ENVIRONMENT AND SOCIAL MANAGEMENT PLAN (ESMP)

Widening/ Improvement of 2.1km Road from G.T Road to Toap Mankiala, District Rawalpindi

December, 2020

PUNJAB
TOURISM FOR ECONOMIC GROWTH

حکومت پنجاب

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List of Abbreviation

APHA	American Public Health Association
BDL	Below Detection Limit
C and W	Communication and Works Department
CBO	Community Based Organization
DCO	District Coordination Officer
DO	District Officer
EA	Environmental Assessment
EA	Environment Specialist
EIA	Environmental Impact Assessment
ESMMP	Environmental 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
MPN	Most Probable Number
MSDS	Material Safety Data Sheet
NGO	Non-Governmental Organization
NTU	Nephelometric Turbidity Unit
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
PPEs	Personal Protective Equipment (s)
PIC	Project Implementation Consultants
PIU	Project Implementation Unit

PKR	Pakistan Rupees
PTEG	Punjab Tourism for Economic Growth
RAP	Resettlement Action Policy
ROW	Right of Way
RPF	Resettlement Policy Framework
SS and 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
WTTC	World Travel & Tourism Council
UNWTO	United Nation World Tourism Organization

EXECUTIVE SUMMARY

According to World Tourism Organization's Report, in 2014 on a global level, there were 1,081 million foreign tourists. Total number of foreign tourists coming to Pakistan in 2014 were 0.965 million; compared to a figure of 0.557 million in the year 2000. Pakistan's share of the global tourism market in 2014 was only 0.09%; which is much below its potential. In South Asia, Pakistan's share out of a total of 17.5 million foreign tourists was a paltry 5.5%; compared to India's share of 44%, Iran's share of 28.4% and Maldives at 7% share[7].In terms of geographical distribution, 44% of the total foreign tourist arrivals into Pakistan were from Europe; a major share of which was of overseas Pakistanis coming from United Kingdom. South Asia was the second largest origin for international tourists coming to Pakistan, accounting for 21% of the total. Of these tourists, a major share constitutes of Sikhs coming from India for religious festivals and for visitation of holy sites. Moreover, almost 50% of the foreign tourists come to Pakistan to visit their friends and relatives (VFR). These travellers usually do not engage in the typical tourism activities. In fact, only 14.7% of the total visitors to Pakistan come for recreational purposes. This low share of tourists in the total arrivals is a clear indicator of the untapped potential of the Tourism Sector (PILDAT 2015)[1].

Pakistan is currently ranked 125 out 141 benchmarked countries on the Travel & Tourism Competitiveness Index developed by the World Economic Forum[2].

Given this diversity and richness of religious heritage, the economic potential, which could be generated from religious and heritage tourism, is immense. Preservation of these sites and development of necessary tourism and related infrastructure in these areas would attract not only higher income domestic tourists but also millions of international tourists including Sikh, Buddhist and Hindu pilgrims. This could lead to a substantial economic uplift of different Sikh Gurdwara, Buddhist sites, UNESCO World Heritage sites, Hindu temples and Sufi shrines.
The Gandhara-Buddhist civilization flourished in what are now Punjab and Khyber Pukhtunkhwa (KP) provinces in Pakistan. In KP, Peshawar, Swat, Mardan, Swabi and Buner are dotted with Buddhist archaeological sites. In Punjab, Taxila and Mankiala both in the Rawalpindi district, are the two major historical and religious sites for Buddhists. Both the provinces can gain immensely from promoting Buddhist cultural and religious tourism, which has an estimated market of 500 million Buddhists around the world. Pakistani Buddhists sites are of particular importance to Korean Buddhists who trace their religious origin to the area, which is now Pakistan.[3]

Punjab Tourism for Economic Growth Project is focused at improving Infrastructure facilities, determining the potential for private sector investment, creation of jobs and showcase the rich heritage of this country. The project is aimed to tap the tourism potential in Pakistan and enhance regional connectivity. The interventions would protect and strengthen the integrity and governance of the sites, improve the overall tourist experience, and ensure that local communities are benefited from and integrated in the eco-systems of the sites.

Environment and Social Management Plan (ESMP)

The sub-project site specific ESMP is being prepared to address the environment and social impacts for the civil works associated with road rehabilitation of the following activity:

- **Widening/ Improvement of 2.1km road from G.T Road to Toap Mankiala, District Rawalpindi**

[1] UNWTO Tourism, 2016
[2] WTTC 2016
[3]http://www.wttc.org/research/economic-research/economic-impactanalysis/country-reports/. Accessed December 2016.

The ESMP has been completed in accordance with provincial and national legislation, and the World Bank's Operational Policies (OPs) as well as sub-project ESMF. Mitigation measures have been proposed in the ESMP based on the selection and siting of construction plant to reduce this impact. Various trainings have been proposed for the Contractor to ensure the implementation of proposed mitigation measures. Further, the sub-project area does not fall in wildlife habitat and does not cause any large scale or irreversible adverse impacts directly. However, there are no major adverse impacts related to operation phase, and impact will be temporary, localized and reversible in nature. Primarily, environment & social impacts are associated with construction activities as occupational health safety, temporarily noise and air pollution, solid waste pollution for which proper mitigation measures are proposed in chapter six under section 6.1 "Environment and Social and Monitoring Management Plan. No labour camps are required. In case of sensitive area related to PCR wherein impact is associated, the contractor will be required to follow the management plan at any cost per OP 4.12. Stupa is adjacent to sub-project. However, in an event where any PCR is encountered during construction activities, Chance Find Procedures have been prepared and shall be followed by the Contractor (***attached at Annex E).***

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. Sub-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 (PCR) wherein impact is associated, the contractor will be required to follow the management plan at any cost as per OP 4.11. 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

Formation width	24'
Metalled width	12'
Sub-base	6" Thick
Base Course	8" Thick
Asphalt Wearing Course	2" Thick

Environmental Baseline

A. Physical Environment

Surface and Groundwater Resource

Surface water at sub-project area is of three types 1) Brackish, 2) Saline 3) Sweet water. Surface water is used 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. Water pumps and wells are commonly observed to withdraw water for drinking purposes.

One water sample was taken for monitoring physical, biological and chemical parameters and accordingly were compared with the PEQS. Results were found in compliance with PEQS and suitable for drinking purposes.

Ambient Air Quality

The 24 hrs monitoring of ambient air quality for 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 (PM_{10}), Particulate Matter ($PM_{2.5}$) and TSPM (Total Suspended Particulate Matter). At both monitoring points pollutant concentration are in compliance with PEQS Limits.

Noise

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

Climate

The climate of the region is typically subtropical in nature. This type of climate is characterized by hot summers with monsoon and cold winters. The hottest months are May and June while the temperature drops slightly in subsequent months from July to September due to heavy monsoon rains. However, the humidity is at a high in these months. The range of seasons of sub-project area:

Summer Season—April to October

Monsoon Season—July to September

Winter Season—November to March

Average lowest temperatures from -1C^o to 1C^o is recorded from mid of December and January and highest temperature rising up to 37C^o in May and June.

Soil Profile

Soil profile of sub-project is fertile and generally alluvial making it suitable for agricultural purposes. The sub-component may require the excavation of earth which may result in top cover removal, holes that get filled with rainwater and/or agricultural runoff, creating a site for vectors to breed.

B. Biological environment:

Major fauna

Birds: Crow *(Corvidae splendens),* sparrow (*Passeridae Domesticus),* Parrot (*Paleornis torquata), Grey* partridge *(Perdix perdix),* Black partridge (*Melanoperdix Niger),* Koel (*Eudynamys scolopaceus) and Bulbul (Pycnonotus jocosus*) are majorly found.

Mammals: Jackal (*Canis aureus)* and Wild boar (*Sus scrofa).*

Reptiles: Reptilian species are not well documented. However, local people have reported that snakes and lizards are common in the region.

Flora

Indian Rosewood/ Sheesham (*Dalbergia sissoo*), Neem (*Azadirachta indica*), Desi Keekar (*Vachellia nilotica*), Kikker (*Acacia Karoo*) and Mulberry *(Morus alba)* are seen in large number along ROW of sub-project.

C. Social Baseline

Number of Household and Population: The socio-economic baseline survey reveals that the overall population is 192 persons belonging to 32 households.

Language: Inhabitants of sub-project area commonly speak Pothohari as language. However, Urdu and Punjabi are also spoken.

Health Facilities: No Basic Health unit facility is available along sub-project area. However, private clinics are working located about 2km away from main Toap Mankiala (Rawat and Jhambat village). In case of emergency and serious health care needs, patients have to travel about 40-45km to nearby hospitals.

Communication and utilities

Telephone landline facility and mobile network exist in along sub-project area. All the houses are connected to the national grid for electricity supply for domestic as well as agricultural use. Natural piped gas supply is also available.

Means of Transport

The sub-project area is located almost 33km away from Rawalpindi city. Only two rickshaws are available at sub-project area. Mostly, community prefers to travel in mini Suzuki.

Marriage

Residents of these areas prefer marriages within their extended families, and in same caste. The trend of marriage outside the extended family is very low.

Source of Fodder

Farmers meet their livestock grazing needs from the nearest rangeland. In addition, fodder is also cultivated on agricultural land.

Source of Livelihood and Income

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, 9, 000 to RS, 350,000 from secondary sources of income.

Commonly Used Agriculture Inputs

The average agricultural expense per acre, including seed, fertilizer, pesticide, ploughing and harvesting costs, is 17,300 rupees.

Housing

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

Type of housing

Houses are made of bricks and concrete material.

Land ownership

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

Impacts associated with biodiversity, air quality, soil, solid waste, labour health and safety, public convenience and safety, Physical Cultural Resources and land acquisition were assessed for design, construction and operational phase. These were found to range from low to medium in nature. Suggested mitigation measures are proposed in Table 6.1 under **"Environment and Social and Monitoring Management Plan"** section.

Environmental and Social Mitigation Measures

The specific mitigation measures for each of the anticipated environmental and social impacts that may arise have been considered. These mitigation measures are proposed to significantly reduce the identified potential environmental and social impacts associated with sub-project activities. The mitigation measures include are the use of **PPEs by labor,** water spraying for dust control, limiting noisy activities during day hours, fencing of construction area, 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 sub-project in accordance with the World Bank's policy 4.01 EA at an early stage before execution. Focused Group Discussion with local residents especially women were done to brief them about sub-project activities.

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.

Grievance Redress Mechanism

A site-based Grievance Redress Mechanism (GRM) for the sub-project will be operational during the implementation of this ESMP. Grievance Redress will be processed 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 district level, the District Coordinator (PTEGP) for the respective district will act as the Grievance Redress Officer (GRO) of the grievance. At the PMU level, the Social Safeguard and Gender Specialist will be the focal person for the GRM. [4]

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 sub-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 with total cost of sub-project is **Rs. 59.297 Million**. The total cost of ESMP implementation is **Rs.1.57 Million**. Detail is given in **Table 10-1.**

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

CHAPTER 1: INTRODUCTION

The Punjab Tourism for Economic Growth (PTEG) 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.[5]

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.

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.

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.

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 need's 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 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:

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

i. Identify social and environmental impacts of the sub-project and related activities including implementation of Standard Operating Procedures (SOPs) for civil works during construction regarding COVID 19 ***(Annex F)***.

ii. Suggest suitable measures for mitigation of identified impacts at planning, designing and implementation stages of sub-project 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 sub-project 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 sub-project staff.

1.2.2 Scope of Environmental and Social Management Plan

Sub-project **"Widening/ Improvement of 2.1km road from G.T Road to Toap Mankiala, District Rawalpindi"** falls in District Rawalpindi. Total length of the sub-project is 2.10km. 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 sub-project, therefore, falls under the Bank's Environmental Category-B. Environmental Category B meaning thereby that the potential impacts are limited, localized and reversible. ***Environmental and Social screening form is attached as Annex B.***

B. ESMP Development

This ESMP covers the site-specific environmental and social aspects, and builds on the Environmnetal and Social Screening done earlier. It proposes a mitigation plan for proposed impacts resulting from the activities during all phases.

1.2.3 ESMP Methodology

1.2.3.1 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, sub-project assessment and preparation of ESMP for construction/rehabilitation of sub-project.

1.2.3.2 Review of Legal and Policy Frameworks Requirements

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

1.2.3.3 Baseline Data Collection- Environmental and Social Surveys

After the review of the sub-project information, detailed environmental and social surveys were conducted by the Safeguard team to collect primary information. The environmental survey

was focused on the collection of specific baseline information of the sub-projects area including, air quality and noise, floral species present in the area.

The social survey was focused on the specific aspects of sub-project 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.

1.2.3.4 Identification and Assessment of Environmental and Social Impacts Mitigation Measures

The anticipated Environmental and Social risks were identified for the proposed construction of sub-project.

1.2.3.5 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.

1.2.3.6 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.

1.2.4 ESMP Implementation Budget

Budgetary requirements for the implementation of ESMP have been calculated and made part of the ESMP.

1.2.5 Justification and Need of the Sub-Project

Sub-project was found dusty, full of potholes and brambles. Visitors including local community face difficulty while travelling. This sub-project is connected with Mankiala Stupa. People come from Japan, France, Italy and China. Normally, 4-5 foreigner's visit the site per month and stay for 2-3 hours. Worshippers usually visit the site in group forms comprising of 11 persons in December & January. During this time, they explore the stupa and pray. Majority of the visitors stay in Islamabad.

CHAPTER 2: DESCRIPTION OF THE SUB-PROJECT

This chapter provides the details of construction phase activities, which are to be carried out.

2.1 Type & Category of the Sub-project

The proposed sub-project road off takes from G.T Road (N-5) near Rawat and connects with Toap Mankiala. The sub-project involves repair and rehabilitation of road including widening within ROW with total proposed length of 2.10km.

According to nature of sub-project, and by reviewing the WB Policy of EA (4.10), the sub-project falls under category B. Poor road surface was observed especially in rainy season, water used to stay at roads which causing trouble for not only vehicles to move but also for pedestrians.

Figure 2-1: Current status of sub-project

2.2 Scope of Work

I. Total Cost

Rs. 59.297 Million

II. Design and Scope

Main Carriageway

Formation width	24’
Metalled width	12’
Sub-base	6” Thick
Base Course	8” Thick
Asphalt Wearing Course	2” Thick

III. Treated Shoulders

Width	3’ Wide (Each Side)
P.C.C. (1:2:4)	6” Thick
P.C.C. (1:4:8)	6” Thick

IV. Road Structure

R.C.C. Slab Culvert (4’ Span) 1 No.

P.C.C. Drain	1312 R.Ft.
Open Drain (Brick Masonry)	6888 R.Ft.

V. Scope of New Road:

Dismantling of existing road.
Reconstruction and raising of embankment.
Widening from 10 feet to 12 feet.
Shoulder treatment.

2.3 Labour Requirement

At the peak of construction activities, up to 40 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 contractor will follow the mitigations given in Table 6.1 under section of job opportunities.

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 Table 4.1. 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 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:

- Rawat Kallar Syeda Road Near Sagri
- G.T. Road(N-5)

Rawat Kallar Syeda Road near Sagri will take additionally 5km more to reach at sub-project site. Therefore, G.T. Road (N-5) will be preferred.[6]

2.6 Sub-project Coordinates:

[6] Discussion with XEN-Highway Division, Rawalpindi

East Side:	Jhammat Village
West Site:	G.T. Road
North Side:	Human settlement Toap Kalya
South Side	Toap Mankiala Village

2.7 Sources of construction material

Crush stone aggregates (sub-base+ base, asphalt and concrete material) will be obtained from Margalla quarry and earthworks from local firms. However, crush material (carpeting material) from Sargodha Quarry will be taken. Contractor is bound to take stones and concrete material from only Government approved quarries.

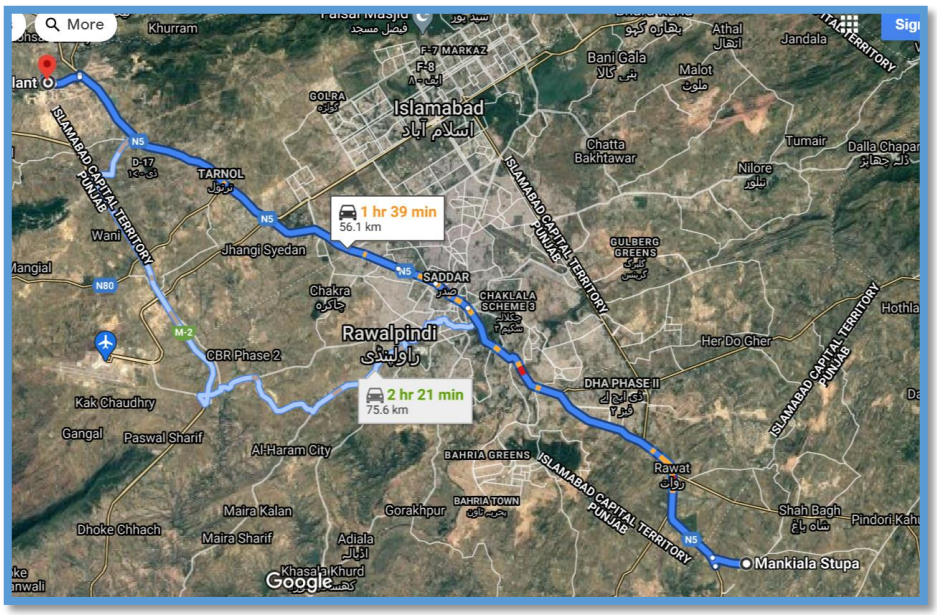


Figure 2-2: Proximity of Quarry from sub-project area

2.8 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.

Table: 2-1 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.	Tandem ruler	2
11.	Bitumen distributor	1
12.	Asphalt Plant	1
13.	Concrete mixing machine	1
14.	Concrete vibrator	3

15.	Asphalt paver	1

2.9 Temporary Storage of Materials

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

2.10 Waste Management & 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

2.11 Construction Schedule

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

2.12 Labour Camp

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. Contractor will have rented houses for remaining 25% of total workers rather than establishing camps nearby the sub-project site with complete provision of health care facilities especially first aid.

2.13 Vegetation Removal/Tree cutting

There is possibility that widening of road may cause cutting of tree as well as vegetation removal. However, sub-project will not cause any tree cutting within ROW. [7]

[7] Sub-Engineer told that ROW is cleared where not cutting of trees will be done.

Table 2-3: Detail of Site[8]

Name of sub-project	Total length	Scope of Work	Total cost of sub-project (million)	Duration of sub-project
Widening/ Improvement of 2.1km road from G.T Road to Toap Mankiala, District Rawalpindi	2.10 km	Reconstruction and carpeting	Rs. 59.297 Million	3 months

[8] 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 sub-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

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. It prohibits the use of Child Labour.

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 sub-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 any Court of competent jurisdiction may subsequently pass.

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 sub-project has been categorized as 'Category B'. The sub-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 to 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 sub-project as a whole will upgrade or provide basic services near cultural and heritage sites in some densely populated or visited areas, this sub-project 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 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 Group Gender Strategy

  Detailed of related EHSG can be found in ***Annex C***.

3.3 COVID-19 SOPs

During the construction and implementation of the sub-project, the Standard Operating Procedure (SOP) will be strictly followed during construction activities, stakeholder consultations or applicable in any other relevant aspect. The SOPs will be shared with civil work contractors and other concerns **(SOPs are attached as *Annex F*).**

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[9]

Mankiala also known as Manikyala and Manikiyala) is a village in the Potohar plateau, Punjab near Rawalpindi, around 35 kilometres from Islamabad. It is visible from the nearby historic Rawat Fort. The stupa is said to have been built during the reign of Kanishka between 128-151 CE.

Figure-4.1: Physical Location of Mankiala Stupa

According to historians, Mankiala Stupa dates back to the Gandhara period, and there are several tales associated with it. One of the most fascinating tales about Mankiala Stupa is that Buddha sacrificed some of his body parts at this place to feed hungry tiger cubs. Later, a stupa was built there as a memorial. According to the British Library, Mankiala Stupa was built during the period of Kanishka (128-151 AD) and first discovered by British traveller Mountstuart Elphinstone on his way towards Afghanistan in 1908. He also wrote a detailed account of his travels and mentioned this stupa in his memoir "Kingdom of Caubul" in 1815.

After its rediscovery, it was restored by the British rulers in 1891. There is another narrative about Mankiala Stupa. According to some historians, it was actually King Ashoka, the son of Bindusara and grandson of Chandra Gupt Mauria, who decided to embrace Buddhism as a religion after the Kalinga war in 261 BC as he was fed up with the bloodshed.

Later, he announced Buddhism as the state religion. He also passed an order that the remains of Buddha in Kapilvastu, Nepal, be cremated, and the ashes placed in 84 different boxes of gold or silver.

Figure-4.2: Toap Mankiala, Rawalpindi

[9] Archaeology Department, Punjab

These boxes were then buried in 84 different places in India from Patliputra to Kandahar and stupas were constructed there in a round mound form, having seven umbrellas over them - a sacred sign in Buddhism depicting seven heavens, seven skies, seven earths, seven skin layers, seven colours and seven musical notes.

According to some researchers, Mankiala Stupa is one of those 84 stupas. Today, the Mankiala Stupa seems like an abandoned place. An iron grill has been erected around the area to protect the stupa. Tourists, especially Buddhists from different countries, often visit the place.

The stupa is in a bad shape due to negligence and desperately needs some restoration work. Wild grass has grown on the stupa while the stone blocks of its base remain broken. Jean-Baptiste Ventura found the relics deposited in the stupa in 1830. However, all these items are now in the British Museum, London.

4.2 Baseline Detail

4.2.1 Physical Environment

1. Surface and Groundwater Resource

Surface water at sub-project area is of three types 1) Brackish, 2) Saline 3) Sweet water. Surface water is used 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. Water pumps and wells are commonly observed to withdraw water for drinking purposes.

Figure-4.3: Water Sampling

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	7.276	[10]APHA-4500-H^+ B
2.	Total Dissolved Solids^	mg/l	<1000	<1000	1340	APHA-2540 C
3.	Turbidity	NTU[11]	<5	<5	1.56	APHA-2130 B
4.	Taste	-	-	Non-Objectionable	Non-Objectionable	APHA-2160 C
5.	Odour	-	-	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	134	APHA-4500-Cl B
8.	Arsenic	mg/l	0.01	≤0.05	0.011	APHA-3114 C
9.	Chromium (Cr)	mg/l	0.05	≤0.05	BDL[12]	APHA-3111 B

[10] American Public Health Association

[11] Nephelometric Turbidity Unit

[12] Below Detection Limit

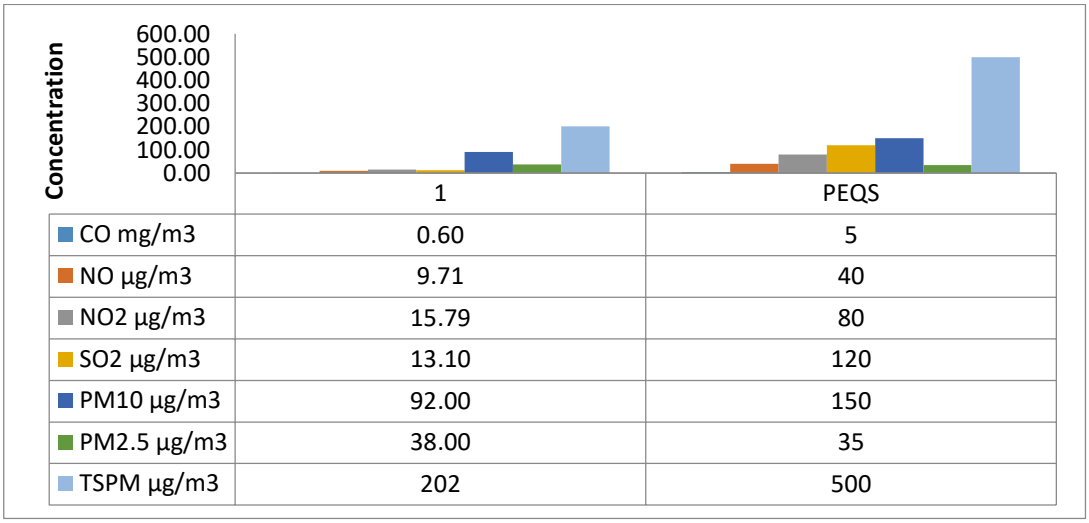
10.	Total Coliform	MPN [13]	Must not be detected in 100 ml sample	Must not be detected in 100 ml sample	Nil	APHA-9221 D
11.	E-Coli	MPN	Must not be detected in 100 ml sample	Must not be detected in 100 ml sample	Nil	APHA-9221 E
12.	Faecal Coliform	MPN	Must not be detected in 100 ml sample	Must not be detected in 100 ml sample	Nil	APHA-9221 F

Results are found in compliance with WHO and PEQ Standards except TDS and Arsenic.

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, NO_2)
- Sulphur Dioxide (SOx)
- Carbon Monoxide (CO)
- Particulate Matter (PM_{10})
- Particulate Matter ($PM_{2.5}$)
- TSPM (Total Suspended Particulate Matter)



	1	PEQS
CO mg/m3	0.60	5
NO µg/m3	9.71	40
NO2 µg/m3	15.79	80
SO2 µg/m3	13.10	120
PM10 µg/m3	92.00	150
PM2.5 µg/m3	38.00	35
TSPM µg/m3	202	500

Graph: 4-1 Pollutant Concentration at 02 monitoring points

Graph 4-1 shows that concentrations of all the air pollutants monitored comply with PEQS Limits except $PM_{2.5}$. PM (dust) level is naturally high. Other than anthropogenic factors (like burning of fossil fuel), road dust and winds also contribute to enhance the level of $PM_{2.5}$. All pollutant concentrations are in ug/m^3 except CO, which is in mg/m^3.

[13] Most probable number

3. Noise

Noise level measurements were carried out at three points of the sub-project site. 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.

Table 4-2: Noise level Variation at 06 points of location

Points	1	2	3	4	5	6
Time	dB[14] (A)	dB (A)	dB (A)	dB (A)	dB (A)	dB (A)
9:00 AM	61.3	65.7	61.8	66.4	66.4	63.1
10:00 AM	63.2	66.3	69.5	68.1	68.1	64.8
11:00 AM	62.7	67.6	59.9	67.7	67.7	64.3
12:00 PM	66.9	60.2	60.2	71.6	71.6	68.1
1:00 PM	64.8	67.1	61.4	73.5	69.5	66.2
2:00 PM	65.8	62.2	62.9	74.9	64.9	61.7
3:00 PM	70.5	64.5	60.8	67.5	67.5	64.2
4:00 PM	68.9	63.8	60.5	66.9	66.9	63.6
5:00 PM	69.9	68.9	62.9	70.9	75.9	67.2
6:00 PM	68.8	69.4	63.3	65.8	72.8	69.2
7:00 PM	69.1	66.5	64.9	69.3	74.3	70.3
8:00 PM	70.6	66.0	62.1	66.9	70.9	67.8
9:00 PM	71.5	65.2	67.3	63.6	75.6	66.9
10:00 PM	70.6	62.7	65.6	65.5	72.5	69.0
11:00 PM	65.3	67.3	60.4	65.1	67.1	61.8
12:00 AM	61.9	66.0	61.0	63.9	73.9	60.3
1:00 AM	67.6	65.5	62.1	69.5	69.5	66.1
2:00 AM	64.5	61.2	63.3	58.8	58.8	55.9
3:00 AM	60.0	60.2	62.1	54.7	54.7	52.0
4:00 AM	58.4	58.5	59.7	53.2	53.2	50.6
5:00 AM	60.2	57.1	61.7	54.9	54.9	52.2
6:00 AM	61.0	65.0	64.1	55.6	55.6	52.9
7:00 AM	59.0	65.6	62.8	53.8	53.8	55.1
8:00 AM	61.3	65.7	62.8	68.1	62.1	59.3
Average	65.2	64.5	62.6	64.8	66.2	62.2

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.[15]

4. Climate

The climate of the region is typically subtropical in nature. This type of climate is characterized by hot summers with monsoon and cold winters. The hottest months are May and June while

[14] Decibel (dB) is a logarithmic unit used to measure sound level.

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

the temperature drops slightly in subsequent months from July to September due to heavy monsoon rains. However, the humidity is at a high in these months. The range of seasons of sub-project area:

Summer Season—April to October.
Monsoon Season—July to September
Winter Season—November to March.

Average lowest temperatures from -1C° to 1C° is recorded from mid of December and January and highest temperature rising up to 37C° in May and June.

5. Soil Profile

Soil profile of sub-project is fertile and generally alluvial making it suitable for agricultural purposes. The sub-component may require the excavation of earth, which may result in top cover removal, holes that are filled with rainwater and/or agricultural runoff, creating a site for vectors to breed.

4.2.2 Biological Environment

1. Flora

Indian Rosewood/ Sheesham (*Dalbergia sissoo*), Neem (*Azadirachta indica*), Desi Keekar (*Vachellia nilotica*), Kikker (*Acacia Karoo*) and Mulberry (*Morus alba)* are seen in large number along ROW of sub-project.

Figure-4.4: Neem (*Azadirachta indica*) along ROW

Figure-4.5: Indian Rosewood/ Sheesham (*Dalbergia sissoo*) along ROW

2. Fauna

No protected or endangers species are reported in sub-project area. However, there is limited presence of wildlife in the sub-project areas. As per provided information from WWF Department and consultation with local community, following list of fauna is reported.

i. Birds

Birds seen in the sub-project area are given in

Table 4-3: List of Birds

Sr.#	Common Name	Scientific Name
1.	Crow	*Corvidae splendens*
2.	Sparrow	*Passeridae Domesticus*
3.	Parrot	*Paleornis torquata*
4.	Black partridge	*Melanoperdix Niger*
5.	Koel	*Eudynamys scolopaceus*
6.	Bulbul	*Pycnonotus jocosus*
7.	Grey Patridge	*Alectoris chukar*

ii. Amphibians

Amphibians found in the sub-project area are given.

Table 4-4: List of Amphibians

Sr.#	Common Name	Scientific Name
1.	Frog	*Rana Tigrina*
2.	Toad	*Bufo bufo*

iii. Mammals

Mammals reported in the sub-project area are enlisted

Table 4-5: List of Mammals

Sr.#	Common Name	Scientific Name
1.	Jackal	*Canis aureus*
2.	Wild boar	*Sus scrofa*

4.2.3 Socio-Economic Baseline

1. Languages[16]

Inhabitants of sub-project area commonly speak Pothohari as language. However, Urdu and Punjabi are also spoken.

2. Education Facilities

Adequate educational facilities are not reported at Toap Mankiala. Details of available education facilities for both boys and girls at Toap Mankiala are given in the table below.

[17]Table 4-6: Educational Institute

Gender	Village	Primary	Middle	High	College	Vocational
Boys	Toap Mankiala	-	1	-	-	-
Girls		-	1	-	-	-

Communities residing at Toap Mankiala reported that boys and girls have to travel about 2km away at Sagri Kala as well as Rawalpindi for higher education.

3. [18]Health Facilities

No Basic Health unit facility is available along sub-project area. However, private clinics are located about 2km away from main Toap Mankiala (Rawat and Jhambat village). In case of emergency and serious health care needs, patients have to travel about 40-45km to nearby hospitals, which includes:

- Tanveer Hospital, Rawalpindi
- CMH Rawalpindi
- DHQ Hospital, Rawalpindi

4. [19]Communication and Utilities

Telephone landline facility and mobile network exist in sub-project area. All the houses are connected to the national grid for electricity supply for domestic as well as agricultural use. Natural piped gas supply is also available.

5. Means of Transport

The sub-project area is located almost 33km away from Rawalpindi city. Only two rickshaws are available at sub-project area. Mostly, community prefers to travel in mini Suzuki.

6. [20]Social Conflicts

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

[16] https://dporjp.punjabpolice.gov.pk/history
[17] Districts Government Education Department Rawalpindi and also field visit and head of institutes
[18] Field visit and conduct consultation meeting with local people
[19] Field visit and conduct consultation meeting with local people and people tell us about communication facility and visited physically as well
[20] Local peoples told us and also conduct consultation meetings they told us there is no conflict they live together

7. [21]Household Information

The socio-economic baseline survey reveals that the overall population is 192 persons belonging to 32 households. The details are illustrated in the following table:

Table 4-7: Number of Household and Total Population

Name of Place	Number of Household	Total Population
Sub-project area	32	192

8. Settlement of Respondents

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

9. [22]Family System

Approximately 90% of the community live jointly whereas 10% of the community live separately. 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 4-8: Family System

Family System	Sub-project Area (%)
Nuclear	10
Joint	90

10. Marriage

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

Table 4-9: Marriage

Marriage System	Sub-project Area (%)
Outside extended family marriage	20
Within family marriage	80

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.

[21] Pakistan Census 2017
[22] Consultation meeting with local community and they prefer joint family system.

12. Source of Livelihood and Income

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, 9, 000 to RS, 350,000 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 4-10: Estimated expenses/year/Acre

Items	Expenses/Acre
Ploughing	10,000
Seeds	3000
Urea DAP	2500
DAP	6000
Pesticides	3000

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 4-11: Average Seasonal Earnings per acre

Season	Average Seasonal Earning/Acre (PKR)
Rabi	40,000
Kharif	20,000

15. Agricultural land holding and cropping pattern

Owners cultivate 92% of the land, while 8% is tenant operated. The land in the sub-project area is fertile. Corn, wheat, rice, pearl millet and peanuts are most common vegetated crops in the area.

16. Housing

The baseline survey reveals that the community members own houses and there is no trend of living in a rented house.

17. Type of housing

Houses are made of bricks and concrete material.

18. Land ownership

The land ownership pattern in sub-project area includes communal and individually owned land. In cases, where land is sold or transferred the record is formally maintained with the revenue department.

19. 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, Rawalpindi consists of Commissioner, Deputy Commissioner (DC), Additional Deputy Commissioner, Assistant Commissioner, revenue officers, and officer's in-charge of line departments.

20. Law and Order Situation

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

21. Community Cultural Properties

There is one graveyard at Toap Mankiala, which does not fall in the road alignment area or ROW of the sub-project.

CHAPTER 5: IMPACT ASSESSMENT AND MITIGATION MEASURES

This section provides the analysis of the potential impacts during preconstruction/design, construction and operational phases of the proposed sub-project on the physical, biological and socio-economic environment of the sub-project area. 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 factors for constructional purposes. Sub-project physical works will improve or rehabilitate the existing road which connects G.T. Road with the Toap Mankiala stupa, as well as widen it within existing ROW.

Potential Impact

Site selection has positive impacts on social life of local people but also on visitors as well. An improved road may encourage more visitors to visit, thereby helping to increase livelihood and earning opportunities for the locals. Sub-project is linked Buddhist sit “Toap Mankiala”. Alternate routes are available for the duration of the road works, and a Traffic Management Plan (see Chapter 6) will also be implemented.

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, placed in a fenced storage area with paved floor, and should be properly disposed off.
- 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.
- Provision of alternate route through Jhammat village, Sagri village and Toap Kalya with prior notification regarding construction.

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

Potential Impact

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

Mitigation Measures

- Sub-project is of 2.1km length, which is not extensive, and civil works will be completed approximately within 3 months' time. 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. Contractor will be encouraged to rent local homes to house the out-of-station labour rather than establish labor camps.
- In case of installation for batching/asphalt plant, compensation will be paid if loss of agricultural land or any economic loss is observed.
- Replantation[23] and afforestation[24] at sub-project will be ensured to avoid soil erosion and flooding if tree cutting is involved or removal of vegetation cover. Planting of ten trees for every single tree cutting will be done.

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. A Tree Plantation Plan has been developed and attached at ***Annex J***.
- Provide impervious platforms in maintenance yards and storage areas with oil and grease traps for collection of spillages 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

[23] 10 trees to be planted for every tree cut
[24] Conversion of degraded land into forest area.

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 – No such land erosion and sedimentation will occur during the proposed sub- project construction. The construction residue and debris, if not handled and stored properly may result in groundwater contamination. However, there is no significant surface water at the sub-

project site so it is envisaging that the impact on surface water is negligible while the impact on groundwater at the sub-project site may become significant if proper measures are not take. A nullah/sewerage drain is also passing alongside of the sub-project area.

Mitigation Measures

- Ensure that all liquid raw materials such as oil, lubricants, and chemical at all proposed sub-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/ channels 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 (see PEQS)
- 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 (Chance Finds).

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 shelter for the fauna, offer fruits/or timber/fire wood and protect soil erosion. Damage to flora has a wide range of adverse environment impacts. The sub-project requires widening within ROW which may lead to clearance of terrestrial vegetation, mainly bushes.

Mitigation Measures

- Planting of ten trees for every tree cut during construction[25].
- 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: Sub-project 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 than 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 accidently be harmed during works throughout the nesting season. The birds shall vacate the area before construction machinery approaches.

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.
- Speed limit will be defined for minimal impacts on fauna.

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

III. Socio-Economic Parameters

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.

1) 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 within existing ROW of road.

2) Impact on Livelihood and Economy

Impact - The proposed sub-project will provide temporary, unskilled construction job opportunities for locals for the duration of the civil works, and a better road may encourage more visitors to the Stupa site. The sub-project development will enhance employment and business opportunities for the locals, and hence the impact on livelihood is assessed to be positive. It is estimated up to 35 labourers will be required for carrying out construction activities. Out of the total, 75% % of labourers will be from local community.

3) 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 management, improper storage of hazardous materials, (i.e. petrol, admixtures, etc.), could result in adverse effects on the health and safety of staff as well as on the environment and nearby community.

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.***

4) 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 visitors 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[26], 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, 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.
- Capacity building session on Gender based violence and child abuses for ensuring public safety.
- Effective implementation of GRM for any kind of grievance if may arise related to public safety.
- Periodic meetings with community regarding construction work as well as workers' behaviour.

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 for landowners whose property is served by this road. This will be major positive impact.

2) Restoration of original site

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

Mitigation Measures

26 The sub-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).

- 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, Social, and Monitoring 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	**"Improvement of the G.T Road at Toap Mankiala, District Rawalpindi"**

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

Proposed Sub-project Activities	Potential Impacts[27]	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 • Vegetation Clearance	• 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 and widening within ROW. Therefore, no resettlement is involved or economic loss. In case of any land acquisition, compensation will be given as per World Bank Policy of 4.12.	Contractor	ES[28]/SS and GS[29]
Public and Cultural Properties	Disturbance to people visiting public properties i.e. mosque, schools, shrines, and graveyards etc.	• 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. • It will be ensured that half part of road is rehabilitated, and remaining half is left for routine movement. • Provision of alternate route through Jhammat village, Sagri village and Toap Mankiala prior notification regarding construction.	Contractor	ES/SS and GS
Identification of site for construction	• Disturbance to the public may occur • Tree cutting may involve for the construction of camp site, asphalt and batching plant site.	• Site must be 1 km away from the localities and cultural sites and 100 m away from the existing road.	Contractor	

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

Proposed Sub-project Activities	Potential Impacts[27]	Mitigation Measures	Implementing Agency	Monitoring Responsibility
camps, asphalt and batching plant	• Loss of agricultural land, and Resettlement Issues	• 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		ES/SS and GS
B. REPAIR/REHABILITATION/ CONSTRUCTION PHASE				
Dismantling of road and handling of waste	**a) Environmental Issues:** • Dust, Noise and vibration issues may generate during dismantling of road posing minor health issues on labours and nearby community. • Scattered solid waste may affect visual and aesthetic environment and provide breeding place to mosquitoes. **b) Social Issues:** Heaps of solid waste may cause disturbance in mobility	• Waste will be properly disposed off • 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 • 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[30] for proper sanitation.	Contractor	ES
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.	• 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.	Contractor	ES

[30] Tehsil Municipal Authority

Proposed Sub-project Activities	Potential Impacts[27]	Mitigation Measures	Implementing Agency	Monitoring Responsibility
	• Emissions and runoff of cement- contaminated water from batching plant may pollute the nearby area. **b) Social Issues:** • Scattered construction material may obstruct mobility	• Emissions from batching plant should be properly controlled and runoff contaminated water should be collected, stored and disposed off at the designated site. • 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[31] as performance indicators. **(Copy attached as 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

[31] Punjab Environment Quality Standards

Proposed Sub-project Activities	**Potential Impacts[27]**	**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. • Use of modern and well-maintained vehicles and machinery with reduced noise emission levels. • Confining excessively noisy work to normal working hours in the day. • 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 rock crushing, concrete mixing, and materials shipment yards at least 500m from residential areas, and religious sites.	Contractor	ES
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. • 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 spillages during storage of 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.	Contractor	ES

Proposed Sub-project Activities	**Potential Impacts[27]**	**Mitigation Measures**	**Implementing Agency**	**Monitoring Responsibility**
		• 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 conduct the mandatory water testing and obtain all necessary permits as per regulations from the Local Authority. • 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 basins and collect wastewater in sedimentation/retention pond • Construction work close to streams or other water bodies will be avoided, especially during monsoon period. • Latrines at worker's camps must be located at least 50 meters from any sources of groundwater such as hand pumps and wells.	Contractor	ES

Proposed Sub-project Activities	Potential Impacts[27]	Mitigation Measures	Implementing Agency	Monitoring Responsibility
		• Contractor will obtain all necessary permits for water extraction/usage for 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.	• 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). • 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 (PEQS). • Sell recyclable waste to local vendors	Contractor	ES

Proposed Sub-project Activities	Potential Impacts[27]	Mitigation Measures	Implementing Agency	Monitoring Responsibility
		• 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. • Collected and disposed of the waste 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.		

Proposed Sub-project Activities	Potential Impacts[27]	Mitigation Measures	Implementing Agency	Monitoring Responsibility
		• 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.		
Emergency Response Plan[32]	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 firefighting. • 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. • Emergency lighting of adequate intensity should be installed and automatically activated upon	Contractor	Sub-Engineer and M and Specialist (PMU)

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

Proposed Sub-project Activities	Potential Impacts[27]	Mitigation Measures	Implementing Agency	Monitoring Responsibility
		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[33]. • Do not introduce invasive or exotic species through plantation • Contractor shall prepare a conservation plan to avoid any impact on fauna during construction. • 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.	Contractor	ES

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

Proposed Sub-project Activities	**Potential Impacts[27]**	**Mitigation Measures**	**Implementing Agency**	**Monitoring Responsibility**
		• 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 [34]PPEs to workers such as gloves, vests, hard-hats, masks etc. • Protection devices (earmuffs) will be provided to the workers operating in the vicinity of high noise generating machines. • 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.	Contractor	ES/SS and GS
COVID-19 Pandemic	There would be a risk of COVID-19 spreading among workforce during sub-project activities.	• Strictly following the WHO[35] Guidelines regarding COVID-19. • Initial screening of the labours would be ensured.	Contractor	

[34] Personal Protective Equipment
[35] World Health Organization

Proposed Sub-project Activities	Potential Impacts[27]	Mitigation Measures	Implementing Agency	Monitoring Responsibility
		• 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 • Separate cost is allocated for taking safety measures against COVID-19 as mentioned at Table 10-1.	**(SOPs are attached as Annex E)**	ES/SS and GS
D. GENERAL SOCIAL ISSUES				
Subproject will have positive outcomes for the local communities by rehabilitation of the sub-project.				
Job opportunities	It will lead to temporary increase in local employment and economic activity.	• 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 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.	• Contractor will have rented out houses for the workers rather than establishing labour camps nearby the sub-project site. • Provide adequate health care facilities within construction sites.	Contractor	ES/SS and GS Sub-engineer

Proposed Sub-project Activities	Potential Impacts[27]	Mitigation Measures	Implementing Agency	Monitoring Responsibility
	• 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	• Standard Operating Procedures (SOPs) should be developed and implemented to ensure that all safety measures are in place with provision of adequate facilities as drinking water, first aid box and proper sanitation[36]. • 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 with the Pakistani Labour Laws and Employment of Child Act (1977).[37] • 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.[38]		

[36] WB EHSGs
[37] ECP 16: Worker Health and Safety
[38] ECP 16: Worker Health and Safety

Proposed Sub-project Activities	**Potential Impacts[27]**	**Mitigation Measures**	**Implementing Agency**	**Monitoring Responsibility**
However, following issue might be generated:				
Gender issue	• Sub-project activities may cause hindrance to normal passage especially for women • Privacy of the community may be disturbed	• Workers would be trained to address privacy issues and be ethically behaved. • Labours would be instructed to respect privacy of local population, especially women and children • Staff capacity-building	Contractor	SS and GS
Land acquisition for the temporary storage of materials and machinery	• Material storage may restrict public movement	As per Govt. rate, landowner will be paid for temporary storage of material. Normally, 50,000/- is annually paid to the owner of the land to whom land is rented out as per defined local government rates	Contractor	SS and GS
Traffic Management	• Blocking of road may hamper public mobility due to increase in number of vehicles • Road Safety	• Provision of alternative routes • Ensuring that half part of road is rehabilitated, and remaining half is left for routine movement to avoid any inconveniences. • 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).** • Jhammat village, Sagri and Toap Mankiala will be used as alternate route. • Movement of vehicles carrying construction materials should be restricted during the daytime to reduce traffic load and inconvenience to the local residents;	Contractor	ES

Proposed Sub-project Activities	**Potential Impacts[27]**	**Mitigation Measures**	**Implementing Agency**	**Monitoring Responsibility**
		• 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).**		
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. • 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.	Contractor	SS and GS
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.	• 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. • In case of discovery of ancient sites or artefacts during construction, follow the procedure for Chance Finds Procedures.	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 EPA certified lab.	Two times (During and post construction).	Contractor and ES
Noise level Testing	Provide ear plugs/earmuffs to workforce.	six times during construction	Contractor and ES
Water testing	Drinking water quality will be analysed through EPA certified lab	Two times (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 Frequency[39]	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.	Sub-project Site	Six times	It will be conducted before[40], during and after completion of civil work. in this regard, an environmental compliance report based on checklist in ***Annex-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.		Two times	It will be conducted during and after completion of civil work. In this regard, an environmental compliance report based on checklist in ***Annex-I*** will be submitted.	ES
3.	**Air Quality**	• Air quality will be analysed in through EPA ***certified Lab.	Sub-project Site	Two times	It will be conducted before[41], during and after completion of	ES

[39] Project duration which is 03 months.
[40] Pre-construction analysis is already incorporated in report.
[41] Pre-construction analysis is already incorporated in report.

Sr. #	Identified environmental and Social issues	Monitoring Parameters	Monitoring Site	Monitoring Frequency[39]	Reporting frequency	Responsibility
					civil work. In this regard, an environmental compliance report based on checklist in ***Annex-I*** will be submitted.	
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.		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.		Once during construction activities	During construction of sub-project, Health Safety attributes will be provided, and environmental compliance report based on checklist in ***Annex-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		Three times (pre, 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 • In case of any complaint, focal person of GRC may contact and his contact details will be provided at sub-project site.	Sub-project Site	During construction, alternative routes will be provided. 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 ***Annex-I.***	ES

Sr. #	Identified environmental and Social issues	Monitoring Parameters	Monitoring Site	Monitoring Frequency[39]	Reporting frequency	Responsibility
8.	**Obstruction in public access**	• Provision of alternate routes • Construction should start from either side of the road		Once during construction activities	During and after completion of sub-project; environmental and social monitoring report will be submitted as ***Annex-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) *This sub-project will not cause any economic loss of structure, land and livelihood.*		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 ***Annex-I.***	SS and GS
10.	**Privacy Issues**	• Staff capacity-building on Gender-based violence, including sexual harassment, child abuse and exploitation will be given to labours. • Contractors would be trained to address privacy issues and be ethically behaved. • Labours would be strictly asked to cater the privacy issues	Sub-project Site	Once during construction	During and after completion of sub-project; environmental and social monitoring report will be submitted as ***Annex-I.***	SS and GS

CHAPTER 7: COMMUNITY AND STAKEHOLDERS CONSULTATION

The objective of public consultation is to ensure that the sub-project proponent should share relevant information about the sub-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 sub-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 sub-project. The consultation process was carried out in accordance with the World Bank's policy and guidelines.

Consultations were conducted to:

- Obtain feedback from primary stakeholders and community members (including women)
- Obtain feedback from secondary stakeholders

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 consultations

Consultation sessions were carried out with concerned stakeholders including local community, visitors visiting shrine as well as shrine administrations to brief them about sub-project activities and future benefits resulting from rehabilitation. During the consultation meetings, stakeholders showed keen interest in execution of proposed sub-project activities.

Staff from the Project Management Unit and C and W also participated in the stakeholder consultations. The list of attendees of each meeting is provided in **Appendix A-1**.

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.	Disruption to community in routine movement: Common concerns that was raised by the community members that there will be disturbance to them in routine movement when the sub-project is executed.	Contractor is bound to follow mitigation measures as mentioned below: • Alternate routes will be provided. • It is ensured that road/street is divided into two parts. One is left for routine movement and other side for construction.
2.	Contractor camp siting and associated activities	Sub-project is of small duration. Preferably, contactor will adopt house renting.[42]

[42] Suggestion provided by Sub-engineer, PMU and Xen-Highway Division, Rawalpindi.

3.	Labour Influx	Communities were informed that hiring of local labour will be preferred to reduce labour influx. Privacy issues will be maintained to prevent mixing of immigrant and resident communities, to reduce community disturbance.
4.	Grievance Redress Mechanism (GRM) Is there a Grievance Redress Mechanism (GRM) in the sub-project?	For effectiveness and operationalization of GRM, a Meeting with DDD, Rawalpindi was arranged. She was requested to address the grievances if arise during execution of the sub-project. She was also informed about project GRM web link and its description. Complaint register/box will be installed at sub-project site.
5.	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 needs will be met from the 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.
6.	Will buildings and structures (shops, houses, and community structures) be lost because of the Works?	No widening of road is involved which may cause negative impacts on building or structures. There is only possibility for placement of construction material during execution. In case of loss of agricultural land or any other loss, compensation will be given with due mutual understanding and without raising of conflicts.
7.	How will the privacy of women be protected during Construction?	Special arrangements regarding training on Gender-based violence, including sexual harassment, child abuse and exploitation will be given to labours.

The list of women participants is provided in Appendix A-2. District Administration, Rawalpindi was also consulted and informed about the PTEG project.

The list of attendees is provided in the Appendix A-3. Photo Gallery is attached as Annex L regarding pubic consultation.

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 and site handing over to contractors.

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 8-1: Potential Stakeholders for Consultation

Stages for capacity building	Strategic Works	Mode of consultation	Key Stakeholders
Screening	Sub-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 sub-project activities		

Environmental Specialist and Social Safeguard and Gender Specialise will execute the following training programs for the overall effective implementation of the ESMP.

A tentative training Framework is given below:

Table 8-2: Tentative Training Detail

Description of Training	Training Module	Location	Participants
One-day training on Environmental and Social Management Plans (ESMP)	• Introduction to ESMF • WB Safeguard policies • Local Laws on Environment • ESMP • Key environmental and social issues associated with the sub-projects • Audio-video display regarding HSE	PMU	Representative from C and W Department and contractors

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 • Health Safety aspects	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
Half day training on Experience sharing and lesson learnt	• Lesson learnt due to implementation of ESMPs • Lesson learnt during social mobilization	PMU	Contractors and labours

Following table is giving an overview regarding awareness sessions to be held at sub-project site on regular basis.

Table 8-3: Summary of Awareness Sessions for Contractors/Labour force

Potential Impact Proposed Avoidance and Mitigation	**Measures**
Environmental Aspects	
Temporary habitat loss or disturbance Temporary visual intrusion Noise level increase at a single location Waste generation Discharge of sanitary effluent	• Site-specific landscape restoration measures. • Limit the working hours of noisy activities when near identified sensitive receptors to normal daytime working hours. • Operate equipment in a manner sympathetic to the ambient noise environment. • Do not leave equipment idling unnecessary.

	• Eliminate tonal, impulsive or low frequency noise through noise control engineering techniques where practicable (fitting of mufflers, damping, etc.), and substitute for a different method if necessary (e.g., instead of hammering actions, use hydraulics). • Provide adequate warnings of impeding works to all potential receptors • Implement Waste Management Plan to include procedures for proper disposal of solid waste • Ensure that discharge of sewage from temporary construction facilities to surface courses does not impact surface
Social Aspects	
• Gender-based Violence Issues • Obstruction of public access • Privacy issues • Tension between Communities and Workers: cultural differences, behaviour of construction workers, potential disregard for local cultural norms,	The sub-project will seek to avoid placement of camps where their presence might contribute to any conflicts, or intrude on privacy. The construction contractor is required to develop a Site Management Plan to address: • Discipline • Community liaison • Ethnic tensions • Code of Conduct on Ethical Behaviour and Gender-based Violence • Local culture and norms

Site Staff: Relevant personnel at site must be trained for the following:

- Techniques for waste minimization and water conservation
- Applicable environmental, health and safety compliance
- Water sprinkling at connective intervals
- Catering of Privacy issues

Contractors shall also provide safety equipment i.e., PPES, safe drinking water, first aid boxes etc. to the workforce as per nature of their jobs. By ensuring all these mitigation measures; not only their company profile shall boost up but also enable them to qualify and win the future sub-projects. It will also be briefed that the contractors having environmental and social safeguards expert in their company will be preferred during evaluation.

Contractors have to comply with the following responsibilities:

- Observation of timings and make a schedule that the surrounding community should not be affected by 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/dust pollution.
- Indicate alternate travel routes and provide indicators at suitable places during work timings.
- Local labour will be preferred to work on site.
- 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.
- Safety and security of school children sub-project route during construction period will be ensured.
- 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

CHAPTER 9: INSTITUTIONAL ARRANGEMENTS AND IMPLEMENTATION MECHANISM

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

Planning and 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. In addition to PMU staff, Deputy Director Development (s) of concerned Districts under PTEGP will provide implementation support on all aspects to the sub-project and serve as District Coordinating Officer.

PMU would have responsibility for sub-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. Communication and Works (C&W) Department is coordinating in parallel with PMU for the hiring of Construction Contractor and supervision is being done by PISC Firm. Archaeology department will oversee all management practices for possible impacts if seen on adjacent Stupa.
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.

9.1 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.

Third Party Monitoring: An independent firm will be hired for TPV of the entire project including ESMP implementation as per ESMF requirements.

9.2 Documentation and Reporting

Environment Specialist and Social Safeguard and Gender 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

9.3 Information Disclosure

The ESMP report will be uploaded on the websites of PMU-PTEGP and World Bank. It will be made available in hard copy at the local offices of C&W and the District Administration, and at a central point/place at the sub-project. The Urdu translation of the Executive Summary of this ESMP will also be distributed to all relevant stakeholders, especially to the communities in the sub-project areas.

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

CHAPTER 10: ESMP BUDGET

The Contractor will undertake most of the environmental and social management activities. Cost of ESMP activities will be included in the Contractor Budget and Bill of Quantities (BoQs) through in accordance to the procurement procedures. The cost details for the implementation of ESMP details are provided in the table below.

Table 10-1: ESMP Implementation Cost[43]

Sub-project: **"Widening / Improvement of road from G.T Road to Toap Mankiala, District Rawalpindi."**

Safety				
Name of item	**Quantity**	**Unit**	**Unit Rate (PKR)**	**Total Amount (PKR)**
Surgical masks	360	Each	25	9000
Safety Shoes	125	Each	1854	231750
Gloves	125	Each	608	76000
First Aid Box	3	Each	4,140	12420
Ear Plugs	125	Each	115	14375
Safety Helmets	125	Each	450	56250
Safety Jackets	120	Each	1013	121560
Sanitizer	300	Each	450	135000
Thermogun	4	Each	3825	15300
SUB TOTAL (1)				**671655**
Environmental Analysis During and after construction)				
Sub-project location: Starting point				
Ambient Air Quality Analysis (SOx, NOX, CO, $PM_{2.5}$, O_3,)	2	Each	64125	128250
Noise Level Monitoring	6	Each	10,350	62100
Water Analysis	2	Each	26,055	52110
SUB TOTAL (2)				**242460**
Others				
Provision of Dust Bins	2	Each	1530	3060
Reflective Tape	150	Each	405	60750
Safety cones	15	Each	2003	30045
Safety boards	10	Each	3578	35780
Water sprinkling	5 times/day	L/S	25000	0
SUB TOTAL (3)				**129635**

[43] 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 (Tree Plantation Plan is attached at Annex H)			521872	521872
SUB TOTAL (4)				**521872**
GRAND TOTAL (1+2+3+4)				**1565622 or 1.57 Million**

****Pre-construction analysis related to noise, air quality and water are already conducted).

CHAPTER 11: GRIEVANCE REDRESS MECHANISM (GRM)

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 Grievance 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 issues and other entitlement issues arising out of the implementation of ESMP and RAP. A multi-tier GRM has been proposed in the PTEG.

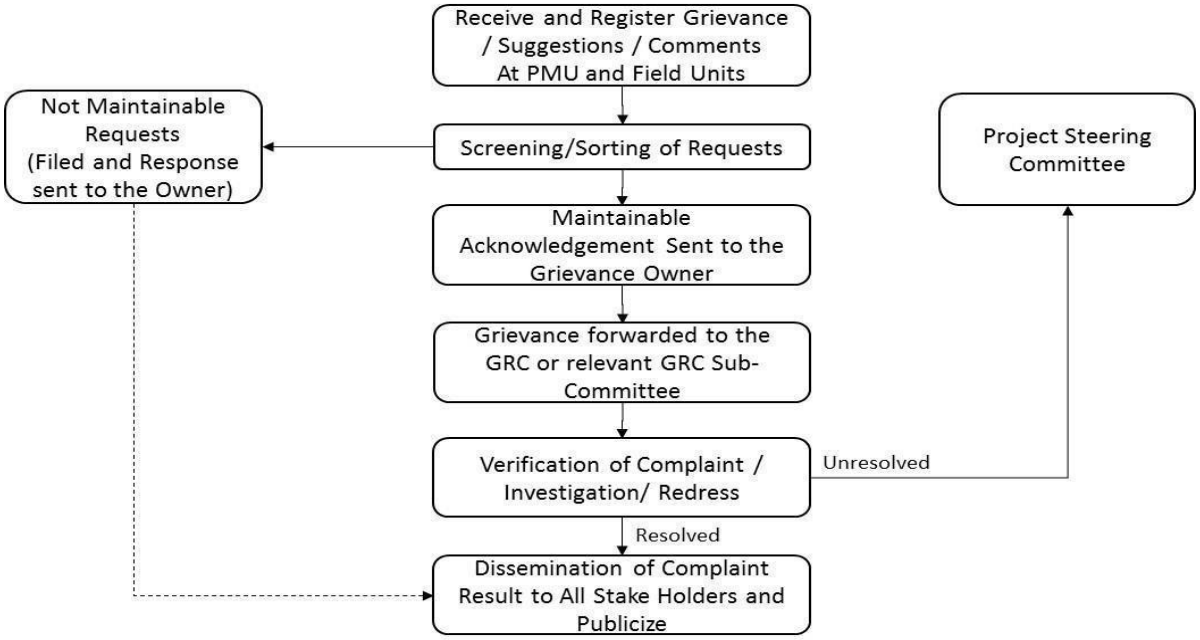


Figure 11-1: Key Steps in Grievance Redress Mechanism

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.

11.1 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 • Intensive schedule of construction activities Flow	• Water Pollution • Waste disposal • Health and safety • Criminal activities • Loss of business/income • Traffic Movement • Inappropriate timing of construction vehicle • Nuisance	• Damage to structure/properties • Impacts on livelihood • Obstruction in access etc. • Resettlement issues and land acquisition • Privacy issues • Any other related with Environment and Social Safeguards.

• Access to natural resources		

11.2 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:

11.3 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 PMU-based 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[44] (C and W Department) Member
6. Special Invitee (as needed)

11.5 Procedure:

1. 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, telephone, web link or mail.[45]
- Registry of Complaint: The Grievance Redress Officer (GRO[46]) will enter the details of complaint, including the subject, date of receipt, CNIC of the complainant, into a computerized grievance record system (GRS).
- Acknowledgement: GRO will also send an acknowledgement to the complainant within 3 days.

GRO Details (Rawalpindi)

Name: Saima Ghafoor
Contact# 0333411077

[44] Project Coordinator
[45] Complaint register/box will be installed at sub-project site.
[46] [3] DCO would be GRO "Grievance Redress Officer"

- Forwarding to the Appropriate Forum: In case of complaints related to the sub-project sites at district level, Deputy Coordinator Officer will serve as GRO and if it is related to Project Management Unit (PMU) or stakeholder departments, the SS and GS will look up the matter.

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 (PTEGP)**	**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**

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.[47] In case the complainant is not satisfied with the redress of his/her grievance to the apex body of GRC.

2. 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.

3. Conveying the Decision:

The GRO will convey the redress decision, at all levels, to the complainant, within 5 days of decision.

4. 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.

[47] 3 days (minimum time)

The Grievance Redressal Mechanism has been made functional at PMU level. A complaints 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.

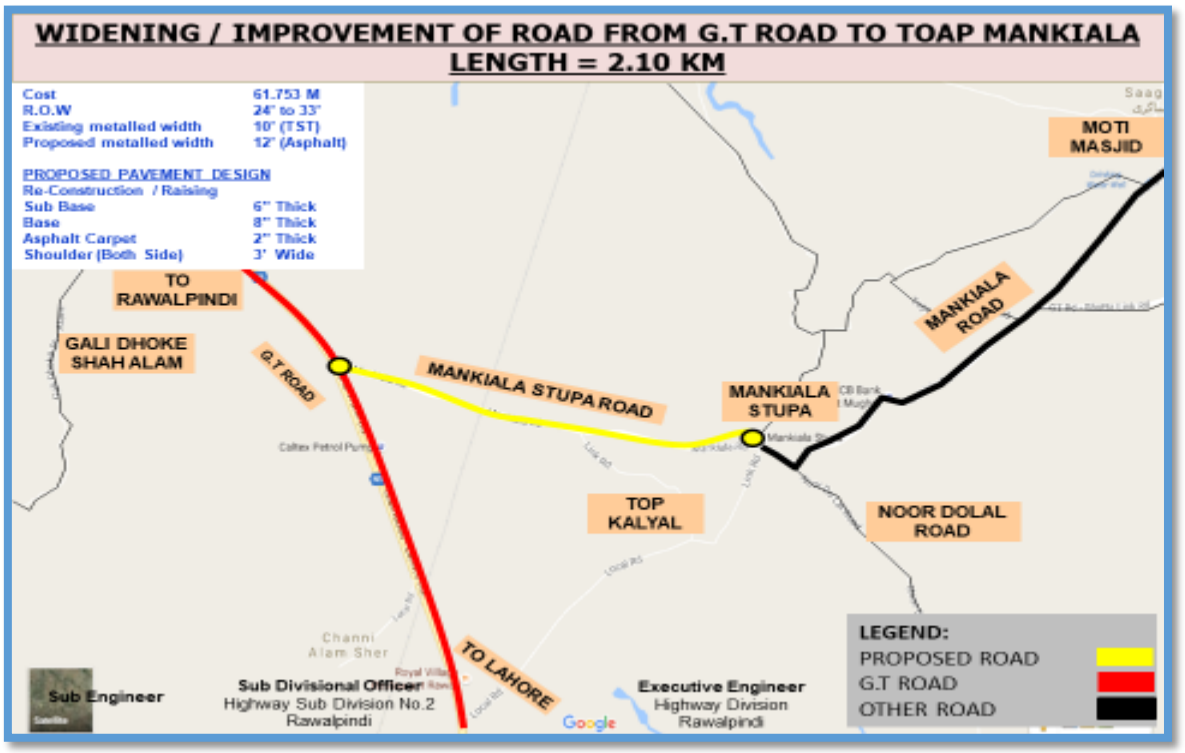
5. Exclusions:

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 sub-judice;
- A Grievance which has already been disposed by the higher-level Grievance Cell; and
- Complaints of corruption which should be lodged and dealt with separately from this system.

ANNEXURES

ANNEXURE – A: Location Map



ANNEXURE – B: Environment and Social Screening Form

Sub-Project Title: Widening/ Improvement of 2.1km Road from G.T Road to Toap Mankiala, District Rawalpindi

Sub-Project location: Toap Mankiala

Sub-Project scope of work: Reconstruction/carpeting

Implementing Agency: C&W Department

bb

Date of Screening: 04.07.2018

Name of District: Rawalpindi

Sub-project Categorization: A B C

Total labor force involved: 40

Responsible Agency: Punjab Tourism for Economic Growth Project

Does the sub-project have requisite certificates/permit? No

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 sub-project area: 05
   - ii. Estimated number of persons/houses: 06
   - iii. Estimated total population: 30
   - iv. Number of shops in the area: No
   - 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
2) Public/Private
3) Timing
4) Specialty

5. **Presence of Religious Sites**

1) Mosque

Yes **No**

(if yes)

a. No. of mosques
b. Name of mosques

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 sub-project in an eco-sensitive area or adjoining an eco-sensitive area or monument?			
	Protected area		✓	
	Wetland		✓	
	Mangroves		✓	
	Forest area		✓	
	Mangroves		✓	
	Cultural points	✓		Toap Mankiala
2.	Will the sub-project 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 Mallah Channel.
	Alteration to natural waterways		✓	
	Improper storage and disposal of excavation spoils		✓	Proper measures would be taken to ensure timely shifting of excavation & 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 & water. Display of MSDS 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.		✓	
	Damage to existing infrastructure, public utilities, and amenities.		✓	No damage to public utilities. No widening of road is involved. There is only rehabilitation of existing road.
	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 sub-project create significant/limited/no environmental impacts during the operation stage?		✓	Sub-project 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 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.
	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?		✓	Traffic Management Plan is attached in report at Annex H.
4.	Is there any conversion of land or tree cutting involve?		✓	No conversion of land is involved as existing road will be rehabilitated.
	Does the sub-project involve any prior clearance from State Forest Department?		✓	
SECTION III: CULTURAL HERITAGE				
5.	Will the sub-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.	✓		Stupa Mankiala
	Is designed to support the management or conservation of a cultural property.	✓		
	Other, specify.		✓	
	Does the sub-project involve any prior clearance from Archaeological Department?	✓		Scope of work is limited to road rehabilitation. However, Chance

				find Procedures are attached at "E" Annex to avoid future inconveniences.
SECTION IV: SOCIAL ASPECTS				
6.	Will the sub-project create significant/limited/no social impacts?		✓	
	Land acquisition resulting in loss of income from agricultural land, plantation or other existing land		✓	
	Impact on livelihood and economic activity.		✓	Job creation is positive impacts.
	Land acquisition resulting in relocation of households		✓	Only rehabilitation and widening within ROW is involved. No involuntary Resettlement is happened
	Any reduction of access to traditional dependent communities (to areas where they earn for their primary or substantial livelihood.		✓	
	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		✓	Training on code of conduct will be arranged for contractor and labour force.
	Impacts on children, other vulnerable e groups?		✓	
	Impacts on infrastructure (roads, water supply, any other type of infrastructure		✓	
	Does the sub-project include measures to avoid child labor?		✓	Labour laws will be followed.
	Other, specify.		✓	

ANNEXURE – C: Environment, Health and Safety Guidelines, World Bank

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.

ANNEXURE – D: Punjab Environmental Quality Standards

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 (NO_3)	≤50	50	
Nitrite (NO_2)	≤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 PUNJAB

LAW AND PARLIMENTARY AFFAIRS DEPARTMENT

Punjab Environmental Quality Standards for Motor Vehicle Exhaust and Noise

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 Ribglemann chart at distance of 6 meters or more	Immediate effect
2	Carbon monoxide	6%	Under idling conditions Non dispersive infrared detection through gas analyser	
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<1250kg)	PAK-II IDI	1.0	0.7	0.008		
		PAK-II IDI	1.0	0.9	0.10		
	NI-II(RW<1250kg<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

IDI: 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

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:

Punjab Environmental Quality Standards for Ambient:

Pollutant	Time-weighted average		
Sulfur Dioxide (SO_2)	Annual Average*	80ug/m^3	Ultraviolet fluorescence method
	24 hours**	120ug/m^3	
Oxides of Nitrogen As **(NO)**	Annual Average*	40ug/m^3	Gas Phase Chemiluminescence
	24 hours**	40ug/m^3	
Oxides of Nitrogen As **(NO_2)**	Annual Average*	40ug/m^3	Gas Phase Chemiluminescence
	24 hours**	80ug/m^3	
Ozone(O_3)	1 hour	130ug/m^3	Non dispersive UV I absorption method
Suspended Particulate Matter (SPM)	Annual Average*	360ug/m^3	High Volume Sampling, (Average flow rate not less than 1.1 m3 /min).
	24 hours**	500ug/m^3	
Respirable Particulate Matter PM_{10}	Annual Average*	120ug/m^3	Preferably β-Ray absorption method
	24 hours**	150ug/m^3	
Respirable Particulate Matter $PM_{2.5}$	Annual Average*	15ug/m3	Preferably β-Ray absorption method
	24 hours**	35ug/m^3	
	1 hour	15ug/m^3	
Lead (Pb)	Annual Average*	1ug/m3	ASS Method after sampling using EPM 2000 or equivalent Filter Paper
	24 hours**	1.5ug/m^3	
Carbon Monoxide (CO)	24 hours**	1.5ug/m^3	Non Dispersive Infra-Red (NDIR) method
	1 hour	10 ug/m^3	

* 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 sub-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 archaeological 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 sub-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۔

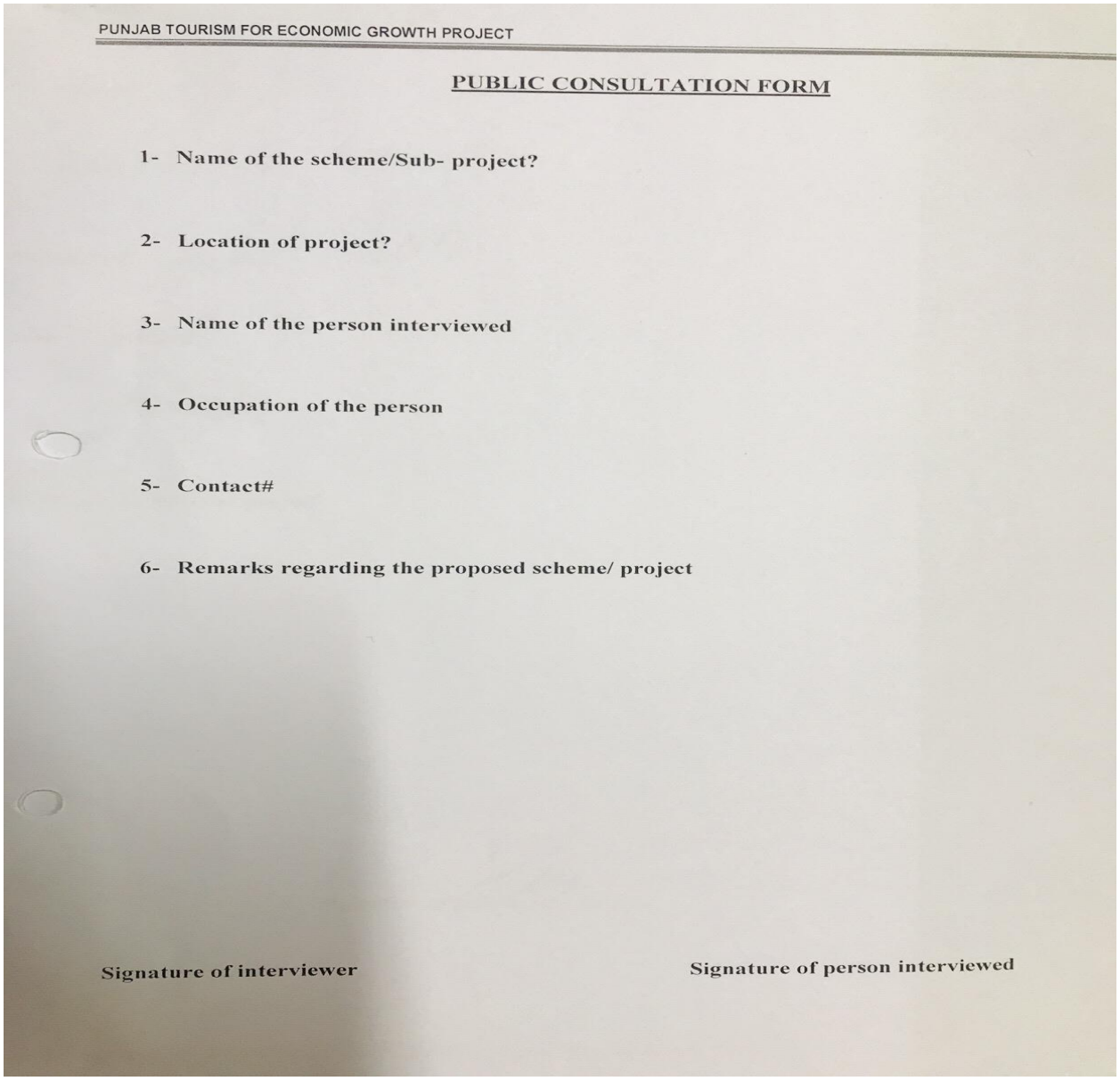
۸۔ جس جگہ پر عملہ کام کر رہا ہو وہاں پر کلورین ملے پانی سے روزانہ سپرے کیا جائے گا تاکہ وہ علاقہ جراثیم اور وائرس سے پاک رہے۔

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۔

۱۱۔ 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>
<tr><td rowspan="3">Proposed Traffic Management Method</td><td colspan="2">Active:
1. Provision of alternative routes
2. Water sprinkling at sub-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 colspan="2">Unattended:</td></tr>
<tr><td colspan="2">Night:</td></tr>
</table>

Proposed Speed Restrictions	**Speed Limit** **Time** Normal Speed 0.00 am Restricted Speed 0.00pm	
Positive Traffic Management Measures		
Contingency Plans	• First Aid Box will be provided • Emergency Contact No. will be displayed	
Public Notification	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 sub-project site). 4. Contact no. of Contractor will be displayed	
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 sub-project/ scheme: _____

Executing Agency: _____

Date of visit: _____

Sr. #	Identified Environmental and 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 equipment 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 CDG /other concerned authority	Visual inspection that solid waste is disposed at designated site Any complaint from the local residents			
5.	**Provision of first aid**	First aid will be provided immediately to save the life of affected.	Visual inspection			

Sr. #	Identified Environmental and Social issues	Mitigation Measure	Means of Monitoring	Status of Mitigation Measure be adopted		Remarks
				Yes	No	
		Emergency numbers will be displayed at appropriate places				
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 alternate 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 contact and his/her contact details will be provided at sub-project site.	Visual inspection to see whether 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				

Sr. #	Identified Environmental and Social issues	Mitigation Measure	Means of Monitoring	Status of Mitigation Measure be adopted		Remarks
				Yes	No	
		from either right or left side				
		Wooden blocks/ramps will be provided at doorstep 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 provided by the Contractor	Record of Public Grievance Visual Inspection			
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 ROW, it shall not be less than 3 meters for plant to plant and row to row spacing. Fencing around 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 Indian Rosewood/Sheesham (*Dalbergia sissoo*), neem (*Azadirachta indica*), desi Keekar (*Vachellia nilotica*), Keekar (*Acacia Karoo*) and Mulberry (*Morus alba*) are preferred. Eucalyptus would be strictly banned to plant. Spacing distance between rows and plants shall depend on choice of species. As a general guidelinethe tree plantation could be done until and unless tress is elongated with certain height and roots are firmed with soil/substratum to get water themselves.

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 Sub-project team for ensuring sustainability.

III. COMPENSATORY PLANTATION

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

ANNEXURE– K: Details of Participants

Appendix A-1: Public Consultation Meeting conducted at Toap Mankiala, Rawalpindi

Sr.	Date	Name of Male participants
1.	01.09.2020	Muhammad Raiz
2.		Muhammad Ali
3.		Muhammad Mubasher
4.		Muhammad Noman
5.		Muhammad Farooq
6.		Bilal Butt
7.		Khalid Muhammad
8.		Ahsan Iqbal
9.		Muhammad Sahid
10.		Aftab Ahmad
11.		Gultasib Sb.
12.		Wajid Ali
13.		Safrin Akhter

Appendix A-2: List of women consulted, Toap Mankiala, Rawalpindi

Sr.	Date	Name of Female participants
1.	02.09.2020	Banni Bibi
2.		Irum Bibi
3.		Bushra Parveen

Appendix A-3: Consultative Meeting with District Administration

Date: 04.09.2020

Sr. No	Name	Department	Designation
1.	Sheikh Iftkhar Ahmad	Highway Division	SDO, Rawalpindi
2.	Nadeem Bhatthi		Sub Engineer, Rawalpindi
3.	Yaseen Sb.		
4.	Nadeem Qureshi	Forest, Wildlife, and Fisheries Department	Director, WWF
5.	Amin Sb.	Environment Protection Department	Deputy Officer (Field)
6.	Ghulam Sughra	PTEGP	Environment Specialist

ANNEXURE – L: Picture Gallery

Meeting with DDD(Rawalpindi)

Meeting with concerned officials at highway division, Rawalpindi

Public consultation at Toap Mankiala