

Environmental Issues

16.1 Alignment

The characteristic of the project alignment are as given below:

<u>SN</u>	<u>Environmental issues</u>	<u>Explanation *</u>
<u>1.</u>	<u>Terrain along the road</u>	Plain
<u>2.</u>	<u>Land use both side of road</u>	Mostly agricultural and partially built up area
<u>3.</u>	<u>River or Natural Drain (if yes, please give Chainage and name)</u>	No river or natural drain is crossed by Project road.
<u>4.</u>	<u>Any pond along the road</u>	No pond is located along the road
<u>5.</u>	<u>Flooding along the road</u>	No flooding along the road

* Should be mentioned as per road condition.

16.2 Environmental Sensitive Area

There no environmental sensitive area like wildlife sanctuary, natural park etc along the road within 01 km from road.

There is no reserved forest, protected forest or any other forest along the project road or within 0.5 km from the project road.

16.3 Construction Camp

There is no place available along project road. The construction camps will be established away from forest area, water body and 500 m populated area. The minimum facilities such as water supply, sanitation, storm water drainage, solid waste management, etc, will be provided during the construction period of the project. After work completion, camp site will be restored in its original condition before handover to owner.

16.4 Permit / Clearance required prior to commencing of civil work

- For borrowing of earth for the project road, environmental clearance will be obtained by the Contractor from District Level Environmental Impact Assessment Authority (DEIAA) /District Level Expert Appraisal Committee (DEAC).
- If Contractor decides to open new stone quarry, environmental clearance will be obtained from District Level Environmental Impact Assessment Authority (DEIAA) /District Level Expert Appraisal Committee (DEAC) or other competent authority as applicable.
- Contractor will procure aggregate, only from approved quarry having valid environmental clearance.
- Consent to Establish (CTE) and Consent to Operate (CTO) - These will be obtained by the Contractor for installation and operation of Hot Mix Plant, WMM Plant, Batching Plant (as applicable) from MP Pollution Control Board.

16.5 Erosion Control

During survey, no erosion prone area has been observed along the road. At the time of construction activity, if any erosion prone area is observed or reported along the project road, erosion control measures will be adopted as per ESMF/ECOP. Turfing or stone pitching (as required) on the embankment slopes and earthen shoulders, rain cuts and sides of culvert will need to be implemented to prevent erosion of slopes by the contractor.

16.6 Drainage

As per design, hydrological survey and outcome of transect walk, cross drainage structures will be provided in the project road. The out fall of CD structures will not be on crop field to avoid crop damage. Irrigation pipe crossing will be provided as per local requirement.

The chainage wise locational details of culverts in the project road are given below:

Sn.	Chainage Wise Details	Type of CD Structure
1.		
2.		

In the settlement area along the project road, drains will be provided so that no accumulation of surface water on the road.

16.7 Use of Material

The effort will be made to use alternative construction material and technology

Cut back bitumen is not proposed in the project to avoid contamination with Kerosene. Bitumen emulsion, rapid setting and slow setting, is proposed for primer coat and tack coat.

“Environmental issues in the road shall be mitigated as per ESMF and ECoPs.”