ENVIRONMENT AND SOCIAL MANAGEMENT PLAN (ESMP)

Rehabilitation of Road from Sucha Soda Manawala Road to Gurdwara, District Sheikhupura. (Length-1.15KM)

December, 2020

PUNJAB
TOURISM FOR ECONOMIC GROWTH

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LIST OF ABBREVIATION

APHA	American Public Health Association
BDL	Below Detection Level
C&W	Communication and Works Department
CBO	Community Based Organization
DCO	District Coordinator Officer
DO	District Officer
EA	Environmental Assessment
EA	Environment Specialist
EIA	Environmental Impact Assessment
ESMMP	Environmental and Social Management and Monitoring Plan
EPA	Environment Protection Agency
ESMF	Environmental and Social Management Framework
ETPB	Evacuee Trust Property Board
FFO	Farmers Friends Organization
GDP	Gross Domestic Product
GRM	Grievance Redress Mechanism
GT	Road Grand Trunk Road
IDA	International Development Association
IEE	Internal Environmental Examination
IEMC	Independent External Monitoring Consultants
LAA	Land Acquisition Act
M and E	Monitoring and Evaluation
MIS	Management Information Systems
NGO	Non-Governmental Organization
OP	Operational Policy
PEPA	Punjab Environment Protection Agency
PEQS	Punjab Environment Quality Standard
P&DD	Planning and Development Department
PAP	Project Affected Persons
PCR	Physical Cultural Resources
PEQS	Punjab Environment Quality Standards
PPEs	Personal Protective Equipment (s)
PIC	Project Implementation Consultants
PMU	Project Management Unit
PKR	Pakistan Rupees

PTEG	Punjab Tourism for Economic Growth
RAP	Resettlement Action Policy
ROW	Right of Way
RPF	Resettlement Policy Framework
SS&GS	Social Safeguard and Gender Specialist
TDCP	Tourism Development Corporation of Punjab
TSP	Total Suspended Particles
TMA	Tehsil Municipal Authority
WB	World Bank
WHO	World Health Organization

EXECUTIVE SUMMARY

Tourism is a large, growing and untapped market that Pakistan could better use to create more and better jobs. Pakistan is home to numerous historical, leisure, and adventure sites as well as heritage sites linked to the Indus Valley civilization, a Bronze Age civilization in north-western Pakistan, the Mughal Empire and colonial era monuments. It also hosts many important pilgrimage sites for Buddhists, Hindus, Sikhs and Muslims.[1]

The Punjab Tourism for Economic Growth Project will focus primarily on putting in place a stronger foundation for private sector participation in the tourism sector, including through the new Tourism Policy framework, institutional reforms, improved governance, sector coordination, destination management and improved access and tourist facilities. The nascent tourism sector in Punjab is potentially a large niche market that will be developed to demonstrate the benefits that the sector can offer the local economy. The Project is financing some low-scale physical interventions to provide improved access, better road conditions and public convenience facilities. In line with the environmental legislation of Pakistan as well as World Bank (WB) Operational Policies, an Environmental and Social Management Framework (ESMF) for the project has been prepared to include environmental and social impact studies for the selected sites to mitigate any negative impact.[2]

Environment and Social Management Plan (ESMP)

The sub-project site specific ESMP is being prepared for following site regarding civil works covering road rehabilitation to address the environment and social impacts by suggesting mitigation measures:

"Rehabilitation of Road from Sucha Soda Manawala Road to Gurdwara length = 1.15 km in District Sheikhupura."

The ESMP has been completed in accordance with provincial and national legislation, and the World Bank's Operational Policies (OPs). The number of mitigations have been included in the ESMP based on the selection and siting of plant to reduce this impact. Requirements to train the contractor's staff in the implementation of measures to reduce dust generation during earthworks operations have also been identified. The sub-project area does not fall in any of the wildlife habitat and does not cause any harmful impacts directly. Illegal hunting and shooting of faunal species by construction staff is possible. However, there are no major adverse impacts related to operation phase, and impact will be of temporary nature. The subproject activity does not involve any removal of vegetation or deforestation. Henceforth, there are no major adverse impacts related to operation phase, and impact will be of temporary nature.

In case of sensitive area related to Physical Cultural Resources wherein impact is associated, the contractor will be required to follow the management plan at any cost as per OP 4.12. This policy is triggered where there is a potential impact to movable or immovable objects, sites, structures, groups of structures and natural features and landscapes that have archaeological, paleontological, historical, architectural, religious,

[1] Project Appraisal Document (PAD) PTEG, pp. 1
[2] Environment and Social Management Framework, 2016 (PTEGP)

aesthetic or other cultural significance. The objective of this policy is to avoid or mitigate adverse impacts on physical cultural resources.

Environmental and Social Screening

Sub-project has been screened to assess the environment and social impacts as described in the ESMF document. As per findings of the site visit conducted on **04.07.2018**, discussion with officials and stakeholder consultations, OP/BP 4.01, OP 4.11, and OP 4.12 of the WB are triggered in this sub-project. There will be no involuntary land acquisition, and therefore there will be no physical displacement or impacts on livelihoods nor restrictions on access to the local community. Project area does not fall in any of the wildlife habitat and will not cause any harmful impacts directly or indirectly.

In case of sensitive area related to Physical Cultural Resources wherein impact is associated, the contractor will be required to follow the management plan at any cost. This policy is triggered where there is a potential impact to movable or immovable objects, sites, structures, groups of structures and natural features and landscapes that have archaeological, paleontological, historical, architectural, religious, aesthetic or other cultural significance. The objective of this policy is to avoid or mitigate adverse impacts on physical cultural resources.

Accordingly, ESMP has been completed in accordance with provincial and national legislation, and the World Bank's Operational Policies (OPs). The number of mitigations included in the ESMP are based on scope of work. Requirements to train the contractor's staff in the implementation of measures to reduce dust generation during earthworks operations have also been identified.

Proposed Civil Works

1. Survey and mapping
2. Dismantling of existing road edging
3. Dismantling of existing PCC
4. Removal of unsuitable/surplus material without excavation i/c2
5. Dismantling of existing road pavement
6. Making embankment Earth work with 2km lead 95% compaction
7. Relaying of sub-base course of old dismantled material received

Environmental Baseline

Physical Environment:

Surface Water Quality: In order to evaluate the water quality, surface water monitoring was carried out at single location by covering physical parameters (pH, turbidity, total dissolved solids, total hardness, taste, odor), chemical parameters (chloride, arsenic, chromium and biological parameters (total E-coli, faecal coliform) found in compliance with PEQS/WHO Standards.

Ambient Air Quality: The 24 hrs monitoring of ambient air quality for specific sub-project site has been carried out at 02 locations. The pollutants monitored were as nitrogen oxides (NOx as NO, NO_2), sulphur dioxide (SOx), carbon monoxide (CO), particulate matter (PM10), particulate matter ($PM_{2.5}$) and TSPM (total suspended particulate matter) found in compliance with PEQS.

Noise: Noise level measurements were carried out at three points of the sub-project. Major source of noise generation is vehicular traffic along the main road. The noise level results were within the PEQS Limits at all boundaries during the monitoring hours.

Climate: The climate of the district Sheikhupura is subject to extreme variations. From the middle of December to the middle of March, the air is very damp, cold and light to moderate rain falls at intervals. The winter rain is followed by a spell of pleasant weather. Soil profile of scheme area is also fertile. There will be no impact on soil profile of scheme area as scope of work limited to the repairing of existing metal road surface.

Soil Profile: Soil profile of project area is fertile and suitable for agriculture. The soil in the project area is generally alluvial composed of silt, sand and clay with no visible signs of contamination. The sub-component may require the excavation of earth from borrow areas, which may result in topsoil removal, holes that get filled with rainwater and/or agricultural runoff, creating a site for vectors to breed.

Biological Environment:

Flora: Sub-project site is neither in a habitat of a critical wildlife nor is in the proximity of a protected area of any classification. Eucalyptus (*Eucalyptus globulus)* and Berry (*Zizyphus nummularia*) plants are seen along ROW of the sub-project area.

Fauna: Sub-project site is neither in a habitat of a critical wildlife nor is in the proximity of a protected area of any classification. Most of the fauna in the project area include Black partridges (*Melanoperdix niger*), Crow *(Corvidae splendens)*, Parrot (*Psittacula kra*meri), Mallard duck (*Anas platyrhynchos*) and Bulbul *(Pycnonotus jocosus).*

Social Baseline

Language: Urdu and Punjabi languages are commonly spoken in the community as mode of communication in Sucha Soda village.

Health Facilities: There is only one functional basic health unit facility available at Sucha Soda. In case of emergency and serious health care needs, patients have to be referred to Sheikhupura District Headquarter Hospital (DHQs) or Lahore.

Communication: All the houses are connected to the national grid for electricity supply for domestic as well as agricultural use.

Means of Transport: Sub-project area is located 23 km away from Sheikhupura city. The community travels to district headquarter town in local buses, Qinchi rickshaws and pickups. Individuals in the community often use their own source of transport (mainly motorbikes).

Vegetation: Rice, wheat and different types of vegetables as cabbage, potatoes, Peelu, turnip are mostly vegetated including fodder.

Number of Household and Population: The socio-economic baseline survey reveals that the overall population is 14,112 belonging to 3500 households.

Impact Assessment and Mitigation Measures

Impacts associated with biodiversity, air quality, soil, solid waste, labour health and safety, public convenience and safety, PCR and land acquisition were assessed for design, construction and operations phase. These were found to be from low to medium in nature. Suggested mitigation measures are proposed in **Table 6.1** under **"Environment and Social and Monitoring Management Plan**" Chapter Six "**Impacts and Mitigation Measures**".

Consultation sessions were held with different stakeholder groups who may be affected by the proposed project. The consultation sessions were conducted in accordance with the World Bank's policy and guidelines. Focused Group Discussion with local residents especially women were done to brief them about project activities.

Standard Operating Procedures (SOP) for construction site are developed as part of ESMP to be implemented at construction site by contractors during execution in line with national, provincial, World Bank and WHO Guidelines to control the spread of COVID-19 and its

prevention attached at ***Annex F***. Capacity building sessions are proposed to be conducted by safeguards team-PMU for effective implementation of ESMP as well as COVID-19 related precautionary measures.

Environmental monitoring will be carried out to ensure that all construction activities comply and adhere to environmental provisions and standard specifications, so that all mitigation measures are implemented.

Environmental and Social Mitigation Measures

Mitigation measures for the anticipated environmental and social impacts that may arise have been provided. These mitigation measures are proposed to reduce/avoid the identified potential environmental and social impacts associated with sub-project activities. The proposed mitigation measures include the use of PPEs by labour, water spraying for dust control, limiting noisy activities during school hours, fencing of construction area and safety measures for prevention of Covid-19 are proposed to mitigate the environmental and social impacts of the sub-project activities.

Consultation sessions were held with different stakeholder groups who may be affected by the proposed project. Consultation sessions were held with different stakeholder groups which may be affected by the proposed sub-project in accordance with the World Bank's policy 4.01 at an early stage before execution of sub-project. Focused Group Discussions with local residents especially women were carried out to brief them about the project activities.

Grievance Redress Mechanism

A site-based Grievance Redress Mechanism (GRM) for the project will be operational during the implementation of this ESMP. Grievance Redress will be convened as per the World Bank OP 4.12 which requires an appropriate and accessible grievance redress mechanism for affected persons, including displaced persons and host communities.

A multi-tier GRM has been proposed in the ESMF. At the PMU level, the focal person for PTEGP will act as the Social Safeguard and gender specialist.[3]

GRM will provide an easy to access forum for stakeholders to officially launch any complaint (through complaint boxes, by post, via mail, in person etc.) against any project related activities or issues whereby, their complaints will be heard, registered and addressed by the project. The proposed GRM has time bound activities with clearly defined roles and responsibilities. All complaints received in writing or received verbally will be properly recorded and documented. An online GRM already exists and can be accessed at https://ptegp.punjab.gov.pk/grm.

ESMP Budget

The costs for the implementation of construction stage activities given in this ESMP will be included within the civil works contract for this sub-project which is **26.171Million.** The total cost of ESMP implementation is **0.687M** of total sub-project cost given in **Table 10-1.**

[3] Grievance Redress Mechanism Manual (GRM), PTEGP

CHAPTER - 1: INTRODUCTION

The Punjab Tourism for Economic Growth Project will focus primarily on putting in place a stronger foundation for private sector participation in the tourism sector, including through the new Tourism Policy framework, institutional reforms, improved governance, sector coordination, destination management and improved access and tourist facilities. The nascent tourism sector in Punjab is potentially a large niche market that will be developed to demonstrate the benefits that the sector can offer the local economy.[4]

Component 1: Policy, Institutions and Governance for Tourism Development

The first component will address market failures linked to sector coordination failures, uncompetitive markets and legacy information failures. The project activities will support implementation of the new Tourism Policy by: (i) reforming and strengthening public institutions mandated with sector regulation and governance aimed at improving market competition; (ii) improving tourism data collection and strengthening sector coordination between federal, provincial and local authorities, including relevant authorities, and tourism industry associations, religious institutions and civil society; (iii) improving management and the protection of sites by developing management plans; and (iv) improving partnerships and knowledge by improving the quality of information about the sites, their cultural significance, and facilities within and around the sites that can be accessed by visitors .

Component 2: Private Investment and Entrepreneurship Promotion

The second component will address pockets of uncompetitive markets as well as missing markets associated with public ownership of commercial properties and services. It will promote positive externalities linked to people-to-people contact and a better informed local population. The project activities will address: (i) weak capacity for facilitation and promotion of private investment in the tourism sector; (ii) insufficient options and quality of training in tourism-related institutes of learning; (iii) weak cooperation and product coordination between tourism and other important market segments; and (iv) entry barriers affecting female labour force participation.

Component 3: Public Investment Facility

The third component will provide public goods to improve access to the historical, leisure, cultural heritage sites and reduce negative externalities such as over-crowding and site-specific environmental degradation. The project activities will seek to address: (i) poor access to some sites (access roads, parking, and select border facilities); (ii) health and safety concerns for visitors; and (iii) potential strains on basic infrastructure and services resulting from a projected increase in the number of visitors. It will finance technical assistance, equipment and works to improve secondary and tertiary road access, upgrade and build new parking areas, and install tourist and family friendly facilities along the main transport network and near the sites (but not within any of the sites/compounds themselves).

[4] Environment and Social Management Framework, 2016 (PTEGP)

Component 4: Project Management, Monitoring and Evaluation

The fourth component will finance a Project Implementation Unit (PIU) in charge of project management and daily implementation of project activities, including procurement, financial management, safeguards management, monitoring and evaluation (M and E), communications, community outreach and stakeholder consultations. It will also finance TA to embed international expertise to prepare and monitor implementation of activities on a needs basis.

1.1 Environmental and Social Management Framework (ESMF)

ESMF assesses environmental and social impacts related to the Project, and outlines an Environmental and Social Management and Monitoring Plan (ESMMP) as well as a Resettlement Policy Framework (RPF) to address any adverse potential impacts as a result of this Project.

1.2 Environmental and Social Management Plan (ESMP)

Based on the principals and guidelines provided in the ESMF, sub-project "**Rehabilitation of Road from Sucha Soda Manawala Road to Sucha Soda Gurdwara length = 1.15 km, District Sheikhupura."** is assigned as Category B due to the limited environmental and social impacts that could be linked to soil erosion, dust and noise, and social disturbance during civil works. Therefore, Environmental and Social Management Plan (ESMP) has been developed to address the environment and social impacts and suggesting mitigation measures accordingly during operational phase of the sub-project. This ESMP includes monitoring mechanism and responsibilities.

1.2.1 Objectives of Environmental and Social Management Plan (ESMP)

Following are the objectives of the ESMP:

i. Identify social and environmental impacts of the subproject and related activities including implementation of Standard Operating Procedures (SOPs) for civil works during construction regarding COVID-19.
ii. Suggest suitable measures for mitigation of identified impacts at planning, designing and implementation stages of subproject and to avoid, eliminate or reduce their adverse impacts, if any.
iii. Propose an environmental and social monitoring plan to ensure that mitigation measures are implemented during the subproject execution and timely corrective actions are taken where required.
iv. Propose the institutional arrangements required to implement and monitor the ESMP.
v. To carry out periodic social and environmental monitoring and ensure compliances and reporting non-compliances in accordance with this ESMP.
vi. Capacity building of contractor and project staff.

1.3 Scope of Environmental and Social Management Plan

Sub-project area falls in District Sheikhupura. To execute the sub-project activities including civil works for road rehabilitation, Environmental and Social Management Plan has been prepared:

A. Environment and Social Screening

At first stage, environment and social screening of the sites was carried out. Based on site visits and consultation meetings, OP 4.01 Environmental Assessment is triggered because of its environmental impacts, although it is not expected to have significant or irreversible environmental and social impacts. The project, therefore, falls under the Bank's Environmental Category-B. Environmental Category B meaning thereby that the potential impacts are limited, localized

B. ESMP Development

ESMP has been developed in second stage which covers the site-specific environmental and social aspects and to suggest the mitigation plan for proposed impacts resulting from the activities during all phases and reversible. ***Environmental and Social screening form is attached as Annex B.***

1.4 ESMP Methodology

1.4.1 Literature Review

Project documents including (PC-1, ESMF, and PAD), data from secondary resources including previous publications, research and reports have been reviewed for collection of baseline data, project assessment and preparation of ESMP for construction/rehabilitation of sub-project.

1.4.2 Review of Legal and Policy Frameworks Requirements

A legislative review has been conducted for the project. This included a review of all the related national and provincial legislation, guidelines and WB OPs which are relevant to the subproject and applicable in conducting ESMP study.

1.4.3 Baseline Data Collection- Environmental and Social Surveys

After the review of the subproject information, detailed environmental and social surveys were conducted by the Safeguard team to collect primary information. The details of the team composition are provided in ***"Annex M"*** The environmental survey was focused on the collection of baseline information of the subprojects area including, air quality and noise, floral species present in the area.

The social survey was focused on the specific aspects of subproject area including health and education facilities, gender, utilities, sewerage and solid waste management and the survey of land use. The socioeconomic data such as education, marriage, population and economic status of the sub-project area.

1.4.3.1 Identification of Primary Stakeholders

Identify primary stakeholders including caretakers, visitors, vulnerable groups such as women, disabled, and secondary stakeholders (NGOs, CBOs, Government departments, local elected representative, community leaders, and Gurdwara administration).

1.4.3.1 Identification and Assessment of Environmental and Social Impacts Mitigation Measures

The anticipated environmental and social risks were identified in a manner proportionate to the scale of the project impacts during the proposed construction of sub-project.

1.4.4 Environmental and Social Impacts Mitigation and Monitoring Plan

Specific mitigation measures were proposed to minimize significant environmental and social impacts. Environmental Management and Monitoring Plan (EMMP) and Social Management and Monitoring Plan (ESMP) was developed for the implementation of the mitigation measures identified during the study. Budgetary requirements for the implementation of ESMP have been calculated and made part of the ESMP.

1.4.5 Institutional Arrangement

The institutional arrangement for the ESMP during implementation has been devised with clear responsibility of the PMU, C and W Department, Contractor and their staff.

1.4.6 Consideration of Alternatives

Alternative project sites are considered when the project location is sensitive to environmental and/or social impacts associated either to the construction works or due to the operation of the facility constructed. This project suggests physical works to improve or rehabilitate existing structures either access roads or public convenience facilities adjacent to site.

1.4.7 Justification and Need of the Sub-Project

Sub-project starting from railway line (Manawala Road) joining Gurdwara Sucha Soda is frequently used by Sikh Yatris. Road from main Lahore road joining Safdarabad road to Gudwara is also in use as an alternative route. Sub-project was found dusty, full of potholes and brambles. Pilgrims including local community face difficulty while travelling. Therefore, it is pertinent to rehabilitate this access road. Another reason regarding rehabilitation of sub-project is because this road joined Manawala Road which furthers serves as junction with Gurdwara Janam Asthan.

CHAPTER - 2: DESCRIPTION OF THE SUB-PROJECT

This chapter provides the details of sub-project activities which are to be carried out.

2.1 Area Description

Following sub-project has been designed to improve the existing infrastructure of the road with the provision of better living standards and the environment for urban populations in and around its project locations.

"Rehabilitation of Road from Sucha Soda Manawala Road to Gurdwara length = 1.15 km in District Sheikhupura"

Road especially along railway track to a length of 0.6km was low laying and drainage was very poor and remaining up to Gurdwara is comparatively fair.

Figure 2-1: Current status of Sub-project

2.2 Scope of Work

I. Total Cost

26.171Million

II. Road Work

8. Survey and mapping
9. Dismantling of existing road edging

10. Dismantling of existing PCC
11. Removal of unsuitable/surplus material without excavation i/c2
12. Dismantling of existing road pavement
13. Making embankment Earth work with 2km lead 95% compaction
14. Relaying of sub-base course of old dismantled material received
15. P/L Sub-Base Course of Crushed stone aggregated from approved P/L Rigid pavement (1:1.5:3) 8" thick

III. Road Structures

1. Construction of 1.5'WIDE Open Drain, 3280Rft, 3280Rft.
2. Raising of existing drain, 2132Rft.

IV. Design of Road:

Main Carriageway	
Formation width	18'
Metalled width	12'
Sub-base	6" Thick
Rigid Pavement	8" Thick

2.3 Labour Requirement

At the peak of construction activities, up to 15 labourers are likely to be employed for the works at sub-project. It is anticipated that approximately 75% of the workforce will be from the sub-project area while some 25% of labour (skilled) would be hired from outside the sub-project area. The mitigations given in Table 6.1 under section of job opportunities will be followed by the contractor.

2.4 Water Supply

During construction, water will be required for both construction activities and consumption by all sub-project personnel. Water suitability has been monitored from EPA certified laboratory and found in compliance as per N/PEQS for drinking purposes. Results are also mentioned in Chapter five under section 4.2. However, it will be ensured the community's water supply is not compromised or negatively impacted and requisite mitigation measures (if required) will be set in place. Contractor will do self-hydrant/boring at site for constructional purposes. Contractor will conduct the mandatory water testing and obtain all necessary permits as per regulations from the Local Authority.

2.5 Site Access

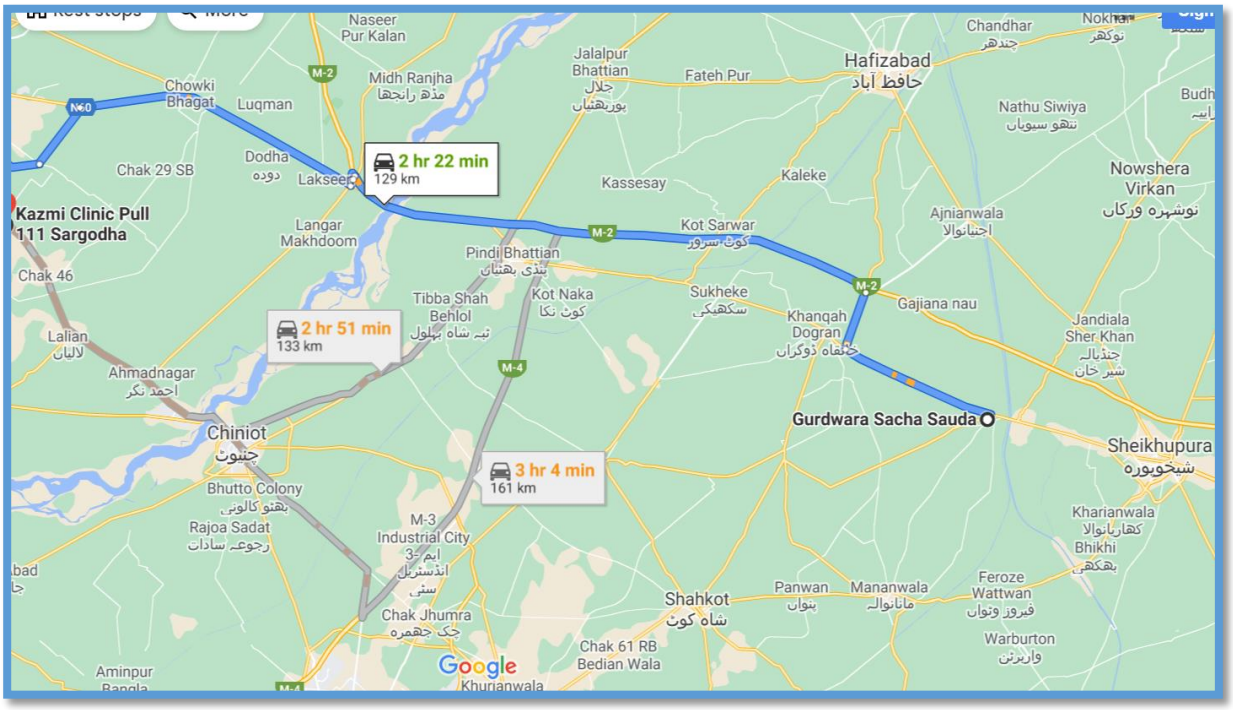
Sub-project is accessible by following two roads:

- Lahore Sheikhupura-Sargodha Road
- Lahore Sheikhupura Faisalabad Road via Shah Kot-Chak Jhumra
- Sargodha Sheikhupura Road via Pindi Bhatia

The mobility and access of the community (residential/commercial) would not be restricted by the construction activities.

2.6 Sources of construction material

Crush stone aggregates (sub-base+ base, asphalt and concrete material) will be obtained from Sargodha query and earthworks from local firms. However, contractor is bound to take



stones and concrete material from only Government approved quarry.

Figure 2-2: Proximity of Quarry from sub-project area

2.7 Use of Machinery and Equipment

It is estimated that the equipment given in the table below will be required to complete the different sub-project engineering activities.

Table2-1: Machinery and Tools / Equipment Required for Earthworks and Civil Works

Sr.#	Machinery and Tools / Equipment	Estimated
1.	Excavator	1
2.	Motor grater	1
3.	Static ruler	3
4.	Vibratory ruler	2
5.	Water tanker	3
6.	Tractor	3
7.	Dump trucks	5

8.	Loader	1
9.	Pneumatic ruler	2
10.	Tandom ruler	2
11.	Bitumen distributor	1
12.	Asphalt Plant	1
13.	Concrete mixing machine	1
14.	Concrete vibrator	3
15.	Asphalt paver	1

2.8 Storage of Materials

Pakistani Rupees 50,000/- is annually paid to the owner of the land to whom land is rented out as per defined local government rates. As, this project is of short duration, henceforth, land will be rented out with due mutual agreement between owner of the land and the contractor.

2.9 Waste Management and Disposal

The main types of waste expected to be generated and requiring disposal include:

a) Fuel, oils, and chemicals;
b) Sewage;
c) Campsite waste;
d) Medical waste;
e) Demolition waste;
f) Packing waste; and,
g) Excess construction material.

Table 2-2: Waste Management Collection and Disposal Techniques

Activity	Best practices
Generation of construction material	• Implement resource conservation, and encourage staff (through training) to reduce waste, reuse waste and recycle waste wherever possible • Prohibit staff from fouling the site
Disposable of recyclable waste	• Sell recyclable waste to local vendors

Disposal of construction material	• Do not burn materials which may lead to the release of toxic or hazardous substances • Do use burn on site when surrounding vegetation is dry and combustible.
Disposal of hazardous	Handover to specialized and certified disposal contractor
Generation of construction waste	Reduce construction waste by reusing waste as a fill material (prior to testing to confirm

2.10 Construction Schedule

From the beginning of construction to the commissioning of the project is estimated to take approximately 03 months. The various construction phases of the project are discussed in relation to mitigation measures (Chapter five, Section B under construction phase).

Table 2-3: Detail of Site[5]

Name of sub-project	Total length	Physical Coordinates	Scope of Work	Total cost of project (Million)
Rehabilitation of Road from Sucha Soda Manawala Road to Gurdwara, District Sheikhupura	1.15 km	Front Side: human settlements Right Side: human settlements Left Side: human settlements and Railway line Back Side: Agriculture land	Rigid pavement	26.171

[5] Estimated cost as proposed by C and W Department

CHAPTER - 3: REGULATORY AND POLICY REVIEW

This chapter provides details of the national/ provincial legislation, regulations, EPA guidelines, World Bank Operational Policies and guidelines which are relevant and applicable to the project.

3.1 National and Provincial Legislative Framework

The applicability of national environmental and social legislations, policies and guidelines of Pakistan, for this sub-project are summarized in this section as follows:

3.1.1 National Environmental Policy 2005

It aims to protect, conserve, and restore the environment in order to improve quality of the life of citizens through sustainable development and resource conservation.

3.1.2 Punjab Environmental Protection Act, 1997 (Amended 2012)

The Punjab Environmental Protection Act, 1997 (Amended, 2012) is comprehensive legislation and provides the legislative framework for protection, conservation, rehabilitation and improvement of the environment.

3.1.3 Punjab Environmental Quality Standards (PEQS), 2016

The PEQS, 2016 specify the

- Maximum allowable concentration of pollutants in municipal and liquid industrial effluents discharged into inland waters, sewage treatment facilities, and the sea
- Maximum allowable concentration of pollutants (16 parameters) in gaseous emissions from industrial sources.
- Maximum allowable concentration of pollutants (two parameters) in gaseous emissions from vehicle exhaust and noise emission from vehicles.

In addition, PEQS has also been issued for drinking water, ambient air, motor vehicle exhaust and noise, municipal and liquid industrial effluents, noise and treatment of liquid and disposal of biomedical waste.

3.1.4 Pakistan Penal Code, 1860

This Act defines the penalties for violations concerning pollution of air, water bodies and land. 3.1.5. Motor Vehicle Rules, 1969.

3.1.5 Motor Vehicle Rules 1969

It defines powers and responsibilities of Motor Vehicle Examiners (MVEs). The establishment of MVE inspection system is one of the regulatory measures that can be taken to tackle the ambient air quality problems associated with the vehicular emissions during operation phase.

3.1.6 Pakistan Labour Policy, 2010

Pakistan's Labour Policy aims at attaining its objectives in a manner best suited to the resources of the country and the present state of economy. Equitable adjustment of rights between workers and employers should be ensured in an atmosphere of harmony, mutually beneficial to workers and the management.

3.1.7 The Bonded Labour System (Abolition) ACT 1992

According to this act, forced labour is any type of work or kind of service in which someone engages involuntarily and under implied coercion a manifest threat of a party or oppression measures. The bonded labour can exist in following forms under different situations:

- Bonded labour in exchange of advance/an amount of money given before services are rendered, received by a person or his family.
- Bonded labour as a consequence of some social or customary obligations.
- Bonded labour in exchange of an economic benefit/consideration received by a person or his family,
- Bonded labour of a guarantor in exchange for debtor who was unable to pay off his debt.
- Bonded labour is prevalent in agriculture sector, brick kilns, domestic work and begging.

3.1.8 Forest Act (1927)

This federal Forestry Act of 1927 authorizes Provincial Forest Departments to establish forest reserves and protected forests. The Act prohibits any person to start a fire in a forest, quarry stone within a forest, remove any forest produce or cause any damage to the forest by cutting trees or clearing up the area for cultivation or any other purpose.

3.1.9 The Land Acquisition Act, 1894

It is the key legislation that has direct relevance to resettlement and compensation in Pakistan.

3.1.10 The Punjab Land Acquisition Rules, 1983,

It describes the land acquisition procedure for public purposes or for a company.

3.1.11 Provincial Wildlife Act, 1974

This prohibit the hunting and disturbance of wildlife.

3.1.12 Pakistan Antiquities Act 1975 and Punjab Antiquities Amendment Act 2012

The current Antiquities Act 1975 (amended in 1990), redefined as ‘ancient’ any object that is at least 75 years old. It requires that all accidental discoveries are reported to the federal Department of Archaeology. It also makes the federal government the owner of all buried antiquities discovered from any site, whether protected or otherwise. It bans all new construction within a distance of 200 feet from protected antiquities. The cultural heritage laws of Pakistan are uniformly applicable to all categories of sites regardless of their state of preservation and classification as monuments of national or world heritage. The Antiquities Act guarantees that no changes or repairs can be made to a protected monument even if it is owned privately without approval of the official agencies concerned with it. The Punjab Antiquities Amendment Act 2012 adopts the Act of 1975 with a few minor changes.

3.1.13 The Punjab Special Premises (Preservation) Ordinance, 1985

It is expedient to preserve certain premises of historical, cultural and architectural value in the Punjab and to control and regulate alterations therein and demolition and re-erection thereof and for matters ancillary thereto;

3.1.14 Katchi Abadis Act, 1987

The Katchi Abadis Act covers the urban squatter's rehabilitation rights by providing plots in public resettlement areas or cash assistance. Based on this act, the PRMP will provide rehabilitation compensation to eventual squatters/ encroachers affected by the project.

3.1.15 Land Revenue Act, 1967

Determination of disputes under section 44 of LR Act 1967 sub-section (2) If in any such dispute, the Revenue Officer is unable to satisfy himself as to which of the parties thereto is in possession of any property to which the dispute relates, he shall (a) if he be not below the rank of Assistant Collector of the first grade, ascertain, after an inquiry in which an opportunity shall be given to all the parties, to the dispute of being heard and adducing evidence in support of their claims, who is the person best entitled to the property, and shall by written order direct that the person be put in possession thereof, and that entry in accordance with that order be made in the record or register; and (b) if he be below the rank of Assistant Collector of the first grade, report the matter to the Assistant Collector of the first grade, who shall thereupon proceed in the manner provided in clause (a). (3) A direction under sub-section (3) shall be subject to any decree or order which may be subsequently passed by any Court of competent jurisdiction.

3.1.16 Punjab Alienation of Land Act, 1900

Under section 13, sub-section 11 of Punjab Alienation of Land Act 1900: Any member of an agricultural tribe may make a lease or farm of his land for any term not exceeding twenty years, and any lease or farm made by a member of an agricultural tribe for a longer term than twenty years shall if the lessee or farmer is not a member of the same tribe or of a tribe in the same group, be deemed to be a tease or farm for the term permitted by this section. Under section 13, sub-section 12. (1) During the currency of a mortgage made under section form 6 in form (a) or form (b) or of a lease or farm under this Act, the owner shall be at liberty to make a further temporary alienation of the same land for such term as together with the term of the current mortgage, lease or farm will make up a term not exceeding the full term of twenty years.

3.1.17 Colonization of Government Lands Act, 1912

This Act shall, unless the Provincial Government, otherwise directs, apply to land to which the provisions of the Government Tenants (Punjab) Act 1893, have been applied and to any other land to which the Provincial Government may by notification in the Official Gazette apply it and which at the time of the notification was the property of the Provincial Government ,Provided that unless the Provincial Government by general or special order otherwise directs nothing in Sections 20, 21, 22 and 23, or in the proviso to section 14, of this Act shall, apply to tenancies specified in Schedule I of this Act, or to any class of tenancies created hereafter which the Provincial Government may declare to be scheduled tenancies under this section.

3.1.18 Employment of Child Act, 1991 and Punjab Restriction of Employment of Children Ordinance, 2016

Article 11(3) of the constitution of Pakistan prohibits employment of children below the age of 14 years in any factory, mine, or any other hazardous employment. In accordance with

this article, the ECA 1991 disallows such child labour in the country. The ECA defines a child to mean a person who has not completed his/her fourteenth year of age. The ECA states that no child shall be employed or permitted to work in any of the occupations set forth in the ECA (such as transport sector, railways, construction, and ports) or in any workshop wherein any of the processes defined in the act is carried out.

3.2 International Laws/Treaties

3.2.1 UNESCO World Heritage Convention

Pakistan is a State Party to the World Heritage Convention. State Parties agree to identify and nominate properties on their national territory to be considered for inscription on the World Heritage List. When a State Party nominates a property, it gives details of how a property is protected and provides a management plan for its upkeep. They are also expected to protect the World Heritage values of the properties inscribed and are encouraged to report periodically on their condition.

3.2.2 The World Bank Operational Policies

The World Bank (WB) has approved a series of Operational Policies which define the conduct of WB operations. A summary of the status of those Operational Policies which relate to environmental and social impacts are provided in the following sections.

Table 3-1: Assessment of Applicable World Bank Operational Policies

Safeguard Policies	Triggered?	Explanation
Environmental Assessment OP/4.01	Yes	This project has been categorized as 'Category B'. The project activities under Component 3 may potentially cause negative environmental and social impacts. Most of these impacts are likely to be small scale, localized, and reversible in nature.
Physical Cultural Resource OP/4.11	Yes	Some of the proposed activities will be carried out adjacent religiously important and historic sites. A PCR Management Plan may need to be developed in pursuance with this policy. Chance find procedures would also need to be in place.
Involuntary Resettlement OP/4.12	Yes	Though OP 4.12 is triggered as the project as a whole will upgrade or provide basic services near cultural and heritage sites in some densely populated or visited areas, subproject does not require any land acquisition, therefore there be no involuntary resettlement, livelihood impacts, or restrictions on access. Consequently, there is no need of a Resettlement Action Plan. If this situation changes, the PMU will take immediate steps to prepare a RAP.

3.2.3 World Bank Environmental, Health and Social Guidelines

The principal World Bank publications that contain environmental and social guidelines are listed below.

- Environment, Health, and Safety (EHS) Guidelines prepared by International Finance Corporation and World Bank in 2007
- Pollution Prevention and Abatement Handbook 1998: Towards Cleaner Production

- Environmental Assessment Sourcebook, Volume I: Policies, Procedures, and Cross-Sectoral Issues.
- Social Analysis Sourcebook
- WB Committee on disability-inclusive development
- WB guidelines on labor influx
- WB Group Gender Strategy

Detailed of related EHSG can be found in Annex C.

CHAPTER - 4: ENVIRONMENTAL AND SOCIAL BASELINE CONDITION

This section provides an overview of the baseline condition of environmental and social aspects along with the route for proposed rehabilitation and improvement works.

4.1 City Profile

4.1.1 Farooqabad Village

Farooqabad, earlier known as Chuharkana is a city in Sheikhupura District, Punjab, Pakistan. It is situated 60 km west of Lahore on Sargodha road.

Sub-project is located in Farooqabad Village starting from Main Sucha Soda-Manawala Road to Gurdwara Sucha Soda is surrounded by human settlements. Police training School is also located nearby sub- project site.

Figure 4-1: City Map

4.1.2 History[6]

History of the area is very old and presence of remains of Hakra, Harrap, Budhist period and architectural spenders of Mughal period are the evidence that this area had a potential to provide a requisite substance which was necessary for cultural development from beginning of cultural activities in this region thousands of years ago to present day.

Farooqabad Village is famous for Baba Grunanak Sahib who was the founder of Sikhism and the first of the ten Sikh Gurus.

Figure 4-2: Gurdwara Sucha Soda

[6] https://www.punjab.gov.pk/sheikhupura_history

4.2 Baseline Detail

4.2.1 Physical Environment

1. Surface and Groundwater Resource

The peoples of the project area and of surrounding villages often use surface water for domestic and irrigation purpose. A lot of water for agriculture crop production and drinking purposes is also withdrawing from ground water sources, but surface water is considered as a major source. Two canals Qadirabad Balloki Link Canal and Upper Chenab Canal are passing through the project vicinity. At present, the only source of recharge to groundwater is rainfall.

In order to evaluate the water quality, surface water monitoring was carried at one location by covering following parameters:

i. Physical Parameters (pH, Turbidity, Total Dissolved Solids, Total Hardness, Taste, Odor)
ii. Chemical Parameters (Chloride, Arsenic, Chromium)
iii. Biological Parameters (Total E-Coli, E-Coli, Faecal Coliform)

Table 4-1: Ground Water Analysis

Sr. No.	Parameters	Unit	WHO	PEQS	Results	Method / Technique
1.	pH^	-	6.5-8.5	6.5-8.5	6.879	APHA[7]-4500-H^+ B
2.	Total Dissolved Solids^	mg/l	<1000	<1000	1600	APHA-2540 C
3.	Turbidity	NTU[8]	<5	<5	1.12	APHA-2130 B
4.	Taste	-	-	Non-Objectionable	Non-Objectionable	APHA-2160 C
5.	Odor	-	-	Non-Objectionable	Non-Objectionable	APHA-2150 B
6.	Total Hardness^	mg/l	-	<500	320	APHA-2340 C
7.	Chloride (Cl^{-1})^	mg/l	250	<250	242	APHA-4500-Cl B
8.	Arsenic	mg/l	0.01	≤0.05	0.016	APHA-3114 C
9.	Chromium (Cr)	mg/l	0.05	≤0.05	BDL[9]	APHA-3111 B
10.	Total Coliform	MPN[10]	Must not be detected in	Must not be detected in 100 ml sample	Nil	APHA-9221 D

[7] American Public Health Association
[8] Nephelometric Turbidity Unit
[9] Below Detection Limit
[10] Most probable number

			100 ml sample			
11.	E Coli	MPN	Must not be detected in 100 ml sample	Must not be detected in 100 ml sample	Nil	APHA-9221 E
12.	Fecal Coliform	MPN	Must not be detected in 100 ml sample	Must not be detected in 100 ml sample	Nil	APHA-9221 F

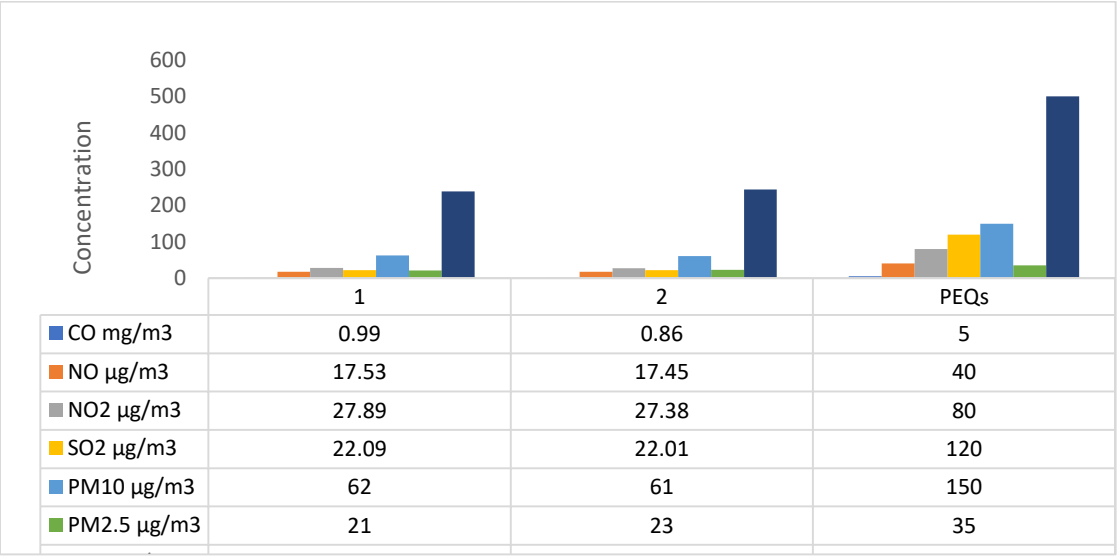
All parameters were found in compliance with PEQS/WHO Standards except Arsenic. Concentration for Arsenic was not within the permissible limits of WHO standards. Reasons for increasing this level could be due to extensive use of fertilizer or contamination of ground water with sewage.

2. Ambient Air Quality

The 24 hrs monitoring of ambient air quality for specific sub-project site has been carried out at 02 locations. The pollutants monitored were as follows:

- Nitrogen Oxides (NOx as NO, NOx)
- Sulphur Dioxide (SOx)
- Carbon Monoxide (CO)
- Particulate Matter (PM_{10})
- Particulate Matter ($PM_{2.5}$)
- TSPM (Total Suspended Particulate Matter)

Graph: 4-1: Pollutant Concentration at all monitoring points



	1	2	PEQs
CO mg/m3	0.99	0.86	5
NO µg/m3	17.53	17.45	40
NO2 µg/m3	27.89	27.38	80
SO2 µg/m3	22.09	22.01	120
PM10 µg/m3	62	61	150
PM2.5 µg/m3	21	23	35

Results of these pollutant concentrations were compared with PEQS. The finding and the comparison showed that the pollutant concentrations are within the permissible limit which reflects that the ambient air quality is very good, as there is no industrial activity or heavy traffic passing by the sub-project locations. The only major source of pollutants is from the minor traffic from the villages, crossing through the sub-project area. To maintain the air quality, the

ECOP on management of Air Quality will be followed by the contractor, in addition, focus on water sprinkling will be made for dust suppression during construction stage.

Table 4-2: 24 Hour average pollutants level at all points

	CO	NO	NO2	SO2	PM10	PM2.5	SPM
	mg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³
1	0.99	17.53	27.89	22.09	62	21	239
2	0.86	17.45	27.38	22.01	61	23	244
PEQS	5	40	80	120	150	35	500
	8hours	24hours	24hours	24hours	24hours	24hours	24hours

3. Noise

Noise is generally used as an unwanted sound, or sound which produces unpleasant effects and discomfort on the ears. Noise is considered as environmental pollution, even though it is thought to have less damage on humans than water, air or land pollution.

Noise level monitoring were also carried out at three locations as per scope using Digital Noise Meter. Noise variation at selected points are given in below table;

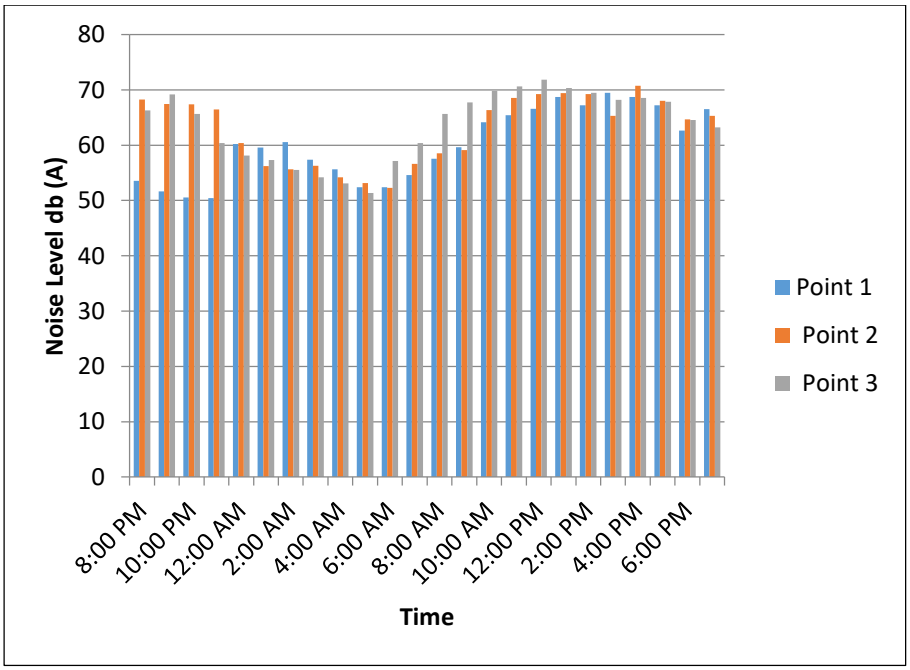
Table: 4-3: Noise Variation at selected points

Sr. No.	Time	Equivalent Noise	Equivalent Noise	Equivalent Noise
		dB (A)	dB (A)	dB (A)
1.	8:00 PM	53.53	68.26	66.28
2.	9:00 PM	51.66	67.44	69.16
3.	10:00 PM	50.55	67.38	65.68
4.	11:00 PM	50.43	66.44	60.36
5.	12:00 AM	60.19	60.38	58.15
6.	1:00 AM	59.55	56.2	57.32
7.	2:00 AM	60.59	55.64	55.55
8.	3:00 AM	57.38	56.25	54.17
9.	4:00 AM	55.62	54.19	53.12
10.	5:00 AM	52.38	53.13	51.37
11.	6:00 AM	52.4	52.3	57.15
12.	7:00 AM	54.59	56.63	60.4
13.	8:00 AM	57.58	58.55	65.63
14.	9:00 AM	59.66	59.13	67.75
15.	10:00 AM	64.18	66.33	69.82
16.	11:00 AM	65.45	68.54	70.66
17.	12:00 PM	66.56	69.22	71.87
18.	1:00 PM	68.7	69.43	70.35
19.	2:00 PM	67.22	69.23	69.5
20.	3:00 PM	69.45	65.32	68.21
21.	4:00 PM	68.7	70.75	68.53

22.	5:00 PM	67.21	68.03	67.86
23.	6:00 PM	62.62	64.66	64.58
24.	7:00 PM	66.54	65.32	63.2
Average		**61.78**	**61.86**	**62.01**

The noise level results were within the N/PEQS Limits at all boundaries during the monitoring hours.

Figure: 4-3: Ariel View of Site



Graph: 4-2: Noise level variation at selected location

Graph is also representing that vales are within N/PEQS. However, during the construction phase of this scheme, noise can be generated from machinery used in road construction.

Mitigation measures have been suggested in mitigation table 6.1and 6.3 in order to reduce its effects upon human beings.[11]

4. Climate[12]

The climate is subject to extreme variations. From the middle of December to the middle of March, the air is very damp, cold and light to moderate rain falls at intervals. The winter rain is followed by a spell of pleasant weather. In April, the temperature rises fast and the two successive months are very hot with temperatures rising up to 39^{o}C in May and June. Lowest temperatures of 8^{o}C are in January.

5. Soil Profile

The soil in the sub-project area are generally alluvial composed of silt, sand and clay with no visible signs of contamination. Soil profile of scheme area is also fertile. There will be no impact on soil profile of scheme area as scope of work limited to the repairing of existing metal road surface. No impact on soil envisaged as no excavation or deep ditching activities are under scope of work of this scheme.[13]

4.2.2 Biological Environment

1. Fauna

Sub-project site is neither in a habitat of a critical wildlife nor is in the proximity of a protected area of any classification. Most of the fauna in the sub-project area include Black partridges (*Melanoperdix niger*), Parrot (*Psittacula kra*meri), Mallard duck (*Anas platyrhynchos*), Crow *(Corvidae splendens)* and Bulbul *(Pycnonotus jocosus).*

2. Flora

Sub-project site is neither in a habitat of a critical wildlife nor is in the proximity of a protected area of any classification. Eucalyptus (*Eucalyptus globulus)* and Berry (*Zizyphus nummularia*) plants are seen along ROW of the sub-project area.

Eucalyptus (*Eucalyptus globulus)*

Berry (*Zizyphus nummularia)*

[11]Source:http://www.tshwane.gov.za/Services/EnvironmentalManagement/Noise%20Management%20Documents/ NoiseAppendixD.pdf

[12] Environment and Social Management Framework, 2017

Figure 4-4: Flora along ROW

4.2.3 Socio-Economic Baseline

1. Languages

Punjabi languages are commonly spoken in the community as mode of communication in Sucha Soda village.

2. Education Facilities

Communities living in Sucha Soda village reported that better quality and adequate educational facilities for both boys and girls are available in Sucha Soda.

The details of available education facilities for both boys and girls at Sucha Soda are given in the table below.

Table 4.4: [14]Educational Institute

Gender	Village	Primary	Middle	High	College	Vocational
Boys	Sucha Soda	1	1	1	1	1
Girls	Sucha Soda	1	1	1	1	

1. [15]Health Facilities:

There is only one functional basic health unit facility available at Sucha Soda. In case of emergency and serious health care needs, patients have to be referred to Sheikhupura Districts Headquarter Hospital (DHQs) or Lahore.

Table 4-5: Health Facilities

Name of Village	Hospital	Basic Health Unit	Dispensary	Homeopathic Clinic	Midwifes/Lady Health Visitors	Medical Store
Sucha Soda	0	1	0	0	1	0

3. [16]Water Supply and Sanitation

Water supply system is not available. Ground water for drinking and other domestic needs is used.

4. [17]Communication and Utilities

Telephone landline facility and mobile network exist in Sucha Soda. All the houses are connected to the national grid for electricity supply for domestic as well as agricultural use. Natural piped gas supply is only available at Sucha Soda Village.

[14] Districts Government Education Department Sheikhupura also field visit and head of institutes

[15] Districts Government Education Department Sheikhupura and also field visit and institute head

[16] Field visit and conduct consultation meeting with local people and people tell us about this and we also visited physically

[17] Field visit and conduct consultation meeting with local people and people tell us about communication facility and visited physically as well

5. Means of Transport

Sucha Soda village is located at 23 km away from Sheikhupura. The community travels to District Sheikhupura headquarter in local buses, rickshaws and pickups. Individuals in the community often use their own source of transport (mainly motorbikes).

6. [18]Social Conflicts

There are no conflicts reported in the sub-project area.

7. [19]Household Information

The socio-economic baseline survey reveals that the overall population is 14,112 belonging to 3500 households. 99% are belonging to Muslim community and remaining are Christians. The details are illustrated in the following table:

Table 4-6: Number of Household and Total Population

Name of Village	Number of Household	Total Population
Sucha Soda	3500	14112

8. Settlement of Respondents

There are no migrants or settlers from other parts of Punjab. All the respondents were local and from the sub-project area.

9. Family System

Approximately 10.5% of the community in Sucha Soda live separately whereas 89.5% of the community live in joint family arrangements. In the joint family system, the eldest male member takes care of all the family members and is the final decision-making authority particularly for issues regarding the public domain. This system also provides social security for family members during periods of individual un-employment and financial crisis. These communities believe that the joint family system is a more economical way of living as they often work together on the same land and are able to share their joint incomes to support the entire family, including elderly relatives who are unable to work.

Table 4-7: Family System

Family System	Sucha Soda (%)
Nuclear	**10.5**
Joint	**89.5**

10. Marriage

Residents of these areas prefer marriages within their extended families and in same cast. The trend of marriage outside the family is very low. The percentage of marriages inside and outside the extended families is presented below:

[18] Local peoples of all villages told us and also conduct consultation meetings they told us there is no conflict they live together
[19] Pakistan Census 2017

Table 4-8: Marriage

Marriage System	Sucha Soda (%)	Average (%)
Outside extended family marriage	11	9.5
Within family marriage	89	90.5

11. Health problems

The most common diseases in these areas are including typhoid, hepatitis B and C, diarrhoea, and malaria. These diseases largely occur due to unhygienic living conditions, lack of sanitation and safe drinking water facilities, malnutrition, and lack of ready access to proper healthcare, including preventive healthcare, facilities.

12. Source of Livelihood and Income

The agriculture is the primary source of income of all villages. Mostly households also have secondary sources of income including livestock, transport, business, and, salaried employment. All households earn between RS, 10, 000 to RS, 50,000 from secondary sources of income.

13. Commonly Used Agriculture Inputs

The average agricultural expense per acre, including seed, fertilizer, pesticide, ploughing and harvesting costs, is 19,800 rupees.

Table 4-9: Estimated expenses/year/Acre

Items	Expenses/Acre
Ploughing	3000
Seeds	8000
Urea DAP	1800
DAP	3500
Pesticides	3500

14. Seasonal Earnings from Crops

During the baseline survey, the following average seasonal earnings in rupees per acre were reported in the sub-project channels:

Table 4-10: Average Seasonal Earnings per acre

Season	Average Seasonal Earning/Acre (PKR)
Rabi	45,000
Kharif	30,000

15. Agricultural land holding and cropping pattern

In sub-project area 97% of the land is cultivated by owners, while 3% is tenant operated. The lands in the sub-project area are fertile and farmers grow rice, fodder and vegetables during

the Kharif season (April to November) and wheat, fodder and vegetables during Rabi season (April to October).

16. Housing

The baseline survey reveals that houses are owned by the community members and there is no trend of living in a rented house. Houses are made of bricks and concrete material.

17. Community Based Organization (CBOs) and NGOs

There are three NGOs at the Sheikhupura district level, Bedari Foundation, Kashaf Foundation and former Friend organization (FFO) at Sheikhupura at district level. Kashaf Foundation working on poverty alleviation through microfinance.

18. Local Government and Administration

Local level elected representatives are active in the sub-project areas. Union council chairman along with other elected councillors work on local or union level development. District level development activities are the mandate of the district council which is headed by the Chairman District Council. Government functionaries, Sheikhupura consists of Commissioner, Deputy Commissioner (DC), Additional Deputy Commissioner, Assistant Commissioner, revenue officers, and officer's in-charge of line departments.

19. Law and Order Situation

The law and order situation in Sheikhupura district, including the sub-project area, is normal and under the control of the district administration and law enforcement agencies (police).

20. Community Cultural Properties

There is one grave yard and mosque in village. Mosque is located along ROW of sub-project area.

21. Community Awareness about Sub-project Works

The communities residing at sub-project area are well aware about the proposed sub-project works and implementation. During screening and development of ESMPs, public consultations are held regarding sub-project activities.

22. Community Demands

During public consultations and baseline data collection activities on sub-project road rehabilitation, basic priority needs of the communities were also determined which are as follows:

- Creation of jobs under the sub-project
- Construction of one-way road both from Sucha Soda to Manawala
- During the festivals, access roads, streets, passages are generally blocked and heavy barriers are installed, due to which, the routine movement / daily income generation activities of local community including women are disturbed.

Further details are available in the section on stakeholder consultations.

CHAPTER - 5: IMPACT ASSESSMENT AND MITIGATION MEASURES

This section provides the analysis of the potential impacts during design, construction and operational phases of the proposed sub-project on the physical, biological and socio-economic environment. The impacts associated with these activities are water/groundwater contamination; solid waste management; air quality issues, primarily related to dust generation, noise, and occupational safety of labour, and community risks etc.

5.1 Potential Environmental Impacts and Mitigation Measures – Design Phase

1) Site Selection

Appropriate site selection is one of the most important factor for constructional purposes. Sub-project suggests physical works to improve or rehabilitate existing structures either access roads or public convenience facilities adjacent to site. Appropriate site selection is one of the most important factors for constructional purposes. The sites selected for sub-project suggests physical works to improve or rehabilitate existing access road approaching towards adjacent Gurdwara. Henceforth, natural land will be utilized and converted for purposes of this sub-project activity.

Potential Impact

Site selection has positive impacts on social life of local people but also on pilgrims. This will create livelihood and earning opportunities for the locals. Sub-project is frequently in use by Sikh Yatris while travelling from Gurdwara Sucha Soda, Farooqabad to Gurdwara Janam Asthan, Nankana Sahib to perform their religious activities.

2) Dismantling/Demolishing of Existing Road Structure

Potential Impact

- Dust, Noise and vibration issues may arise during dismantling of road posing minor health issues on labours and nearby community.
- Noise pollution due to use of heavy machinery, and air pollution due to machinery emissions and/or dust due to earthing activities.
- Scattered solid waste may affect visual and aesthetic environment and provide breeding place to mosquitoes.
- Heaps of solid waste may cause disturbance in mobility.

Mitigation Measures

- Updated and tuned machinery will be used to control noise.
- Plan to neutralize dust emissions from construction activity, such as watering of sub-project area to settle dust during dismantling. Water sprinkling will be carried out at consecutive intervals.
- Dust masks and ear plugs should be provided to the labours.
- Bitumen waste should be stored in closed containers and placed in a fenced storage area with paved floor. Scattered solid waste should be properly managed in order to avoid contamination
- Availability of bins will be ensured for commonly generated solid waste.
- Timely management of solid waste will be ensured and contractor would be asked to take services of TMA for proper sanitation.

- Notify noise barriers in populated areas and areas close to the religious site.

3) Identification of Site for Construction, Camps, Asphalt and Batching Plant

Potential Impact

- Tree cutting may involve for the construction of camp site, asphalt and batching plant site.
- Loss of agricultural land, and resettlement Issues.

Mitigation Measures

- Sub-project is of small duration. Therefore, house renting is preferred than camping.
- In case of installation for batching/asphalt plant, compensation will be paid if loss of agricultural land or any economic loss is observed.

5.2 Potential Environmental Impacts and Mitigation Measures – Construction Phase

I. Physical Parameters

1) Soil Degradation

Impacts – The construction phase activities may result in degradation of soil. This may be caused due to soil erosion during the construction due to uncontrolled run-off from equipment washing yards, excavation of earth/cutting operations and clearing of vegetation. Unauthorized use of borrow areas and quarries may also cause soil erosion and degradation of landscape. This may limit the future use of land for agricultural purposes.

Mitigation Measures

- Careful use of machinery and equipment should be ensured to prevent leakages which may result in the release of contaminants directly onto the soil.
- Ensure that the machinery should be kept away from exposed soil area and should be repaired on an immediate basis at designated workshops having impermeable floors.
- Removal of vegetation and trees will be avoided to the extent possible.
- The exposed soil will be re-vegetated quickly and compensatory plantation will be followed, i.e. 10 trees to be planted for every tree cut.
- Provide impervious platforms in maintenance yards and storage areas with oil and grease traps for collection of spillage during storage of liquid fuel and lubes, and equipment and vehicle maintenance.
- Contractors to follow proper handling and disposal of construction waste and materials in designated site.
- The contractor will ensure prevention of soil erosion and destabilization by applying batched excavation technique.
- Productive land or land adjacent to agricultural/irrigated land may not be used for excavation.

2) Air Quality

Impacts – The machinery, equipment, diesel generators, operation of batching plant and sub-project vehicles will be used for movement of people and construction activities such as excavation, levelling, filling of earth material etc. Due to these activities release of exhaust emissions, containing carbon monoxide (CO), sulphur dioxide (SO_2), oxides of nitrogen (NO_X), and particulate matter (PM) is expected, which can deteriorate the ambient air quality in the sub-project site and access roads.

Mitigation Measures

- All vehicles, machinery, equipment and generators used during construction activities should be kept in good working condition and be properly tuned and maintained to minimize exhaust emissions.
- Open burning of solid waste from the Contractor's camps should be strictly banned
- Stockpiled materials will be covered to avoid dust/particulate emission.
- Adoption of preventive measures against dust such as regular water sprinkling of the site including service roads and excavation sites.
- Near cultivation fields, the speed of the vehicles will be reduced to 15 km/h to avoid excessive dust emissions.
- The exhaust emissions will comply with the N/PEQS.
- The contractor shall be required to minimize the double handling of material during earthworks operations for the embankment strengthening and channel lining.
- The contractor shall be prohibited from vegetation clearance beyond the ROW.
- Water sprinkling shall be carried out at material stockpiles where dust is generated.
- Materials delivered to sites, such as cement, loose material, sand or aggregates shall be transported in a covered truck.
- Burning of waste oil should be strictly prohibited.

3) Noise and Vibrations

Impacts – During construction, use of heavy machinery such as bulldozers, excavators, stabilizers, concrete mixing plant, etc. can result in noise pollution and vibrations, causing discomfort and health hazards to workers and surrounding communities, especially those using the religious and sacred sites.

Mitigation Measures

- Use of modern and well-maintained vehicles and machinery with reduced noise emission levels; confining excessively noisy work to normal working hours (8am-5pm) in the day.
- Providing construction workers with suitable hearing protection such as earmuffs and train them in their use.
- Locating the concrete mixing, and materials shipment yards at least 500m from residential areas, and religious sites.
- The contractor shall keep in place any acoustic guards, covers, and doors provided on plant, generators, and vehicles and maintain all in accordance with the manufacturer's maintenance procedures to ensure good working order.
- Pressure horns will not be allowed while passing through or near communities in the sub-project area.
- The contractor shall train the operators of construction equipment on potential noise problems and the techniques to minimize noise levels.

4) Surface and Groundwater

Impacts – Sub-project area is surrounded by agricultural irrigated lands.

- Construction waste and oil spills, if left unattended will result in the formation of leachate that will percolate through the soil strata and may contaminate the groundwater table.

- Contractor may throw the waste material into nullahs/drains passing along the both sides of sub-project which may cause contamination and blockage of the drains.
- Construction waste and oil spills will result in the formation of leachate that will percolate through the soil strata and may contaminate the groundwater table. Hand pumps and wells are commonly used sources of subsoil/groundwater for communities in these areas.

Mitigation Measures

- Ensure that all liquid raw materials such as oil, lubricants, and chemical at all proposed project sites are stored within the storage yard with impermeable floors.
- Proper disposal of solid waste in designated site to sustain the water quality for domestic requirements. Services from TMA could be taken for timely management of waste.
- Water required for construction should be obtained in a way so that water availability and supply to nearby communities remains unaffected.
- The contractor will obtain all necessary permits for the Local Authority related to water consumption.
- Regular water quality monitoring according to a determined sampling schedule.
- The contractor will ensure that construction debris does not find its way into the drainage or irrigation canals, Wastes from the construction sites will not be released to nearby water sources, cultivation fields, irrigation channels which may get clogged.
- Prohibit washing of machinery and vehicles in surface waters, provide sealed washing basins and collect wastewater in sedimentation/retention pond.
- Construction work close to water bodies will be avoided, especially during monsoon period.
- The contractor shall submit a plan for treatment using septic systems to PMU during mobilization for approval. The plan must include designs or specifications demonstrating that the treatment rate of the system exceeds the loading rate, maintenance of the system, proposal for treatment and disposal of sludge from septic tanks.

5) Waste Disposal

Impacts – The main types of waste expected to be generated and requiring disposal include:

- Fuel, oils, and chemicals;
- Sewage;
- Campsite waste;
- Medical waste;
- Demolition waste;
- Packing waste; and,
- Excess construction material.

Construction activities can result in the generation of wastewater, oil spillage from machinery, domestic waste from labour camps and construction related solid waste. Improper solid waste disposal can result in increased air pollution through burning of waste, vector borne diseases, and contamination of water sources.

The construction activities are not perceived to result in the production of any hazardous waste. As the sub-project deals with the construction of civic facilities, no blasting is perceived nor is use of hazardous substances anticipated during the construction waste.

Mitigation Measures

- Prepare a detailed Solid Waste Management Plan for the construction site (including adequate placement of waste bins, requirements of sanitary staff, transportation of waste, and identification designated site for final disposal).
- Do not allow siting and location of worker camps, including waste dump sites, in a distance closer than one kilometre to any inhabited areas and religious and historic site
- Plan for placement of waste collection containers throughout the sub-project area
- Disallow the burning of any of type of waste
- Prepare plans for the safe handling, storage and disposal of harmful materials
- Implement resource conservation, and encourage staff (through training) to reduce waste, reuse waste and recycle waste wherever possible
- All COVID-19 waste such as, gloves, face mask, tissue papers shall be disposed-off in already placed separate top covered waste bins in different identified areas as per contractor waste management and disposal plan. These waste bins shall be marked with COVID-19 waste·
- All COVID-19 waste shall be collected with appropriate safety measures and be transported to the burning pit away from construction site and from community.
- Collect all bio-degradable domestic waste and dispose of at the designated area as defined by TMA.
- Do not burn materials which may lead to the release of toxic or hazardous substances
- Sell recyclable waste to local vendors
- Collect non-biodegradable waste separately and dispose of at designated waste disposal area·
- Enforce the use of garbage bins and prevent littering of the site
- No fire is allowed in open.
- Do not burn materials such as plastics and polyethylene which may lead to the release of toxic or hazardous substances.
- Waste will be collected and disposed off in municipal waste dumping points.
- Reduce construction waste by reusing waste as a fill material (prior to testing to confirm the suitability of material)
- Collect construction waste separately to domestic waste·
- Collect and remove all construction waste from the sub-project area.
- Reuse material as fill material or sell to local vendors· Sell or reuse gates removed from structures·
- Treat construction wastes water and dispose of after treatment·
- Do not burn materials which may lead to the release of toxic or hazardous substances
- Request suppliers to minimize packaging where practical·
- Do not burn materials which may lead to the release of toxic or hazardous substances
- All the medical waste shall be disposed off in burial pits.
- The burial site shall be identified away from community residents and sub-project area. The burial site shall be identified on the barren land with due coordination of TMA.
- Handover to specialized and certified disposal contractor.
- Effluent from contractor's workshop and equipment washing yards would be passed through gravel/sand beds to remove oil and grease contaminants before discharging it into nearby canal or agricultural land.
- Training of workers will be carried out in the storage and handling of materials and chemicals that can potentially cause soil contamination.
- Proper labelling of containers will be carried out, including the identification and quantity of the contents, hazard contact information etc.
- Emergency Response Plan should be prepared to address the accidental spillage of fuels and hazardous goods at storage areas.

6) Physical Cultural Resources

Impacts - Due to the location of sub-project close to religious and sacred site, there may be some negative impacts due to air and noise pollution, and vibrations due to movement of heavy vehicles and use of heavy machinery. There is also a chance that excavation work during construction may result in the uncovering of ancient sites or artefacts.

Mitigation Measures

- The most important single strategy for heritage protection is site avoidance: redirecting activities so that they do not endanger a site by limiting noise and air pollution while working close to the religious and ancient sites. Any development or physical activity should be at least 200 feet away from the heritage sites.
- Suggestion of the local communities and the concerned authorities will be suitably incorporated during taking the preventive measures to conserve the antique, artefact and cultural (religious) properties.
- Secure the site to prevent any damage or loss of removable objects. In case of removable antiquities or sensitive remain, a night guard shall be arranged until the responsible local authorities take over.
- Contractor should immediately stop the work and follow the Chance Find Procedures.
- In case of discovery of ancient sites or artefacts during construction, follow the procedure for Chance Finds Procedures as ***included in the ESMF will be adopted attached at Annex E.***

II. Biological Parameters

1) Flora

Impacts: Local flora is important to provide shelters for the fauna, offer fruits/or timber/fire wood and protect soil erosion. Such as damage to flora has a wide range of adverse environment impacts. However, the sub-project does not involve widening of road. Therefore, no tree cutting or clearance of vegetation will be done. Impact is minimal. As a precautionary principle, the following mitigation measures have been proposed:

Mitigation Measures

- Planting of ten trees for every tree cut during construction.[20]
- Do not introduce invasive or exotic species through plantation
- Measures to prevent soil and water contamination will forestall any adverse impact on the faunal diversity of the area.
- Contractor shall prepare a conservation plan to avoid any impact on fauna during construction.

2) Fauna

Impacts: Subproject area does not fall in any of the wildlife habitat and does not cause any harmful impacts directly and indirectly. It involves only upgradation of existing road located along agricultural areas rather construction of new road. There are no wetlands, or any other type of natural habitat to support critical mammal or bird species. There might be a risk to key ground nesting birds, which could be struck during works throughout the nesting season. It is anticipated that the birds shall vacate the area before construction machinery approaches.

[20] Tree Plantation Plan is attached at Annex J.

Mitigation Measures

- On identification of any nest, the contractor will immediately cease works in the area and inform the Engineer and PMU. The contractor will also erect a fence within 50ft of the nest and prohibit any works within this area until approved by the Engineer.
- The contractor's staff will be required to sign a code of conduct prohibiting hunting, poaching or trapping of animals.
- Provide adequate knowledge to the workers regarding protection of fauna, punishments for illegal poaching.
- Planting of ten trees for every tree cut during construction.
- Do not introduce invasive or exotic species through plantation
- Speed limit will be defined for minimal impacts on fauna.

III. Socio-Economic Parameters

1) Land Acquisition, Resettlement, Loss of Livelihood

Impacts – Construction/widening of sub-project may require some land acquisition.

Mitigation Measures

- No widening of road is involved. If land acquisition/resettlement will be required or livelihood will be affected, impacts will be mitigated by preparing a RAP in accordance with the RPF, provided in this ESMF and WB OP 4.12.

2) Damage to Crops and Infrastructure

Impacts - The works may cause some damage to agricultural crops and public or private infrastructure may get damaged.

Mitigation Measures

- All such impacts on crops will be mitigated by payment of market price of crops.
- The damage to infrastructure will be minimized by relocating them. The infrastructure which cannot be relocated will be compensated in accordance with provision of RPF. However, no relocation of any kind of infrastructure is involved as sub-project is improvement in existing road.

3) Impact on Livelihood and Economy

Impact - The proposed sub-project will provide job opportunities for locals where very low to low income communities are living. Hence, the sub-project development will enhance employment and business opportunities for the locals, the impact on livelihood is assessed to be positive in terms of access to better sanitation facilities, increased employment opportunities and better livelihood. It is estimated up to 15 labourers will be required for carrying out construction activities. Out of the total, 75% of labourers will be from local community.

4) Workers Health and Safety

Impacts - The construction phase will include various activities such as; excavations installation of a batching plant, earthworks, movement of various heavy machines and manual

handling during loading-unloading operation, bad housekeeping, improper storage of hazardous materials, (i.e. petrol, admixtures, etc.), as result of these works there will be a direct impact on the health and safety of all staffs working in sub-project.
During the implementation of the sub-project, it will be anticipated that newly discovered COVID-19 Pandemic (Corona Virus) have a negative impact on the health and life of sub-project staff, as implementation phase will require staffs at various levels (Consultants, PMU and Contractor). It involves large a number of workers working together for the different construction activities, carrying out site inspections, and preparing, serving, and having food together. COVID-19 disease can spread easily from an infected person to others through small droplets by nose or mouth during cough or exhaling. These droplets can also land on objects and surfaces around the person and if other persons touch these objects or surfaces, then touching their eyes, nose, or mouth can also be spread the disease. The sub-project staff can also easily contract COVID-19 if they are sitting together and inadvertently, inhale droplets from a sick person. Keeping in view the above stated factors, the potential impacts is negative that can occur during the construction activities.

Mitigation Measures

- Train all construction workers in basic sanitation and health care issues (HIV/AIDS, COVID-19).
- Prepare a Worker Health and Safety Plan for the construction phase covering documentation and reporting of occupational accidents, diseases and incidents with complete record for supply of personal protective equipment for all staffs and visitors.
- Identification of potential hazards to workers, particularly those that may be life threatening.
- Ensure health care facilities especially first aid facilities are readily available. Appropriately equipped first-aid stations should be easily accessible throughout the sub-project area.
- Providing appropriate personal protective equipment (PPE) in conjunction with training, use, and maintenance of the PPE.
- Document and report occupational accidents, diseases, and incidents.
- Provide awareness to the construction drivers to strictly follow the driving rules.
- Safe storage facilities for petroleum and other chemicals at sub-project site.
- The contractor should provide drinking water facilities to the construction workers at all the construction sites.
- SOPs regarding COVID-19 for construction site are attached at ***Annex E***.

5) Public Health and Safety

Impacts – Construction activities and movement of heavy vehicles at construction sites and service roads may result in road-side accidents, particularly with the local community who may not be familiar with the presence of heavy equipment. During execution of sub-project, regular visiting and influx of pilgrims especially at religious festivals can result in greater inconvenience and disruption for the general public (including the visitors).

Additionally, in order to address the community concerns about the presence of non-local workers, or the risks posed to the community by local workers presence on the sub-project site[21], the following good practice should be considered:

Mitigation Measures

- ***COVID-19 Prevention and Contingency Measures:***

It is estimated up to 35 labourers will be required for carrying out construction activities. Out of the total, 75% % of labourers will be local residents and will return to their homes at night,

[21] The project should set out risk-based procedures to be followed, which may reflect WHO guidance (for further information see WHO Risk Communication and Community Engagement (RCCE) Action Plan Guidance COVID-19 Preparedness and Response).

while 25% (skilled) will have overnight stay. Preferably, house will be rented out nearby the sub-project site as per available number of workers rather than labour camping.

- Train drivers operating heavy vehicles in road and pedestrian safety.
- Set appropriate speed limits to avoid accidents.
- Placement of construction signage, particularly at populated area.
- Provision of alternate facilities for use by the public where disrupted.

5.3 Potential Environmental Impacts and Mitigation Measures – Post Construction Phase

1) Changes in Land Value

Proposed sub-project is expected to increase the land values, especially in villages where little or no road infrastructure is present and the seasonal drains with gravels on their beds are used as access road to their residences. Land owners will have an opportunity to sell their land on increased prices and start new businesses. This impact will be major positive in nature.

2) Restoration of original site

Impacts - Disposal of contaminated construction wastes and left-over construction material can lead to soil contamination.

Mitigation Measures

- Contractor is bound to restore the site back to its original conditions before handing over.

3) Air and Noise Pollution

Impacts - Improvement in road condition will help reduce traffic related emissions in the short term by allowing a smoother traffic flow. However, in the longer run, increased traffic levels and congestion will lead to PM10 pollution levels which may result in causing public health risks, nuisance and other impacts on bio-physical environment. This impact is permanent and positive, in case of improvement of road conditions and minor negative, when traffic volume is increased.

Mitigation Measures

- Setting up of a system to monitor air quality along sub-project area in accordance with the applicable standards/limits
- Roadside tree plantations as applicable and feasible under harsh climatic conditions plants should be selected in accordance to their ability to absorb emissions
- Regular road maintenance to ensure good surface condition

4) Soil

Impacts - Disposal of construction waste from sub-project site can lead to soil contamination.

Mitigation Measures

- Ensuring that contractor has properly disposed off all remaining waste including left over material and hazardous waste.
- Managing contaminated media with the objective of protecting the safety and health of occupants of the site, the surrounding community, and the environment post construction or post decommissioning.
- Implementing good house-keeping practices, such as the sorting and placing loose construction materials or demolition debris in established areas away from foot paths
- Cleaning up excessive waste debris and liquid spills regularly.

5) Biodiversity Conservation

No negative impacts are envisaged on the flora of the area during the operational phase. However, improper maintenance of the saplings planted against the trees cut for the proposed sub-project may adversely affect the growth of those saplings which were planted to improve the environmental aesthetics of the sub-project area. Raising of new trees in two rows on either side of the sub-project shall render a positive impact on the flora of the area and will also cause a positive impact on the landscape of the area, which shall be of permanent in nature. Presence of adequate flora will absorb CO_2 gas, through photosynthesis, emitted from an expected large number of cars, vehicles and public transport, thus purifying air of hazardous particles.

Mitigation measure will include planting of native trees along both sides of the sub-project, in accordance with the tree plantation plan. Although it shall take 10-15 years, before these plants become trees, this planting on sub-project, shall not only compensate for the loss of trees, but shall contribute towards improvement of flora and environment of the tract. Invasive species of trees shall be strictly avoided.

CHAPTER - 6: IMPACTS AND MITIGATION MEASURES

An Environmental and Social Management Plan (ESMP) includes description of mitigation measures necessary to minimize or offset adverse impacts and to enhance beneficial impacts.

This section deals with the identification of potential negative impacts and proposes mitigation measures as shown in the Table 6.1 while Environmental Analysis, Environmental Monitoring Plan and ESMP implementation cost is given in the Table 6.2, 6.3 and 10.1 respectively.

Sub-project	Rehabilitation of Road from Sucha Soda Manawala Road to Gurdwara, District Sheikhupura

Table 6-1: Environment and Social Mitigation and Monitoring Plan

Proposed Sub-project Activities	Potential Impacts[22]	Mitigation Measures	Implementing Agency	Monitoring Responsibility
A. DESIGN PHASE				
Site Selection	• Accidents due to improper design • Resettlement issues of local people • Disturbance to properties/ businesses • Tree cutting	• Removal of vegetation and trees will be avoided to the extent possible. • The exposed soil will be re-vegetated quickly and compensatory plantation will be followed, i.e. 10 trees to be planted for every tree cut. • Sub-project involves rehabilitation of existing infrastructure. Therefore, no resettlement is involved	Contractor	ES[23]/SS and GS[24]
Dismantling/demolishing of existing road structure	• Dust, Noise and vibration issues may generate during dismantling of road posing minor health issues on labours and nearby community. • Noise pollution due to use of heavy machinery, and air pollution due to machinery emissions and/or dust due to earthing activities. • Scattered solid waste may affect visual and aesthetic environment and provide breeding place to mosquitoes.	• Updated and tuned machinery will be used to control noise. • Water sprinkling will be carried out at consecutive intervals. • Dust masks and ear plugs should be provided to the labours. • Bitumen waste should be stored in closed containers and placed in a fenced storage area with paved floor. Should be properly disposed off. • Scattered solid waste should be properly managed in order to avoid contamination.	Contractor	ES/SS and GS

[22] The impact of an activity is a change from the baseline situation that is caused by the activity.
[23] Environment Specialist
[24] Social Safeguard and Gender Specialist

Proposed Sub-project Activities	Potential Impacts[22]	Mitigation Measures	Implementing Agency	Monitoring Responsibility
	• Heaps of solid waste may cause disturbance in mobility.	• Availability of bins will be ensured for commonly generated solid waste. • Timely management of solid waste will be ensured and contractor would be asked to take services of TMA for proper sanitation.		
Identification of site for construction camps, asphalt and batching plant	• Disturbance to the public may occur. • Tree cutting may involve for the construction of camp site, asphalt and batching plant site. • Loss of agricultural land, and Resettlement Issues	• Site must be 1 km away from the localities and cultural sites and 100 m away from the existing road. • Asphalt, batching and crushing plants must be installed in the downwind direction of residential areas. • Compensation to the affected people as per Land Acquisition Act, 1894.	Contractor	ES
B. REPAIR/REHABILITATION/ CONSTRUCTION PHASE				
Handling of construction material	**a) Environmental Issues:** • Construction material such as sand, bitumen may pose health risks • Spray of bitumen may cause respiratory and visual impairment. • Emissions and runoff of cement-contaminated water from batching plant may pollute the nearby area. **b) Social Issues:** • Scattered construction material may obstruct mobility	• Material shall be appropriately covered to prevent dispersal of sand material. • Implement dust suppression measures for all stockpiles. • Protective health and safety measures should be adopted. • Concrete mixing on the ground shall not be allowed. • Emissions from batching plant should be properly controlled and runoff contaminated water should be collected, stored and disposed off at the designated site.	Contractor	ES

Proposed Sub-project Activities	Potential Impacts[22]	Mitigation Measures	Implementing Agency	Monitoring Responsibility
		Material should be kept aside in designated place without creating disturbance to public mobility.		
C. GENERAL ENVIRONMENTAL ISSUES				
Air Quality • **Dust Pollution** • **Dust plumes from construction operation** • **Emission from machinery/ equipment**	• Dust emission may generate during construction activity. • Dust plumes from construction operations commonly, earthworks (dismantling, grading, shaping), haulage and dumping of soil have always generated excessive dust during in the city and suburbs and possibly lead to short-term respiratory health effects (coughs). • Due to heavy movement of vehicles, noise may generate • Air emissions may generate due to fuel burning from machinery/equipment	• Following of PEQS[25] as performance indicators ***(Attached at Annex D).*** • Access roads/street shall be sprinkled with water at least five times a day to suppress dust emissions. • Wet suppress or cover transported materials that may emit dust during transportation. • All vehicles, machinery, equipment and generators used during construction activities should be kept in good working condition and be properly tuned and maintained to minimize exhaust emissions. • Open burning of solid waste from the Contractor's camps should be strictly banned. • Asphalt, hot mix and batching plants should be equipped with dust control equipment such as fabric filters or wet scrubbers to reduce level of dust emissions. • Stockpiled materials will be covered to avoid dust/particulate emission. • Air quality analysis will be carried out before, during and after construction.	Contractor	ES

[25] Punjab Environment Quality Standards

Proposed Sub-project Activities	Potential Impacts[22]	Mitigation Measures	Implementing Agency	Monitoring Responsibility
Noise pollution	During construction, use of heavy machinery such as bulldozers, excavators, stabilizers, concrete mixing plant, pneumatic drills, stone crushers asphalt plants etc. can result in noise pollution and vibrations, causing discomfort and health hazards to workers and surrounding communities, especially those using the religious and sacred sites.	• Utilize noise mitigation measures (including the construction of bunds, metal sheet walls) in order to limit noise levels at sensitive receptors. • Confining excessively noisy work to normal working hours (8am-5pm) in the day. • Maintain all vehicles in order to keep it in good working order in accordance with manufactures maintenance procedures - Make sure all drivers will comply with the traffic codes concerning maximum speed limit, driving hours, etc. [26] • Providing construction workers with suitable hearing protection such as earmuffs and training them in their use. • Heavy machinery like percussion hammers and pneumatic drills should be used at a minimum level and should not be used at all during the night • Use of noise barriers in sensitive areas in the form of high boundary walls (concrete or wood), next to the religious and sacred sites • Locating the concrete mixing, and materials shipment yards at least 500m from residential areas, and religious sites.	Contractor	ES

[26] ECP 9: Noise and Vibration Management

Proposed Sub-project Activities	Potential Impacts[22]	Mitigation Measures	Implementing Agency	Monitoring Responsibility
		• Avoid undertaking the noisiest activities, where possible, when working at night near the residential areas.[27] • Pressure horns will not be allowed while passing through or near communities in the sub-project area. • The contractor shall train the operators of construction equipment on potential noise problems and the techniques to minimize noise levels. • The contractor shall keep in place any acoustic guards, covers, and doors provided on plant and maintain all in accordance with the manufacturer's maintenance procedures to ensure good working order.		
Soil	Soil erosion may occur during the construction of facilities due to uncontrolled run-off from equipment washing yards, excavation of earth/cutting operations and clearing of vegetation.	• Removal of vegetation and trees will be avoided to the extent possible. • Careful use of machinery and equipment should be ensured to prevent leakages which may result in the release of contaminants directly onto the soil. • The exposed soil will be re-vegetated quickly and compensatory plantation will be followed, i.e. 10 trees to be planted for every tree cut as per PEPA, 2012. • Provide impervious platforms in maintenance yards and storage areas with oil and grease traps for collection of spillage during storage of	Contractor	ES

[27] ECP 9: Noise and Vibration Management

Proposed Sub-project Activities	Potential Impacts[22]	Mitigation Measures	Implementing Agency	Monitoring Responsibility
		liquid fuel and lubes, and equipment and vehicle maintenance. Controlled disposal of oil, grease and chemicals, and restoration of site back to its original conditions before handing over. • Contractors to follow proper handling and disposal of construction waste and materials in designated site. • The contractor will ensure prevention of soil erosion and destabilization by applying batched excavation technique. • Productive land or land adjacent to agricultural/irrigated land may not be used for excavation.		
Vibration	• Shock waves can be produced due to heavy machinery working. • May create disturbance for nearby community	• Use of vibratory rollers should be prohibited.	Contractor	ES
Surface and Groundwater	• Construction waste and oil spills, if left unattended will result in forming leachate that will percolate through the soil strata and may contaminate the groundwater table. Wastewater from sanitation facilities in the workers' camps may also result in contamination of subsoil water. • Hand pumps and wells are commonly used sources of subsoil/groundwater for communities in these areas.	• Proper disposal of solid waste in designated site to sustain the water and land quality for domestic requirements. • Water required for construction should be obtained in a way so that water availability and supply to nearby communities remains unaffected. • Contractor will ensure that construction debris does not find its way into the drainage or irrigation canals which may get clogged. • Prohibit washing of machinery and vehicles in surface waters, provide sealed washing	Contractor	ES

Proposed Sub-project Activities	Potential Impacts[22]	Mitigation Measures	Implementing Agency	Monitoring Responsibility
		basins and collect wastewater in sedimentation/retention pond. • Contractor will conduct the mandatory water testing and obtain all necessary permits as per regulations from the Local Authority.		
Waste Disposal	Construction activities can result in the generation of wastewater, oil spillage from machinery, domestic waste from labour camps and construction related solid waste.	• Effluent from contractor's workshop and equipment washing yards would be passed through gravel/sand beds to remove oil and grease contaminants before discharging it into nearby channel. • Training of workers will be carried out in the storage and handling of materials and chemicals that can potentially cause soil contamination; • Solid Waste Management Plan will be prepared for waste generated during construction and camp sites, and will be safely disposed in demarcated waste disposal sites; the contractor will follow the Waste Management Plan. A contract with TMA[28] should be made defining the schedule for solid waste management and its disposal. • Proper labelling of containers will be carried out, including the identification and quantity of the contents, hazard contact information etc.; • Emergency Response Plan should be prepared to address the accidental spillage of	Contractor	ES

[28] Tehsil Municipal Authority

Proposed Sub-project Activities	Potential Impacts[22]	Mitigation Measures	Implementing Agency	Monitoring Responsibility
		fuels and hazardous goods, fire in labour camps and storage areas • Disposing non-usable bitumen spills in a deep trench providing clay linings at bottom and filled with soil at the top (for at-least 0.5m) • Used oil should be collected in separate containers stored on impervious platform with restricted access and must be sold to licensed contractor • Burning of waste oil should be strictly prohibited • The sewage system for camps will be properly designed (pit latrines or, as required, septic tanks).		
Emergency Response Plan[29]	Uncontrolled releases of hazardous materials may result from small cumulative events, or from more significant equipment failure associated with events such as manual or mechanical transfer between storage systems or process equipment.	• Measures for fire prevention and fire fighting. • Indicators on site (for example, heavy rainfall) that will prompt the shutdown of specified areas of work. • Procedure for shutdown of site, including transfer of plant, materials and personnel to safe areas (for example in the event of a flood). • Emergency evacuation procedure for staff and members of the public likely to be impacted by an emergency event on site (for example: fire or blast). • Where practicable, avoiding or minimizing the use of hazardous materials.		

[29] Environment, Health and Safety (EHS) Guidelines

Proposed Sub-project Activities	Potential Impacts[22]	Mitigation Measures	Implementing Agency	Monitoring Responsibility
		• Emergency lighting of adequate intensity should be installed and automatically activated upon failure of the principal artificial light source to ensure safe shut-down, evacuation etc. • The contractor will prepare emergency shutdown procedures and evacuations to cover all staffs and affected members of the public in the event of any emergency incident (such as traffic accident and fire). The contractor will ensure emergency access routes are well-known and have appropriate signage. • Identification of locations of hazardous materials and associated activities on an emergency plan. • Training should incorporate information from Material Safety Data Sheets for hazardous materials being handled. MSDSs should be readily accessible to employees in their local language.		
Biodiversity (Fauna and Flora)	There might be a risk to key ground nesting birds which could accidently be harmed during works throughout the nesting season. The birds shall vacate the area before construction machinery approaches and cutting of trees.	• Planting of ten trees for every tree cut during construction[30]. • Do not introduce invasive or exotic species through plantation • Contractor shall prepare a conservation plan to avoid any impact on fauna during construction.	Contractor	ES

[30] Detailed Tree Plantation Plan is attached at Annexed J.

Proposed Sub-project Activities	Potential Impacts[22]	Mitigation Measures	Implementing Agency	Monitoring Responsibility
		• On identification of any nest, the contractor will immediately cease works in the area and inform the Engineer and PMU. The contractor will also erect a fence within 50ft of the nest and prohibit any works within this area until approved by the Engineer. • The contractor's staff will be required to sign a code of conduct prohibiting hunting, poaching or trapping. • Provide adequate knowledge to the workers regarding protection of fauna, punishments for illegal poaching. • Speed limit will be defined for minimal impacts on fauna.		
Health and Safety Measures	• Health problems or immediate risk may emerge at dismantling and construction phase e.g. at time of bitumen plant/asphalt handling • Accidentals risks • Dust particles • Air and Noise pollution • Un-awareness regarding usage of PPEs may have serious outcomes	• Providing basic medical service and supplies to workers on-site (First Aid Boxes). • Setting and enforcement of speed limits. • Do not allow workers with inadequate training to operate heavy machinery • Provision of appropriate and high quality PPEs[31] to workers such as gloves, vests, hard-hats, masks etc. • Protection devices (ear muffs) will be provided to the workers operating in the vicinity of high noise generating machines.	Contractor	ES/SS and GS[32]

[31] Personal Protective Equipments
[32] Social Safeguard and Gender Specialist

Proposed Sub-project Activities	Potential Impacts[22]	Mitigation Measures	Implementing Agency	Monitoring Responsibility
		• Provision of protective clothing for labourers handling hazardous materials, e.g. helmet, adequate footwear for bituminous pavement works, protective goggles, gloves etc. • Provision of proper safety signage at sensitive/accident-prone spots. • Consecutive sessions would be organized to create awareness among labours. • Arrange awareness sessions on public safety for visitors during special festivals.		
COVID-19 Pandemic	There would be a risk of COVID-19 spreading among workforce during sub-project activities.	• Strictly following the WHO[33] Guidelines regarding COVID-19. • Initial screening of the labours would be ensured. • Use of COVID-19 related personal protective equipment's. • Advice on use of mask • Avoid shaking hands and physical contact. • Ensure workplaces are clean and hygienic • Provide hand washing stations around the workplace. • Display posters with COVID-19 prevention message in workplaces to keep social distancing. • Encourage employees to wash their hands regularly and stay at least one meter away from people who are coughing or sneezing.	Contractor **(SOPs are attached as Annex E)**	ES/SS and GS

[33] World Health Organization

Proposed Sub-project Activities	Potential Impacts[22]	Mitigation Measures	Implementing Agency	Monitoring Responsibility
		• Train all construction workers in basic sanitation and health care issues (HIV/AIDS, COVID-19). • Prepare a Worker Health and Safety Plan for the construction phase covering documentation and reporting of occupational accidents, diseases and incidents with complete record for supply of personal protective equipment for all staffs and visitors. • Identification of potential hazards to workers, particularly those that may be life threatening. • Ensure health care facilities especially first aid facilities are readily available. Appropriately equipped first-aid stations should be easily accessible throughout the sub-project area. • Providing appropriate personal protective equipment (PPE) in conjunction with training, use, and maintenance of the PPE. • Document and report occupational accidents, diseases, and incidents. • Provide awareness to the construction drivers to strictly follow the driving rules. • Safe storage facilities for petroleum and other chemicals at sub-project site. • The contractor should provide drinking water facilities to the construction workers at all the construction sites. • Separate cost is allocated for taking safety measures against COVID-19 as mentioned at Table 10-1. • SOPs regarding COVID-19 for construction site are attached at ***Annex F***.		

Proposed Sub-project Activities	Potential Impacts[22]	Mitigation Measures	Implementing Agency	Monitoring Responsibility
D. GENERAL SOCIAL ISSUES				
Sub-project will have positive outcomes for the local communities as by the provision of good state of art infrastructure.				
Job opportunities	• It will lead to an increase in economic activity and contribute to local area economic development.	Priority will be given to local area inhabitants for skilled and unskilled labour jobs. Majority of labour need will be met from the sub-project areas. The sub-project will also require skilled workers and these may be available from the community. It is anticipated that approximately 75% of the workforce will be from the sub-project area while some 25% of labour (skilled) would be hired from outside the sub-project area. This labour influx may have a positive impact on social norms, culture and economy of the area.	Contractor	SS and GS
Construction Camp Management	• Campsites for construction workers are the important locations that have significant impacts such as health and safety hazards on local resources and infrastructure of nearby communities. • There will be a potential for diseases to be transmitted including malaria, exacerbated by inadequate health and safety practices. • Child labour and school drop out • Health Safety attributes	• Contractor will have rented out houses for the workers rather installation of camps nearby the sub-project site. • Provide adequate health care facilities within construction sites. • Provide first aid facility round the clock. • Maintain stock of medicines in the facility and appoint fulltime designated first aider or nurse. • Ensuring that children and minors are not employed directly or indirectly on the sub-project. • Children of less than 14 years of age and pregnant women or women who delivered a child within 8 preceding weeks, in accordance	Contractor	ES/SS and GS Sub-engineer

Proposed Sub-project Activities	Potential Impacts[22]	Mitigation Measures	Implementing Agency	Monitoring Responsibility
		with the Pakistani Labour Laws and Employment of Child Act (1977).[34] • Communication on hiring criteria, minimum age, and applicable laws. • Provide personal protection equipment (PPE) for workers, such as safety boots, helmets, masks, gloves, protective clothing, goggles, full-face eye shields, and ear protection. Maintain the PPE properly by cleaning dirty ones and replacing them with the damaged ones. - Safety procedures include provision of information, training and protective clothing to workers involved in hazardous operations and proper performance of their job.[35]		
However, following issue might be generated:				
Gender issue	• Sub-project activities may cause hindrance to mobility especially for women during construction stage. • Privacy of the community may be disturbed.	• Workers would be trained to address privacy issues and ethically behaved. • Labours would be strictly asked to cater the privacy issues. • staff capacity-building	Contractor	SS and GS
Land acquisition for the temporary storage of materials and machinery	• Material storage may restrict public movement	• No land will be acquired for the storage of materials and machinery as no widening of road will involve under scope of work. Hence, provision of construction material will be ensured continuously	Contractor	SS and GS

[34] ECP 16: Worker Health and Safety
[35] ECP 16: Worker Health and Safety

Proposed Sub-project Activities	Potential Impacts[22]	Mitigation Measures	Implementing Agency	Monitoring Responsibility
Traffic Management	• Blocking of road may hamper public mobility due to increase in number of vehicles • Road Safety	• Provision of alternative routes • Water sprinkling at sub-project site at consecutive intervals • Indicators/signboards regarding alternate routes should be provided at proper distance to avoid accidents • Inform and coordinate the local residents regarding construction time schedule and also to display the details at sub-project site for their convenience (Public consultation has been carried out. **Performa is attached as Annex G).** • Movement of vehicles carrying construction materials should be restricted during the daytime to reduce traffic load and inconvenience to the local residents; • In case of any complaint, focal person of GRC may contact (details will be highlighted at sub-project site). • **Traffic Management Plan is attached at Annex- H).**	Contractor	ES
Economic Issues	Economic issues may arise due to; • loss of land, • structures/assets • productive plants • livelihood • shopkeepers • vendors (Mobile/permanent)	• No land acquisition is involved. • No Public structures are found to be affected in the sub-project area because they are not fallings in ROW. • No tree plantation is found. • No livelihood will be affected by sub-project activity. • No shops were found to be affected as located out of ROW.	Contractor	SS and GS

Proposed Sub-project Activities	Potential Impacts[22]	Mitigation Measures	Implementing Agency	Monitoring Responsibility
		• No permanent vendors were observed during social and environmental assessment survey • In case of any complaint, focal person of GRC may contact and his contact details will be provided at sub-project site.		
E. Physical Cultural Resources				
Excavation Work	The sub-component includes upgrading of access roads leading directly to religiously important and sacred sites. Due to the historic nature of these sites, there may be some negative impacts due to air and noise pollution, and vibrations due to movement of heavy vehicles and use of heavy machinery. Excavation work during construction may result in the uncovering of ancient sites or artefacts.	• Limit noise and air pollution while working close to the religious and ancient sites • In case of discovery of ancient sites or artefacts during construction, follow the procedure for Archaeological Chance Finds included in ESMF.	Contractor	ES /SS and GS

Table 6-2: Environmental Analysis

Parameter	Details of Action	Monitoring Frequency	Responsibility
Air Quality Testing	Air quality will be analysed through EPD certified lab.	Three times (Pre, during and post construction).	Contractor and ES
Noise level Testing	Provide ear plugs/ear muffs to workforce.	Three visits during construction	Contractor and ES
Water testing	Drinking water quality will be analysed through EPD certified lab	Three times (Pre, during and post construction).	Contractor and ES

Table 6-3: Environmental Monitoring Plan

Environmental monitoring will be carried out to ensure that all construction activities comply and adhere to environmental provisions and standard specifications, so that all mitigation measures are implemented.

Sr. #	Identified environmental and Social issues	Monitoring Parameters	Monitoring Site	Monitoring[36] Frequency	Reporting frequency	Responsibility
1.	**Noise and vibration**	• Use of machineries and equipment having less noise. • Provision for personal protective equipment (PPE's), ear muffs/ear plugs to workers. • Noise level testing will be carried through EPA ***certified Lab.	Scheme Site	Six times	It will be conducted before, during and after completion of civil work. in this regards, an environmental compliance report based on checklist in ***Annexure I*** will be submitted	ES
2.	**Dust**	• Provision for personal protective equipment (PPE's) Mask. • Avoiding construction activities during nights. • Sprinkling of water and removal of excess matter/construction debris from the site as soon as possible.	Scheme Site	Two times	It will be conducted during and after completion of civil work. In this regards, an environmental compliance report based on checklist in ***Annexure I*** will be submitted.	ES
3.	**Air Quality**	• Air quality will be analyzed in through EPA ***certified Lab.	Scheme Site	Two times	It will be conducted before, during and after completion of civil work. In this regards, an environmental compliance report based on checklist in ***Annexure H*** will be submitted.	ES

[36] Frequency is showing the sub-project duration (03 months).

Sr. #	Identified environmental and Social issues	Monitoring Parameters	Monitoring Site	Monitoring[36] Frequency	Reporting frequency	Responsibility
4.	**Provision of first aid in case of any emergency**	• First Aid will be provided immediately to save the life of Affected Peoples. • Ambulance will be called up to shift the affected persons to the nearest medical facility.	Scheme Site	Immediate as per need	First Aid Box will be provided at site.	ES
5.	**Health, Safety and Environmental needs**	• Adequate safety precautions such helmets, safety shoes, gloves, etc. should be provided to the labour.	Scheme Site	Once during construction activities	During construction of sub-project, Health Safety attributes will be provided and environmental compliance report based on checklist in ***Annexure I*** should be submitted.	ES M and E Specialist
6.	**Public Consultation**	• Local residents in the sub-project area will be informed about the sub-project details, sub-project schedule and GRM	Scheme Site	Two times (during and post construction) In case of any complaint, emergency visit will be organized.	During and after completion of sub-project; social compliance report will be submitted.	SS and GS
7.	**Vehicle Movement**	• Provision of alternative routes • Indicators/signboards regarding alternate routes should be provided at proper distance	Scheme Site	During construction, alternative routes will be provided.	During and after completion of sub-project; environmental and social monitoring report will be submitted as ***Annexure I***.	ES

Sr. #	Identified environmental and Social issues	Monitoring Parameters	Monitoring Site	Monitoring[36] Frequency	Reporting frequency	Responsibility
		• In case of any complaint, focal person of GRC may contact and his contact details will be provided at sub-project site.		In case of any complaint, emergency visit will be organized.		
8.	**Obstruction in public access**	• Provision of alternate routes • Construction should start from either side of the road	Scheme Site	Once during construction activities	During and after completion of sub-project; environmental and social monitoring report will be submitted as ***Annexure I.***	ES SS and GS
9.	**Economic Losses**	• loss of land, • damage to structures • damage to trees/plants • negative impacts on livelihood in form of blockage of passage for shopkeepers as well as vendors (Mobile/permanent)	Scheme Site	Three times (pre, during and post construction) In case of any complaint, emergency visit will be organized.	During and after completion of sub-project; environmental and social monitoring report will be submitted as ***Annexure I***.	SS and GS
10.	**Privacy Issues**	• Contractors would be trained to address privacy issues behave ethically. • Labours will be strictly asked to respect privacy of local residents.	Scheme Site	Once during construction	During and after completion of sub-project; environmental and social monitoring report will be submitted as ***Annexure I.***	SS and GS

Sr. #	Identified environmental and Social issues	Monitoring Parameters	Monitoring Site	Monitoring[36] Frequency	Reporting frequency	Responsibility
		• Training on observing/respecting and local norms.				

CHAPTER - 7: COMMUNITY AND STAKEHOLDERS CONSULTATION

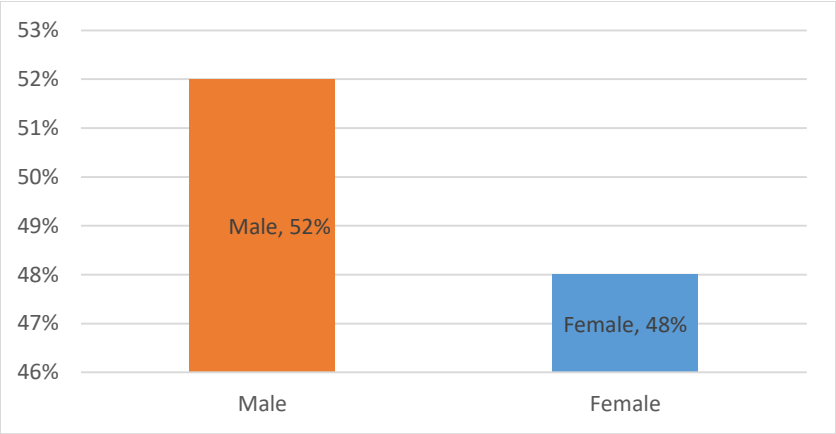
Consultation with stakeholders and community is an integral part of environmental and social assessment of development projects. The objective of public consultation is to ensure that the sub-project proponent should share relevant information about the project interventions and their potential environmental and social impacts with all stakeholders. Consultation is a two-way process by which the knowledge and views of affected persons, and other interested parties are considered for purposes of decision making. Information dissemination during public consultation by the project proponent or representative is fundamental to meaningful consultation.

Consultation sessions were held with different stakeholder groups who may be affected positively or negatively by the proposed project. The consultation process was carried out in accordance with the World Bank's policy and guidelines.

The purpose of the meetings with stakeholders was:

- To inform the communities about the overall objectives of the sub-project and the scope of work involved in the execution of the sub-project
- To receive and document feedback and views of the stakeholders
- To determine the needs of community members
- To consult community member about the construction of contractor camp and other associated activities (influx of labour, construction activities, waste disposal sites)
- Develop a schedule for future consultation

Two consultations at the sub-project site were done with both men and women. The consultations were carried out in the month of March and April 2019 and February 2020, for Sucha Soda Manawala Road to Gurdwara 1.15 km during the preparation of the ESMP.



Graph 7-1: Public Consultation

Male participated in walk-through surveys along the sub-project. During the consultation meetings, the male and female community members expressed their willingness to participate and cooperate for the effective sub-project implementation and execution of proposed sub-project works. Staff from the Project Management Unit and C and W Department also participated in the stakeholder consultations. The list of participants (Male) and village committee members are provided in ***Appendix A-1*** and ***Appendix A-2*** respectively.

In addition to the dissemination of the information regarding the road rehabilitation work, local community was also provided with brief information about the PTEGP. Communities expressed their willingness and cooperation vis-à-vis the sub-project. Consultation sessions with local women were also conducted at Sucha Soda, village. The list of women participants is provided in ***Appendix A-3***.

The women of the area keenly participated in the consultations. Women expressed great interest in initiatives for livelihood generation and requested support for the following:

- Livestock rearing
- Kitchen gardening
- Poultry farming
- Supply of safe drinking water
- Market linkages for Embroidery produce

Consultations were also held with the district administration Sheikhupura. In the meetings, the PMU team appraised the district administration about the PTEGP project. Also scope of work, construction schedule and other associated PTEGP project activities were discussed in detail. All the officials of the district administration offered their complete support for the execution of the sub-project. List is provided in the ***Appendix A-4.***

A summary of the main comments and views expressed by stakeholders and the measures taken to satisfy them during the consultation are included in the following table:

Table 7-1: Summary of Key Discussions

No.	Comments	Measures to be Implemented
1.	During the festival, access roads, streets, passages are generally blocked, due to which, the routine movement of local community including women are disturbed.	Sub-project will result in improvement of the infrastructure facilities with smooth flow of traffic and provision of state of art development.
2.	Meeting at Gurdwara Administrations	Safeguard team conducted meeting with Gurdwara administration regarding the development of ESMP. Granthi and caretaker showed interest for rehabilitation of the road and considered it as positive sign not only for the tourists but also for local people. It will prove more ease for routine movements. (List is attached at ***Appendix A-5***).
3.	Labour Influx	Communities were informed that hiring of local labour will be preferred to reduce labour influx. Non-local labour will be contained to camps and work sites to prevent mixing of immigrant and resident communities, and reduce community disturbance.

No.	Comments	Measures to be Implemented
4.	How will the privacy of women be protected during Construction?	Special sessions will be arranged for labours regarding privacy issues and moral values.
5.	Will buildings and structures (shops, houses, and community structures) be lost because of the Works?	It does not involve widening of road. However, in case of unavoidable interference prior notification and consultation needs to be made to reach consensus on procedures and options or any other form of agreed compensation.
6.	Will employment opportunities be offered to the community?	Priority will be given to local area inhabitants for skilled and unskilled construction labour jobs. Majority of labour need will be met from the sub-project areas. The sub-project will also require skilled workers and these may be available from the community. It is anticipated that approximately 75% of the workforce will be from the sub-project area while some 25% of labour (skilled) would be hired from outside the sub-project area.
7.	What is the scope of work and how will the quality of work will be ensured?	PISC Firm along Safeguard team would do frequent visits to supervise technical aspects of the sub-project as well as quality of work etc.
8.	Is there a Grievance Redress Mechanism (GRM) in the sub Project?	District Coordinator Officer will serve as GRO at district level. Detail is given chapter 11.
9.	Local community requested for street lights along the sub-project road.	Suggestion is recorded and to be shared with C and W Department.
10.	Protected/endangered Species	Environment Specialist conducted meeting with concerned officials at WWF Office regarding endangered/protected species at sub-project. There were neither endangered nor protected species found along ROW.

Details of Participants from Community and Photo gallery are attached ***at Annex K*** and ***Annex L*** respectively.

CHAPTER - 8: CAPACITY BUILDING

Capacity building is an evidence-driven process of strengthening the abilities of individuals, organizations, and systems to perform core functions sustainably, and to continue to improve and develop over time. Individual/workforce level capacity building activities improve the performance of staff according to ESMPs depending on specified activities and executing body.

Therefore, a comprehensive training program will be followed to strengthen the technical and institutional capacities of the executing agency, contractors and labourers. Training program will be scheduled after approval of ESMP from EPD[37] and site handing over to contractors.

Table 8-1: Potential Stakeholders for Consultation

Stages for capacity building	Strategic Works	Mode of consultation	Key Stakeholders
Screening	Project Site Visits	• Meeting with line dept. • Public meetings • Awareness sessions for contractors and labour force • Site Survey	• Line dept. • Residents near and at sub-project site
Project formulation	• General Project and Site Information • Safeguards Information • Mitigation Measures • Allocation of ESMP cost		
Impact Assessment	Scoping, assessment and management process, alternative options and mitigation measures		
Implementation and monitoring	Consultation and collaboration on the basis of project activities		

Trainings for contractors will be organized when the bidding process will be completed. It will be suggested to develop inventory at sub-project site to address potential impacts during construction. Contractors shall be bound for environmental and social compliance otherwise cost will be deducted as per break-down of environmental mitigation cost (item wise) in ESMPs. Training program will be planned as per requirement.

Table 8-2: Tentative Training Detail

Description of Training	Training Module	Location	Participants
One day training on Environmental and Social Management Plan (ESMP)	• Introduction to ESMF • WB Safeguard policies • Local Laws on Environment • ESMP • Key environmental and social issues associated with the subprojects	PMU	Representative from C and W Department and contractors

[37] Environment Protection Department

Awareness raising Session on COVID-19	• Risks and preventive measures • Effective implementation of SOPs during construction • Ensuring the use of COVID-19 related safety attributes Posters distribution	PMU	Representative from C and W Department and contractors
One day Training on Appropriate personal protective equipment (PPE) and First Aid	• What is the purpose of PPE? • How important to use PPE? • How to use PPE? • First Aid • EHS aspects • Fire Fighting	Sub-project site	Contractors and Labours
Gender-based violence, including sexual harassment, child abuse and exploitation	• Mandatory and regular training for workers on required lawful conduct in host community and legal consequences for failure to comply with laws; • workers' misconduct and complaints/reports on gender-based violence or harassment through the GRM • Provision of opportunities for workers to regularly return to their families	Sub-project site	Contractors and Labours
Two days training on Experience sharing and lesson learnt	• Lesson learnt due to implementation of ESMF ESMPs • Lesson learnt due to implementation of ESMPs • Lesson learnt during social mobilization	PIU	Contractors and labours

Contractors have to comply with the following responsibilities:

- Observation of timings and make a schedule that the surrounding community should not affect from noise pollution, air emissions and disturbances in their routine work and avoid use of heavy machinery in day hours.
- Usage of machinery/ equipment producing negligible/low noise.
- Ensure health, safety and protective measures including safety equipment, safe drinking water, first aid boxes etc. to the workforce as per nature of their jobs.
- Water sprinkling to avoid air pollution.
- Indicate alternate travel routes and provide indicators at suitable places during work timings.
- Local labour should be preferred to work.
- Child labour is strictly prohibited as per labour law. All labour should be more than 14 year of age.
- Information should be provided to the surrounding populations before pre-construction and privacy of women should not be disturbed.
- Proper disposal of wastes and garbage.
- Health, safety and protective measures for the labour.
- Notice board of emergency numbers and GRC should be placed at proper place.
- Contractor is bound to follow SOPs regarding COVID-19 during execution.

CHAPTER - 9: INSTITUTIONAL ARRANGEMENTS AND IMPLEMENTATION MECHANISM

9.1 Implementation Mechanism

Institutional arrangements for project oversight, management coordination and implementation would be guided by a systematic process of assessments. This will help to define an optimal institutional mix that will guarantee efficiency and effectiveness in delivering project outcomes to project beneficiaries, ensure achievement of the intended results, and permit evaluation of impacts and documentation of lessons learned.

Planning & Development Department, GoP is the Implementing Agency for Punjab Tourism for Economic Growth Project. PMU is led by a Project Manager. PMU includes a financial management specialist, Admin and Accounts officer, a procurement specialist, environmental specialist, a social safeguard and Gender specialist, and a monitoring and evaluation specialist.

PMU would have responsibility for project implementations including, but not limited to reporting, monitoring, and evaluation, social and environmental management, procurement, financial management, audit, and disbursements, as well as coordination with the line departments and the World Bank. C and W Department is coordinating in parallel with PMU for the hiring of Construction Contractor and supervision is being done by PISC Firm.

Environment Specialist and Social Safeguard and Gender Specialist will ensure the implementation of ESMP through the contractor and submit the ESMP implementation progress report. Both will be directly responsible for the internal monitoring and progress reporting by doing site visits regarding the compliance of ESMP.

9.2 Monitoring Mechanism under ESMP

ESMP monitoring will be carried out to ensure that the mitigation plans are regularly and effectively implemented. It will be carried out at four levels. Safeguard Team of PMU will carry out ESMP monitoring to ensure that the mitigation plans are being effectively implemented and will conduct field visits on a regular basis. District Coordinator and PISC firm will also be responsible for ESMP implementation monitoring effectively. An independent firm will be hired for TPV of the entire project including ESMP implementation as per ESMF requirements.

9.3 Documentation and Reporting

The E and S Specialist will produce monthly and quarterly progress reports based on the information collected. These reports will include:

- Minutes of Meetings with contractors
- Laboratory analysis during construction phase
- Safety attributes compliance
- Implementation of mitigation measures
- Capacity building sessions
- GRM implementation
- Any other ESMP implementation activity carried out during the reporting period

9.4 Information Disclosure

The ESMP report will be uploaded on the websites of PMU-PTEGP. ESMP will also be the part of contract agreement with the contractors. Briefing session with contractors regarding effective implementation of ESMP would be arranged. Safeguard Team will keep the stakeholders informed about the environmental and social impacts throughout the project construction phase and facilitate in addressing grievance (s).

CHAPTER - 10: ESMP BUDGET

Most of the environmental and social management activities will be undertaken by the Contractor. Before the issuance of contract award to the contractor, therefore, the cost of ESMP activities will be included in the Contractor Budget and Bill of Quantities (BoQs) through in accordance to the procurement procedures. The ESMP implementation budget will be applicable for this sub-project. The cost details for the implementation of ESMP details are provided in the table below.

Table 10-1: ESMP Implementation Cost[38]

Sub-project: Rehabilitation of Road from Sucha Soda Manawala Road to Gurdwara, District Sheikhupura

Name of item	Quantity	Unit	Unit Rate (PKR)	Total Amount (PK)
Surgical Masks	182	Each	25	4550
Safety Shoes	20	Each	1854	37080
Gloves	20	Each	608	12160
First Aid Box	1	Each	4,140	4140
Ear Plugs	20	Each	115	2300
Safety Helmets	20	Each	450	9000
Safety Jackets	20	Each	1013	20260
Sanitizer	43	L/S	450	19350
Thermogun	1	Each	3825	3825
SUB TOTAL (1)				**112665**
Environmental Analysis During and after construction)				
Sub-project location: Starting point				
Ambient Air Quality Analysis (SOx, NOX, CO, PM2.5, O3,)	2	Each	64125	128250
Noise Level Monitoring	3	Each	10350	31050
Water Analysis	2	Each	26,055	52110
SUB TOTAL (2)				**211410**
Others				
Provision of Dust Bins	12	Each	1530	18360
Reflective Tape	70	Each	405	28350
Safety cones	10	Each	2003	20030
Safety boards	12	Each	3578	42936
Water sprinkling	5 times/day	L/S	25000	25000
SUB TOTAL (3)				**134676**

[38] This is estimated cost which may vary as per market rate.

Cost for Tree Plantation (Layout/Site Clearance, pit alignment and digging of earth, pit enrichment, plant fencing, planting a tree).1% of total cost			**228844**	**228844**
SUB TOTAL (4)				**228844**
GRAND TOTAL (1+2+3+4)				**687595 or 0.687595M**

CHAPTER - 11: GRIEVANCE REDRESS MECHANISM (GRM)

11.1 Introduction

The Project's Citizen Engagement (CE) strategy includes establishing a Grievance Redress Mechanism (GRM) in the PMU (PTEGP) and in all the nominated project districts. The Grievances Redress Mechanism (GRM) is directly linked to the transparent implementation of ESMF and RPF. A key objective of the GRM is to establish procedures for filing any grievances and disputes on social and environment safeguards and other entitlement issues arising out of the implementation of ESMP and RAP. A multi-tier GRM has been proposed in the PTEG:

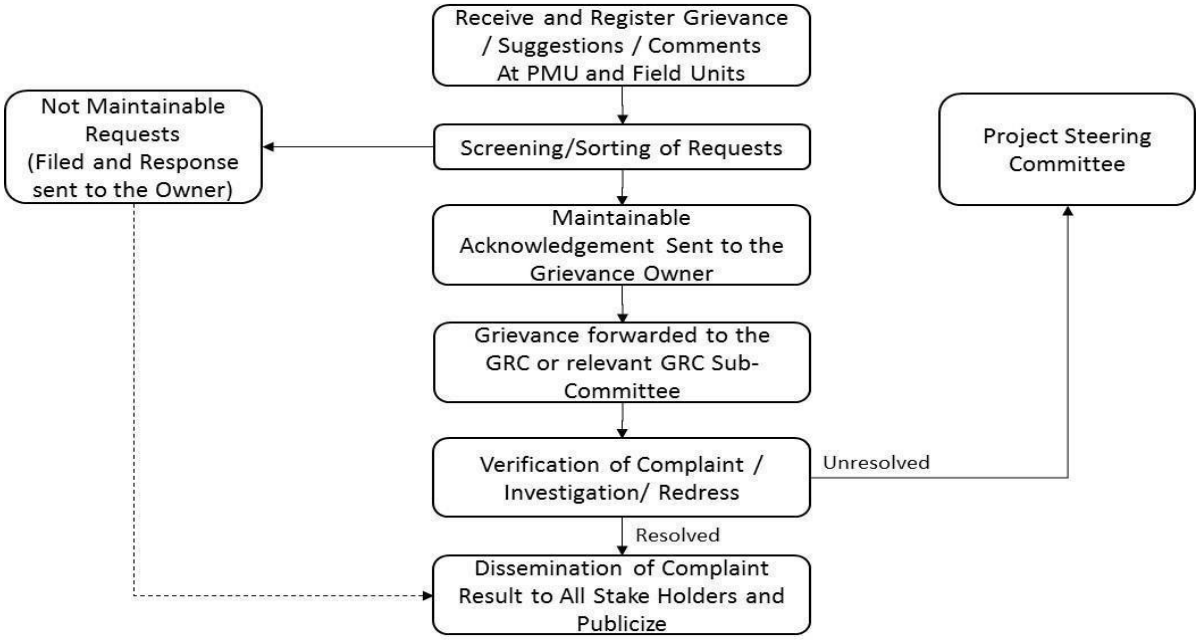


Figure 11-1: Key Steps in Grievance Redress Mechanism

Environment and Social Management Framework (ESMF) and the same will be followed in this ESMP. The lowest tier of GRM will be at sub-project level and the Project Steering Committee (PSC) will serve as an appeals mechanism and be the highest forum for resolution of any complaint. A matter reported to this forum will be decided in not more than one month.

11.2 Legal and Policy Reforms

Grievance Redress will be convened as per the World Bank OP 4.12 which requires an appropriate and accessible grievance redress mechanism for affected persons, including displaced persons and host communities.

Table 11-1: Types of Grievances

• Loss of livelihood • Compensation issues • Local Culture and norms • Dust, noise and air pollution from construction activities	• Water Pollution • Waste disposal • Health and safety • Criminal activities • Loss of business/income	• Damage to structure/properties • Impacts on livelihood • Obstruction in access etc. • Resettlement issues and land acquisition • Privacy issues

• Intensive schedule of construction activities • flow • Access to natural resources	• Traffic Movement • Inappropriate timing of construction vehicle • Nuisance	• Any other related with Environment and Social Safeguards.

11.3 Sub-project Site Based GRC:

GRM will be ensured to be effective at site especially during and post construction. Different types of grievances will be generated as described in types of grievances. However, following will be composition for Grievance Redress Committee at sub-project will be notified after awarding of contract:

Composition of Site-based Grievance Redress Committee (GRC)

1.	Deputy Commissioner/Representative	(Chair)
2.	Social Safeguard and Gender Specialist.	(Secretary)
3.	Sub-Engineer (C and W Department)	(Member)
4.	District Coordinator Officer	(Coordinator)
5.	Local Representative	(Member)
6.	Contractor	(Member/Representative)
7.	Special Invitee (as needed)	

11.4 Composition of Grievance Redress Committee (GRC)

A Grievance Redress Committee has been notified with composition of following members:

1.	Project Director, PTEGP.	(Chair)
2.	Social Safeguard and Gender Specialist.	(Secretary)
3.	Deputy Commissioner/Representative	(Member)
4.	District Coordinator Officer	(Coordinator)
5.	Deputy Secretary-PC[39] (C and W Department)	Member
6.	Special Invitee (as needed)	

11.5 Procedure

A. Inception

- Receipt of Complaint: The complaints will be recorded on an online Grievance Redress System. Complaints can also be received in person or through complaints box available at site, complaints register available at site and PMU office, telephone, web link or mail.
- Registry of Complaint: The Grievance Redress Officer (GRO[40]) will enter the details of complaint, including the subject, date of receipt, CNIC of the

GRO Details (Sheikhupura)

Name: Muhammad Tariq
Contact# 03216482753

[39] Project Coordinator

[40] [3] DCO would be GRO "Grievance Redress Officer"

complainant, into a computerized grievance record system (GRS).

- Acknowledgement: GRO will also send an acknowledgement to the complainant within 3days.
- Forwarding to the Appropriate Forum: In case of complaints related to the Project sites at district level, GRO will be Deputy Coordinator and if it is related to Project Management Unit (PMU) or stakeholder departments, the SS and GS will look up the matter.

B. Review and Decision

At District Level: The GRO will resolve the complaint within 7 days and inform the complainant. In case the complainant is not satisfied with the redress of his/her grievance, the complaint will be referred to the PMU.

At PMU Level: Secretary will resolve the complaint within 15 days and inform the complainant.[41] In case the complainant is not satisfied with the redress of his/her grievance to the apex body of GRC.

Table 11-2: Time Frame

Sr.#	Subject	Time	Activity
For Local complaint @ Site			
1.	Receipt and acknowledgment of Complaint	Within 3 Days	Registration, forwarding and Acknowledgment
2.	Forwarding of complaint to DCO (PTEG)	7 Days	Dispatch of complaint to concerned department and immediate action
	At PMU level		
3.	Final disposal of complaint to Secretary	15 days	Proposing action or sending to concerned department accordingly
4.	If could not resolve, forward to Chairman of Project Steering Committee	30 days	Final decision on grievance and its solution

C. Closure of Grievance

The complaint shall be considered as disposed and closed when:

- The designated GRO/authority has acceded to the request of the complainant fully;
- Where the complainant has indicated acceptance of the response in writing;
- Where the complainant has not responded to the Grievance Redress Officer within one month of being intimated about the final decision of the grievance officer on his Grievance/complaint.
- Where the complainant is informed in advance, but fails to attend the proceedings of the Grievance Redress Officer within the stipulated period of the disposal of the complaint;
- Where the complainant withdraws his/her complaint.

[41] 3 days (minimum time)

Conveying the Decision: The GRO will convey the redress decision, at all levels, to the complainant, within 5 days of decision. Feedback: The GRO will solicit the satisfaction of the complainant regarding the redress decision and will enter it into the GRS. Satisfaction of the complainants may also be validated through a third party.

The Grievance Redressal Mechanism has been made functional at PMU level. A complainant link has been created at PTEGP website (https://ptegp.punjab.gov.pk/grm), where people can register their complaints. Furthermore, a complaint register will be placed in the site villages before the starting of construction work.

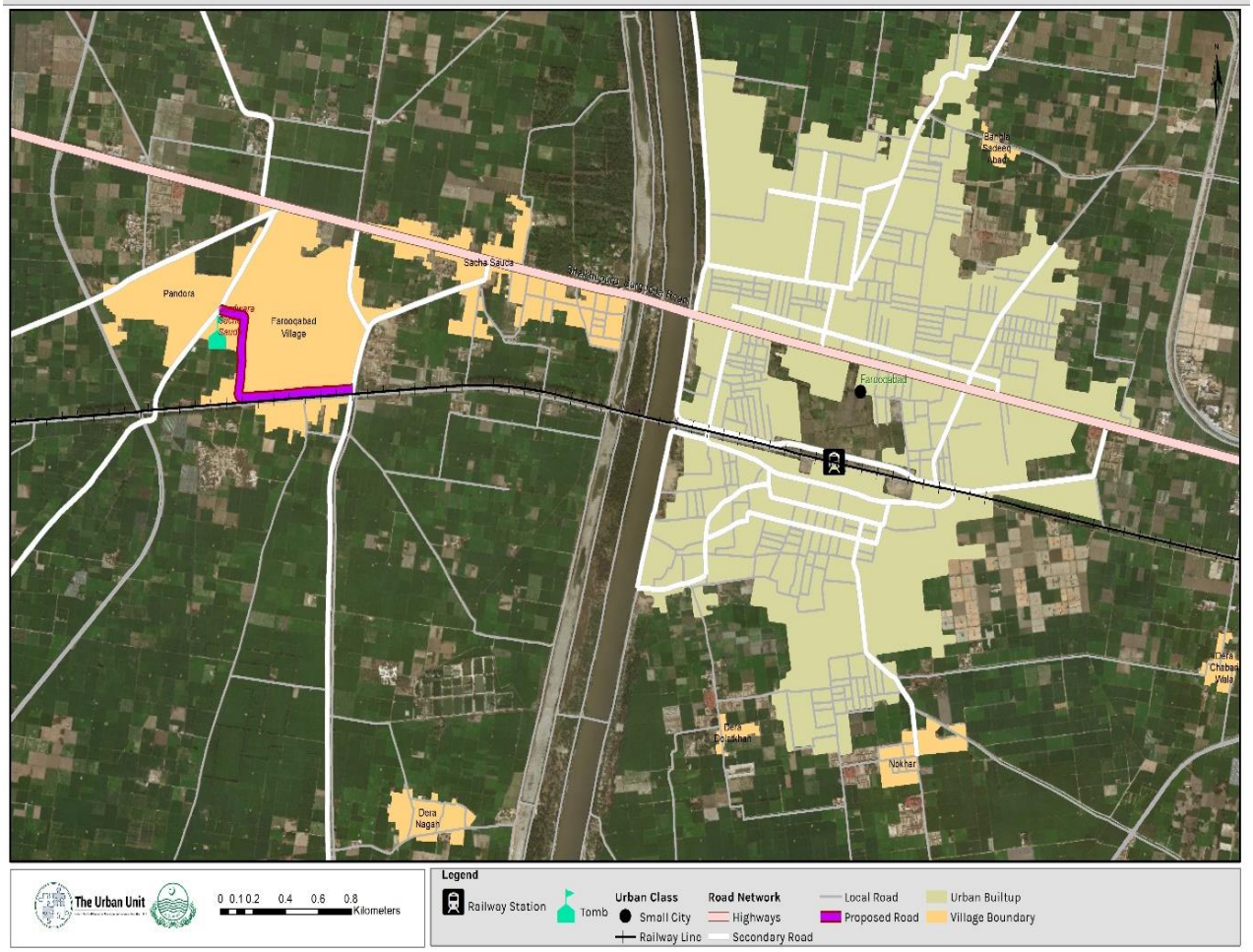
D. Exclusions:

- The following allegations/complaints shall not be construed or taken up for consideration and disposal as 'Grievances:
- Anonymous complaints or Frivolous cases in respect of which inadequate supporting details are provided;
- Cases involving decisions/policy matters in which the complainant has not been affected
- directly/indirectly;
- Cases where quasi-judicial procedures are prescribed for deciding matters or cases that are subjudice;

ANNEXURES

ANNEXURE – A: Location Map

REHABILITATION OF ROAD FROM SUCHA SODA MANAWALA ROAD TO GURDWARA, DISTRICT SHEIKHUPURA, LENGTH =1.15 KM



ANNEXURE – B: Environment and Social Screening Form

Sub-Project Title: Rehabilitation of Road from Sucha Soda Manawala Road to Gurdwara, District Sheikhupura

Sub-Project location: Farooqabad Village

Sub-Project scope of work: Reconstruction/carpeting

Implementing Agency: C and W Department

Date of Screening: 21-06-2018

Name of District: Sheikhupura

Project Categorization: A B C

Total labor force involved: 15

Responsible Agency: Punjab Tourism for Economic Growth Project

Does the project have requisite certificates/permit? No

1) Environment Deptt. 2) Archeological Deptt. 3) Forest Deptt. 4) Auqaf Deptt.

Section 1: Background Information

1. Nature of Area:

i. Residential ii. Commercial iii. Industrial
iv. Agricultural v. Residential cum Commercial
vi. Any other (please specify)

2. Demography

i. Number of households in project area: 71

ii. Estimated number of persons/house: 06

iii. Estimated total population: 426

iv. Number of shops in the area: 15

v. Number of offices in the area: No

3. **Public infrastructure presents in the proposed area:**

i. Shops	ii. Banks	iii. Shopping Plaza
iv. Offices	v. Industrial areas	vi. None of the above

vii. Any other

4. **Civic facilities in the surrounding of proposed area?**

i. **School/college/university**

Yes **No**

(if yes)

1) Name
2) **Public/Private**
3) Timing

ii. **Hospital/Dispensary/clinic**

Yes **No**

(if yes)

1) Name: Bunaydi Markaz-e Seht
2) Public/Private
3) Timing
4) Specialty

5. **Presence of Religious Sites**

1) Mosque

Yes No

(if yes)

a. No. of mosques: 01
b. Name of mosques: Jamay Masjid

2) Church

Yes **No**

(if yes)

a. No. of church
b. Name of church (if yes)

3) Graveyard

Yes **No**

6. **Public Service Facility in the scheme proposed area:**

a. Electric Poles **Yes** No

b. Telephone cables	**Yes**	No	
c. Telephone lines	**Yes**	No	
d. Gas pipelines	**Yes**	No	
e. Tube wells	**Yes**	No	
f. Disposal station	Yes	**No**	
g. Water supply lines	Yes	**No**	
h. Railway tracks	**Yes**	No	
i. Sewerage/drains	**Yes**	No	

SECTION II: ENVIRONMENT

Sr.#	Screening criteria	Yes	No	Remarks
1.	Is the subproject in an eco-sensitive area or adjoining an eco-sensitive area or monument? • Protected area • Wetland • Mangroves • Forest area • Mangroves • Cultural points	✓		Gurdwara Sucha Soda
2.	Will the subproject create significant/limited/no environmental impacts during the construction stage? • Direct discharge of construction run-off	✓		Contractor is to ensure not to discharge water directly into nearby Channel.
	• Alteration to natural waterways		✓	
	• Improper storage and disposal of excavation spoils	✓		Proper measures would be taken to ensure timely shifting of excavation and waste material.
	• Flooding of adjacent areas		✓	

	• Improper storage and handling of substances leading to contamination of soil and water.	✓		For placement of construction material, impermeable base would be provided to control contamination of soil and water. Display of MSDS[42] at site.
	• Elevated noise and dust emission.	✓		To control noise, earplugs would be provided to workforce. For dust, water sprinkling will be done at regular intervals.
	• Disruption to traffic and visitor's movements.	✓		No damage to public utilities. No widening of road is involved. There is only rehabilitation of existing road. Traffic Management Plan is attached in report at Annex G.
	• Damage to existing infrastructure, public utilities, and amenities.		✓	
	• Failure to restore temporary construction sites.		✓	Contractors would be strictly adhered to restore the temporary construction site and ensured through regular monitoring.
	• Aggravation of solid waste problem	✓		
	• Soil pollution due to littering and sewage disposal into open areas	✓		
	• Health risks due to unhygienic conditions at workers 'camps.	✓		Contractors' training would be conducted to avoid health risks. Site monitoring will be ensured. However, house renting will be preferred at this site.
3.	Will the subproject create significant/limited/no environmental impacts during the operation stage? • Flooding of adjacent areas • Impacts on water quality due to effluent discharge • Gas emission • Safety hazards • Increased noise and air pollution resulting from traffic volume?		✓ ✓ ✓ ✓ ✓ ✓	Subproject will result in limited impacts during operational phase. After rehabilitation of road, more traffic to the tourist spot is expected which could result in safety hazards and increases noise pollution. However, since the road will be well maintained and traffic

42

				could pass more freely, a reduction in air pollution is anticipated. Mitigation measures are mentioned in chapter 06 under section Environment and Social and Monitoring Management Plan.
4.	• Is there any conversion of land or tree cutting involve? • Does the subproject involve any prior clearance from State Forest Department?		✓ ✓	No conversion of land is involved as existing road will be rehabilitated.
SECTION III: CULTURAL HERITAGE				
5.	Will the project create significant/limited/no cultural properties impacts? • Involve significant excavations, demolition, movement of earth, flooding or other major environmental damages		✓ ✓	
	• Is located within or in the vicinity of a recognized cultural property conservation area or heritage site.	✓		Sucha Soda Gurdwara
	• Is designed to support the management or conservation of a cultural property.	✓		Scope of work is limited to road rehabilitation. However, Chance Find Procedures are attached at "E" Annex to avoid future inconveniences.
	Other, specify. • Does the subproject involve any prior clearance from Archaeological Department?	✓		
SECTION IV: SOCIAL ASPECTS				

6.	Will the project create significant/limited/no social impacts? • Land acquisition resulting in loss of income from agricultural land, plantation or other existing land.		✓ ✓	Only rehabilitation is involved.
	• Impact on livelihood and economic activity.		✓	Job creation is positive impacts.
	• Any reduction of access to traditional dependent communities (to areas where they earn for their primary or substantial livelihood.		✓	Another road is passing by the side of the sub-project along canal. During construction, that road can be used as an alternative.
	• Any displacement or adverse impact on tribal settlement.		✓	No tribal area existed along sub-project location.
	• Adverse impacts to women, including economic and privacy concerns.		✓	
	• Impacts on children, other vulnerable e groups?		✓	
	• Impacts on infrastructure (roads, water supply, any other type of infrastructure •		✓	
	• Does the project include measures to avoid child labor?		✓	
	• Other, specify.		✓	

ANNEXURE – C: Environment, Health and Safety Guidelines (WORLD BANK)[43]

Environmental, Health, and Safety General Guidelines

Introduction

The Environmental, Health, and Safety (EHS) Guidelines are technical reference documents with general and industry-specific examples of Good International Industry Practice (GIIP) [1]. When one or more members of the World Bank Group are involved in a project, these EHS Guidelines are applied as required by their respective policies and standards. These **General EHS Guidelines** are designed to be used together with the relevant **Industry Sector EHS Guidelines** which provide guidance to users on EHS issues in specific industry sectors. For complex projects, use of multiple industry-sector guidelines may be necessary. A complete list of industry-sector guidelines can be found at: www.ifc.org/ifcext/enviro.nsf/Content/EnvironmentalGuidelines

The EHS Guidelines contain the performance levels and measures that are generally considered to be achievable in new facilities by existing technology at reasonable costs. Application of the EHS Guidelines to existing facilities may involve the establishment of site-specific targets, with an appropriate timetable for achieving them. The applicability of the EHS Guidelines should be tailored to the hazards and risks established for each project on the basis of the results of an environmental assessment[2] in which site-specific variables, such as host country context, assimilative capacity of the environment, and other project factors, are taken into account. The applicability of specific technical recommendations should be based on the professional opinion of qualified and experienced persons. When host country regulations differ from the levels and measures presented in the EHS Guidelines, projects are expected to achieve whichever is more stringent. If less stringent levels or measures than those provided in these EHS Guidelines are appropriate, in view of specific project circumstances, a full and detailed justification for any proposed alternatives is needed as part of the site-specific environmental assessment. This justification should demonstrate that the choice for any alternate performance levels is protective of human health and the environment.

The **General EHS Guidelines** are organized as follows:

[1] Defined as the exercise of professional skill, diligence, prudence and foresight that would be reasonably expected from skilled and experienced professionals engaged in the same type of undertaking under the same or similar circumstances globally. The circumstances that skilled and experienced professionals may find when evaluating the range of pollution prevention and control techniques available to a project may include, but are not limited to, varying levels of environmental degradation and environmental assimilative capacity as well as varying levels of financial and technical feasibility.

[2] For IFC, such assessment is carried out consistent with Performance Standard 1, and for the World Bank, with Operational Policy 4.01.

[43] By clicking double on document, complete document will be opened.

ANNEXURE – D: Punjab Environment Quality Standards

LAW AND PARLIMENTARY AFFAIRS Department

Government of the Punjab

12 August, 2016

The following NOTIFICATION: No. SO (G} EPD/07-26-2013 dated 05.08.2016 regarding **Punjab Environmental Quality Standards for Drinking Water is published for general information.**

NOTIFICATION: NO. SO (G)/EPD/7-26-2013 –In exercise of the powers conferred under clause (c) of sub-section (1) of section 4 of the Punjab Environmental Protection Act, 1997 (XXXIV of 1997), Environmental Protection council has approved the following Punjab Environmental Quality Standards for drinking water:

Punjab Environmental Quality Standards for Drinking Water

Properties/Parameters	Standard Values	WHO standard	Remarks
All water intended for drinking (E. Coli or Thermo-tolerant Coliform bacteria)	Must not be detectable in any 100 ml sample	Must not be detectable in any 100 ml sample	Most Asian countries also follow WHO standards
Treated water entering the distribution system (E. Coli or thermo tolerant coliform and total coliform bacteria)	Must not be detectable in any 100 ml sample	Must not be detectable in any 100 ml sample	Most Asian countries also follow WHO standards
Treated water in the distribution system (E. Coli or thermo tolerant coliform and total Coliform bacteria	Must not be detectable in any 100 ml sample. In case of large supplies, where sufficient samples are examined, must not be present in 95% of the samples taken throughout any 12-month period.	Must not be detectable in any 100 ml sample. In case of large supplies, where sufficient samples are examined, must not be present in 95% of the samples taken throughout any 12-month period.	Most Asian countries also follow WHO standards
Colour	≤15 TCU	≤15 TCU	
Taste	Non objectionable/ Acceptable	Non objectionable/ Acceptable	
Odour	Non objectionable/ Acceptable	Non objectionable/ Acceptable	
Turbidity	<5 NTU	<5 NTU	
Total hardness as CaCO3	<500 mg/l	---	
TDS	<1000	<1000	
pH	6.5-8.5	6.5-8.5	
Essential Inorganic	Mg/Litre	Mg/Liter	
Aluminum (Al) mg/l	≤0.2	0.2	
Antimony (Sb)	≤0.005 (P)	0.02	
Arsenic	≤0.05 (P)	0.01	Standard for Pakistan similar to most Asian developing countries
Barium (Ba)	0.7	0.7	
Boron (B)	0.3	0.3	
Cadmium (Cd)	0.01	0.003	Standard for Pakistan similar to

			most Asian developing countries
Chloride (Cl)	<250	250	
Chromium (Cr)	≤0.05	0.05	
Copper (Cu)	2	2	
Toxic Inorganic	Mg/l	Mg/l	
Cyanide (CN)	≤0.05	0.07	Standard for Pakistan similar to most Asian developing countries
Fluoride (F)	≤1.5	1.5	
Lead (Pb)	≤0.05	0.1	Standard for Pakistan similar to most Asian developing countries
Manganese (Mn)	≤0.5	0.5	
Mercury (Hg)	≤0.001	0.001	
Nickel (Ni)	≤0.02	0.02	
Nitrate (NO3)	≤50	50	
Nitrite (NO2)	≤3 (p)	3	
Selenium	0.01 (P)	0.01	
Residual Chlorine	0.2-0.5 at consumer end 0.5-1.5 at source		
Zinc (Zn)	5.0	3	Standard for Pakistan similar to most Asian developing countries
Organic			
Pesticides mg/l			PSQCA No.4639-2004 Page No. 4 Table No. 3 Serial No. 20-58 may be consulted.
Phenolic compound (as Phenols) mg/l			
Poly-Nuclear aromatic hydrocarbons (as PAHs) g/l		0.01 (By GC/MS method)	
Alpha Emitters bq/l or pCi	0.1	0.1	
Beta emitters	1	1	

Government of the Punjab Environment Protection Department

NOTIFICATION: No. SO (G} EPD/07-26-2013 — in exercise of the powers conferred under clause (c} of sub-section (1) of section 4 of the Punjab Environmental Protection Act, 1997 (XXXIV of 1997}, the Environmental Protection Council has approved the following as the Punjab Environmental Quality• Standards for motor vehicle exhaust and noise.

Punjab Environmental Quality Standards for Motor Vehicle Exhaust and Noise

(i) For in –use Vehicles

No.	Parameter	Standards (Maximum Permissible limit)	Measuring methods	Applicability
1	2	3	4	5
1	Smoke	40% or on the Ringlemann scale during engine acceleration mode	To be compared with Ringlemann chart at distance of 6 meters or more	Immediate effect
2	Carbon monoxide	6%	Under idling conditions Non dispersive infrared detection through gas analyzer	
3	Noise	85dB(A)	Sound-meter at 7.5 from the source	

(ii) For New vehicles

EMISSION STANDARDS FOR DIESEL VEHICLES

(a) For passenger car and light commercial vehicles (g/km)

Type of vehicles	Category/class	Tires	CO	HC + NO_x	PM	Measuring Method	Applicability
1	2	3	4	5	6	7	8
Passenger Cars	MI: with reference mass (RW) up to 2500kg	PAK-II IDI	1.0	0.7	0.008		All imported and locally manufactured diesel vehicles with effect from 01-07-2012
	Cars with RW over 2500 kg to meet NI category standards	PAK-II IDI	1.0	0.9	0.10	NEDC (ECE 15+EUDCL)	
Light commercial vehicles	NI-I(RW<1250 kg)	PAK-II IDI	1.0	0.7	0.008		
		PAK-II IDI	1.0	0.9	0.10		
	NI-II(RW<1250 kg<RW<1700kg	PAK-II IDI	1.25	1.0	0.12		
		PAK-II IDI	1.25	1.3	0.14		
	NI-III(RW<1250kg)	PAK-II IDI	1.50	1.3	0.14		
		PAK-II IDI	1.50	1.6	0.20		

Parameters Standards (maximum permissible limit)	Measuring methods
85dB(A)	Sound meter at 7.5 meters from the source

(b) For heavy duty diesel engine and large goods vehicles (g/KWh)

Type of vehicles	**Category/class**	**Tires**	**CO**	**HC**	**NO_x**	**PM**	**Measuring method**	**Applicability**
1	2	3	4	5	6	7	8	9
heavy duty diesel engine	Trucks & buses	Pak-II	4.0	1.1	7.0	0.15	ECER-R-49	All imported and locally manufactured diesel vehicles with effect from 01-07-12
large goods vehicles	N2(2000 and up)	Pak-II	4.0	101	0.15	EDC		

Parameters	**Standards (maximum permissible limit)**	**Measuring methods**
Noise	85 dB(A)	Sound-meter at 7.5 meters from the source

EMISSION STANDARDS FOR PETROL VEHICLES (g/km)

Type of vehicles	**Category/class**	**Tires**	**CO**	**HC+ NO_x**	**Measuring method**	**Applicability**
1	2	3	4	5	6	7
Passenger Cars	M1:with reference mass (RW) up to 2500kg.Cars with RW over 2500kg to meet NI category standards	Pak-II	2.20	0.5	NEDCE(ECE15+EUDCL)	All imported and new models* locally manufactured petrol vehicles with effect from 01-07-12
Light commercial vehicles	NI-I(RW<1250kg)	Pak-II	2.20	0.5		
	NI-II(RW<1250kg<RW<1700kg	Pak-II	4.0	0.65		
	NI-III(RW<1700kg)	Pak-II	5.0	0.08		
Motor Rickshaws & Motor cycles	2.4 Strokes<150cc	Pak-II	5.5	1.5	ECER40	
	2.4 Strokes<150cc	Pak-II	5.5	1.3		

Parameters	**Standards (Maximum permissible limit)**	**Measuring methods**
Noise	**85 dB(A)**	**Sound-meter at 7.5 meters from the source**

EXPLAINATION

DI: Direct Injection

lDI: Indirect Injection

EUDCI: Extra urban driving cycle

NEDC: New European driving cycle

M: Vehicle designated and constructed for the carriage of passengers and comprising more than eight seats in addition to the driver's seat.

N: Motor vehicles with at least four wheels designed and constructed for the carriage of goods.

* Now model means both model and design type of change.

** The existing model of petrol driven vehicles locally manufactured with immediately switched over to PakII emission standards but not later than 30th June 2012

PUNJAB ENVIRONMENTAL QUALITY STANDARDS FOR AMBIENT:

GOVERNMENT OF PUNJAB
LAW AND PARLIMENTARY AFFAIRS DEPARTMENT
NOTIFICATIONS
(122 of 2016)
12th August 2016

The following notification No. SO (G)/EPD/7-26-2013, dated 05.08.2016 regarding the Punjab Environmental Quality Standards for Ambient Air is published for general information:

The following notification No. SO (G)/EPD/7-26-2013, dated 05.08.2016 regarding

NOTIFICATION: NO. SO (G)/EPD/7-26-2013 –In exercise of the powers conferred under clause (c) of sub-section (1) of section 4 of the Punjab Environmental Protection Act, 1997 (XXXIV of 1997), Environmental Protection council has approved the following Punjab Environmental Quality Standards for Ambient:

Pollutant	**Time-weighted average**		
Sulfur Dioxide (SO2)	Annual Average*	80ug/m3	Ultraviolet fluorescence method
	24 hours**	120ug/m3	
Oxides of Nitrogen As (NO)	Annual Average*	40ug/m3	Gas Phase Chemiluminescence
	24 hours**	40ug/m3	
Oxides of Nitrogen As (NO_2)	Annual Average*	40ug/m3	Gas Phase Chemiluminescence
	24 hours**	80ug/m3	
Ozone(O_3)	1 hour	130ug/m3	Non dispersive UV I absorption method
Suspended Particulate Matter (SPM)	Annual Average*	360ug/m3	High Volume Sampling, (Average flow rate not less than 1.1 m3 /min).
	24 hours**	500ug/m3	
Respirable Particulate Matter PM_{10}	Annual Average*	120ug/m3	Preferably β-Ray absorption method
	24 hours**	150ug/m3	
Respirable Particulate Matter $PM_{2.5}$	Annual Average*	15ug/m3	Preferably β-Ray absorption method
	24 hours**	35ug/m3	
	1 hour	15ug/m3	
Lead (Pb)	Annual Average*	1ug/m3	ASS Method after sampling using EPM 2000 or equivalent Filter Paper
	24 hours**	1.5ug/m3	
Carbon Monoxide (CO)	24 hours**	1.5ug/m3	Non Dispersive Infra-Red (NDIR) method
	1 hour	10 ug/m3	

* Annual arithmetic mean of minimum 104 measurements in a year taken twice a week 24 hourly at uniform interval.

** 24 hourly /8 hourly values should be met 98% of the in a year. 2% of the time, it may exceed but not on two consecutive days.

Annexure – E: Chance Find Procedures

Chance find procedures which will be used during this Project are as follows:

- Stop the construction activities in the area of the chance find;
- Delineate the discovered site or area;
- Secure the site to prevent any damage or loss of removable objects. In cases of removable antiquities or sensitive remains, a night guard shall be present until the responsible local authorities and the Ministry in charge of Department of Archaeology take over;
- Notify the supervisory Engineer who in turn will notify the responsible local authorities and the Ministry immediately (within 24 hours or less);
- Responsible local authorities and the Ministry in charge of Department of Archaeology would be in charge of protecting and preserving the site before deciding on subsequent appropriate procedures. This would require a preliminary evaluation of the findings to be performed by the archaeologists of the Department of Archaeology and Museums (within 72 hours). The significance and importance of the findings should be assessed according to the various criteria relevant to cultural heritage; those include the aesthetic, historic, scientific or research, social and economic values;
- Decisions on how to handle the finding shall be taken by the responsible authorities and the Ministry in charge of Department of Archaeology. This could include changes in the layout (such as when finding an irremovable remain of cultural or archeological importance) conservation, preservation, restoration and salvage;
- Implementation for the authority decision concerning the management of the finding shall be communicated in writing by the Ministry in charge of Department of Archaeology; and
- Construction work could resume only after permission is given from the responsible local authorities and the Ministry in charge of Department of Archaeology concerning safeguard of the heritage.

These procedures must be referred to as standard provisions in construction contracts, when applicable. During project supervision, the Site Engineer shall monitor the above regulations relating to the treatment of any chance find encountered are observed.

Annexure – F: SOPs for Construction Site

Communication & Works Department
Government of the Punjab
Lahore

احتیاطی ھدایات برائے(COVID-19)کورونا وائرس انفیکشن

یہ احتیاطی ھدایات تمام کنسٹرکشن سائٹس پر نافذ العمل ھوں گی اور محکمہ تعمیرات و مواصلات کے کنٹریکٹرز اور سپروائزرز ان پر عمل درآمد کو یقینی بنائیں گے۔

۱۔ یہ ھدایات، تمام کنسٹرکشن سائٹس جن پر کام جاری ھے، پر نمایاں طور پر بینرز اور سٹریمرز کی صورت میں آویزاں کی جائیں گی۔

۲۔ تمام ٹھیکیداران اپنی کنسٹرکشن سائٹس پر جسمانی درجہ حرارت چیک کرنے کیلئے ٹمپریچر گن کی دستیابی یقینی بنائیں گے

۳۔ کنسٹرکشن سائٹ پر کام کرنے والے تمام عملے بشمول مزدور، ٹیکنکل سٹاف، ڈرائیور، سپروائزری سٹاف کا ٹمپریچر روزانہ کام شروع کرنے سے پہلے چیک کیا جائے گا اور اسکا ریکارڈ رکھا جائے گا۔

۴۔ کسی بھی مزدور یا دیگر عملہ میں وائرس کی علامات ظاہر ہونے کی صورت میں فوری طور پر ضلعی انتظامیہ کو مطلع کیا جائے گا۔

۵۔ ایسے کسی بھی شخص کو جس میں گلے یا ناک کی بیماری مثلاً زکام، کھانسی، نزلہ وغیرہ ہو کو کام پر آنے کی اجازت نہ ہو گی۔

۶۔ کنسٹرکشن سائٹ پر ہاتھ دھونے کے انتظامات بشمول پانی و صابن کی دستیابی متعلقہ ٹھیکیدار کی ذمہ داری ہو گی۔

۷۔ ٹھیکیداران اس بات کو یقینی بنائیں گے کہ صبح کام شروع کرنے سے پہلے تمام عملہ صابن سے ہاتھ دھوئے گا۔ اور ہر ایک گھنٹے بعد کام پر موجود ہر فرد اپنے ہاتھ صابن سے دھوتا رہے۔

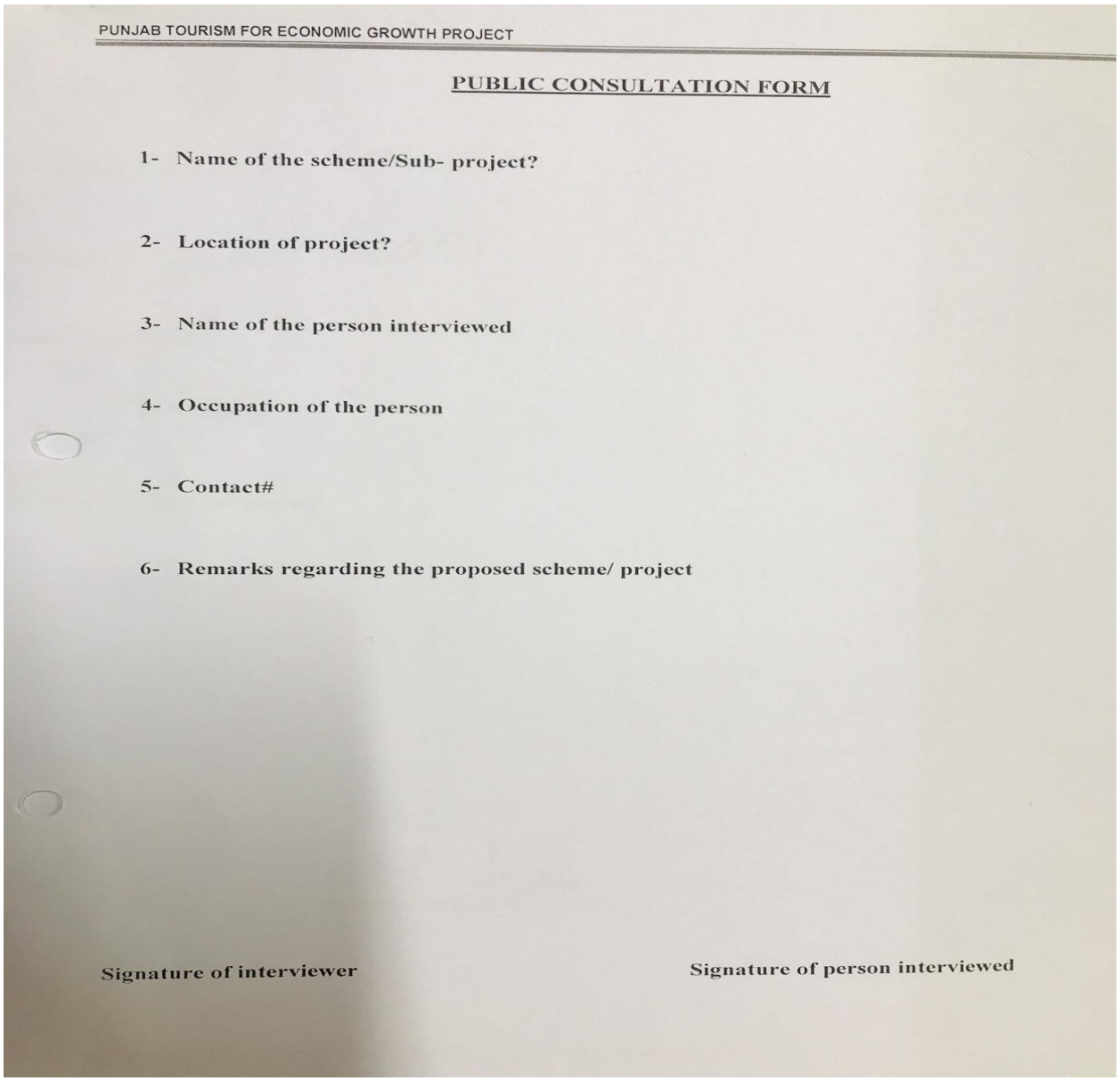
۸۔ جس جگہ پر عملہ کام کر رہا ہو وہاں پر کلورین ملے پانی سے روزانہ سپرے کیا جائے گا تاکہ وہ علاقہ جراثیم اور وائرس سے پاک رہے۔

۹۔ جہاں تک ممکن ہو اس بات کو یقینی بنایا جائے کہ مزدور اور دیگر عملہ کام ختم ہونے کے بعد گھر جانے سے پہلے صابن سے نہا کر جائے اور کام والے کپڑے وہیں چھوڑ کر جائے

۱۰۔ اگر مزدور یا دیگر عملہ کنسٹرکشن سائٹ پر ہی رہائش پذیر ہے تو ان کی رہائش پر مناسب سماجی فاصلے کو یقینی بنایا جائے۔

۔کنسٹرکشن سائٹ پر جراثیم کش محلول(Hand Sanitizers / Hand Wash etc)کی دستیابی اور استعمال یقینی بنایا جائے گا

Annexure – G: Public Consultation Form



PUNJAB TOURISM FOR ECONOMIC GROWTH PROJECT

PUBLIC CONSULTATION FORM

1- Name of the scheme/Sub- project?

2- Location of project?

3- Name of the person interviewed

4- Occupation of the person

5- Contact#

6- Remarks regarding the proposed scheme/ project

Signature of interviewer

Signature of person interviewed

ANNEXURE – H: Traffic Management Plan

A Traffic Management Plan is a document that describes the design, implementation, maintenance and removal of temporary traffic management measures while an activity in the road reserve is carried out.

<table>
<tr><td>Contractor Name
Firm’s Name:
Address:
Contact Number:
Contract Award No.</td><td colspan="2"></td></tr>
<tr><td>Location</td><td>Road Name(s)
1. ----------
2. ----------
3. ----------</td><td>Speed Limit</td></tr>
<tr><td rowspan="2">Description of Activity</td><td colspan="2">1. Please describe the proposed supply route to and from the site, showing details of links to the strategic road network?

2. How will vehicles enter and leave the site?

3. Provide a breakdown of the number, type, size and weight of vehicles accessing the site</td></tr>
<tr><td colspan="2">Proposed activity to be executed at site
• Cold Milling
• Excavation
• Dismantling
• Carpeting
• RCC
• Bitumen
• Any other</td></tr>
<tr><td>Covering of Loads</td><td colspan="2">All vehicles involved in the excavation and/or demolition process and departing the property with demolition materials, spoil or loose matter must have their loads fully covered before entering the public roadway</td></tr>
<tr><td>Proposed/ Restricted Working Hours</td><td colspan="2">Monday to Friday: 05:00 am to 07:00 pm;
Saturday: 05:00 am to 07:30 pm and 03:00-09:00 (Shift)
Sunday/Public Holidays: follow complete working time

***(Time will may vary as per need and seasonal variations)</td></tr>
</table>

<table>
<tr><td rowspan="3">Proposed Traffic Management Method</td><td>Active:

1. Provision of alternative routes
2. Water sprinkling at project site at consecutive intervals
3. Indicators/signboards regarding alternate routes should be provided at proper distance to avoid accidents
4. Public way must not be obstructed by any materials, vehicles, refuse, skips or the like, under any circumstances. Non-compliance with this requirement will result in the issue of a notice by C and W to contractor stop all work on site.</td></tr>
<tr><td>Unattended:</td></tr>
<tr><td>Night:</td></tr>
<tr><td>Proposed Speed Restrictions</td><td><table><tr><td>Speed Limit</td><td>Time</td></tr><tr><td>Normal Speed</td><td>0.00 am</td></tr><tr><td>Restricted Speed</td><td>0.00pm</td></tr></table></td></tr>
<tr><td>Positive Traffic Management Measures</td><td></td></tr>
<tr><td>Contingency Plans</td><td>• First Aid Box will be provided

• Emergency Contact No. will be displayed</td></tr>
<tr><td>Public Notification</td><td>1. Displaying of construction schedule
2. Information disclosure regarding scheme
3. In case of any complaint, focal person of GRC may contact (details will be highlighted at project site).
4. Contact no. of Contractor will be displayed</td></tr>
</table>

Personal Safety	Safety attributes will be followed as mentioned in ESMP: Dust masks Safety Shoes Gloves First Aid Box Safety Jackets Ear Plugs	
On-Site Monitoring	Who has responsibility for supervising, controlling and monitoring vehicle movements to/from the site? **Daytime:** **Night Time:** **Overnight:** **Other times (If applicable):**	
Other Information *(temporary speed issues, Labor safety issue etc.)*		
Traffic Controllers (Traffic Warden, nominated person by contractor)	**Name**	**Phone (24 hours)**

This TMP is Approved on the Following Basis

1. To the best of the judgment this TMP conforms to the requirements of Code of Practice for Temporary Traffic Management at site.
2. During execution, Traffic Management Plan will be periodically monitored and reviewed. Any significant changes to the TMP should be reported to the Environmental Specialist, PMU Lahore.
3. This plan is approved on the basis that the ***activity, the location and the road environment have been correctly represented by the applicant.*** Any inaccuracy in the portrayal of this information is the responsibility of the contractor.

Name (Site Engineer):.....
.....
.....
(Signature)

ANNEXURE – I: Checklist for Environmental and Social Monitoring

Name of the project/ scheme:

_____

Executing Agency:

_____

Date of visit: _____

Sr. #	Identified Environmental & Social issues	Mitigation Measure	Means of Monitoring	Status of Mitigation Measure be adopted		Remarks
				Yes	**No**	
1.	**Noise**	Noise level testing should be executed by Contractor.	EPD certified laboratory results			
		Provision for Personal Protective Equipment (PPE's), ear muffs/ear plugs to workers.	Visual Inspection			
		Use of machineries and equipments having less noise.	Visual Inspection			
2.	**Dust**	Provision for personal protective equipment (PPE's)	Visual Inspection			
		Sprinkling of water	Visual Inspection to ensure water sprinkling is being implemented			
3.	**Air Quality**	Air quality will be analysed before and during execution of scheme	Results from EPD certified laboratory			
4.	**Waste management**	Immediately transport the accumulated construction waste to a site identified by the implementing	Visual inspection that solid waste is disposed at designated site Any complaint			

Sr. #	Identified Environmental & Social issues	Mitigation Measure	Means of Monitoring	Status of Mitigation Measure be adopted		Remarks
				Yes	**No**	
		CDG /other concerned authority	from the local residents			
5.	**Provision of first aid**	First aid will be provided immediately to save the life of affected. Emergency numbers will be displayed at appropriate places	Visual inspection			
6.	**Health, Safety and Environmental needs**	Adequate safety precautions such as helmets, safety shoes, gloves, etc. should be provided to the labour	Inspection of usage of Personal Protective Equipment during execution			
7.	**Public Consultation**	Local residents will be consulted during execution phase regarding their views either they are satisfied with the Contractor's activities or not and grievance (if any)	Consultation with local residents			
8.	**Vehicles Movement**	Provision of alternative routes	Visual inspection to see whether proper traffic signs, safety barriers/ safety strips for traffic management are placed			
		Indicators/signboards regarding alternate routes be provided at proper distance Traffic Management Plan should be displayed at scheme site				
		In case of any complaint, focal person of GRC may	Visual inspection to see whether			

Sr. #	Identified Environmental & Social issues	Mitigation Measure	Means of Monitoring	Status of Mitigation Measure be adopted		Remarks
				Yes	**No**	
		contact and his/her contact details will be provided at project site.	proper sign boards with emergency numbers are placed			
9.	**Infrastructure Losses i-e, loss of land, damage to structures, damage to plants etc.**	Complaint from the local residents In case of any losses Contractor should compensate the owner immediately	Record of grievance and mode of compensation provided			
10.	**Obstruction in public access**	Provision of alternate routes	Visual inspection Record of public grievance			
		Construction should start from middle of the street and later on from either right or left side				
		Wooden blocks/ramps will be provided at door step of each house				
11.	**Privacy Issues**	Workers should be trained to address privacy issues and ethically behaved.	Visual inspection and record of grievance			
12.	**Economic Losses**	In case of obstruction of passage, shopkeepers/local businesses may affect Public Consultation, alternate routes will be provided. In case of any loss, compensation will be	Record of Public Grievance Visual Inspection			

Sr. #	Identified Environmental & Social issues	Mitigation Measure	Means of Monitoring	Status of Mitigation Measure be adopted		Remarks
				Yes	**No**	
		provided by the Contractor				
13.	**Any other**					

Monitoring Team:

Name and Designation

Signature

ANNEXURE – J: Tree Plantation Plan

Plantation will be undertaken under the general principle that it will in no way endanger or affect condition of the road pavement and that it will not hinder smooth flow of traffic or disturb overhead and underground utility limes. Plantation will be undertaken in a manner that in the first row shrubs (starting from the berm of the road) would be planted and in the second and subsequent rows small trees and tall trees would be planted. Care will be taken that these do not fall on utility lines.

Under Punjab Tourism for Economic Growth Project, different kind of plantation would be done along the sub-project side as part of its landscape and environmental pollution control plan. 1% of the total cost of the sub-project is already allocated for green cover under the head of horticulture in PC-1. Only local species will be preferred to plant for speedily growth and to avoid any inconvenience regarding wilting, animals eating and human touching. Local trees species like Shisham/Indian rosewood, Banayan, Berry and Shiri are preferred including shrubs as Ficus. Eucalyptus would be strictly banned to plant. Spacing distance between rows and plants shall depend on choice of species. As a general guideline, it shall not be less than 3 meters for plant to plant and row to row spacing. Fencing around the tree plantation could be done until and unless tress are elongated with certain height and roots are firmed with soil/substratum to get water themselves.

Species will increase the aesthetic value due bearing of colourful flowers and commonly used in avenue plantation by attracting birds and insects as well. Also serving as with high rate of dust control efficiency

I. Sustainability of Tree Plantation Plan:

Community Based Management could be introduced for preservation and sustainability of tree plantation plan. During execution of project, local community could be declared as custodian for sustainability of this plan. For this purpose, awareness sessions will be arranged with due coordination of the contractor and management of Gurdwara with local community. Tree plantation campaign by involving local community, engaging school students and influenced personnel could be invited for introducing best practices and smoothing the implementation of this plan. Sharing of information and suitable suggestions would be documented. In this regards, District Forest and Environment Protection department would also be on board for valuable proposals and future monitoring.

II. Compensatory Plantation Plan:

Compensatory plantation will be followed, i.e. 10 trees to be planted for every tree cut as per PEPA, 2012.

III. Inventory of Trees

Proper inventory of trees of all age classes will be carried out and maintained by Project team for ensuring sustainability.

List of Plant Species Suggested for Green Belt

Sr. No.	Species	Local Name	Character of species	Proposed Location		
				A	B	C
1.	*Albizzia lebbek*	Shiris	WT	-	-	
2.	*Calotropis procera.*	Aak	SH			
3.	*Dalbergia sissoo*	Shisham	WT, ST	-	-	-
4.	*Albizzia lebbek*	Shiris	WT	-	-	
5.	*Azadirachta indica*	Neem	CT, MT	-		-
6.	*Ficus religiosa*	Pipal	CT, LT, FT	-	-	

Species Characters:

SH=Shrub

WT sp. = Wild Tree species

CT sp.= Common Tree species

FT = Fruit Tree

ST = Small Tree

LT = Large Tree

MT = Medium Tree

Locations:

A= along the roads

B= In between the row

C= Third row

I. CHOICE OF TREES / SHRUBS

The choice of species will be according to local edaphic and ecological conditions. Above table is giving an overview of those species that were commonly observed while visiting at site. However, final selection would be done after consultation with concerned department and local community.

II. INVENTORY OF TREES

Proper inventory of trees of all age classes will be carried out and maintained by Project team for ensuring sustainability.

ANNEXURE– K: Details of Participants from Communities

Appendix A-1: List of Participants (Male), Sucha Soda Village

Sr.#	Date	Name of Participants
1.	**17-02.2020 18.02.2020**	Abdul Salam
2.		Imtiaz Ali
3.		Haji Ali
4.		Gullam Mustaq s/o Muhammad Ramzan
5.		Muhammad Khan
6.		Abbas Khan s/o Muhammad Deen
7.		Muhammad Ismail s/o Gullam Hussain
8.		Ghulam Mustafa
9.		Abbad Khan
10.		Muhammad Shareef
11.		Ijaz Ahmed
12.		Abdul Rahim
13.		Abdul Aziz
14.		Zafarullah
15.		Arshad Ahmed

Appendix A-2: List of Village Committee Members, Sucha Soda Village

Date	S. No	List of Members	Designation
17.02.2020	1.	Malik Shareef	Chairman
	2.	Ghulam Mustafa	General Secretary
	3.	Abdul khan	Member 1
	4.	Ijaz Ahmed	Member 2
	5.	Muhammad Ismail	Member 3

Appendix A-3: List of Consulted Women, Sucha Soda

Sr.#	Date	Name of Female participants
1.	18.02.2020	Amina Bibi
2.		Aliya Sarwar
3.		Jamila Bibi
4.		Katoon Bibi
5.		Mewish Ishaq
6.		Noor Bano
7.		Khatija Bibi
8.		Shafaq Hayat
9.		Tabinda khalid
10.		Laiaila khan
11.		Saira Bano
12.		Zahida Akthar
13.		Zahida parveen
14.		Sana

Appendix A-4: Consultative Meeting with District Administration

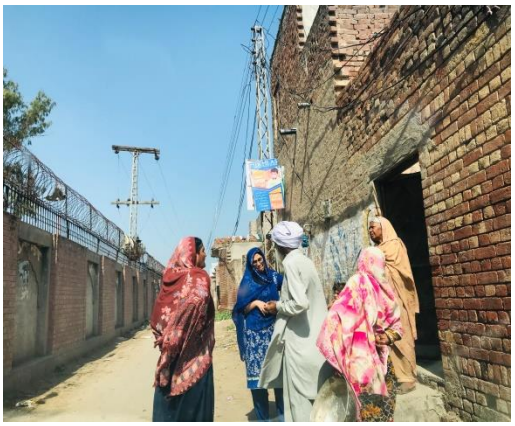
Sr. No.	Date	Name	Department	Designation
1.	**19.02.2020**	Muhammad Tariq	DC Office	Deputy Director Sheikhupura
2.		Kashif Shakoor	C and W	XEN Sheikhupura
3.		Muhammad Ashraf	C and W	Sub Engineer Sheikhupura
4.		Asghar Ali	EPA	DO Environment Sheikhupura
5.		Arshad Hussain	PTEGP	Social Safeguard and Gender Specialist
6.		Ghulam Sughra	PTEGP	Environment Specialist

Appendix A-5: Consultative Meeting with Gurdwara Administration

Sr.#	NAME	DESIGNATION	DEPARMENT
1.	Gordas Sing	Granthi	ETPB
2.	Liqat Ali	Care Taker	ETPB
3.	Imran Khan	Site supervisor	ETPB
4.	Sughra Sahar	Environment Specialist	PTEG
5.	Arshad Jami	SS&GS	PTEG

ANNEXURE – L: Picture Gallery

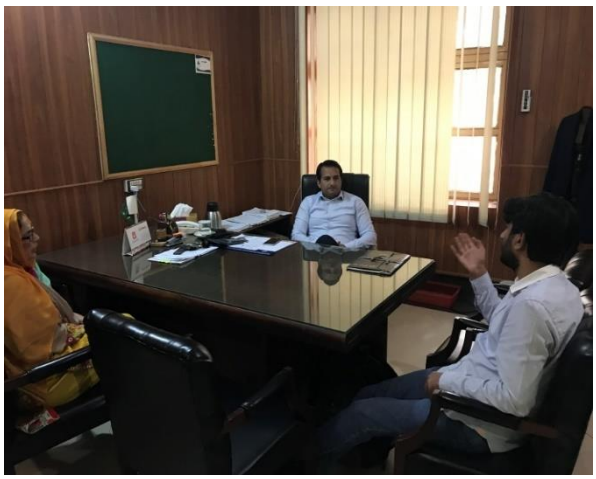
Consultation Meeting with Community at Sucha Soda Village



Consultation Meeting with female Community at Sucha Soda Village

Joint field visit regarding Sucha Soda road with C&W Team Sheikhupura

Current Road Condition



Meeting DDO Sheikhupura at DC Office

Meeting with caretaker

Meeting with Granthi

ANNEXURE – M: Study Team

Sr.#	Names	Designation
1.	Ghulam Sughra	Environment Specialist
2.	Arshad Hussain	Social Safeguard and Gender Specialist