Environment and Social Screening Report

May 2019

Construction/Upgradation of Halmulla Punchpora to Kralkut Road in District Anantnag - 3.348 km

(Jhelum Tawi Flood Recovery-World Bank Project)

Prepared by Jammu & Kashmir Projects Construction Corporation, Government of Jammu & Kashmir, for the World Bank

CHAPTER - 1

1. Introduction

In September 2014, J&K experienced torrential monsoon rains in the region causing major flooding and landslides. The continuous spell of rains from September 2-6, 2014, caused Jhelum and Chenab Rivers as well as many other streams/tributaries to flow above the danger mark. The Jhelum River also breached its banks flooding many low-lying areas in Kashmir, including the capital. In many districts, the rainfall exceeded the normal by over 600%. The Indian Meteorological Department (IMD) records precipitation above 244.4 mm as extremely heavy rainfall, and J&K received 558mm of rain in the June-September period, as against the normal 477.4 mm. For example, the district of Qazigund recorded over 550 mm of rainfall in 6 days as against a historic normal of 6.2 mm over the same period. The devastating deluge of September 2014 had enormous negative impacts on economic aspects of the state and massive infrastructure damages. In response, a mission of the World Bank visited the state from 1st to 6th, February-2015 in order to produce a rapid multi-sectoral assessment report of the damages and needs. The RDNA estimates the total damages and loss caused by floods at about INR 211,975 million (US$ 3,550.45) most of it to housing, livelihoods, and roads and bridges, which combined represented more than 70% of the damages in terms of value. Public service infrastructure and equipments of hospitals and education centres were also severely damaged and are still not fully operational.

2. Need of the Project

A major catastrophic devastation in the most districts of the J&K due to 2014 floods of as hardly any escape routes were available. In the view of loss due to flood, it was essential to restore the damages and efforts are required to strengthen the infrastructure as such a limit to overcome the future effects due to such natural disaster aftermath, year 2014 as to improve the connectivity disrupted due to damaged roads and bridges. In this connection **Halmulla Punchpora to Kralkut** Road has been selected to restore the flood damage for 3.348 km road in district Anantnag under a category of village road. Therefore, the sub-project road aims to construct & up-grad 3.348 km Halmulla-Punchpora to Kralkut road. The sub-project road is a major & vital connecting link between various villages like Hallmulla, Punchpora, Kralkut etc. The proposed road will be upgraded by way of strengthening the existing road to a 3.750 m wide carriageway along with 1.0 m wide shoulders on each side.

3. Project Location

The project road exists in district **Anantnag** of Kashmir region. The location in the state of Jammu & Kashmir is illustrated in ***Figure-1***. The road takes off from National Highway at Hallmulla (RD 0) and culminates at Kralkut (RD 3.348) with a total length of 3.348 km.

The Road is a major/ vital connecting link between various villages like Hallmulla, Punchpora, Kralkut etc. The sub-project road is under the catogary of Village road which is an important link of various villages which population are more than 25,000 each. The sub-project also serve to links various locality in the adjoining areas as like Marhama, Sirhama, Wopzan, Khiram etc as it links with the National Highway. The village area is rich in production of cash crop under varieties of apple and dry fruit as like walnuts. The up-gradation & restoration of road will provide better transport & marketing facilities for this agriculture produce which economically uplift the local village communities by smooth movement and reducing time

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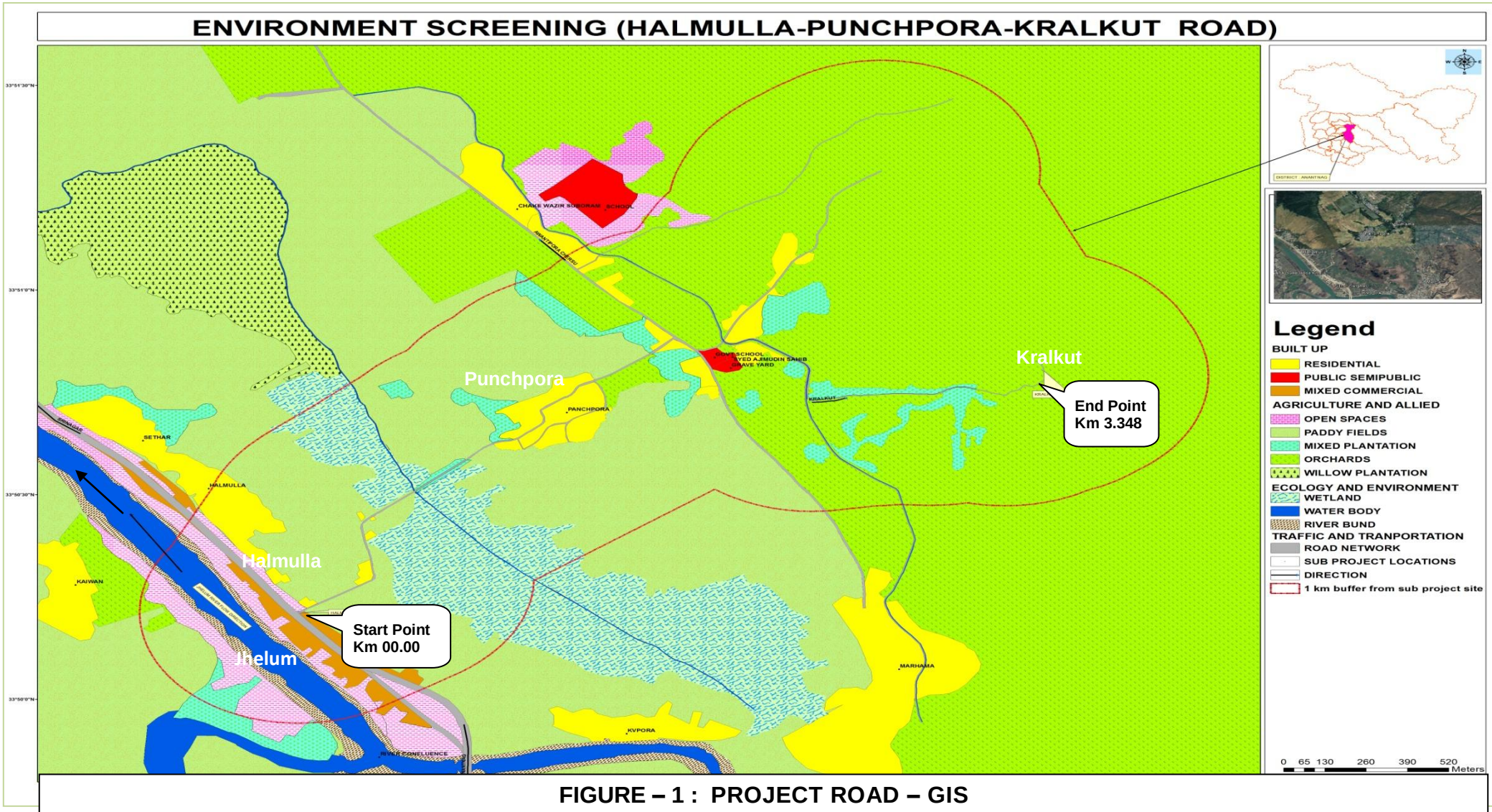


FIGURE – 1 : PROJECT ROAD – GIS
HALMULLA PUNCHPORA TO KRALKUT ROAD, ANANTNAG - 3.348 KM

4. Scope for Environmental Study

The sub- project 3.348 km length is village road selected to restore the connectivity with improve facilities disrupted due to disaster on 2014 flood by reinstatement, cross drainage facilities as to withstand future occurrence of such disaster by latest official designs & guidelines. The environmental study of project road notifies nature of impacts on environment due to project implementation. The approach and methodology provided in the approved Environment and Social management Framework (ESMF) for baseline environmental study, indentifying impacts, mitigation measures to avoid, minimize and mitigate negative impacts under the limit of one km radius of the project road. Accordingly, In the field survey baseline environmental set-up has been studied around one km radius either side of project road in general and within the Right of Way (RoW) in particular. Accordingly, to minimize negative impacts during the entire project cycle environmental management plan has been developed with roles & responsibility for sound construction management during the project implementation. Furthermore, the report covers major finding of existing environmental, legal and administrative framework, monitoring programme, relative cost for environmental management and evaluation of potential environmental impacts due to the proposed sub-project Halmulla Punchpora to Kralkut Road in district Anantnag in the state of J&K.

5. Administrative and Legal Frameworks

The Government through specific legislations regulates the environmental management system. The statutory bodies responsible for ensuring environmental protection due to the project activities are central, state level as well as local authority for which administrative control was made by the following as Ministry of Environment & Forests (GoI), Central Pollution Control Board (CPCB), State Pollution Control Boards (SPCB), Department of Environment in State and Forest & Wild-life division, local bodies as municipal corporation etc. The reinstatement of sub-project **Halmulla Punchpora to Kralkut Road** Is village road in district Anantnag of J&K state and come under preview of Government of India (GoI) therefore environmental notification, policy, acts & rules are governed pertaining to state and national level. Furthermore, the sub-project are being implemented by the funding of World Bank, therefore, regulations and restrictions on activities to minimize impacts on the environment is also come under the safeguards policy of the World Bank. The total length of project road 3.348 km come under village road which serve important links to huge population of adjoining villages with the National Highways. As sub-project comes under village road, therefore, it does not attract EIA notifications 2006 and its subsequent amendments 22nd August, 2013.
As such the environmental clearance is not required. Therefore, rapid environmental assessment has been conducted and environmental management plan is developed under the safeguard policy of World Bank in referance to environmental management framework prepared for the sub- projects of JTFRP.

Accordingly, applicable law & acts under the national and state made for environmental protections are put forward which require responsibilities of the project executing agencies to ensure legal requirements in all stages of the sub-project including design, construction and operation which are listed as below:

5.1 Rules, Notifications and Standards

Rules, notifications and standards are particularly relevant to this project are listed below :

Sl No	Act , Rules, Policy and Notification	Applicable/ Not Applicable	Remark
1.	Environment (Protection) Act, 1986	Applicable	For environmental safeguards.
2.	Environment (Protection) Rules, 1986 and its amendments.	Applicable	For environmental safeguards.
3.	Noise Pollution (Regulation & Control) Rules, 2003 and its amendments.	Applicable	For regulation on noise nuisance.
4.	National Ambient Air Quality Standards and its amendments.	Applicable	To control the air pollution.
5.	Water (Prevention and control of pollution) Act, 1974 as amended	Applicable	To control the water pollution.
6.	Air (prevention and control of pollution) Act, 1981, as amended	Applicable	To control the air pollution.
7.	Jammu and Kashmir Preservation of Specified Trees Act of 1969 and Rules of 1969. Tree felling permission	Applicable	Protection for felling of trees.
8.	The Hazardous Wastes. (Management and Handling) Rules, 1989	Applicable	Authorization for disposal of hazardous waste like used oil, paint wastes etc)
9.	Labour Act 1970.	Applicable	For labour facilities
10.	Building and Other Construction Workers (Regulation of Employment and Conditions of service) Act of 1996 and Rules 1998	Applicable	provide for regulation of employment and conditions of service
11.	Central Motor Vehicle Act 1988 and Central Motor Vehicle Rules1989.	Applicable	For PUC
12.	EIA Notification, 19th January 2009 and its amendments on 22nd August, 2013.	Not Applicable	Environmental Clearance

5.2 Require Statutory Clearances

The details field survey has been conducted for the sub-project **Halmulla Punchpora to Kralkut Road** for value ecological component (VEC) of the project wherein information are gathered from the field level study and secondary sources in order to appraise the requirements for statutory clearance for this project. After the collection of primary and secondary data Environmental

features along the project are thoroughly examined for the NOC and the clearances from the concern authority (if any) required which are detailed in subsequent sections.

5.2.1 Environmental Clearances

The up-gradation of **Halmulla Punchpora to Kralkut Road** does not attract EIA Notification, 14th September 2006 and its latest amendment 22nd August, 2013 therefore it does not require process of environmental clearance.

5.2.2 Forest Clearances

The sub-project road reinstatement of **Halmulla Punchpora to Kralkut Road** is passing through the major settlement and agriculture land covering 3.348 km length. Along the entire length there no forest land is involved throughout the project. Therefore, it does not require processing any forest clearance

5.2.3 NOC from Wildlife Division

There are no National Park, Biosphere reserve and Wildlife sanctuaries exist in & around one km radius either side of the sub-project road. Therefore, it does not require any NOC from wildlife division.

5.2.4 NOC for withdrawal of Ground Water

Any users of ground water desiring to withdraw ground water for the commercial use are advised to get NOC from the Concerned Authority under the Jammu and Kashmir Water Resources (Regulation and Management) Act, 2010 for grant of permit for water withdrawal, and shall not proceed with any activity connected with such sinking unless a permit has been granted by the authority. Furthermore, the any agency wish to get extraction of water from any water source, navigation channel, intake channel, or flood spill channel and for extraction of river bed materials shall be required to obtain permits from the authorized licensing authority of Jammu & Kashmir prior to extraction of water for the use of construction under the J& K Water Resources (R&M) Act, 2010.

5.2.5 Environmental Clearance for stone quarry

The procurement of aggregate shall be made from local authorized agency for the use in construction as the road length is 2.450 km only. In this case, the agency is not required to make process for clearance of quarry mining for requirements of blue metal.

5.2.6 Structure of the EIA Report

The selected sub-project of JTFTP **Halmulla Punchpora to Kralkut Road** has to up-grade 3.348 km village road to reinstate the damage caused in year 2014 flood, therefore, rapid environmental impact assessment has been carried –out to minimize impacts by formulation of environmental management plan for sound construction management practices and suggested remedial measures for the resilience features & stability of road to protect it from future loss based on existing environmental features along the project road.

The structure of this report is described as follows:

Chapter – 1 : Introduction
Chapter – 2 : Project Description
Chapter – 3 : Description of the Environment
Chapter – 4 : Anticipated Environmental Impacts and Mitigation Measures
Chapter – 5 : Environmental Management Plan (EMP)
Chapter – 6 : Environmental Monitoring Programme
Chapter – 7 : Stakeholders Consultation.

List of the Table, Figures and Flow-Charts
Photographs
Annexure

CHAPTER – 2
PROJECT DESCRIPTION

2.1 Introduction

The sub-project road takes off from National Highway at Hallmulla (RD 0) and culminates at Kralkut (RD 3.348) with a total length of 3.348 km. The Road is a major/ vital connecting link between various villages like Hallmulla, Punchpora, Kralkut etc. The road serves as an important link between various villages having a population more than 25,000. The road will also serve indirectly thousands of people in the adjoining villages as like, Marhama, Sirhama, Wopzan, Khiram etc. as links all those areas with the National Highway. The reinstatement of road will provide facilities to local communities for good communication of horticulture produce as villages surrounding the sub-project sire are rich in production of cash crop under varieties of apple, walnut and other dry fruit etc. The up-gradation & restoration of road will provide better connectivity and transport facilities for agriculture produce which economically up-lift the local communities financially by providing access & communications directly to their agriculture field to the market place.

2.2 Project details

The project **Halmulla Punchpora to Kralkut Road is** 3.348 km length proposed for reinstatement and strengthening in District Anantnag has following features:

Sl. No	Location (State)	Jammu & Kashmir.
1.	District.	Anantnag
2.	Geographical location at start (Halmulla)	Latitude = 33^0 50'13.06'' Longitude = 75^0 03' 54.77"
3.	Geographical location at end (Kralkut)	Latitude = 33^0 59' 45.26" Longitude = 75^0 05' 28.19"
4.	Total Road Length.	3.348 km
5.	Length of projected stretch of road.	3.348 km
6.	Category of Road	Rural Road (VR)
7.	Terrain.	Party Plain and Partly Hilly
8.	Existing Carriage Way.	3.35 m
9.	Proposed Carriage Way.	3.75 m
10.	Proposed road way.	5.75 m with 1.0 m shoulders both sides
11.	Pavement thickness.	
12.	a) Sub grade V	300mm thick
13.	b) GSB Grade III	130 mm thick
14.	c) Wet mix Macadam.	100 mm thick layer I
15.	d) Wet mix Macadam.	125mm thick layer II

16.	e) DenseBituminous Macadam.	50mm thick.
17.	f) Bituminous concrete.	30mm thick.
18.	Protection Works.	RCC Retain Walls as per design and specification for length of 105 m
19.	Cross Drainage Works.	Box Culverts. 5 Nos. Pipe Culverts 1000 mm dia 3 Nos.
20.	Road Furniture.	3 No. Kilometers Stones. Retro reflector type sign boards/ informatory signs, advance direction, destination signs, route marker signs.
21.	Cost of Project Work.	Rs. 498 lakhs.
22.	Time of Completion.	One working seasons. (Subject availability of funds)

The Design Standards and guidelines are followed as per IRC and MORTH to avoid any inconsistency in design and provide desired level of service and safety. The basic design is based on the consideration of providing suitable alignment, cross-sectional layout, geometric, safety to cater safe movement of the traffic. The design standards adopted for the project road are briefed as follows:

2.2.1 Terrain

The entire length exists in partly plan terrain and partly hilly region.

2.2.2 Pavement Design

The Pavement thickness has been designed as per IRC Pavement Design chart.

2.2.3 Cross Sectional Details

The existing carriageway width is 3.350 m wide and roadway width is 5.250 m along-with shoulders which intercepted 4.5m width along the settlements narrowing the existing carriageway of road. According to availability of land and protective measures from future damage the restoration and up-gradation of road is framed as per actual need of roadway width 5.750 m following the specifications of IRC/MORTH. Accordingly the carriageway width is proposed 3.750 m whereas the proposed road way width is 5.750 m including one meter shoulders either side. The proposed up-gradation work include protection works by way of providing RCC retaining walls by providing 5 nos box culverts and 3 nos pipe culverts to ensure proper drainage as well installation of road furniture.

2.2.4 Horizontal Alignment Design

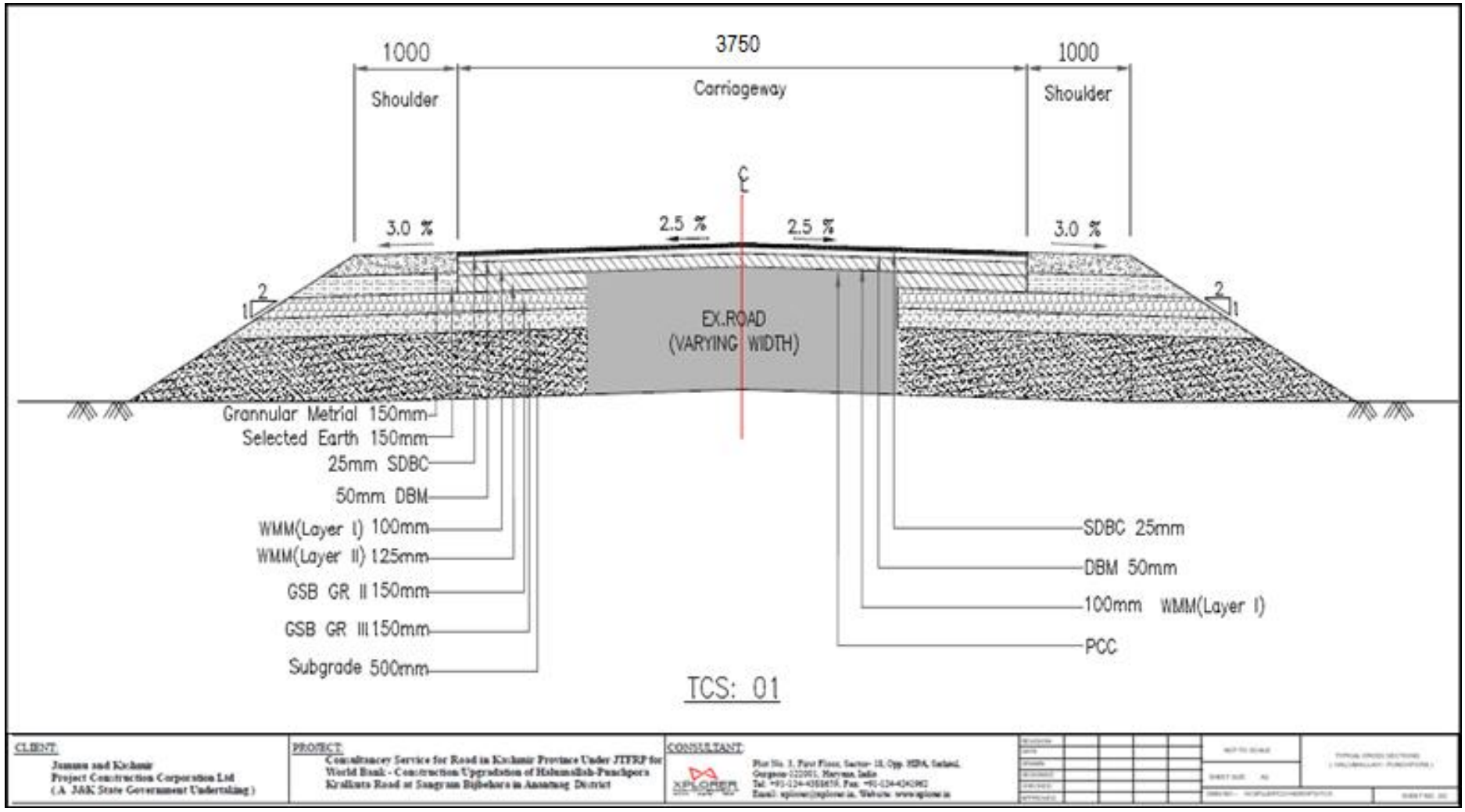
The design speed of 60 km/h of RDS (Ruling Design Speed) adopted to determine the horizontal and vertical alignment for geometric design. A straight alignment has been fixed, however curves of adequate radius for design speed have been proposed.

2.2.5 Vertical Profile– Grade

The proposed road is to be constructed as per IRC/MoRTH/MoST specification. The Construction of Granular Sub Base will be carried –out by providing close graded material in uniform layers as per Clause 401 having CBR value. An Aggregate for base course shall be graded stone age of WMM specifications including pre-mixing of WMM material with water at OMC in mechanical mix plant. The Bitumen of grade 80/100 shall be used for macadamization works

2.2.6 Safety Measures & Devices

To ensure safe movement of traffics and pedestrians safety road signs will be as per IRC: 67-2001. The Thermoplastic road markings are proposed on road surface for traffic safety in accordance with guidelines contained in IRC: 35-1997. In addition Information boards of retro-reflective type will be erected.



TCS: 01

CLIENT:
Jammu and Kashmir
Project Construction Corporation Ltd
(A J&K State Government Undertaking)

PROJECT:
Consultancy Service for Road in Kishtwar Province Under JTFP for World Bank - Construction/Upgradation of Hahmallah-Panchpore Kralkuta Road at Sangram Bijbehara in Anantnag District

CONSULTANT:
XPLORER
Plot No. 3, First Floor, Sector- 18, Opp. HSIIDA, Sanlaul, Gurgaon-122001, Haryana, India
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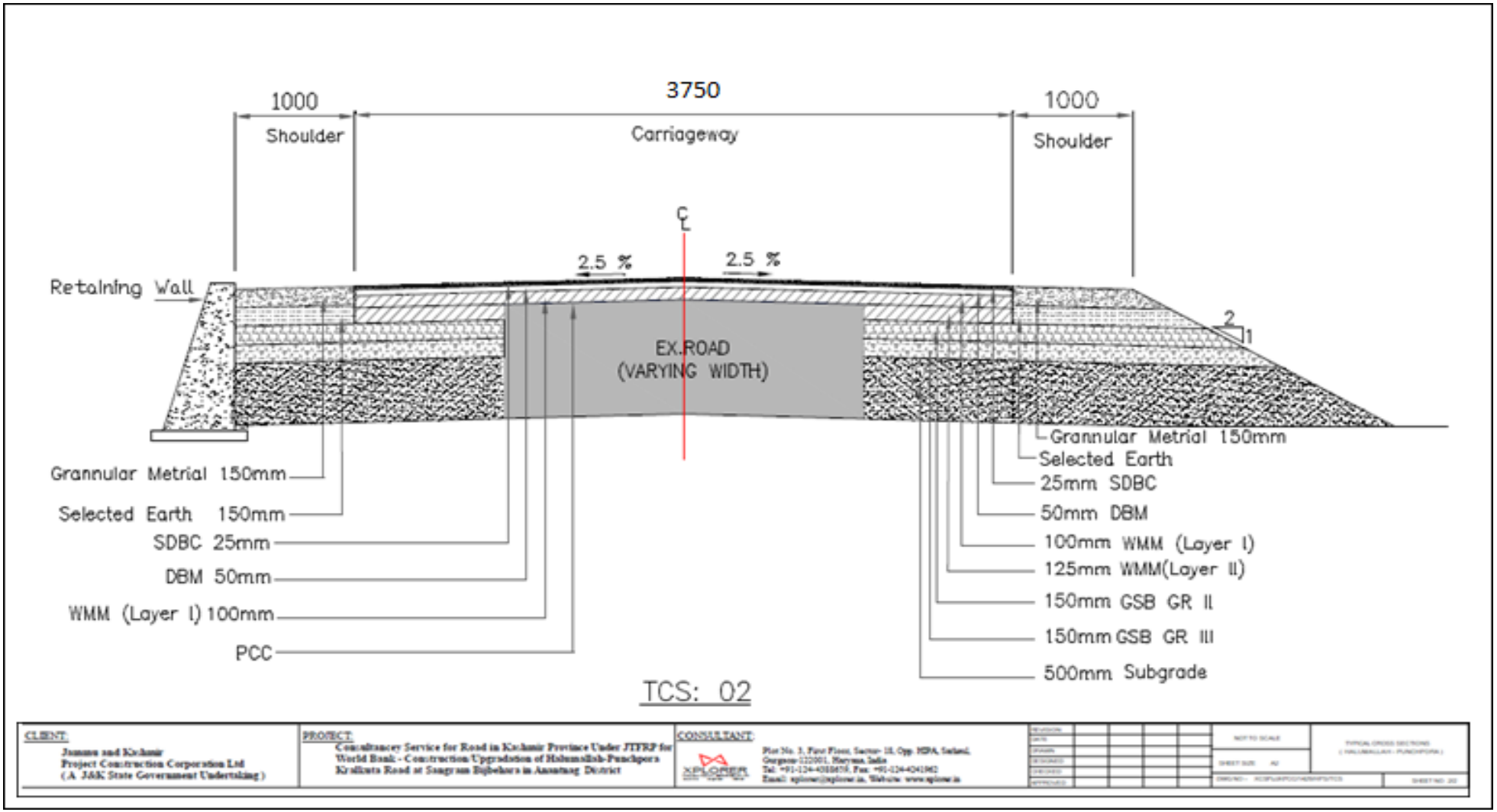
1000
Shoulder
3750
Carriageway
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Shoulder
2.5 %
2.5 %
Retaining Wall
EX.ROAD
(VARYING WIDTH)
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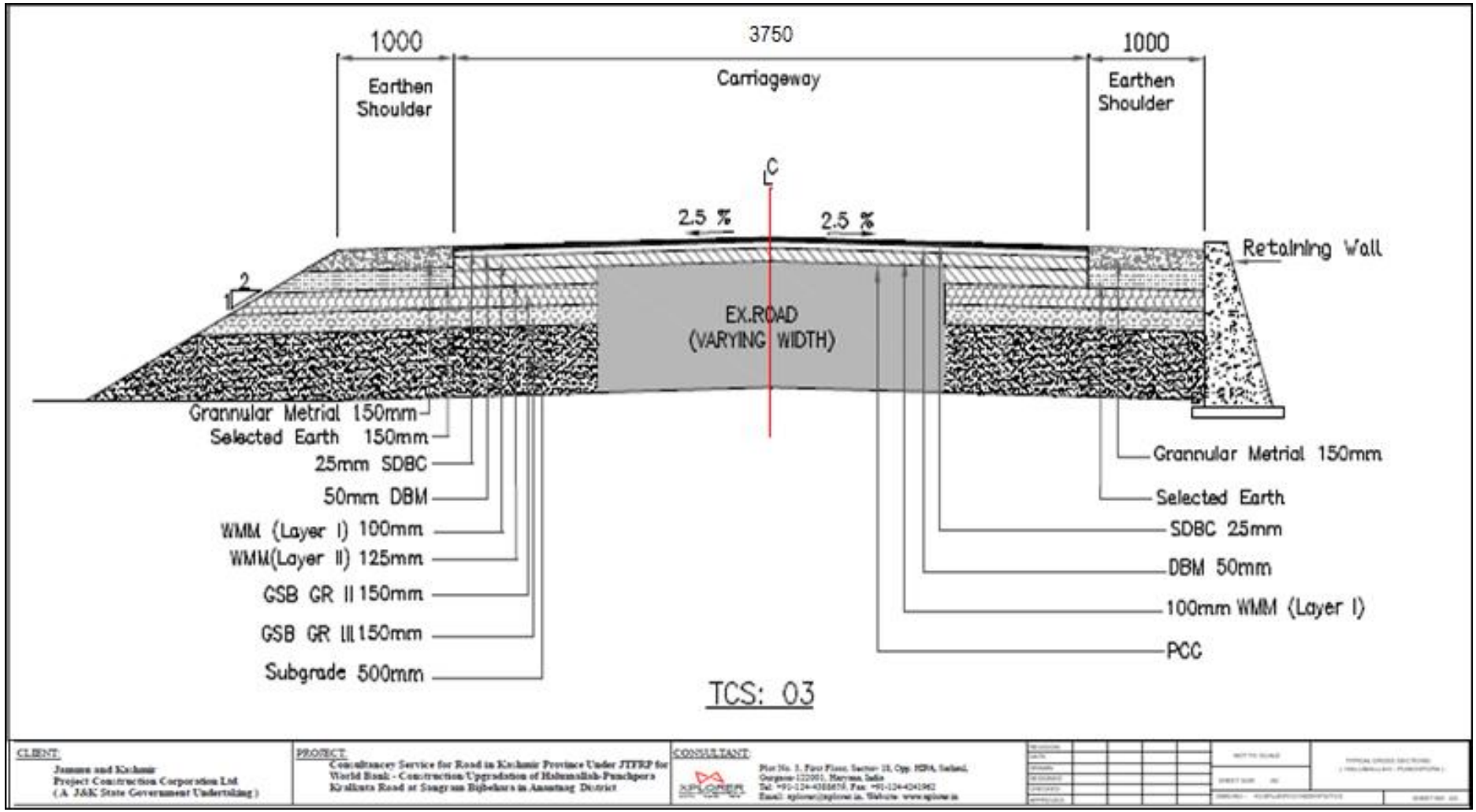
Grannular Metrial 150mm
Selected Earth 150mm
SDBC 25mm
DBM 50mm
WMM (Layer I) 100mm
PCC
Grannular Metrial 150mm
Selected Earth
25mm SDBC
50mm DBM
100mm WMM (Layer I)
125mm WMM(Layer II)
150mm GSB GR II
150mm GSB GR III
500mm Subgrade
TCS: 02
CLIENT:
Jammu and Kashmir
Project Construction Corporation Ltd
(A J&K State Government Undertaking)
PROJECT:
Consultancy Service for Road in Kashmir Province Under JTFRP for World Bank - Construction/Upgradation of Halmullah-Punchpora Kralkuts Road at Sangram Bijbehara in Anantnag District
CONSULTANT:
XPLORER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1
EX.ROAD
(VARYING WIDTH)
Grannular Metrial 150mm
Selected Earth 150mm
25mm SDBC
50mm DBM
WMM (Layer I) 100mm
WMM(Layer II) 125mm
GSB GR II 150mm
GSB GR III 150mm
Subgrade 500mm
Grannular Metrial 150mm
Selected Earth
SDBC 25mm
DBM 50mm
100mm WMM (Layer I)
PCC
TCS: 03
CLIENT:
Jammu and Kashmir
Project Construction Corporation Ltd
(A J&K State Government Undertaking)
PROJECT:
Consultancy Service for Road in Kashmir Province Under JTFRP for World Bank - Construction/Upgradation of Halmullah-Punchpora Kralkuta Road at Sangram Bijbehara in Anantnag District
CONSULTANT:

CHAPTER – 3
DESCRIPTION OF THE ENVIRONMENT

The environmental study is required to conduct where physical changes may be expected in development process. A rapid environmental survey has been conducted as per ESMF prepared for the study of baseline environmental features along the project road for the Jhelum Tawi flood recovery project. The field observations include baseline environmental set-up within 1 Km on either side of the proposed road in general and within the Right of Way (ROW) in particular, as described in subsequent sections.

The baseline environmental features assessed are as follows

- *Physiography*
- *Geology and Soil*
- *Seismicity*
- *Land Use Pattern*
- *Hydrology/Drainage*
- *Wetlands*
- *Forests*
- *Religious & Cultural Property*
- *Communities* Properties
- *Ecological Sensitive Sites*
- *Recreation Resources*
- *Archaeological, Historical and Heritage Sites*

3.1 Physiography

The sub-project road falls in Anantnag district in J& K. It is one of the districts which make-up the Kashmir Valley. It is in the southern sector of Jhelum Valley surrounded by hills. Northern and Western sides of the sub-project area are bounded by Pulwama district while Kulgam district falls in its west. The Doda district lies in south and the Kishtwar in east. The physiography of project area is shown in Figure : 3.1

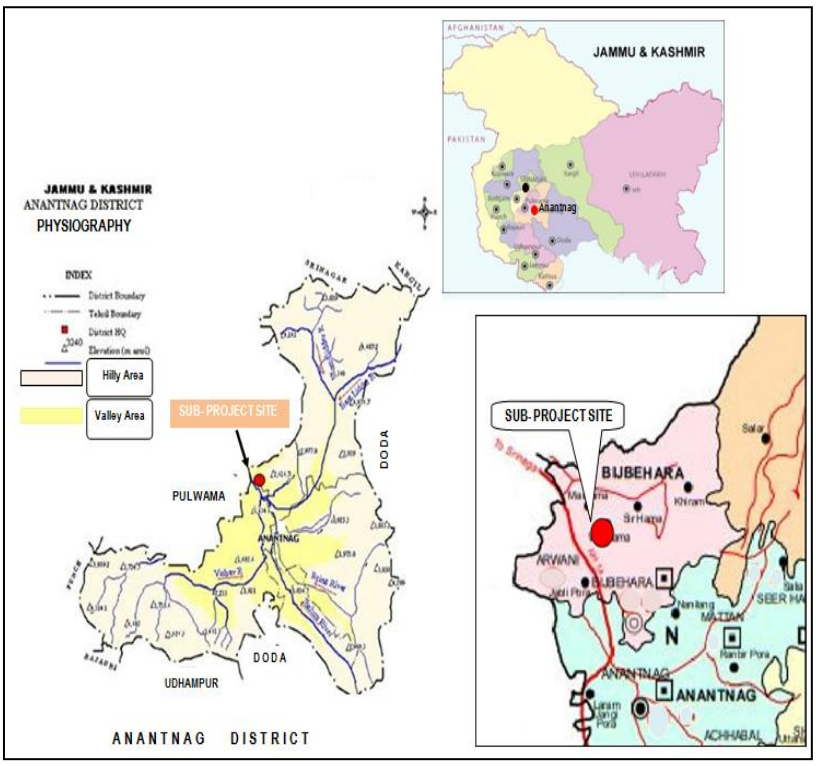


Figure 3.1: Physiography
Jammu & Kashmir

3.2 Geology and Soil

The characteristic of geological features and type of soil in the project area are studied at field level with reference to geological map. The study area exists in Anantnag district under valley of Kashmir. Therefore, geological information of surrounded hilly area of Anantnag district will ascertain appropriate geological features in study area.

3.2.1 Geology

The rock type in Hilly section is western most part of lesser Himalaya which composed of permo-carboniferous volcanic rocks of granite, gneisses, quartz and slates whereas in valley of Kashmir comprises of sedimentary, metamorphic and igneous rocks ranging in age from Precombrian to recent age. The Geomorphologically Kashmir valley holds a unique position in Himalayas. The valley has undergone many changes in geological times. The mountain abruptly rises on the sides which develop varied geological scenery representing in its massive section of quartzite and in west Jhelum valley. As such the top soil strata in the study area consist of mostly intermixed alluvial layers of fine silts, sands and gravel. The Most sedimentary material that fills a basin is alluvial. The recent alluvium occurs in Anantnag are depositary from river Jhelum which cover a large area.

3.2.2 Soil

The sub-project laying in Bijbehara sub-division of Anantnag district. The district consists of rich alluvial soil well drained by rivers and stream. Therefore, the soil in the project area is best suited for rice, saffron, vegetable and variety of fruit. The characteristic of alluvial soil in sub-project area is stated below

General texture

- Soil type: Clay loam intermixed with sands & gravel.
- Degree of plasticity: Non plastic.
- Degree of cohesiveness: cohesive (MI Group of soil).

3.3 Seismicity

According to GSHAP data, the state of Jammu & Kashmir falls in a region of high to very high seismic hazard. As per BIS Code of practice IS-1893-2002 Kashmir valley fall in seismic Zone-V and the rest of area fall in seismic Zone-IV in Jammu & Kashmir State. Historically, parts of this state have experienced seismic activity in the M 6.0-7.0 range. The map of Seismic hazard Jammu & Kashmir is shown in **Figure 3.2**

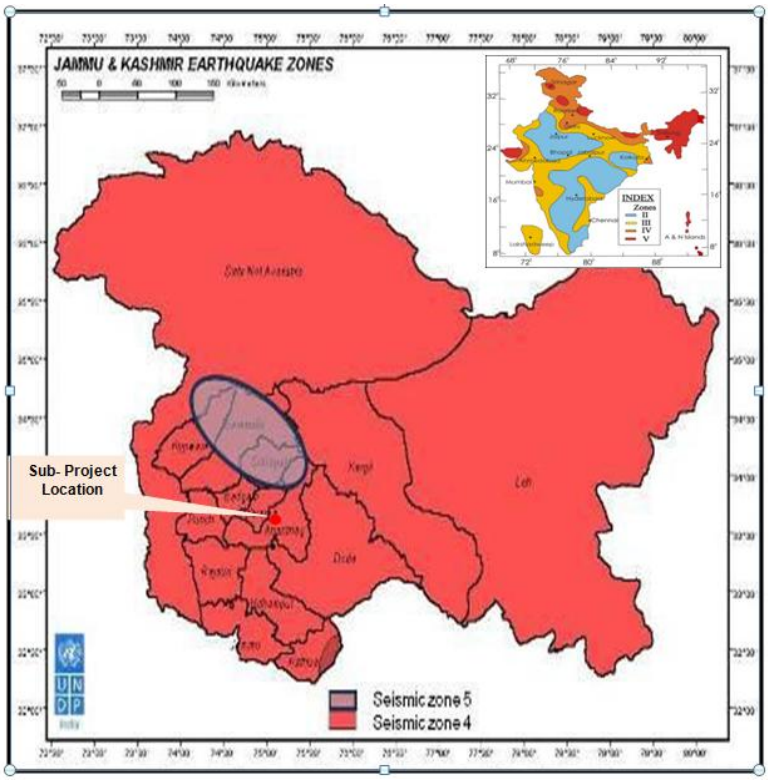


Figure 3.2: Seismic Hazard Jammu & Kashmir

3.4 Land Use Pattern

The project **Halmulla Punchpora to Kralkut Road** covers 3.348 km length. In total length of sub-project road, there are mainly agriculture land comprising with settlement and the irrigation canal passing along side of road partly left or right about 400m out of total length of project road. Irrigation canal is origin from tapping of local stream at Awantipura. The entire length of project road lies in Jhelum sub-basin. Jhelum river flowing in close proximity of project road which originating at the Verinag, with its tributaries Lidder, Vishav, Sandram rivers. Irrigation canal origin from the local stream flowing along the road either side from left or right alternatively is the main source of water for agriculture production.

The land-use pattern along project road is described below while the graphically represented by ***Figure - 3.3***

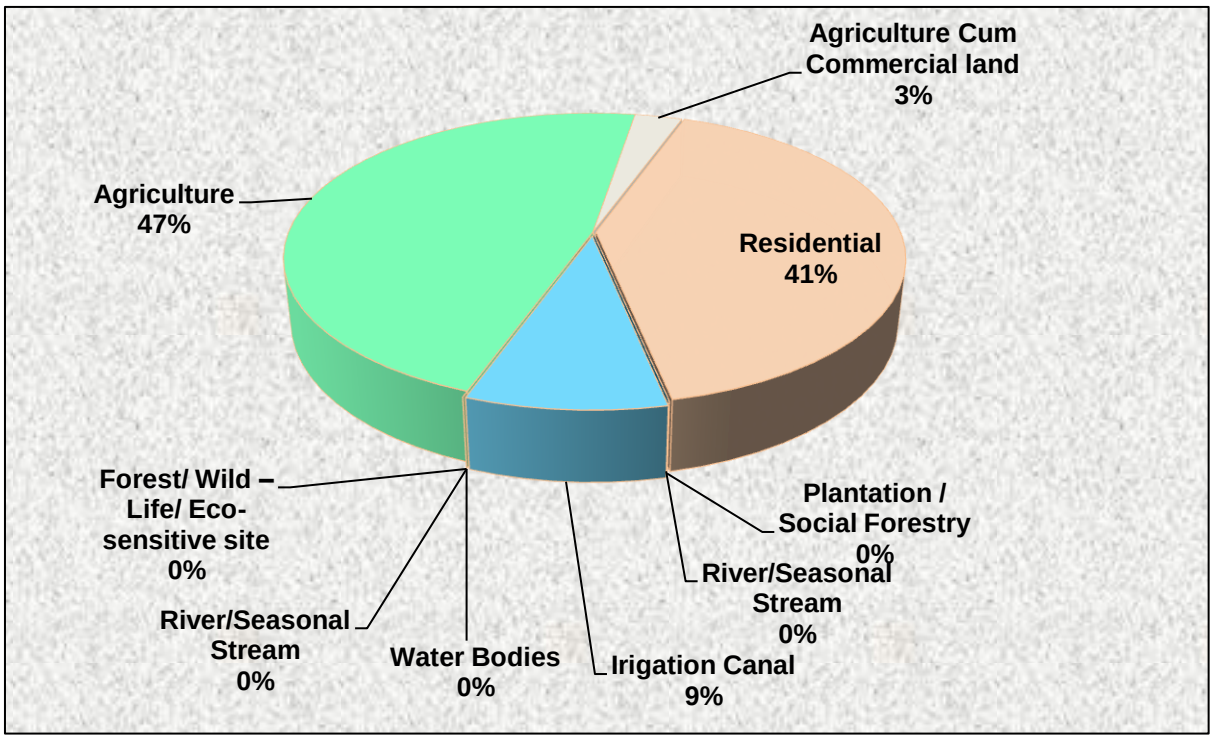


Figure - 3.3: Land-use
Halmulla Punchpora to Kralkut Road

3.5 Hydrology/Drainage

The main hydrological feature is natural drainages flow in proximity of project area under the Bijbehara sub-division of Anantnag district. Jhelum River flowing closely associated with the project road. Also, there is a number of developed drainage system in the study area which forms as an irrigation canal which is main source of water for irrigation of agriculture fields. As the project is under the Jhelum basin surrounded with numerous natural streams. The east Lidder and west Lidder is main tributaries of Jhelum River in sub project area. The master slope of the project area is towards North West.

3.6 Air, Water and Noise Environment

The monitoring of various performance indicators pertaining to Air, Water and Noise level had been carried out during the month October, 2017. The result and evaluation of various performance indicator pertaining to air, water and noise are presented under the following sub-sections.

3.6.1 Monitoring Ambient Air Quality

The samplings of AAQ have been taken as per CPCB guidelines near the settlements area at Halmulla for 24 hrs on date 11th October, 2017. The sampling and evaluation was carried –out by the Environmental Monitoring Laboratory of J&K ERA which is recognized through State Pollution Board, J&K.

The results of sampling taken is presented in table below :

Sampling Location : Settlements Area – **Halmulla**			
Sl. No	**Parameter ($\mu g/m^3$)**	**Value Observed**	**NAAQS Permissible limits**
1	RSPM (PM_{10})	65.2	100
2	RSPM ($PM_{2.5}$)	25.6	60
3	SOx	5.1	80
4	NOx	4.6	80

The monitoring results of ambient air quality near settlements at project road observed within the permissible limits of National Ambient Air Quality Standards (NAAQ) pertaining to the parameters of RSPM PM_{10}, $PM_{2.5}$ and gaseous pollutants under SOx, and NOx, at the proposed sub-project road.

3.6.2 Monitoring of Water Quality

The irrigation canal passing along side of road partly left or right at various points alternatively is the main source of water for agriculture production. Therefore, the water analysis with regard to various parameters has been carried-out for evaluation of surface water quality. The physico-chemical property of surface water quality was analyzed of which sampling are taken in October, 2017 from Awantipura Irrigation canal at Punchpora village flowing along the side of road.

The sampling of water and evaluation of result was conducted by the Jammu & Kashmir Economic Reconstruction Agency which is recognized by the SPCB, J&K.

The results of surface water sampling presented below in **Table 3.1.**

Table 3.1 :
Water Quality Awantipura Irrigation Canal
Halmulla Punchpora to Kralkut Road

Sl. No	Parameter	Permissible limit	Value of water sample Observations
1	**Temperature ^{0}C**	-	19
2	**PH**	6.5 - 8.5	6.7
3	**Colour Hazen units, Max**	300	235
4	**Total Coli form MPN/100ml max. Inland surface water Class-C category.**	5000	2200
5	**D.O mg/l**	>6	5.9
6	**BOD mg/l**	<2 -3	3.5
7	**COD mg/l**	-	7.4
8	**TDS mg/l max.**	≤ 1500	450
9	**Total Alkalinity mg/l**	200 -600	145
10	**Total Hardness mg/l**	300-600	175

The monitoring results of surface water were under the permissible limits. It was found odorless. The flow of the stream was moderate therefore might be the reason for optimal values of DO 5.9 mg/l. The values of BOD observed 3.5 mg/l, COD 7.4 mg/l, the coli form MPN was 2200 nos and TDS 450 mg/l. The alkalinity of surface water was 145-146 mg/l and hardness was 175 mg/L).

3.6.3 Monitoring of Noise Quality

The project length sub-project is total 3.348 km only. The major section of sub - project area is settlements of local communities coming under Bijbahera sub division of Anantnag district. The sampling points was selected, therefore, at km 2.100 km from start of sub-project near Punchpora village. The noise sampling was carried – out in day hrs for 8 hrs as per the CPCB guidelines on date 11 Oct, 2017. The sampling station was kept 10m from the Centerline of sub-project road and carried – out by M/S Environmental Monitoring Laboratory, J&K ERA which is recognized by the SPCB. The 8-Hourly sampling at fixed interval of noise equivalent in day hrs noise level in the sub-project area are presented below in **Table : 3.2**

Table 3.2 : Noise Quality
Punchpora village at Halmulla Punchpora to Kralkut Road

TIME 11.0Am-7.0 Pm	Punchpora village Km 02.100 ; dB(A)	Minimum dB(A)	Maximum dB(A)	Leq (8 Hourly Sampling)	Permissible Limit dB(A)
11-12.0	55.6	**45.2 dB(A)**	**55.6 dB(A)**	**50.20dB(A)**	55 dB(A)
12 -1.0	54.3				
1.0-2.0	47.3				
2.0-3.0	45.2				
3.0-4.0	57.2				
4.0-5.0	53.1				
5.0-6.0	48.2				
6.0-7.0	47.7				

The monitoring results of noise level of 8hrs day sampling shows that project site yet at settlement area where local community are staying are living in desirable limit of noise as 8hrs day noise level equivalent is 50.20 dB(A) only. This is due to low traffics on sub-project village road, presently.

3.7 Forests

There is no natural forest (RF, Protected Forest etc) or natural heritage sites of national and international importance along the one km radius of project site.

3.7.1 Local Flora

The local flora on the study area denotes trees along the road, social forestry and any other sites of green cover along either side of project road. In the field study of approx three km project road noted well marked vegetation of Willow trees. The others are Walnut, Brenn, Cassia sps and Popular along either side of road. The sub-project also have apple orchard along either side of road.

There is none of any rare and endangered plant species are observed. The trees are only affecting which required to be cleared/ cut down from the proposed road width up-to 5.750 m or might be saved existing on earthen shoulder. Therefore, tree falling under the road carriage width excluding the earthen shoulders are taken for felling due to road construction only.

As per the improvement proposal of up-gradation, the total no of trees which affected which required to be felled are 95 trees. All the tree girth is in the range from 90 cm to 140 cm. The number of trees likely to be felled with respect to chainage and side of road are given below in **Table: 3.4** .

TABLE : 3.4 ; LIST OF TREES ALONG PROJECT ROAD

	Chainage		Left	Right	Trees species to be felled
Halmulla Punchpora to Kralkut Road	00.00	500	0	0	38 Popular, 20 Brenn, and 37 Willow; Total felling of trees = 95 trees.
	500	1000	0	0	
	1000	1500	19	25	
	1500	2000	24	9	
	2000	2500	6	5	
	2500	3000	0	0	
	3000	3348	4	3	
	Total		**53**	**42**	

Furthermore, the list of tree species observed in the study area in one km radius of either side of project road with their scientific name is given in table : 3.5 below.

TABLE-3.5: LIST OF FLORA ALONG PROJECT ROAD

Sl. No.	Common Name	Scientific name
Tree Species		
1	Walnut	*Juglans regia*
2	Bird cherry	*Prunus padus*
3	Willow	*Salix alba*
4	Elm (Brenn)	*Uranus americana*
5	Poplar	*Populus tremula*
6	Birch	*Betula sps.*
8	*Cassia*	Cassia Siamea
9	Apple	*Malus domestica*
10	Mulberry	*Morus alba*
11	Chinar	*Platanus orientalis*

3.7.2 Local Fauna

There is none of any protected forest and any patches of reserve forest are present along either side of sub-project road, the terrestrial fauna is restricted to high tolerance local species of human activities. There are no Schedule-I terrestrial mammals" species observed along proposed road.

3.8 Wetlands Sites/ Water Bodies

There are none of any wetlands sites along either side of the project road. Hence, the entire site is free from any water bodies of national and international importance.

3.9 River/ Irrigation Canal

Jhelum River flowing closely associated with the project road. There is a number of developed drainage system in the study area which forms as an irrigation canal. This canal is origin, from tapping of local stream, at Awantipura. The entire length of project road lies in Jhelum sub-basin. Jhelum river flowing in close proximity of project road which originating at the Verinag, with its tributaries Lidder, Vishav, Sandram Rivers.

3.10 Religious & Cultural Property

The road side religious generally include temples, gurudwara, mosques, cremation ground and as buildings of cultural properties include as works of art libraries, museums, community place, marriage hall etc.

There is one mosque exist in the close proximity of the project road.

3.11 Ecological Sensitive Areas

There is none of any Biosphere Reserve, National Park World Heritage Sites and others Wild –life sanctuaries recognised as an ecological importance in & around one km radius of sub-project site, Halmulla Punchpora to Kralkut Road.

3.12 Communities Properties

The Community properties includes as hand-pumps, tube wells and pasture grounds for the use for local communities.

In the community properties only the Hand pumps are existed along sub- project road which lists below in **Table: 3.6** with details status.

TABLE-3.6: LIST OF COMMUNITIES PROPERTIES

Sl. No	(Halmulla Punchpora to Kralkut Road)					
	Communities Properties	Chainage KM	Distance from C/L of the Road (m)		Require to be relocated (Yes/No)	
			L/S	R/S		
1.	Hand Pump	0.300	4		Yes	All Four hand pumps are closely associated with project road which required to be relocated.
2.	Hand Pump	1.350	3.5		Yes	
3.	Hand Pump	1550		4	Yes	
4.	Hand Pump	2300	3		Yes	

3.13 Ecological Sensitive Areas

Project site is existed in Bijbehara sub-division of Anantnag district in Jhelum Valley. There is none of any Biosphere Reserve, National Park World Heritage Sites and others wild –life sanctuaries as ecological importance existing in one km radius of the proposed sub-project road. .

3.14 Recreation Resources

The recreational sites include Amusement Park, centre for musical & cultural activities.

There is none of any recreational sites either one km radius or in the close proximity of sub-project site, Halmulla Punchpora to Kralkut Road.

3.15 Archaeological, Historical and Heritage Sites

There is no monument or place of tourist importance located in close proximity of sub- project road. No Cultural Heritage property such as archaeological sites and historical monuments of national and international importance within a distance of 300 meter from the project site, as per limitation of distance fixed by the Govt. of India, Gazette Notification No. 13, dated 30th March, 2010 on "The Ancient Monuments and Archeological Sites and Remains (Amendment & Validation) Act, 2010.

3.16 Key Environmental Features

The Hot Spots in 3.348 km of wide corridor i.e. 1 km either side of the project which needs attentions for impact analysis is trees and the hand pumps only. Further, the attention is required on road embankments by providing suitable measures in design for providing retaining wall along section of road where the irrigation canal is flowing along the side of road. Further, parapet of suitable height is required to be constructed for safety pedestrian and road users to around 600 m length in habitat area where water channel in form of irrigation canal is flowing along the side of road.

CHAPTER – 4
Anticipated Environmental Impacts & Mitigation Measures

4.1 Introduction

Environmental study of subproject under Jhelum and Tawi Flood Recovery Project has been undertaken as per approved environmental & social management framework prepared for rapid study of impact assessment and remedies to minimize impacts in all phases of project cycle. As the project road is under the catogary of village road which proposed for up- gradation up-to 5.750 m from existing width of 3.750 m including shoulders, therefore impact & mitigation are studies only for design and construction phase.

After conducting field surveys and reviewing statutory norms, the major impacts are identified and assessed are stated in following sections.

4.2 Environmental Impacts

The impact due to proposed sub-project **Halmulla Punchpora to Kralkut Road** is broadly described in term of significant and non significant impacts.

4.2.1 Significant Impacts

The significant impacts of proposed sub-project during construction include change in land use, slight disruption of vegetative cover, existing drainage system which is temporary & reversible in nature.

- Excavation of proposed site, transportation of material will generate dust, noise and pollution to environment creating nuisance to settlements area.
- Transportation of construction materials may cause inconvenience to local communities and road users.

4.2.2 No Significant Impacts

- The sub-project does not have a new alignment. Hence, no significant impact on existing natural environmental is expected.
- There are no historical monuments, cultural properties and other community resources in close proximity of proposed site which shall directly effect on socio-economic environment. Therefore, no significant impacts on property resources are expected.
- There are no natural resources as National park; Biosphere reserve and other eco-sensitive site exist in close proximity of the project. Therefore, no impacts on biodiversity are expected.

4.3 Anticipated Environmental Impacts

Furthermore, the negative, positive and potential environmental impacts on physical, ecological and socio- economic environment with respect to the project locations and

design have been identified, annexed and evaluated under the following sub-sections.

4.3.1 Positive Impacts

As a result of development and improvement there are several benefits to inhabitants and natural environment.

4.3.1.1 Transportation

The up-gradation of village road will provide good communication facilities in transportation of agriculture produce in sub-project area. It also links village road with the National Highway which provide good access to local market of selling their crops and the transportation of cricket- bat manufacturing industries of village area.

4.3.1.2 Public Amenities

It also satisfies the public demands by up-gradation of distressed village road which presently creating inconvenient to the local communities.

4.3.2 Negative Impacts

Implementation of project has adverse impacts on the environments. Adequate mitigation measures should be planned and it is required to minimize the degree of negative impacts. Impacts subject to the proposed sub project **Halmulla Punchpora to Kralkut Road** is broadly related to:

4.3.2.1 Pre-construction phase - Planning and Design

To minimize the impacts on green covers, shifting of hand-pumps as well water channel in form of irrigation canal passing along the project road, it is suggested for judicious applications of engineering designs in construction methodology as well as special techniques for the retaining wall along water channel, shifting of hand pumps as to minimize impacts on environment during pre-construction phase.

4.3.2.2 Construction Phase

- Pollution to air, water and noise environments
- Damage & destruction to local communities properties,
- Destruction of forest ecosystem and natural environment,
- POLs contamination due to plant & machineries,
- Alteration of topography by use of borrows,
- Insanitation, health & hygiene due to Labour camps/ construction camps.
- Loss of green covers
- Accidental hazards etc.

4.3.2.3 Operation Phase

As project road widely used by local communities of nearby village area of Bijbehara in Anantnag district which to be up-graded to 5.750 m from existing 3.750 m including 1m shoulder only, therefore impacts prediction and its mitigation are not assessed in operation phase.

4.3.3 Potential Environmental Impacts

The environmental parameters are broadly classified into three groups as say **Physical Environment** which includes air, water, land and noise quality. The holistic approach for safeguard of all components is must for survival of life on earth. The second is **Biological Environment** which states local biota (fauna and flora) including mammals, avifauna and aquatic life will not be affected due to project work activities and the third & last is **Social Environment** which states for the concern of local communities affected due to up-gradation and land requirements. However, there are no such issues in up-gradation of this sub- project village road. Therefore, the impact has been studies on the construction factor and related activities only.

4.3.3.1 Impacts during Construction Phase

The proposed project is up-gradation of road. The total length of up-gradation is 3.348 km which proposed for restoration of damage caused in flood, 2014. The up-gradation is proposed for extending 5,750m from the existing 3.750m total width of the road. Therefore, no land requisition, properties and loss of livelihood are expected. There are no issues related to affect on water bodies, forest, cultural sites etc. No major issues therefore expected except for use of construction materials and consideration of legal permits for the execution of project. Hence, the assessment of project impacts is carried –out based on disturbances, damage and loss to environment on nature of work activities to be undertaken during project implementation. In this circumstance the suitable measures are proposed to avoid, minimize and mitigate impacts on environment.

4.3.3.2 Topography, Geology and Soil

The proposed sub-project is up-gradation road, therefore main civil work is required for filling of lands as described in design for embankments and sub-grade layer in road works. Therefore, earth from borrow pits is required and accordingly measures is essential to minimize impacts on alteration of topography of exiting lands. The same can be applied for aggregate as require from quarry.

4.3.3.3 **Drainage :**

There are no Impacts of drainage pattern in this road construction. However, impacts may arise on un-planned work programme and work execution.

(A) Impacts

- Blockage of existing drainage in course of earth work.
- Obstruction of natural drainage in construction of embankment.
- Water stagnation on obstructions of irrigation canal during dumpling of soil in road construction.

(B) Mitigation Measures

- Place should be defined and finalized before storage of earth in road works

- Irrigation canal flowing along road should be prevented from obstructions of earth during the embankment construction and cross drainage structures duly augmented to accommodate high discharges.
- Periodical inspection at location of irrigation canal to avoid blockage due to road construction.

4.3.3.4 Water Use

There are various local steam flowing in project area which use in irrigation to agriculture fields as well household –use for local communities. Therefore, water for the construction is readily available for road work. Only, the consent from the concern authority is required to be taken for construction use. Furthermore, keeping in view the road length for 3.348 km road very short quantity of water shall be required. Hence, impacts on water resource shall be insignificant.

4.3.3.5 Water Quality

A. Impacts

- Contamination due to indiscriminate disposal of construction wastes in water channel flowing along the subproject road.
- Deterioration of water quality due to open discharge from Labour camps and the construction camps.
- Pollution due to Oil & Grease spills (if any) in project area.

B. Mitigation Measures

- The probable estimate of construction wastes should be prepared and solid waste disposal plan should be developed for safe disposal of debris as well hazardous wastes (if any) during the construction.
- Adequate drainage system should be developed at the construction camp to avoid contamination.
- Prevent water contamination sanitation, health & hygiene at camp as well plan to re-use and periodical inspection of POL storage sites.

4.3.3.6 Impacts on Air Quality

A. Impacts

- Impacts on air quality during construction are generation of fugitive dust due to excavation on road work.
- Environmental pollution due to haulage of materials for construction. Emission of gaseous pollutants like hydrocarbon, carbon monoxide and other particulate matter due to use of generator.
- Dusts are expected to be generated in form of fugitive emissions.

B. Mitigation Measures

- The impact on air quality during construction is temporary and site specific. Therefore, good environment management practices can overcome and reduce impact to a large extent.
- The construction materials to be stored at designated site with barricading.
- Earth carrying vehicles should be suitably covered with Tarpaulin.
- Dust minimization measures should be followed as per EMP.

- Machineries and equipments being used for construction works should be adequately maintained and emissions should be within permissible limits of SPCB norms.
- Plant & machinery should be established at least 500 m away the settlements.
- Proper planning and appropriate scheduling in construction for timely completion of work should be followed.

4.3.3.7 Noise Quality

The noise is usually generated on movement of vehicles & heavy machineries. However, the noise is temporary and mostly in daytime only. The workforce is more vulnerable with high noise level at work site.

(A) Impacts

- Increase in noise level due to construction activities.
- Noise nuisance are mainly during operations of machineries and increases after movement of vehicles at work site.
- D.G set running openly also a source of noise at work –place.

(B) Mitigation Measures

- Construction camp and labour camp should be away from the source of noise and from the locations of heavy plants & machineries.
- Plant & machineries should be conforming to noise standards.
- Earplugs should be provided to workers & staffs to minimize exposure of noise at workplace.
- The construction equipments & machineries should be in good working, lubricated and maintained to keep noise within permissible limits.
- In the residential area the construction works should be carried out in day time.
- Machinery yards should be minimum 200 m away from settlements, schools and institutions.

4.3.3.8 Impacts on Local Flora

(A) Impacts

- Loss of tree and vegetative cover due to up-gradation of road.
- Deposition of fugitive dust on vegetation may lead to reduction of photosynthesis and damage the plant.

(B) Mitigation Measures

- Felling of trees to be undertaken up-to the cross- section of carriageway; trees at road - shoulder should be saved. Trees should be protected also on & nearby drain by adequate care & management.
- Green-belts should be developed under Forest Conservation Act-1980. The available space should be covered with afforestation scheme.
- Fuel for cooking should be provided to the construction workers to avoid cutting of adjoining trees for fuel- wood.

4.3.3.9 Impacts on Local Fauna

The proposed project is limited to specific designated location with total 3.348 km length. Therefore, no consistent impacts on local fauna at project site.

4.3.3.10 Impacts by Solid Wastes

(A) Impacts

- Solid waste disposal from construction camps may cause unhygienic and insanitation may create pollution to environment.
- Scarified asphalt and construction spoils create pollution problems.
- Unused aggregate, sand and cement in construction create pollution problems.

(B) Mitigation Measures

- Solid wastes disposal plan to be developed for safe disposal of debris, concrete wastes and other residues generated during the construction.
- Scarified asphalts to be suitably re-used in filling along approaches & low lands which effectively sealed off afterwards in order to avoid the pollution.
- Earth generated during excavation to be re-used in embankment and other places during the construction.
- Indiscriminate disposal of spoils should be avoided.

4.3.3.11 Social Aspects

As the project up-gradation being carried -out on existing available land only, therefore, none of any religious & cultural properties as well loss of livelihood are accountable due to road up-gradation.

Hence, there are no issue of social concern related to land acquisition.

4.3.3.12 Impact of Construction Camp

A. Impacts

- Influx of construction work-force to construct temporary dwellings.
- Sanitation, health and hygiene due to domestic wastes in open fields.
- Spread of pathogenic bacteria due to deterioration of water in open ground on inadequate drainage facilities.
- Pollution to environment due to open defecations due to lack of toilet facilities at work –place for male & female separately.

B. Mitigation Measures

- The temporary camps should be constructed at designated sites with adequate sanitation and drinking water facilities.
- Proper accommodation will be provided for the migrant workers as per environmental management plan and as per the Labour act, 1970.
- It should be ensured that workers are provided with adequate ancillary facilities i.e. sanitation at camps, drinking water lavatories, first-aid facilities and temporary electrification at camp.
- Regular cleanliness should be ensured.

4.3.3.13 Safety Aspects

❖ **Arrangements of Safety for road – users**

(A) Impacts

- Increase of incidence of accidents due to disruptions of traffics movements, excavated road, and poor safety arrangements.

(B) Mitigation Measures

- Adequate safety measures will be adopted to prevent accidental risks.
- Adequate traffic management should be developed during the construction in accordance with SP-55 : 2014.

❖ **Safety for workers at work site; and health & hygiene at Labour camps.**

A. Impacts

- Safety risks to workers due to inadequate housekeeping & management, blind spot, open electric wiring, trip & fall and unsafe work practice at work sites.
- Periodical watch & care on electrical wiring system and immediate repair of defective wires at work site.
- Health problems to workers due to insanitation and un-healthy environment at the labour camps due to adequate management.

B. Mitigation Measures:

- Personnel protective equipments should be ensured for all workers at work site as per provisioned under the BOCW –Act, 1986, And Labour Act – 1970.
- Safety measures should be taken following the safety norms.
- Periodical inspection for audit of safety standards at work site accordingly remedies to be taken on defective arrangements for risk free site.
- Adequate penalty on safety lapses should be fixed –up to the concern.
- Health check-up should be conducted to workplace, periodically. And the workers indentified medically unfit / sickness should be sent to hospital for medical treatments. Furthermore, alternate arrangements should be made for replacement with new labours.

4.3.3.14 Impacts during Operation Phase

In this phase, the final closures of environmental issues are discussed only. Hence, entire temporarily structure should be dismantled and the site should be restored to its original ground conditions. The concrete residues, unserviceable materials and other debris should be cleared & cleaned from the entire site. Any scars, borrows (if any) should be redeveloped by adequate filling, grading and levelling the ground as to restore the natural ground condition soon in future. Afforestation programme to be undertaken to recover greenery loss during the project implementation.

CHAPTER – 5
Environmental Management Plan

Environmental Management Measures deals with the management measures and implementation procedure of guidelines recommended to avoid, minimize and mitigate unforeseen environmental impacts during the project implementation. The sub-project road during design, construction and operation shall conform to environmental rules & regulations in force under law & acts and by laws of GoI and J&K state made for environmental safeguards.

The environmental management plan and recommended mitigation measures are required to be followed by the Contractor. However this does not absolve them from performance of good practices for sound construction management and safeguarding the environment. The details of management & mitigation measures to be followed during all the project covers are presented as follows in Table.

Sl. No	Activities	Management Measure
P 1	**PRE-CONSTRUCTION BY THE CONTRACTOR**	
P 1.1	Appointment of Environment and safety Officer.	The contractor shall appoint a qualified and experienced Environment and Safety Officer prior to the commencement of work. He shall be responsible for EMP implementation including occupational health & safety aspects. The project Manager of Contractor shall be responsible for overall implementation of EMP provisions and ensure implementation of said plan with the concerned agencies, stakeholders and internal staffs / workers.
P 1.2	Regulatory / Statutory Clearances/ approvals.	Prior to commencement of construction the contractor shall obtain all requisite statutory clearances / for setting-up construction camp including labour camp, plants & equipments, use of material source etc. as per environmental law & acts and regulations that apply to this project. The contractor is required to abide by all conditions laid in the said clearances / consents given by the regulatory authorities. The compliances report shall include the status of permits / consent and measures taken to minimize impacts as per conditions in permit.
P 1.3	Tree felling	Any schedule trees felled -down due to design/ under unavoidable circumstances, permission shall be obtained for felling of trees from the Concern Authority. The Contractor will co-ordinate with the PIU and ensure that all necessary permissions are taken prior to the felling trees.
P 1.4	Construction Camp / Labour camps Locations – Selection and Lay-out	**Location & Lay-out of the Construction Camp** : Lay-out plan of the construction camp shall be approved by the Environmental Specialist of the PIU ensuring clear access & approach, oil & grease storage yards, parking lots, toilet facilities etc. The stockyards, reinforcement yards hoisted at designated place and approved. **Location and Layout of Labour Camp** : The location & layout plan of labour camps must be approved by the environmental Specialist of PIU/PMU prior to start of construction on ground. The Contractor shall follow all relevant provisions of the Labour Act, 1970 and the Building & Other Construction Workers (Regulation of Employment & Conditions of Service) Act, 1996 for establishment of labour camp.
P 1.5	Construction Materials	The Contractor shall procure materials from J&KPCB authorised Plants/RMC only. The permits of RMC must be submitted to the PIU/PMU for perusal and record.
P 1.6	Sand (all river and stream beds used directly or indirectly for the project)	The sand, aggregate shall be taken from the approved agency only. The Contractor shall furnish the permits/NOC to the PIU/PMU for perusal and record.
P 1.7	Labour Requirements	The contractor shall preferably use labours from the local communities to avoid additional stress on existing facilities as like lands, drainage, medical services, power and drinking water etc.
P 1.8	Contractor Environmental & Social Management Plan (C-ESMP)	The Contractor shall submit supplementary Management Strategies and Implementation Plans as necessary to manage the ESHS risks & impacts within the fifteen days of Contract Agreement. These Management Strategies and Implementation Plans collectively comprise the Contractor's Environmental & Social Management Plan (C-ESMP). The C-ESMP should include a Contractor's proposal with environmental mitigation action plan prepared by the Project Manager of implementing agency will be operationalized by the contractor to their workers/employees.

Sl. No	Activities	Management Measure
		The C-ESMP shall be approved by the Environmental Specialist of PIU/PMU prior to the commencement of construction activities.
P 1.9	Information Dissemination.	Project information Board showing the name of work, project cost, duration, date of commencement, date of completion, executing agency and contact details (including telephone numbers) for providing suggestions / filling grievances shall be displayed prominently in both English and in Vernacular. Further, the advance information and periodic update (once in a month) about construction schedule, safety measures, pollution abatement and other such details shall also be displayed.
C1	**CONSTRUCTION STAGE**	
C1.1	Generation & disposal of Debris	Scarified asphalts and the other construction wastes shall be appropriately re-used in construction. In case of unable to re-use, a Solid Waste Management Plan to be developed by the Contractor in consultation with the local competent authority, this shall be approval by the Environmental Specialist of the PIU/PMU to ensure the safe disposal.
C1.2	Blue metal/ Material / Aggregate	The Contractor shall obtain materials from the approved quarries only. A copy of the permits for quarry mining must be submitted to the PIU & PMU for the perusal and record.
C1.3	Water Extraction	No extraction of water are allowed from any water source, navigation channel, intake channel, or flood spill channel by the Contractor without prior permit of authorised licensing authority of Jammu & Kashmir. Any user of ground water desiring to withdraw ground water for any purpose shall apply to the prescribed authority for grant of a permit for this purpose, and shall not proceed with any activity connected with such sinking unless a permit has been granted by the authority. The water meter to be installed by the Contractor in case of ground water extraction and abide by the conditions led down under the Jammu and Kashmir Water Resources (Regulation & Management) Act, 2010. The contractor shall minimize wastage of water during the construction
C1.4	Drainage System	The Contractor shall ensure that no construction materials shall block the water flow or create water lodging at the work site. The Contractor shall take remedies to bail-out accumulated water (if any) from construction sites, camp sites, storage yard, excavated areas etc. They shall plan to avoid water- pool besides temporary cross drainage prior to on-set of monsoon.
C1.5	Work-Zone Safety Management	The Contractor must furnish the construction safety plan as per IRC: SP: 55:2014 which to be approved by the environmental specialist of PIU/PMU prior to start of road works. Temporary barricades shall be provided at construction zone as well material stack-yards. The construction site and the labour camp (if any) shall be appropriately barricaded to prevent unauthorised entry & exit in order to eliminate any incidents/ accidents. All operational areas should be access controlled. Watch and ward facilities at all times should be provided by the contractor along the entire work site. The warning sign-boards should be installed on access points of link road to regulate the movements of construction machinery and vehicles. In excavations, high visibility warning signage shall be displayed in the vernacular language and the English language both. Entry of unauthorized persons should be restricted. In the case of excavation of 1.5 m deep or greater, it should be barricaded by effective rigid barriers at work site to ensure zero risks. There should be adequate lighting arrangement at night

Sl. No	Activities	Management Measure
		to prevent any mishaps after the construction ceases for the day. The road safety sign- boards should be as per IRC: 55 : 2014 for the safety of road-user during the construction.
C2	**Water Pollution Control**	
C 2.1	Water Pollution from Construction Wastes	The Contractor shall take all precautionary measures to prevent entering of wastewater into water channel or irrigation system during the construction. The Contractor should not wash his vehicles near irrigation canal (Awantipura Irrigation Canal) and shall not enter into water channel flowing along road for doing that purpose. The Contractor shall submit all locations and layout plans of disposal sites prior to their establishment and shall be approved by the Environmental Specialist of PIU/PMU. The Contractor shall certify that all liquid wastes disposed off meeting with the discharge standards and non hazardous in nature. The monitoring of Water quality should be conducted by an approved agency as per monitoring schedule.
	Water Pollution from Labour / Construction camps	All precautionary measures shall be taken in accordance with Pollution Control Board guidelines to ensure that wastewater from labour camp or the construction site doesn't contaminate any surface water body or the aquifer.
C 2.2	Water Pollution from Fuel, Lubricants, Chemicals and hazardous materials	The Contractor shall ensure that none of any activities during maintenance of machineries and re-fuelling has PoLs contamination polluting to the environment. All spills and discarded petroleum products shall be disposed off in accordance with MoEF /J&KPCB guidelines. The storage of materials as like cement shall be done in a manner (with impervious layer on bottom and a covered shed on top) that does not contaminate land and ground / surface.
C3	**Air Pollution**	
C3.1	Pollution to environment	The contractor shall take every precaution to arrest the dust fumes ($PM_{2.5}$ and PM_{10}) at construction site that include unloading of aggregate, sands and cements etc. The Contractor shall take measures by water sprinkling, mist spray, encapsulation of dust generation source and erection of screen & barriers. The Contractor shall erect the screens of hessian cloth, agro-net and other such barricading where the construction materials are dumped and stock-piled, so that generation of dust can be minimized. The cement will be stored and emptied in covered area to control fugitive dust emissions. Air monitoring shall be conducted as per monitoring schedule by approved agency at designated sites in consultation with the Environmental Specialist of PIU/PMU. The result of various parameters with regard to air quality should be displayed on a board at project site. All corrective measures for prevention of pollution on account of the construction work (including both on site and off areas) shall be taken as per the requirements / standards of CPCB and SPCB. Roads used by the contractor or any of sub-contractor or suppliers will be kept clear from dust/mud or other extraneous materials dropped by the construction vehicle.

Sl. No	Activities	Management Measure
C3.2	Emission from Construction Equipment and Machineries	All the vehicles, equipment and machinery for construction will confirm to relevant Bureau of Indian Standard (BIS/CPCB) standards. The discharge standards promulgated under the Environment Protection Act, 1986 and Motor Vehicle Act, 1988 will be strictly adhered to. The contractor shall furnish PUC certificates for all vehicles/equipment/machinery being used at project site. The Diesel Generator to be kept at place approved by Environmental Specialist of the PIU/PMU. The stack height should be H = h + 0.2 capacity of DG in KVA ; whereas 'h' stands for height of surrounding building in meter.
C4	**Noise Pollution**	
C4.1	Noise Pollution: Noise from Construction Equipment and Machineries	The Contractor shall confirm the following : All Construction machineries and equipments used in construction shall strictly conform to CPCB noise standards. All equipments used in construction shall be provided with proper exhaust muffler. A proper routine and preventive maintenance procedure for the DG set should be planned, and the same shall be followed. Further, its record to be kept for observations to the Environmental Specialist of PIU & PMU during the inspection. Acoustic enclosure/ room should be provided for D.G set for minimum 25dB (A) insertion loss or for meeting the ambient noise standards. The diesel generator sets shall be kept at approved site. It should be sufficient away the Construction site. The Noise monitoring shall be conducted as per schedule by an approved monitoring agency under consultation with Environmental Specialist of PIU/PMU. The result of noise level should be displayed on a board at project site.
C5	**Safety (Site Safety & Workers Safety)**	
C5.1	Site Safety/ Workers Safety & PPEs Material handling & Painting etc.	The Contractor should demarcate the construction zone. And the barricaded should be approved by Environmental Specialist of PIU & PMU. **Barricades include the use of followings :** ➢ Channeling devices as barrier by use of Bamboo poles / Green-nets/ corrugated galvanised iron (G. I. Sheets). ➢ Caution Tape/ Signs/ Safety Cones/Barricades; The Contractor should ensure that the barricading items should be approved and it may be improved as per need & requirements directed by Environmental Specialist of PIU/PMU before fixing it at construction site to minimize inconvenience to the road –users. The Contractor shall have designated area for material storage yards as to keep the construction materials (steel, aggregate, sand & cement etc), reinforcement-yards for hand-tool usage, scrap-yards, oil & grease storage-yards, diesel storage for clear access, safe movement and hazard free work sites. They shall have fire – extinguisher at construction camp to minimize any fire hazards.

Sl. No	Activities	Management Measure
		Workers Safety/ PPEs. The Contractor must ensure that during construction all relevant provisions of the Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act 1996 are adhered to. The Contractor will comply with all precautions as required for ensuring safety of workmen as per country's labour regulations and International Labour Organization (ILO) Convention No. 62 as far as those are applicable to this contract. All measures shall be taken by the Contractor to ensure safety & health of workers. In this provisions the Contractor shall ensure: ➢ Protective footwear, hamlets, safety jacket to all workers engaged in re-enforcement / cutting of iron & steel, asphalts works during the road construction works etc. ➢ All the welders should have protective eye-shields engaged in welding work. ➢ The Contractor shall comply with all regulations for the safety regarding centring in formwork, shuttering, availability of safe ladders, working platforms, gangway, stairwells and safe means of entry and egress for risk free site. ➢ The workers of electrical activities should be provided with insulating (rubber) gloves with leather protectors, safety shoes, insulating sleeves and flame-resistant (FR) clothing. **Labour below the age of 14 years** is strictly prohibited for any work. **'The Construction Safety Plan'** to be prepared by the Contractor during mobilization, the same should be furnished to the Environmental Specialist of PIU/PMU for approval & final acceptance. The Contractor shall fulfil the requirements to enforce compliances for risk free site with zero tolerance.
C5.2	Tool Box Meetings	**Tool box** meeting shall be conducted at work site every alternate day in order to ensure Personal protective equipment (PPEs), risks free site and safety culture at workplace during the construction. The Contractor shall fix a place of **Assembly Points** for Toolbox Talk. The meeting should involve groups of workers who work together and face same sort of injury risks at work site.
C5.3	Risk from Electrical Equipment(s)	The Contractor shall take all required precautions to prevent danger from electrical equipments and ensure the followings: All electrical works as like welding, cutting, installation, operation, maintenance and repair works should be performed at designated place approved by the Environmental Specialist of PIU/PMU. Any electrical wire & cable never be kept haphazard as to cause danger or inconvenience to any person or the public at work place. Avoid the use of worn, damaged or poorly spliced cables, welding gun cables or torch cables. Make sure all connections are tight, clean and insulated. Any electrical works in wet working environment should be avoided. Molded Circuit Breakers **(MCB)** to be used as a switch and for over current protection. The extension cords and any such wire being used to be kept away from heat, oil & chemicals, sharp edges and must not be

Sl. No	Activities	Management Measure
		on the path of workers at workplace to avoid any electric hazards. The Contractor shall keep record of **Electrical Safety Checklists** at work site for the observation of Environmental specialist of PIU/PMU as and when they asked. All machines to be used in the construction shall conform to the relevant Indian Standards (IS) codes, and shall be free from patent defect which should be kept in good working order. It shall be regularly inspected and properly maintained as per IS provisions to the satisfaction of Environmental Specialist of PIU/PMU.
C5.4	First Aid	The contractor shall have a readily available first-aid box with availability of sterilized dressing materials, antiseptic and medicine at the work place as per the Factories Rules. The Contractor shall ensure agreements with nearest hospital with ambulance facilities for medical treatments to workers in case of emergency on any unforeseen incidents at work site. The Contractor shall ensure a training of Cardio-Pulmonary Resuscitation (CPR) to a Safety Officer for timely first-aid to the victim on the breathing and heartbeat problems.
C5.5	Storage of flammable liquid, Gas Cylinder, diesel & petrol and POLs	The Contractor shall fix a define place for storage of flammable liquid, gas cylinder, diesel & petrol and POLs in well ventilated areas. The collection, disposal and place for storage of flammable materials should be duly approved by the Environmental Specialist of PIU/PMU for the safe use as part of management plan.
C6	**Labour Camp Management**	
C6.1	Labour Camps & minimum basic facilities	For the dwelling of Labour Camps and basic minimum facilities, sanitation, health and hygiene, the Contractor shall ensure followings : **1. Site general requirements:** a) Levelled ground, drainage, paved, plinth height, soak –pits & septic tanks. b) Dumping ground for garbage or other refuse, and fencing/ security at camp. **2. Minimum Basic facilities at Temporary Labour Camps** a) 6 sq.mts minimum space per person, b) a separate room for family workers, c) Paving of ground, d) Waste disposal, e) Drinking water, and storage tank f) Washing & bathing place for female separately g) Toilet facilities for male & female separately and marked in hindi and in local language. h) Gas cylinder for Cooking facilities,

Sl. No	Activities	Management Measure
		i) Lighting at camps j) Beds & Cots k) Medical & first aid-facilities,
C6.2	Potable Water	The Contractor shall also ensure the following: a) Supply of sufficient quantity of Potable Water (as per BIS) in every workplace/labour camp. b) If any water storage tank shall be kept as such that the bottom of tank is at least 1.0 m above the ground level. Analysis of water shall be done at six month as per parameters prescribed in IS 10500-2012 for the drinking water and IS 2296 for surface water at irrigation canal.
C6.3	Sanitation and drainage System	The contractor shall ensure that The drainage system are designed, built and operated in such a fashion that no health hazards and pollution problems. Adequate water supply in toilets provided with flush facilities. The cleaning of toilets by disinfectant be made every day for sanitation & hygiene. Night soil is to be disposed of by putting layer of it at the bottom of a permanent tank prepared for the purpose and covered with 15 cm layer of waste or refuse and then covered with 30cm layer of earth for a fortnight. Workers shall not be allowed to defecate in the open field. Proper toilets fitted with septic tank and with required hand washing facility will be provided by the Contractor at the labour camp. Waste water generated from the sanitary facilities of labour camp shall be disposed in safe manner in consultation with municipal or discharge in a septic / soak pits. The medical health check-up shall be provided to workers at work place during entire project cycle.
C6.4	Waste Disposal	The contractor shall provide garbage-bins which regularly disposed off hygienically as per **Solid Waste Management Plan** approved by the Environmental Specialist of PIU/PMU.
C6.5	Environmental Monitoring and Reporting	The contractor will carry out environmental monitoring for ambient air quality, water and noise levels by engaging NABL approved laboratory on six monthly intervals. The reports will be furnished to the PIU/ PMU for the observations. The Contractor will submit Monthly Status Report on EMP Compliance covering all environmental aspects as mentioned above. This includes, but not limited to the following: ✓ Deployment of the Environment and Safety Officer. ✓ Methodology and plan for EMP implementation (linked with work program). ✓ Statutory / regulatory clearances and permissions. ✓ Material Sources. ✓ Construction camp and Labour Camp Management. ✓ Plant Site Management. ✓ Waste Management (Collection , Disposal).

Sl. No	Activities	Management Measure
		✓ Waste Water Management. ✓ Water used for construction (including the sources). ✓ Traffic Management and Safety Measures (including the Management Plan). ✓ Workers Safety Measures. ✓ Access provision to adjoining properties during construction. ✓ Information dissemination to public. ✓ Management of grievances, First Aid and Emergency response arrangements. ✓ Management of impact on utilities and services (temporary / during construction). ✓ Pollution Control and Management. ✓ Clean up and restoration of work sites.
C7	**Contractor Demobilization**	
C7.1	Cleanup Operations, Restoration and Rehabilitation	The Contractor shall prepare site restoration plans prior to the completion of project for the approval to Environmental Specialist of PIU/PMU. The clean-up and restoration should be implemented by the Contractor prior to demobilization. The Contractor shall clear all temporary structures, dispose all garbage, night soils and POL (Petroleum, Oil and Lubricants) wastes as per Comprehensive Waste Management Plan approved by Environmental Specialist of PIU/PMU. All disposal pits or trenches should be filled -up and effectively sealed off. All facilities at construction sites including construction & labour camps, material storage yards, D.G Sets, and any other area used/affected due to the construction shall be left clean and tidy at the Contractor's costs to the entire satisfaction of Environmental Specialist of PIU/PMU.
C7.2	Liabilities	Any liability arising out of Contractor agreements with the land owners / Srinagar Municipal Corporation / local people (including those related to temporary use of land and disposal of debris) should be got it settled and certified before the closure of work by the Contractor.

CHAPTER – 6
ENVIRONMENTAL MONITORING PROGRAMME

6.1 Introduction

An effective monitoring program is necessary to maintain the environmental quality during the construction of **Halmulla Punchpora to Kralkut Road** proposed for up-gradation in Bijbahara sub –division of Anantnag district. The Monitoring Plan recommends that the work to be carried-out following sound environmental management practices so as minimal loss to environment. Monitoring is categorized into out-put monitoring and out-come monitoring. The output monitoring is programmatic and addresses EMP implementation resulting in implementation report. The outcome monitoring focuses on changes in ambient conditions, ecological functions, and biological communities resulting in environmental status report. This Environmental Monitoring Plan mainly focuses on out-come monitoring.

6.2 Performance Indicators (PIs)

The physical, biological and social components identified for the evolution of environment quality is indicated as Performance Indicators (PIs) to which is listed below.

- *Air quality Monitoring*
- *Water quality Monitoring*
- *Noise level Monitoring*
- *Afforestation Programme*
- *Accidental Frequency*
- *Sanitation and Wastes disposal etc.*

6.3 Ambient Air Quality Monitoring

Air quality should be monitoring during construction of sub-project road. The ambient air quality parameters recommended for sampling are $PM_{2.5}$, $PM_{10,}$ SPM, NOx and SO_X. The monitoring shall be made near the settlements. Air quality should also be monitored near material storage yards say as aggregates, sands, cements etc and the construction site. It should be monitored on six monthly intervals.

6.4 Water Quality Monitoring

Water quality should be monitored by recognised agency on six monthly intervals. The monitoring will be carried-out for surface water at irrigation canal and for drinking water source at the Construction / labour camps under the standard parameters for Surface Water Quality Standards as per IS: 2296 and drinking water quality standards as per IS: 10500,2012.

6.5 Noise Level Monitoring

The measurement of noise level would be carried-out at settlement area in accordance with Ambient Noise Standards formulated by the Ministry of Environment

and Forests (MoEF). The noise level would be monitored on twenty-four hourly sampling. Noise should be recorded at “A” weighted frequency using a slow time response mode of the measuring instrument.

6.6 Afforestation Programme

In total length of sub-project Halmulla Punchpora to Kralkut Road 95 trees required to be felled –down for the upgrading of road. The girth is under range from 90 to 140 cm. The PIU- JTFRP should plan for plantation of minimum 190 trees (twice the number of felling) on the available land along project road.

6.7 Accident Frequency

Issues with regard to the lapses of safety in civil work construction has been taken into considerations. The Contractor should ensure safety arrangement at all work site. The locations of work site at deep cutting, construction at road work activities, diversion (if any) the safety arrangements should be approved by the concern safety engineer of PIU / PMU.

Furthermore, periodical site monitoring is required to be carried –out by the PIU, JTFRP for surveillance & maintenance of road safety during the construction. The brief description of measures has been given below in **table: 6.1**

Table : 6.1 : Safety Arrangements

Sl. No.	Locations of Work Site	Site Safety Measures
1	**Construction Sites**	Caution boards, Ribbon band, delineator
2	**Deep Cutting**	The construction zone should be barricaded with G.I Sheet or arrangement to be made as per plan approved by the PIU / PMU. *[Provide Safety Sign Boards and Safety Barriers marked with reflective tapes]*
3	**Temporary Diversion (if any)**	Diversion Board, Barricading [*Provide **‘Diversion Ahead’** boards at 50m, 100m and 150m ahead of diversions with reflective tape for illumination at night at the all diverted locations]*
4	**Safety for the Workers**	Helmets, Safety-Shoes, Goggles, Dusk mask

6.8 Environmental Monitoring Programme

The monitoring of various performance indicators with regard to air, water and noise is required for evaluation of pollution level during the construction. Therefore detail monitoring programme with respect to specific parameters, location, frequency and Institutional responsibilities for implementation are given below in table no : 6.2

TABLE : 6.2 - ENVIRONMENTAL MONITORING PROGRAMME

Sl. No	Environment	Environmental Monitoring Programme			Institutional Responsibility
	Component	Parameters	Locations	Frequency	Implementation
DURING PROJECT CONSTRUCTION PHASE					
1	Air Quality	PM_{10}, $PM_{2.5}$, SOx, NOx, CO	Two suitable locations. i.e. Construction site, and Residential area.	Six month interval and two time in a year. sampling of CO at 8hr.	Contractor
2	Water Quality	As per relevant IS: 2296 for surface water; and IS : 10500 for ground water.	Sampling at 2 suitable locations one from irrigation canal (Awantipura Irrigation Canal) and second is ground water at construction / labour camps.	Six month interval and two time in a year.	Contractor
3	Noise Level	Noise levels on dB (A) scale Leq dB(A) Day /Night. Days : Max.& Min Night : Max. & Min.	Sampling at 2-suitable locations one at settlements and second sampling at work site of road activities.	Six month interval and two time in a year.	Contractor
4	Compensatory Afforestation	Green Cover	Open available land along either side of road	Comparison should be done for every six months	Environmental Specialist of PIU/PMU

6.9 Institutional Arrangements

The PIU(R&B) /PMU JTFRP and the Contractor shall be responsible for ensuring environmental management mitigation measures for this project. The contractor is responsible for EMP implantation which will be part of bid documents & the contract agreement. Institutional arrangement and responsibilities for proposed project road has been given below in table no : 6.3

TABLE : 6.3 - INSTITUTIONAL ARRANGEMENT & RESPONSIBILITIES

Implementing/ Monitoring Agency	Designation	Responsibilities
JTFRP; PMU and the PIU , (R&B)	The CEO at PMU level and the Project Director at PIU level	✓ Overall responsible for EMP implementation. ✓ Reporting to various stakeholders (World Bank) on status of EMP implementation. ✓ Review of the issues and

		corrective measures attended by the Contractors. ✓ Joint Inspection along with environmental expert from PMU and TAQAC to address environmental concern and direction to the Contractor for effective EMP implementation. ✓ Reviewing the EMP compliance report, periodically for suitable direction to the Contractor on serious environmental concern
	Environmental Expert of PIU	✓ Periodical monitoring to work site in order to ensure effective implementation of environmental management plan. ✓ To conduct orientation & training programme for awareness of environmental concern among staffs and workers at work site. ✓ Ensuring corrective measures on lapses of environmental & safety concern on the observations of audit finding notified by the TAQAC. ✓ To prepare monthly environmental compliance reports and other reports in specific formats approved by the World Bank. ✓ Periodical co-ordination with the environmental expert of TAQAC.
Contractor	Environment & Safety Officer	✓ Responsible for ensuring implementation of mitigation measures as per provisions made in the EMP document. ✓ To ensure all permits / NOC/ labour license/ and other statutory requirements require for the project as the Contractor did not contravene the law & acts of GoI made for environmental protection. ✓ To prepare environmental compliance report and submission to the PIU/PMU as per schedule. ✓ To conduct Tool Box talk to ensure personal safety for workers at work site. ✓ To attend meeting at PIU & PMU and to take corrective measures immediately on serious concern as per discussion in meeting. ✓ To conduct mock-drill as to ensure preparedness on emergency response at work site for contractor's supervisors and workers along with sensitization on environmental & safety issues that may be arising during the construction stage of the road project. ✓ To carry-out environmental monitoring and control activities including pollution monitoring.

		✓ To conduct awareness campaign for all construction personnel, staffs and laboures on environmental issues, risks hazards and about HIV/AIDS. ✓ To prepare environmental compliance reports on issues and corrective measures in specified format provided by the PMU/PIU and to furnish other various report as per schedule.

6.10 Reporting Requirements

The contractor will follow the reporting system for environmental management measures and environmental management indicators. The Contractor will report the PIU on corrective measures and implementation status of mitigation measures as per the environmental management plan. The EMP compliance report will comprise with the photographic evidences (with date, time and geo-reference) for implemented mitigation measures in the monitoring reports.

The reporting requirements are stated below in table in **table no : 6.4**

TABLE NO : 6.4- REPORTING SYSTEM

Sl. No	Item	Stage	Contractor
			Implementation & Reporting to PIU/PMU
1.	Identification of disposal location for constructional wastes from road project building	Construction	One Time
2.	Monthly EMP Implementation Report	Construction	Monthly
3.	Pollution Monitoring	Construction	Six Monthly
4.	Cleaning and Restoration	On completion of construction of road project	One Time

The contractor will take all reasonable steps to protect the environment on & off the project site and to avoid, minimize and mitigate impacts due to the project work activities create pollution to environment and other causes as a consequence of methods of operations.

6.11 Non conformity of EMP and Protection to Environment

The Contractor shall implement necessary mitigation measures as given in the EMP for which they are responsible. Any lapses in implementing the same will attract the damage clause as detailed below:

- Any complaints of public, within the scope of the Contractor formally registered with the PIU and communicated to the Contractor, which is not

properly addressed within the time period intimated by the PIU shall be treated as a major lapse.

- ❖ Non-conformity to any of the mitigation measures stipulated in the EMP Report (other than stated above) shall be considered as a minor lapse.
- ❖ On observing any lapses, PIU shall issue a notice to the Contractor to rectify the same.
- ❖ Any minor lapse for which notice was issued and not rectified after the first and second reminders given after ten days from original notice. That minor lapse shall be treated as a major lapse from the date of issuing the second reminder.
- ❖ If a major lapse is not rectified upon the receiving the notice of PIU shall invoke reduction in the subsequent interim payment certificate.
- ❖ For major lapses 10% of the interim payment certificate will be withheld subject to a maximum limit of about 2.0 % of the contract value.
- ❖ If the lapse is not rectified within one month after withholding the payment the amount withheld shall be forfeited

6.12 Environmental Management Budget

There are some environmental aspects which addressed as part of good management practices are accounted in the Engineering Cost. The environmental management budget for the various environmental management measures proposed in the EMP is detailed in Table - 6.5.

TABLE : 6.5 - ENVIRONMENTAL MANAGEMENT BUDGET

Sl. No.	Component	Stage	Item	Unit	Unit Cost	Quantity	Total Cost
1	**Monitoring Cost**						
	Air	Construction Phase	Two suitable locations. i.e. Construction site, and Residential area.	No	10000/-	2-Points, 24 hr sample, once every six month for one year. (4 Samples)	40000/-
	Water	Construction Phase	Sampling at 2 suitable locations one at irrigation canal (Amberpora Irrigation Canal) and second is ground water at construction / labour camps.	No	10000/-	2-Points, , once every six month for one year. (4 Samples)	40000/-
	Noise	Construction Phase	Sampling at 2-suitable locations one at settlements and second sampling at work site of road, activities.	No	5000/-	2-Points, As and when necessary for one year. (4 samples)	20000/-
	(A) Monitoring Cost						**1,00,000/-**

Sl. No.	Component	Stage	Item	Unit	Unit Cost	Quantity	Total Cost
2	**Mitigation and Enhancement Cost**						
	Green Belt	Trees (In project Implementation Stage)	Open land closely associated with project site	No	1200/-	190 nos	2,28,000/-
	(B)Mitigation and Enhancement Cost						**2,28,000/-**
3	**(C)Environmental Management** ; During Construction.						
3.1	Project Information Board	MS angle 50 x 50 x 6 mm; and height 1.5 meter);, English and Urdu written in White paint with blue background; size: 2 meters X 1.5 meters		Nos	7000/-	2 nos ;	14000/-
3.2	Mobile toilet	2000 litre overhead tank; and bottom tank,500 litre capacity		Nos	20,500/	2nos	41,000/-
3.3	mobile drinking water	300 liters capacity,		Nos	10200/-	2 nos	20,400/
3.4	First-aid	in the camp, worksites		Nos	13,000/-	2 Nos	26000/-
3.5	Sign – Boards	Cautionary/warning signage, including diversion boards as per IRC SP:55, 2014		Nos	6500/-	3 nos	19,500/
3.6	EMP Implementation	EHS Officer		Nos	40,000/	12 month	4,80,000/
3.7	Utilities Services	Shifting of Hand –Pumps		Nos	80,000/-	4 nos	3,20,000/
(C) **Environmental Management**							**9,20,900/-**
Total Cost (A+B+C)							**12,48,900/-**
Contingency @ 5 %							**62,445/-**
Total Budget Cost						**13,11,345/-**	

CHAPTER – 7
STAKEHOLDERS CONSULTATION

7. Introduction

The public consultation process with various stakeholders has been made a part of this project from the very initial stage. The aim is to understand their viewpoint and concerns, suggestions, etc. early on in the project. This process would help in making the project people oriented and accommodate stakeholders' aspirations and expectations at the very initial stage of the project. Such process would not only make it people's oriented but will have more positive impact by the way of people's cooperation and timely completion.

7.1 Identification of Stakeholders

The public participation process included identifying interested and affected parties (stakeholders); informing and providing the stakeholders with sufficient background and technical information regarding the proposed development creating opportunities and mechanisms whereby they can participate and raise their viewpoints (i.e issues, comments and concerns) with regard to the proposed development of road, receiving the feedback of stakeholders on process findings and recommendations and ensuring compliance to process requirements with regards to the environmental and related legislation.

This sub-project is essentially designed to benefit the community through the provisions of up-grading existing village road. It does not involve any elements, which could have an adverse impact on the community. There is no deprivation of any sort for the residents or displacement of any groups. However in compliance with the World Bank's guidelines, focused public consultations were undertaken during the site visit in the sub-project area. Residents of the area were informed about the proposed sub-project and their views were obtained. People of area raised their concerns about the problems being faced due to lack of good transport facilities for approach to local market which link the internal road with the National Highways. Therefore, local communities welcomed the up gradation of proposed village road and desired an early completion of the project.

7.2 Objectives of Consultations

The process of public participation / consultations was taken up as an integral part of the sub-project in accordance with World Bank guidelines to fulfil the following objectives :

- To educate the general public specially potentially impacted or benefited communities / individuals and stakeholders about the proposed sub-project activities.
- To familiarize the people with technical and environmental issues of sub - project for better understanding.
- Dissemination of information to local communities through the public consultation by briefing the project including its benefits.

- Informal by group consultations in the sub-project vicinity at field level.

- The environmental concerns and suggestions made by the participants were listed out, discussed and suggestions were accordingly incorporated in the EMP.

The different procedures of consultation viz., Interviews, public meetings, group discussions etc. with all communities were conducted during the project preparation. Accordingly, the questionnaire was designed and social & environmental information were collected. Apart from this a series of public consultation meetings were conducted during the sub-project preparation. The various forms of public consultations (consultation through adhoc discussions on site) have been used to discuss the sub-project and involve the community in planning the design and mitigation measures. The signatures of participants in the public consultation are given in **Annexure-III**.

7.3 Issues Discussed during Public Consultation

The issues discussed during public consultation for the proposed road project are given below:

- About proposed sub-project, source of assistance and its implementation/execution etc.
- Information on perceived benefits from the proposed road development including travel time, marketing of agriculture produce, easy transport, linking facilities of village road with the National Highways, noise and air pollution.
- Information of the impacts from the proposed road project during construction stage in terms of inconvenience to public, air and noise pollution etc.
- Whether construction activities will cause any type of health hazard or not?
- Discussions among public for sharing of information related to the proposed road project, environment policy of World Bank, direct and indirect impacts of improvement/construction work on environment.
- Any loss of land/structure/business or other community property due to proposed road project.
- Any damage to historical or cultural monuments due to proposed road project?
- Any impact on trees and measures to be taken for saving scheduled trees (Chinar, Mulberry, Walnut) in close vicinity of the proposed site.
- Any possible problems to be faced by the local people in their daily activities due to the proposed road project construction work.

7.4 Feedback Received in Public Consultation

In the consultation process on proposed sub-project, local people, students, business, farmers, expressed their keen interest. People in general were very enthusiastic about the benefits of the sub-project. The major problems faced by concerned people are related to non-availability of good connectivity of village with National Highways. The crops grown in village are difficult to send in market from the surrounding villages due to poor road conditions as well damage in flood. Therefore, the people are ready to extend all supports during execution of sub-project. The few key points and suggestions of people consulted are enumerated below:

- Constructional materials should not be stored to occupy road stretches and should be dumped as per daily requirement.

- Construction material should be transported during day times only.
- Noise generating activities should be scheduled only during working hours (Day time).
- Proper dust suppression measures by way of sprinkling water put in place during the construction.
- Construction zone must be properly barricaded to avoid interference of project activity with the day normal traffic flows and other business works.
- Proper and timely disposal of construction wastes shall be ensured.
- Local people must be preferred for employment in the project activity.
- JKPCC shall ensure that the requisite environmental management measures shall be taken as per EMP and the public consultation shall be made at regular basis during all project cycle. Few photographs taken during the pubic consultation are shown below.

PHOTOGRAPHS OF PUBLIC CONSULTATION
PROPOSED ROAD PROJECT (HALMULLA PUNCHPORA TO KRALKUT ROAD)

ANNEXURE
SCREENING REPORT

Annexure : I

Environment and Social Screening Form

Part A: General Information

1. Name of the sub-project	Construction/up-gradation of Halmulla-Punchpora to Kralkut road in district Anantnag - 3.348 km.	
2. Type of proposed activity (tick the applicable option and provide details)		
▪ Road	√	
▪ Bridge		-
▪ Fire Station		-
▪ Hospital/Health Facility		-
▪ Educational Institute		-
▪ Building for Livelihoods		-
▪ Flood Infrastructure Related		-
▪ Other Public Building		-.
▪ Any Other (Please Specify)		-
3. Location of the proposed sub-project		
▪ Name of the Region	Kashmir (J&K State)	
▪ Name of the District	Anantnag	
▪ Name of the Block	Bijbehara	
▪ Name of the Settlement	Halmulla-Punchpora and Kralkut	
▪ Latitude	Start Halmulla= **33^{0}50$'$13.06"** End Kralkot = **33^{0}50$'$45.26"**	
▪ Longitude	Start Halmulla= **75^{0}03$'$54.77"** End Kralkot = **75^{0}05$'$28.19"**	
4a. Proposed Nature of Work (tick the applicable options)		
▪ Minor Repairs	-	

▪ Major Repairs/Rehabilitation	-
▪ Upgrading/Major Improvement	√
▪ Expansion of the facility	-
▪ New Construction	-
▪ Any Other	-
4b. Size of the sub-project (approx. area in sq. mt/hac or length in mt/km, as relevant)	3348 m
5. Land Requirement (in hac./sq.mt.)	
▪ Total Requirement	Nil
▪ Private Land	Nil
▪ Govt. Land	Nil
▪ Forest Land	Nil
6. Implementing Agency Details (sub-project level)	
▪ Name of the Department/Agency	J&K Projects Construction Corporation Ltd. (JKPCC)
▪ Name of the contact person	Er Gh Hussain Dar
▪ Designation	Deputy General Manager (DGM)
▪ Contact Number	+91-9419013160
▪ E-mail Id	dgm5anantnag@jkpcc.com
7. Screening Exercise Details	
▪ Date on which it was carried out	15/11/2017, 16/11/2017 & 09/062018
▪ Name of the Person	Sakib Qadri
▪ Contact Number	9469240260
▪ E-mail Id	sakibqadri@gmail.com

Part B (1): Environment Screening

Question	Yes	No	Details
1. Is the sub-project located in whole or part within 1 km of the following environmentally sensitive areas?			
a. Biosphere Reserve		No	
b. National Park		No	
c. Wildlife/Bird Sanctuary		No	
d. Wildlife/Bird Reserve		No	
e. Important Bird Areas (IBAs)		No	
f. Habitat of migratory birds (outside protected areas)	No		
g. Breeding/Foraging/Migratory route of Wild Animals (outside protected areas)		No	
h. Area with threatened/rare/ endangered fauna (outside protected areas)		No	
i. Area with threatened/rare/ endangered flora (outside protected areas)		No	
j. Reserved/Protected Forest		No	
k. Other category of Forest		No	
l. Wetland	No		Marshy/wasteland exists between RD700 to RD900
m. Natural Lakes	No		

n. Rivers/Streams/		Yes	Water stream in name of Awantipora Irrigation Canal passes about 400 m length along the sub-project road.
Question	**Yes**	**No**	**Details**
o. Swamps/Mudflats		No	
p. Zoological Park		No	
q. Botanical Garden		No	
4. Is the sub-project located in whole or part within 500 mts. of any of the following sensitive features?			
a. World Heritage Sites		No	
b. Archaeological monuments/ sites (under ASI's central/state list)		No	
c. Historic Places/Monuments/ Buildings/Other Assets (not listed under ASI list but considered locally important or carry a sentimental value)		No	
d. Religious Places (regionally or locally important)	Yes		One Mosques exist at right side of road at Km 2.100 km.
e. Reservoirs/Dams		No	
f. Canals		No	
g. Public Water Supply Areas from Rivers/Surface Water Bodies/Ground Water Sources		No	
4. What is the High Flood Level in the sub-project area?	The HFL at most of the places along the sub-project road was 1m above ground level in September, 2014 floods.		

5. Is any scheduled/protected tree like Chinar, Mulberry or Deodar likely to be affected/ cut due to the project?	Yes		38 trees Popular, 20 trees Brenn, and 37 trees Willow; Total felling of trees = **95 trees.**
6. Is the sub-project located in a landslide/heavy erosion prone area or affected by such a problem?		No	
7. Is sub-project located in an area that faces water paucity or water quality issues?		No	

Part B (2) : Result/Outcome of Environmental Screening Exercise		
1.	Environment Impact Assessment	No
2.	Environment Clearance Required	No
3.	Forest land Clearance/Diversion	No
4.	Tree Cutting Permission Required	Yes
5.	ASI (Centre/State) Permission Required	No
6.	Permission from ULB/Local Body/Department Required	No
7	Any other clearance/permission required	As the project road up-gradation is proposed 3.348 km only. Therefore, the Contractor shall plan for construction materials from the local authorized agency for aggregate, WMM and the asphalt. Only the NOC for water to be used at construction from surface water or extraction of ground water (if any), labours license, certificate of employing labours, Insurance, PUC's and other fitness certificates of equipments etc. are required under the act & rules and by-laws of GoI and J&K. The details are given in EIA report.

Part C (1): Social Screening

1. Does the sub-project activity require acquisition of land?			
Yes		No	✓
Give the following details:	Private Land (sqmts/hac.)		Nil
	Govt. Land (sqmts/hac.)		Nil
	Forest Land (sqmts/hac.)		Nil
2. Does the proposed sub-project activity result in demolition/removal of existing structures?			
Yes		No	✓
If so, give the following details:			
Number of public structures/buildings		Nil	
Number of common property resources (such as religious/cultural/drinking water/wells/etc.)		Nil	
Number of private structures (located on private or public land)		Nil	
3. Does the proposed project activity result in loss of crops/trees?			
Yes		No	✓
4. Does the proposed project activity result in loss of direct livelihood/employment?			
Yes		No	✓
5. Does the proposed activity result in loss of community forest/pastures on which nearby residents/local population are dependent?			
Yes		No	

			✓
If yes, give the details of the extent of area to be lost (in acres/hac)			
6. Does the proposed project activity affect scheduled tribe/caste communities?			
Yes		No	✓

Part C (2): Result/Outcome of Social Screening Exercise

S. No.	Result/Outcome	Outcome
1.	Answer to all the questions is 'No' and only forest land is being acquired	No SIA/RAP required
2.	Answer to any question is 'Yes' and the sub-project does not affect more than 200 people (i.e. either complete or partial loss of assets and/or livelihood)	Abbreviated RAP is required
3.	Answer to any question is 'Yes' and the sub-project affects more than 200 people (i.e. either complete or partial loss of assets and/or livelihood)	No SIA/RAP required

Government of Jammu & Kashmir

OFFICE OF THE DEPUTY COMMISSIONER
DISTRICT COLLECTOR ANANTNAG

Deputy General Manager JKPCC,
Unit-5th Anantnag

No: LA/PWD/Ang/ 587-88
Dated:- 09 /08/2018

Subject: - Status regarding compensation of Halmullah-Panchpora - Kralkat road of Estate Marhama, Tehsil Bijbehara.

Sir,

Kindly find enclosed a letter received from Tehsildar Bijbehara vide No. 253/OQ/Bij dated 08.08.2018 which indicates that no additional land is involved in the above subject road if a road width of 18 feet already existing is taken up for upgradation.

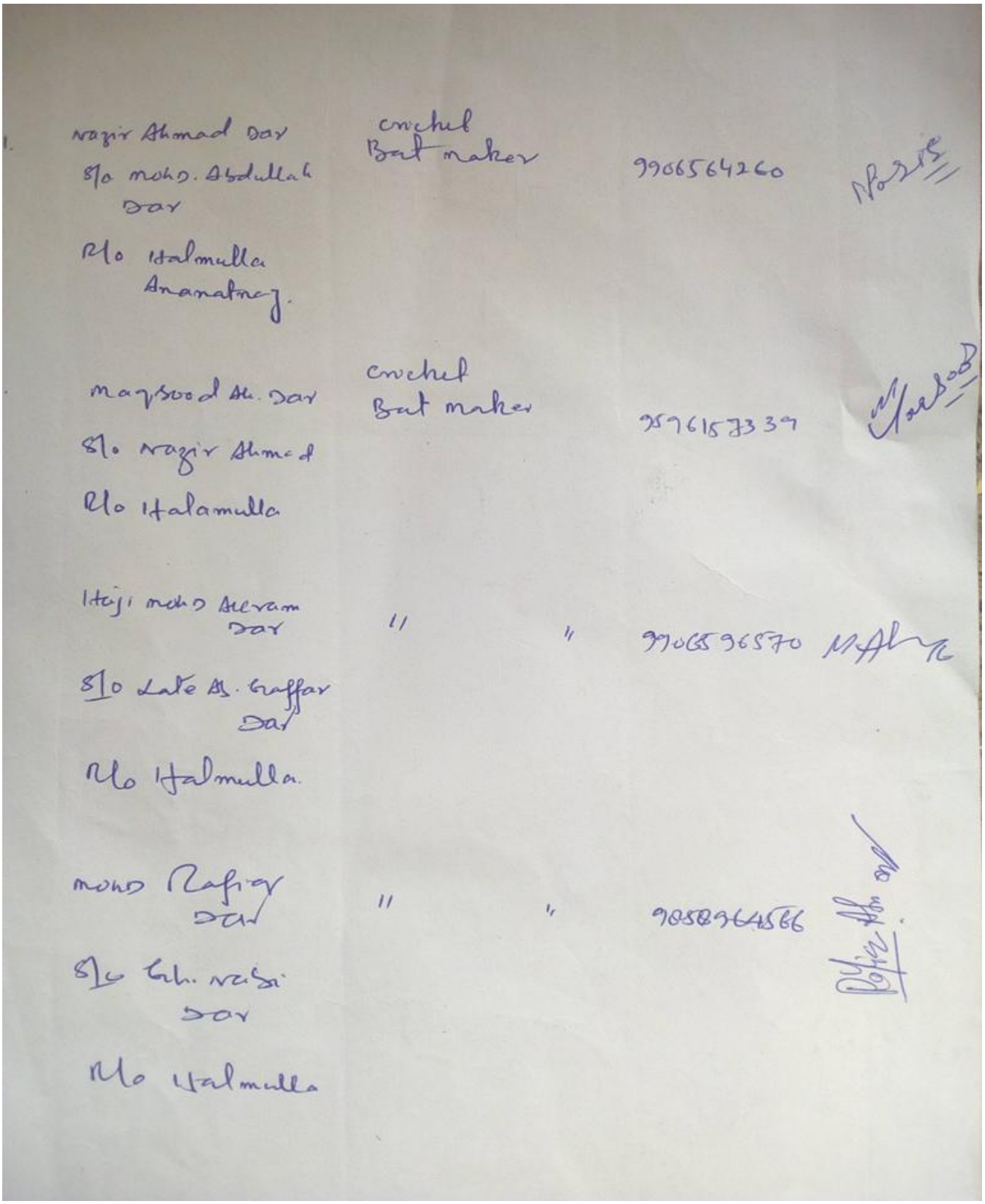
The report submitted by the Tehsildar is enclosed herewith for necessary action as per rules.

Yours faithfully,

Assistant Commissioner Revenue /
Collector Land Acquisition PWD
Anantnag

Encl. (02
1. Report of Tehsildar
2. Shajra Aksi - Shajra duly certified by Tehsildar Bijbehara.

Copy to the:-
1. Tehsildar Bijbehara for information.



1. Nazir Ahmad Dar S/o Mohd. Abdullah Dar R/o Halmulla Ananatnag.	Cricket Bat maker	9906564260	
Maqsood Ah. Dar S/o Nazir Ahmad R/o Halamulla	Cricket Bat maker	9761573397	
Haji Mohd Akram Dar S/o Late Ab. Gaffar Dar R/o Halmulla.	"	" 9906596570	
Mohd Rafiq Dar S/o Gh. Nabi Dar R/o Halmulla	"	" 9858964586	

ANNEXURE – III

PHOTOGRAPHS OF SUB-PROJECT SITE

START POINT HALMULLA ROAD LINK TO NATIONAL HIGHWAY

PADDY FIELD ALONG THE SIDE OF PROPOSED VILLAGE ROAD

DISTRESSED CULVERT IN ROAD ALIGNMENT

IRRIGATION CANAL ALONG PROPOSED ROAD

HABITATION ALONG SUBPROJECT ROAD

MOSQUE ALONG PROPOSED ROAD SUBPROJECT

AWANTIPORA CANAL ALONG PROPOSED ROAD

AWANTIPORA CANAL ALONG PROPOSED ROAD

NARROW ROAD SECTION CONNECTING APPLE ORCHARDS