuring that women, men, and vulnerable groups benefit equitably from project activities and are not exposed to disproportionate adverse impacts. All project interventions including construction, rehabilitation, and community engagement will be planned and implemented to promote inclusive participation, safety, and fair access to project benefits for all social groups.

1.2 Objectives of the Gender Action Plan

This Gender Action Plan (GAP) for Component 1 is prepared in accordance with the World Bank Environmental and Social Framework (ESF) and Environmental and Social Standards (ESS1–ESS10).
Specific Objectives

- It aims to ensure meaningful participation and leadership of women in project planning, implementation, and monitoring.
- Enhance women's access to gender-responsive infrastructure, services, and disaster risk management systems.
- Strengthen institutional capacity for gender-sensitive and inclusive project implementation.
- Reduce gender-based vulnerabilities and strengthen safeguards, including prevention of SEA/SH.
- Establish clear monitoring indicators and mechanisms for gender gender-disaggregated throughout the project cycle.

1.3 Key Gender Issues

- Limited participation of women in community-level disaster risk management and decision-making bodies.
- Inadequate consideration of women's needs in flood-resilient infrastructure and service delivery.
- Barriers to women's access to early warning information and disaster preparedness systems
- Weak institutional capacity for gender mainstreaming and GBV risk mitigation.
- Lower literacy rates among women limit access to written project information.

1.4 Gender Action Matrix

Strategic Area	Activities	Indicators	Targets	Responsibility	Timeline
Institutional Strengthening & Participation	• Ensure at least 40% women's representation in community-level FGDs and Consultations. • Provide gender-sensitivity, SEA/SH, and safeguards sessions to community • Engage local women's organizations for community outreach. •Provide gender-sensitivity, SEA/SH, and safeguards sessions to CSC and contractor staff	• 40% women in DRMCs. • # of personnel trained (gender-disaggregated). • #of women-form groups and engaged in activities.	• 40% women representation. • 100% CSC staff and contractors trained.	PIU,CSC Gender/Social Specialist	Throughout project
Gender-Responsive Infrastructure and Services	• Integrate women-friendly design (Footbridges and/or passages in strategic locations of the irrigation, roads, and bridges accessibility) in flood-resilient sub-project reconstruction. • Prioritize pregnant/lactating women and women with disabilities during service reconstruction-restoration.	• # of facilities with gender-responsive design. • % women beneficiaries.	• 100% facilities compliant. • 50% women beneficiaries.	CSC and Contractor Infrastructure Specialist	Years 1–3
Disaster Risk Reduction & Climate Resilience	• Include women in early warning dissemination and community preparedness planning. • Conduct disaster preparedness awareness sessions targeting women and girls. • Promote women's engagement in climate-resilient water and land management.	• % women participating in DRR activities. • # women trained.	• 30% women participation. • Annual awareness sessions conducted.	PIU, CSC Social and Gender team	Years 1–3
Safeguards & GBV/SEA/SH Risk Prevention	• Establish GBV referral pathways and confidential reporting mechanisms. • Conduct community-level awareness on GBV ,SEA, SH, Sexual exploitation & abuse, and HIV/AIDS awareness • Enforce a Code of Conduct for all workers addressing GBV, SEA, and SH. • Ensure labor influx and OHS plans integrate SEA/SH mitigation.	• GBV mechanism operational. • # awareness sessions conducted.	• Functional system in all project areas.	PIU Safeguards Specialist; Contractors;	Throughout the project
Gender responsive Grievance	• Establish women-friendly GRM access points, including female focal persons.	• **% of project communities informed**	• 40% women participation. • Monthly and	PIU, CSC Social and Gender team	Throughout project

Redress Mechanism	•Conduct GRM awareness sessions, including women-only sessions.	**about the GRM**, disaggregated by gender **• Number of GRM awareness sessions conducted,** including women-only sessions	Quarterly awareness sessions conducted.		
Formation of Women Development Groups (WDGs)	100% of project command area villages were covered for the formation of Women Development Groups (WDGs) to strengthen women's participation in project planning and implementation, in line with ESMP commitments. 100% WDGs capacity needs to be built to do proper management and maintenance of the WDGs	100% of WDG members were selected by their respective communities and will coordinate regularly with the project team. 1 Chairperson, 7 General Body Members selected through community-based nomination	100% Formation of WDG at subproject site.	PIU, CSC Social and Gender team	Throughout project
Stakeholder engagement and women's Consultation	According to ESMP Stakeholder Engagement /GAP: **100%** separate consultations conducted with women in all project-affected villages, facilitated by trained female social mobilizers, in line with ESS10 requirements. **100%** of women consultations informed project design and the Gender Action Plan (GAP), ensuring meaningful participation and inclusion.	Consultation outcomes indicated women's priority needs as follows: 35% access to clean and safe drinking water 25% provision of safe and dignified washing/sanitation facilities 20% livelihood support to enhance household income and resilience	• at least 40-50% women Consultation • # women consulted	PIU, CSC Social and Gender team	Throughout project
Monitoring and Reporting	• Monthly ESMP Monitoring Reports • Quarterly Social Safeguards Reports • GAP Progress Reports • GRM records and community feedback	# of reports submitted; completeness source	Monitoring data will be sex-disaggregated and used to adapt implementation as needed.	PIU Gender Specialist will oversee compliance, with third-party monitoring where required.	Throughout project

1.5 Gender-Based Violence (GBV) and Sexual Exploitation & Abuse (SEA)

1.5.1 Risk Assessment

Due to the influx of labour during project implementation, there is a potential risk of Gender-Based Violence (GBV) and Sexual Exploitation and Abuse (SEA) affecting women, girls, children, and other vulnerable populations (e.g., poor women, single women, elderly, infirm, orphans). These risks may result in lasting physical, emotional, and social harm and could undermine the ability of survivors and their families to live productive lives.

Identified Risks	Mitigation Measures
Women's limited participation in community consultations	Conduct separate FGDs for women; engage female social mobilizers; ensure consultation venues and timings are convenient for women.
Potential safety risks for women near construction sites	Ensure safe access routes; restrict unnecessary worker–community interaction; enforce Codes of Conduct for workers.
Limited access to employment opportunities for women	Encourage contractors to hire local women for feasible roles (e.g., community liaison, documentation); ensure equal wage for equal work.
Cultural restrictions limiting women's mobility	Coordinate with community elders and female groups; develop inclusive mobilization strategies.
Communication gaps due to low female literacy	Use visual communication tools, verbal briefings, and culturally appropriate awareness material.

1.6 Conclusion

This Gender Action Plan provides a comprehensive, World Bank–compliant framework to ensure that Component 1 of IFRAP delivers equitable, inclusive, and safe outcomes for women and men. The GAP will be implemented as an integral part of the ESMP and updated as needed, based on monitoring results and World Bank guidance.