Initial Environmental Examination (Draft)

August 2013

IND: Rural Connectivity Investment Program – Project II

Prepared by Madhya Pradesh Rural Road Development Agency, Government of India for the Asian Development Bank.

CURRENCY EQUIVALENTS

as of 16 August 2013

Currency unit	–	Indian rupee (Rs)
Rs 1.00	=	$ .01628
$1.00	=	Rs 61.4250

ABBREVIATIONS

ADB	–	Asian Development Bank
APO	–	Accident Prevention Officer
B.T.	–	Black Top
BGL	–	Below Ground Level
BIS	–	Bureau of Indian Standards
BOQ	–	Bill of Quantity
C.C.	–	Cement Concrete
CD	–	Cross-drainage
CGWA	–	Central Ground Water Authority
CGWB	–	Central Ground Water Board
Ch.	–	Chainage
COI	–	Corridor Of Impact
CPCB	–	Central Pollution Control Board
CTE	–	Consent to Establish
CTO	–	Consent to Operate
DG	–	Diesel Generating
DPR	–	Detailed Project Report
EARF	–	Environmental Assessment Review Framework
ECOP	–	Environmental Code of Practices
EIA	–	Environmental Impact Assessment
EMOP	–	Environmental Monitoring Plan
EMP	–	Environmental Management Plan
EO	–	Environmental Officer
FEO	–	Field Environmental Officer
GDP	–	Gross Domestic Product
GOI	–	Government of India
GSHAP	–	Global Seismic Hazard Assessment Program
HC	–	Hydrocarbon
HH	–	House Hold
IEE	–	Initial Environmental Assessment
IRC	–	Indian Road Congress
LHS	–	Left Hand Side
MCM	–	Million Cubic Meter
MFF	–	Multi-Tranche Financing Facility
MoEF	–	Ministry of Environment and Forests
MORD	–	Ministry of Rural Development
MOSRTH	–	Ministry of Road Transport & Highways
MPRRDA	–	Madhya Pradesh Rural Road Development Authority
NAAQS	–	National Ambient Air Quality Standards
NGO	–	Non-government organization
NOx	–	Nitrogen Oxides
NRRDA	–	National Rural Road Development Authority
NSDP	–	Net State Domestic Product

PIC	–	Project Implementation Consultant
PIU	–	Project Implementation Unit
PLF	–	Plant Load Factor
PM	–	Particulate Matters
PMGSY	–	Pradhan Mantri Gram Sadak Yojna
PPE	–	Personal Protective Equipment's
PPTA	–	Project Preparation Technical Assistance
PRI	–	Panchati Raj Institution (Village Level Adminstration Set-up)
RCIP	–	Rural Connectivity Investment Program
RHS	–	Right Hand Side
ROW	–	Right of way
RRS I	–	Loan 2018-IND: Rural Roads Sector I Project
RRS II	–	Loan 2248-IND: Rural Roads Sector II Investment Program
RSES	–	ADB's Environmental Safeguard Division
SBD	–	Standard Bidding Documents
SDP	–	State Domestic Product
SO_2	–	Sulphur Dioxide
SPCB	–	State Pollution Control Board
SPS	–	ADB's Safeguard Policy Statement, 2009
SRRDA	–	State Rural Road Development Authority
STDs	–	Sexually transmitted diseases
TDS	–	Total Dissolved Solids
TSC	–	Technical Support Consultants
UNESCO	–	United Nations Educational, Scientific and Cultural Organization
WBM	–	Water Bound Macadam

WEIGHTS AND MEASURES

ha	–	hectare
km	–	kilometer
M	–	meter
mi	–	mile

NOTE

In this report, "$" refers to US dollars.

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I. INTRODUCTION

A. Project Background

1. As one of the key features of the Government's poverty reduction agenda for the rural sector, the Government of India (GOI) is implementing a nationwide rural road investment program, Pradhan Mantri Gram Sadak Yojana (PMGSY). PMGSY aims to provide all-weather road connectivity to currently unserved habitations in India's rural areas, where 70% of the population live. The Government of India (GOI) launched "The Pradhan Mantri Gram Sadak Yojana (PMGSY)" in year 2000. The objective of PMGSY is to provide all-weather road connectivity to all rural habitations with a population of more than 500 persons in plains and and 250 persons in hill states. This program is being implemented through National Rural Road Development Authority (NRRDA) under Ministry of Rural Development (MORD) at central level and through State Rural Road Development Authority/Agencies (SRRDA) at state level.

2. The Rural Connectivity Investment Program (RCIP) is continuation of Rural Road Sector II Investment Program (RRS IIP) and is a multitranche financing facility (MFF) that will construct or upgrade to the all-weather standard about 9,000 km of rural roads connecting around 4,800 habitations in the states of Assam, Chhattisgarh, Orissa, Madhya Pradesh and West Bengal (RCIP states). The RCIP will also focus on improvement of institutional arrangements, business processes and associated capacity building. This will especially be done in relation with design, operation, safeguard, financial, road safety, and asset management matters. Investments in rural roads will improve connectivity, cut transport costs, and provide enabling infrastructure to areas currently with poor access to markets and urban towns, and thus contribute to growth and equity in the country's largest sector. Project 1 (Loan 2881) totaling $252 million is currently ongoing.

3. The Government is now planning to submit to ADB the second Periodic Finance Request (PFR) that includes the proposal for about 654.05 km of rural roads in the state of Madhya Pradesh. MPRRDA is the implementing agency (IA) for ADB-funded subprojects in the state. The preparatory works for the proposed second batch of roads have been completed for the state. As per the requirements of ADB, it is mandatory that the subprojects under the programme comply with ADB's environmental safeguards. The project as per classification of ADB has been categorized as 'Category B' project and therefore requires an Initial Environmental Examination (IEE). The initial environmental examination (IEE) for the first batch has been prepared by using environmental checklist. The report has been prepared by M/s Operations Research Group (P) Ltd., the Technical Support Consultants (TSC) appointed by National Rural Road Development Agency (NRRDA) under the ADB loan assistance.

B. Project Roads Identification and Location

4. PMGSY has prepared specific guidelines for the selection of roads under this programme. The key requirements is that any road will be eligible for construction or upgradation only if it is part of the Core Network[1] and satisfy the following environmental safeguards:

[1] Core Network is that minimal network of roads (routes) that is essential to provide access to essential social and economic services to all eligible habitations in the selected areas through at least single all-weather road connectivity. A core network comprises of through routes and link routes. Through routes are the ones, which collect traffic from several link roads or a long chain of habitations and lead it to marketing centres either directly or through the higher category roads i.e., the district roads or the state or national highways. Link routes are the roads connecting a single habitation or a group of habitations to through routes or district roads leading to market centres. Link routes generally

i. The selected road shall not disturb any cultural heritage designated by the Government or by international agencies, such as UNESCO, and shall avoid any monuments of cultural or historical importance;
ii. The selected road shall not pass through any designated wildlife sanctuaries, national parks, notified ecological sensitive areas or area of internationally significance (e.g., protected wetland designated by the Wetland Convention); and
iii. The subprojects shall only involve activities that follow Government of India laws and regulations and meets funding agency safeguard policies.

5. The MPRRDA has selected about 654.05 km of rural roads to be taken up under RCIP as sample subproject roads in Madhya Pradesh. The 654.05 km of roads comprises 267 different stretches spread over in nine districts of the State. Within each district, the roads are further scattered in several blocks and sub divisions. In this batch of subprojects, the longest road is 11.00 km (M. N. Road to Badchapra in Ratlam Block of Ratlam district), while the shortest is 0.510 km (Khudel Road to Mundla Jetkaram in Indore block of Indore District), the average length works out to 2.54 km. The list of 654.05 km roads with location and length is given in **Appendix 1.1.**

C. Rural Road Construction Proposal

6. The proposal for rural road construction works typically considers a 10-12 m right of way (ROW), which includes side slopes for embankment, side drains on either side of the alignment. The roads consists both Black Top (B.T.) and Cement Concrete (C.C.) as per the ROW availability.

7. The construction proposals are confined to the existing alignment of the unpaved tracks. Majority of these are foot/pathways traditionally used by the villagers and transformed into the present form of unpaved tracks/roads through minor construction works taken up by the communities, local bodies and state Government over the decades.

D. ADB Safeguard Policies and Category of the Project

8. The Asian Development Bank has defined its Safeguard requirements under its 'Safeguard Policy Statement 2009' (SPS 2009). The SPS 2009 require environmental assessment, mitigation and commitment towards environmental protection. The prime objectives of these safeguard policies are to (i) avoid adverse impacts of projects on the environment and affected people, where possible; and (ii) minimize, mitigate, and/or compensate for adverse project impacts on the environment and affected people when avoidance is not possible. ADB as per SPS 2009 classify a project into category A, B or C depending on potential adverse environmental impacts.

9. The project has been evaluated considering outcome of Rapid Environmental Assessment Checklist[2] and the same is enclosed as **Appendix 1.2**. All environmentally sensitive components along each subproject roads is critically analyzed to assess the magnitude and extent of likely impacts. These sample subproject roads stretches do not pass through any protected areas nor located near any archeologically important monument. As per selection guidelines, none of the selected subproject road passes through reserved forests

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have dead ends terminating on a habitation, while through routes arise from the confluence of two or more link routes and emerge on to a major road or to a market centre.

[2] REA checklist defined for Roads and Highways as per ADB Environmental Guidelines 2003.

either. Few tree-cutting though may be involved. The roads primarily pass through agricultural and residential areas. Most of the roads follow existing village roads and unpaved movement paths. As such, land acquisition is also low. Hence, the project will fall under category B as per ADB SPS 2009.

10. No categorization is made under environmental legislation since these small roads do not require any environmental clearance in accordance to Indian Environmental (Protection) Act and Rules, 1986 amended till date.

E. Objectives and Approach for Environmental Assessment

11. The prime objectives of the environmental assessment is to identify the likely environmental impacts during design, construction and operation stage of each subproject and suggest cost effective mitigation and monitoring measures with institutional mechanism applicable to all the subprojects as well as specific to a subproject.

12. Since there is large number of subproject roads involved under RCIP and magnitude of each road is small, preparation of individual IEE's for each road will be difficult and time consuming. ADB had finalized Environmental Code of Practices (ECOP) checklist **(Appendix 1.3**) under RRS III, which is modified for RCIP. Subprojects specific Initial Environmental Assessment (IEE) is carried out as per this ECOP checklist. These completed ECOP checklist with annexures on tree, utility and community structures, strip maps and photographs for each selected sample road are enclosed as **Appendix 1.4.**

13. The findings of subproject specific assessment suggest that similar issues exist amongst the state roads with very few subproject specific issues. Therefore, state specific IEE report has been prepared based on ECOP checklist of selected sample subproject roads (about 100 km per state). This IEE approach will be followed for conducting environmental assessment for remaining subprojects under RCIP.

F. IEE Methodology and Content

14. The state specific IEE has been largely structured as per SPS, 2009 and ADB's Environmental Assessment Guidelines (2003). The IEE reports EMPs, including EMPs, monitoring plans, cover the most environmentally sensitive components in state as well as specific to subproject roads.

15. **Corridor of Impact**: The direct area of influence or the corridor of impact (COI) has been considered as, 10 m on either side of the proposed sample roads alignment Based on the proposed cross-section.

16. **Field visits, Primary and Secondary Data Collection**: Each selected sample road was visited along with concerned PIU officials for environmental assessment and identification of associated environmental issues. Each road specific strip map was prepared during the field visit to capture the information related to tree inventory, utility and community structures located along the proposed road alignment, surface water bodies, and ecological sensitivities. Secondary environmental information pertaining to the environmental issues, protected area, forests areas were collected from various government and non-governmental/research institutions for assessment of the baseline environment of the project locations, district and state as a whole.

17. **Data Analysis, Impact identification and Mitigation Measures**: Information collected was analyzed and impact was identified using experts' assessment and following established practices. Mitigative measures are proposed common to larger roads and specific to the roads. EMP is prepared considering mitigative measures and institutional framework of SRRDA.

18. The IEE report includes following seven chapters including this introduction Chapter.

- Chapter 1- Introduction
- Chapter 2- Description of Project
- Chapter 3- Description of Environment
- Chapter 4- Anticipated Impacts and Mitigation Measures
- Chapter 5- Institutional Requirement and Environmental Monitoring Plan
- Chapter 6- Public Consultation and Information Disclosure
- Chapter 7- Conclusion and Recommendation

G. Legal Framework and Legislative Requirements

19. India has well defined institutional and legislative framework. The legislation covers all components of environment viz air, water, soil, terrestrial and aquatic flora and fauna, natural resources, and sensitive habitats. India is also signatory to various international conventions and protocols.

20. As per Environment (Protection) Act, 1986; the Environmental Impact Assessment Notification, 2006; amended in 2009 defines the environmental impact assessment for defined development projects. All new or expansion of National and State Highways requires Environmental Impact Assessment and Environmental Clearance from central or state level Environmental Appraisal Authority. However, small roads projects as proposed under RCIP do not require environmental assessment or clearance as per above notification. Since above environmental assessment requirement is not applicable, the mainstream environmental concerns specific procedures that were formulated under Rural Roads Sector I (RRS I) and Rural Roads Sector III Investment Program (RRS III) will in any case be implemented.

21. In addition to above, new road construction or road improvement work attract many legislation including for diversion of forest land, tree cutting, opening of new quarry, establishment of temporary workshops, construction camps, hot mix plants, and use of vehicles for construction. The legislation applicable for sample RCIP roads are listed below:

Sl. No.	Legislation	Applicability
1.	Environment (Protection) Act 1986-EIA Notification 2006 (Amended 2009)	Not applicable to these rural roads. It is applicable only to National and State highways**.**
2.	Forests (Conservation) Act 1980 (Amended 1988), and Forest (Conservation) Rules, 1981, (Amended 2003)	As per above Act/Rules *Forest Clearance* from Department of Forests/Ministry of Environment and Forests Govt. of India is required for diversion of forest land (if any) for non-forest purpose. Prior permission is required from forests department to carry out any work within the forest areas and felling of roadside trees. Cutting of trees need to be compensated by compensatory afforestation as per permission condition.

Sl. No.	Legislation	Applicability
3.	The Wildlife (Protection) Act, 1972 (Amended 1993); Not applicable in this case. Since No roads will be selected passing through protected areas or sanctuaries	Not Applicable, since no sample road is selected if it passes through protected areas.
4.	The Water (Prevention and Control of Pollution) Act 1972 (Amended 1988), and the Water (Prevention and Control of Pollution) Rules, 1974	Placement of hot-mix plants, quarrying and crushers, batch mixing plants, discharge of sewage from construction camps requires *No Objection Certificate (Consent to Establish and Consent to Operate)* from State Pollution Control Board prior to start of construction or setting up specific facility. *Authorisation* will also be required for disposal of Hazardous Waste like waste oil etc. from State Pollution Control Board
5.	The Air (Prevention and Control of Pollution) Act, 1981, (Amended 1987), and the Air (Prevention and Control of Pollution) Rules, 1982	
6.	The Noise Pollution (Regulation and Control) Rules, 2000 (Amended 2002)	
7.	The Hazardous Waste (Management, Handling and Transboundary Movement) Rules 2008 (Amended 2009), and the Batteries (Management and Handling) Rule, 2001	
8.	Guidelines for Ground Water Extraction Prescribed by Central Ground Water Authority under the power granted under Environment (Protection) Act 1986	*Permission* from Central Ground Water Authority (CGWA) is required for extracting ground water for construction purposes, from declared as Semi-critical, Critical and Overexploited areas from ground water potential prospective. For NOC, An application in the prescribed Performa is to be submitted either to the Office of the Regional Director, (CGWB) of the concerned state, or to Member Secretary, CGWA, New Delhi

22. The PMGSY Scheme and Guidelines (2004) No. 12025/8/2001-RC, Ministry of Rural Development (MORD) also defines environmental safeguards particularly with respect to sample road selection and regulatory compliance which is also to be complied with.

H. Acknowledgement

23. The consultants gratefully acknowledge the support received from NRRDA and MPRRDA officials throughout the environmental assessment process. We also acknowledge the assistance received from respective PIUs during field visits and other Govt. agencies for primary and secondary data collection as well during public consultation.

II. DESCRIPTION OF THE PROJECT

A. General

24. The PMGSY program has mandate to provide all-weather roads to all the rural habitations within the country. RCIP is planned to meet above objective. The selection of roads in the five states for funding under the RCIP is done by the State Rural Roads Development Agencies by selecting roads from their core network that is decided by taking into account different parameters made by the respective state governments. The broad specification for road alignment selection, payment design, construction methodology, geometric designs are same and is as per the "Specification for Rural Roads" published by IRC on behalf of the Ministry of Rural Development, Govt. of India. The design details presented in this chapter are as per above specifications. Minor changes will apply depending on road specific issues and design consideration.

25. Since topography of selected project districts Madhya Pradesh state is largely flat, the design details applicable to flat terrain suit the requirements, and therefore do get mentioend in following section.

B. Sample Roads Selected in Madhya Pradesh State

26. The Madhya Pradesh state has selected 267 roads with a total length of 654.05 Km spread over nine districts as summarised at **Table II-A** below and detailed at **Appendix 1.1.**

Table II-A: Summary of District Wise Rural Roads

Sl. No.	District	No of Roads	Total Length (km)	Average Road Length (Km)	Road Length (Km)	
					Max	Min
1	Bhopal	15	31.75	2.07	4.125	0.810
2	Damoh	41	104.10	2.60	9.5	0.7
3	Indore	36	110.81	3.09	5.6	0.510
4	Jabalpur	51	91.86	1.81	5.2	0.600
5	Mandsaur	19	47.60	2.42	4.40	0.700
6	Neemuch	25	61.36	2.15	3.40	0.750
7	Ratlam	26	75.475	3.008	11.00	0.800
8	Sehore	14	55.65	2.88	5.630	1.00
9	Tikamgarh	27	75.45	2.86	6.80	0.800
Total/Average		**267**	**654.05**	**2.54**	**6.18**	**0.74**

C. Project Description

1. Rural Road Construction Proposals

27. The proposed rural road construction work will provide 7.5 m roadway width[3] with 3.75 m carriageway in accordance with the IRC-SP 20: 2002 in plain terrain. The proposal considers a 3.75 m cement concrete pavement with lined storm water drains for stretches passing through built-up areas, waterlogged/water overtopping/ flood-prone areas. The pavement design considers a base layer of variable thickness as per the design with granular sub-base, 150 mm

[3] The road width may face reduction of width to 6m as per PMGSY recent decision.

thick water bound macadam (WBM grade I & II) and finally topped with 20 mm thick bituminous pavement. Adequate cross-drainage structures like pipe or slab culverts/bridge structures do get included for drainage channels across the roads. Few minor bridges will also need to be constructed. Figure 2.1 shows the typical cross section of the rural roads.

28. The rural road construction works will be in conformance with the Rural Roads Manual and/or Technical Specifications (IRC: SP20: 2002) for Rural Roads published by the Indian Road Congress (IRC) on behalf of Ministry of Rural Development, Government of India. The broad design considerations do get a mention at a later part of this chapter.

2. Present Condition

29. The project roads mainly pass through plain terrain and agricultural area. The project roads have several cross-drainage structure, electric post and telephone post along the existing alignment. There are some community physical structures like Temple, primary or secondary schools beside the roads alignment, but will not be affected due to the widening of roads. There are some utilities besides the roads. Some of these may need shifting.

3. Alignment and Profile

30. The existing road is generally an earthen track with some stretches of brickbat soling (description of the road surface). The construction works should adhere to the existing alignment. The existing horizontal and vertical alignment/profile will be generally maintained except for minor smoothening or corrections to sustain consistent design speed without causing any land acquisition requirements and thereby the possible social and/or environmental concerns.

4. Design Considerations

31. **Geometrical Design and ROW Requirements**: The geometric design standards for this project will conform to PMGSY (ADB) guidelines and the guidelines as stated in *IRC-SP 20:2002* and the final recommendations of NRRDA expert committee *(refer D.O. no. - 17305/1/2007-Tech/12 dated 30/09/2010)*. Recommended design standards vis-à-vis the standards followed for this road are described below. The requirement of ROW as per PMGSY guidelines considered for the design is given at Table II-B below:

Table II-B: ROW Requirement

Road classification	Plain and Rolling Terrain (ROW in m)			
	Open Area		Built-up Area	
	Width	Range	Width	Range
Rural roads (ODR and VR)	15	15-25	6.0	6.0

ODR= other district road, VR= village road.

32. Since terrain is plain, the design speed considered is as per recommended design speed of 50 km/h for ruling terrain (40 km/h as minimum speed). The radius of horizontal curve will be 90 m ruling minimum (60m absolute minimum). The vertical alignment design is as per ruling gradient of 3.3% applicable for plain terrain.

33. **Pavement and Embankment Design**: Considering the sub-grade strength, projected traffic and the design life, the pavement design for low volume PMGSY roads are proposed to be carried out as per guidelines of IRC: SP: 72 – 2007 or IRC SP:77 "Design of Gravel Road" and IRC SP:62-2004 "Cement Concrete roads". In built-up area for hygienic and safety reasons, C.C pavement is proposed with a hard shoulder and appropriate line drain. A design life of 10 years is considered for the purpose of pavement design of flexible and granular pavements. The embankment height considered as 1 m (average) from ground to crust except at the approaches of cross-drainage structures. The embankment height will vary in flood prone area as per the HFL.

34. **Roadside drain**: As the insufficient drainage of surface water leads to rapid damage of road, road side drain (Figure 2.1) are provided on the locations of habitation areas with concrete pavement. The rain water will flow along the longitudinal slope and intermittent gaps in concrete curbs.

35. **Carriageway:** The carriageway is proposed as 3.75 m as per IRC-SP20 : 2002. It may be even restricted to 3.0 m, where traffic intensity is less than 100 motorized vehicles per day and where the traffic is not likely to increase due to situation, like dead end, low habitation and difficult terrain condition. The ROW requirement in built-up/constricted area may be even reduced to 5 m.

36. **Shoulder:** Earthen shoulder shall be constructed in layers and compacted to 100% of Proctor's Density. It is proposed to have 1.875 m wide shoulder (0.875 m hard shoulder and 1 m earthen shoulder) on either side of carriage way. In MP, the road width is considered as 6 m (3.75 carriageway and 1.125 m shoulder on either side).

37. **Surfacing**: Slow setting bitumen emulsion will be applied as primer on water bound layer. Rapid setting bituminous emulsion shall be used for Tack coat. Premixed carpet 20 mm thick and mixed with equivalent viscosity grade bitumen shall be laid as surfacing course. 6 mm thick, Type B seal coat is considered for sealing of the premixed carpet.

38. **Structural Works** :Following grades of concrete are proposed for Structural works as per specified MORD and IRC specifications:

- Concrete in superstructure of Slab Culvert – M-25 (RCC)
- Concrete in Abutment cap, Dirt wall of slab culverts – M-25 (PCC)
- Brickwork in Abutment, Return Wall, Headwall – Cement mortar (1:4)
- Concrete below Abutment, Return Wall, Headwall – M-10 (PCC)
- Concrete in pavement (on carriageway) – M-30 (PCC)
- Concrete in pavement (on shoulder and drain) – M-25 (PCC)

5. Construction Methods

39. Since these are smaller roads, NRRDA has framed specific guidelines for cost-effective construction of these rural roads. As per the guideline of NRRDA, construction by more of manual means is preferred. Motor grader & tractor-towed rotavator shall be used for handling of bulk materials like spreading of aggregates in sub-base & base courses by mix-in-place method. Compaction of all items shall be done by ordinary smooth wheeled roller, if the thickness of the compacted layer does not exceed 100 mm. It is also considered that, hot mix plant of medium type & capacity with separate dryer arrangement for aggregate shall be used for bituminous

surfacing work that can be easily shifted. A self-propelled or towed bitumen pressure sprayer shall be used for spraying the materials in narrow strips with a pressure hand sprayer. For structural works, concrete shall be mixed in a mechanical mixer fitted with water measuring device. The excavation shall be done manually or mechanically using suitable medium size excavators.

6. Available Right of Way

40. As per the information available with Madhya Pradesh Rural Road Development Agency (MPRRDA), ROW (8-12m) is available for all the sample roads. In some of the road, it is put to agricultural use by the adjacent landowners. The private landowners along the proposed right of way (ROW) however, are voluntarily parting the encroached land and in some cases are ready to part even their own private land without any compensation if required, anticipating the developmental benefits from the road construction works.

7. Traffic

41. The present traffic data on each of these rural roads typically vary between 10-25 vehicles per day on most of the rural stretches. The traffic largely comprises motor cycles/two wheelers, tractors, light commercial vehicles, animal drawn carts and bicycles.

8. Economic Assessment

42. The economic analysis carried out under the project has indicated that the rural road construction works will act as a catalyst for the rural economic growth and poverty alleviation of the community in the region.

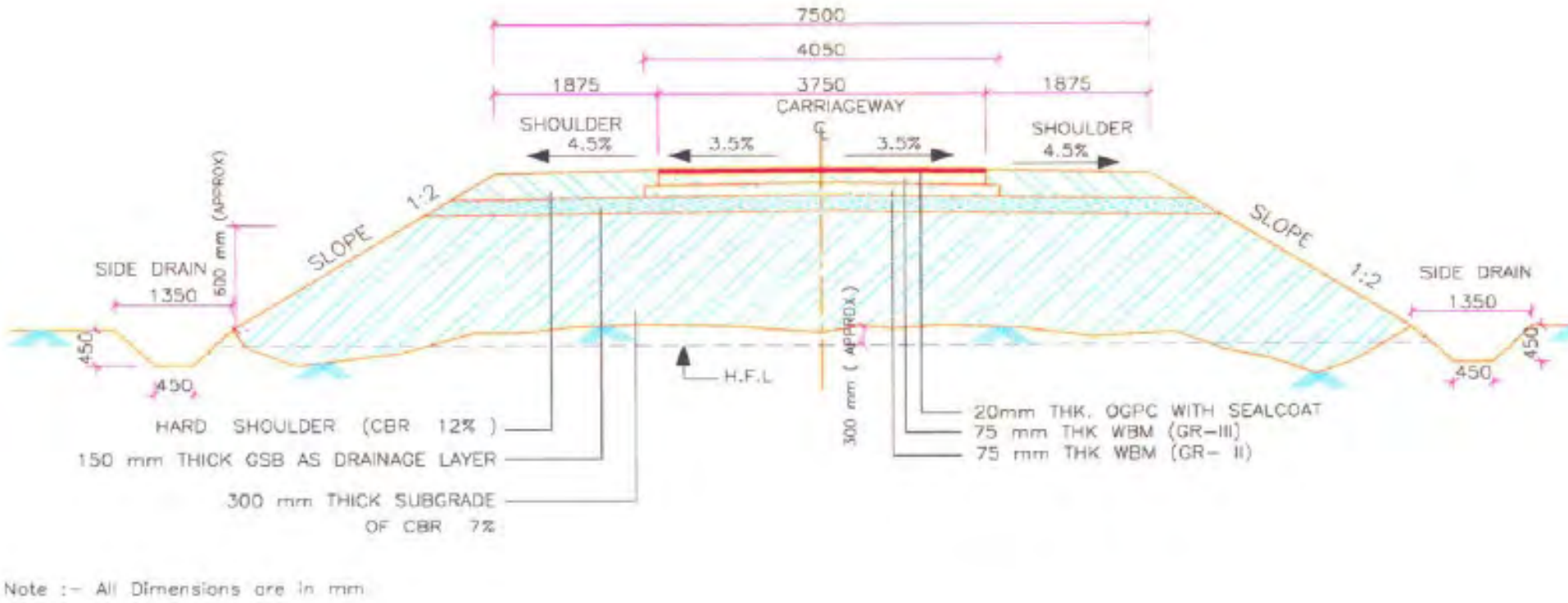


Figure II.1 : Typical Cross-section of Rural Roads

III. DESCRIPTION OF THE ENVIRONMENT

A. Background

43. Baseline environmental conditions about all facets of environment viz. physical, biological and socioeconomic have been established using both primary and secondary sources, consultation with local people, and interaction with forests officials and other Government officials. Efforts have been made to collect the latest information both at regional as well as local level especially along the project roads alignment. This will help to predict likely changes in the environment due to the RCIP road construction and will serve as performance indicators for various components.

44. The baseline information is presented below at state level and district level. Road specific environmental salient features has also been summarised in this chapter.

45. Madhya Pradesh is located between lat. 21°04'N and long. 74°02' and 82°49' E, The geographical area of the state is 308,144 km^2 (118,975 sq mi) which constitutes 9.38% of the land area of the country. The forest area of the state is 95,221 km^2 (36,765 sq mi) constituting 31% of the geographical area of the state and 12.44% of the forest area of the country. The state boundary touches six states of the country, namely Chhattisgarh, Maharashtra, Andhra Pradesh, Orissa, Jharkhand & Uttar Pradesh. The selected Sample roads fall in Dhar, Sagar, Sidhi and Damoh districts of the state. Summary key environmental features of these three districts are given in Table III-A**.**

B. Physical Environment

1. Meteorology and Climate

46. Madhya Pradesh has a topography that is crossed from north to south by plains separated by upland areas. The climate is extreme in the north of Madhya Pradesh. It is cool and breezy in the central parts and humid in the eastern and southern regions. Best time to visit is between Septembers to February. The state has three main seasons:

- **Winter**: November to February are the months of winter during which the average temperatures range from 10° to 27° C (50° to 81° F). Winters are usually pleasant and dry.
- **Summer**: The March-to-May season is hot and dry. Summers are hot, with an average temperature of 29°C (85°F) and a high temperature that at times reaches 48°C (118°F).
- **Monsoon season**: The climate is monsoonal between June to September. During the monsoon season temperatures average 19° to 30° C (66° to 86° F). Madhya Pradesh receives an average annual rainfall of about 1200 mm (nearly 50 in), of which 90 percent falls during the monsoon season.

2. Ambient Air Quality

47. Most of the project area lies in vast open agricultural land and is largely free from air pollution sources other than traffic and few brick-kilns existing in the area. These were located in open area and operate only for few months. As such, the ambient air quality (for parameters SO_2, RSPM and NO_X) is expected to be within the limits in most of rural and semi urban areas. However, in absence of any existing data on ambient air quality levels of the project area, secondary sources were referred.

Table III-A: Summary Key Environmental Features of the Sample Road Districts

Districts	Location	Climate	Ecologically Sensitive Area (Wild Life Sanctuaries/ National Park etc)	Geomorphology (Major Physiographic Units and land use)	Major Drainage	Major Soil Type	Principal Crops
Bhopal	▪ Bhopal district has an area of 2772. 40 sq. km. ▪ Bhopal is divided into two sub-divisions-Berasia and Huzur ▪ Bhopal district has a total population of 2,368,145 as per 2011 census ▪ Bhopal is surrounded by Guna to the north, Vidisha in north-east, Raisen in East and South-East, Sehore in south and south-west and Rajgarh in the north-west zone	▪ The climate is dry to sub-humid and the average yearly rainfall is around 1130 mm.	▪ The district has 437.19km^2 area under forest. ▪ Van Vihar is a forest area around Bhopal	▪ The district is part of the Vindhya Plateau	▪ The district falls mostly in the Parbati watershed area. Other smaller rivers are Halali, Bah, Sagar, Kolar etc.	▪ The soil is medium to shallow black	
Indore	▪ Indore is situated on Malwa Plateau at 553 metres above sea-level ▪ It is located between 23o N longitude and 76o E latitude ▪ The total area of the district is 3898 sq kms ▪ Indore district's total population is 3,272,335 as per 2011 census ▪ Indore is surrounded by Ujjain district in the north, Dewas in the east, Khargone (West Nimar) in the south and Dhar district in the west ▪ Indore district is divided	▪ The climate is semi-arid and the annual rainfall ranges between 850 to 900 mm		▪ Indore forms part of the Malwa and Nimar Plateau	▪ Chambal and Kshipra Rivers are the mian rivers of Indore ▪ Saraswat, Khan and Gambhir are the other rivers	▪ The soil is of medium to deep black type	

Districts	Location	Climate	Ecologically Sensitive Area (Wild Life Sanctuaries/ National Park etc)	Geomorphology (Major Physiographic Units and land use)	Major Drainage	Major Soil Type	Principal Crops
	into five Tehsils, namely Depalpur, Sanwar, MHOW, HATOD and Indore						
Jabalpur	▪ Jabalpur is divided into four tehsils, namely Sihora, Patan, Jabalpur and Kundam ▪ The total population of Jabalpur district is 2,15,1203 as per 2001 census ▪ Jabalpur is surrounded by Katni in the north & north-east, Damoh in the north and norh-west, Narsimhapur in the south-west, Seoni in the south and Mandla in the south-east	▪ The climate is dry sub-humid and the average annual rainfall ranges between 1050 to 1100 mm		▪ Jabalpur forms part of the Kaimur Plateau and Satpura hills	▪ The district falls mostly in the Narmada watershed area. Other smaller rivers are Gaur, Hirann, Sindor etc.	The soil is of medium black type	
Mandsaur	▪ Total Geographical area of Mandsaur district is 5521 Sq. Km ▪ The total population of Mandsaur district as per 2001 census is 1183274 ▪ Mandsaur has four sub-divisions namely Mandsaur, Sitamau, Malhargarh and Garoth	▪ The climate is tropical to semi-arid dry, and average annual rainfall ranges between 850 and 900 mm		▪ Mandsaur forms part of the Malwa and Nimar Plateau	▪ Shivna river is main drainage system of Mandsaur	The soil is medium to deep black	Wheat, Jowar, Maize and pulses like Gram, Urad and Arhar are the main crops
Neemuch	▪ Neemuch lies between 24.15 and 24.35 degree north longitude, and between 74.45 & 75.37 degree east latitude ▪ The population of	▪ The climate is semi-arid and average annual rainfall rnages between 850 and 900 mm	▪	▪ Neemuch forms part of the Malwa and Nimar Plateau	▪	▪ The soil is medium to deep black	▪ Wheat, Jowar, Maize and pulses like Gram, Urad and Arhar are the

Districts	Location	Climate	Ecologically Sensitive Area (Wild Life Sanctuaries/ National Park etc)	Geomorphology (Major Physiographic Units and land use)	Major Drainage	Major Soil Type	Principal Crops
	Neemuch as per 2011 census is 825958						main crops
Sehore	▪ Sehore stretches between22.31 degree to 23. 40 degree north longitude, and from 76.22 degree east to 78.08 degree east latitude ▪ Sehore has a total population of 1,311,008 as per 2011 census ▪ Sehore is surrounded by seven districts, viz, Bhopal, Raisen, Hoshangabad, Dewas, Shajapur, Rajgarh and Harda	▪ The climate is dry to sub-humid and the average yearly rainfall is around 1100 to 1150 mm		▪ Sehore district's height is around 1500 ft to 2000 ft from the sea level	▪ Narmada, Parvati, Dudhi, Newaj, Kolar, Papnas, Kulans, Seewan, Lotia among others, are the main rivers of Sehore district	The soil is of medium black type	
Tikamgarh	▪ Tikamgarh extends between the latitude 24 degree 26 minute and 25 degree 34 minute N and between 78 degree26 minute and 79 degree 21 minute Longitudes ▪ Tikamgarh District is bounded by Chhatarpur district to east, Lalitpur district Uttar Pradesh to West, Jhansi to North and Sagar to South ▪ The total area is 5048 sq km ▪ The total population is 1,202,998 as per 2001 census ▪ Tikamgarh has three sub-	▪ The climate is dry sub-humid and average annual rainfall rnages between 700 to 750 mm		▪ Tikamgarh forms part of the Bundelkhand Plateau region	▪ Betwa, Dhasan,Jamni, Bagri and Barua are the main rivers of Tikamgarh	▪ The soil is of mixed red and black type	▪ The main crops of the district are Jowar, Wheat, Paddy, Urad and Till, Soyabean amongst the oilseeds while Sugarcane also is grown to a certain extent. ▪ Besides Gram, Urad and Moong are among other

Districts	Location	Climate	Ecologically Sensitive Area (Wild Life Sanctuaries/ National Park etc)	Geomorphology (Major Physiographic Units and land use)	Major Drainage	Major Soil Type	Principal Crops
	divisions namely Tikamgarh, Niwari and Jatara; and six tehsils namely, Niwari, Jatara, Tikamgarh, Prithvipur, Baldeogarh and Palera						important pulses of the district and are grown generally in Kharif
Ratlam	▪ Ratlam has an area of 4861 Km^2. It is in the western border of Madhya Pradesh bordering Rajasthan. ▪ Ratlam has five tehsils,, nine towns and 1063 villages (2001 census), with a population of 1,454,483 (2011 census), population density of 299 persons per sq km and a sex ratio of 973 females per 1000 males	▪ The average temperature is 55 degree Fahrenheit and average rainfall is 90 cm, which occurs mainly between July and August every year		▪ Part of Malwa Plateau having basaltic flows and rocks, besides Alot blocks, Vindhyan sandstones	▪ Chambal and Shipra along with its tributaries, Khan and Gambhir are the major rivers in Ratlam	▪ The soil types range from medium balck to shallow black along with red and yellow soil. It is found sulphur deficient	▪ Wheat, Jowar Maize, pulses like Chana and Urad besides Soyabean and Groundnut are t he main crops. Cotton is also another main crop
Damoh	▪ Damoh is located between 23.09 Degree North Longitude and 79.03 Degree East Latitude. It has an area of 7306 sq kms ▪ Damoh has a population of 1,083,949 as per 2001 census with a population density of 173 per sq km and a sex ratio of 913 females per 1000 males. It has five towns, 1229 villages and seven blocks.	▪ The average temperature varies between 33.76-18.16 Degree Celsius with the highest and lowest temperature recorded being 38 and 6 Degree Celsius. Damoh has an average rainfall of 903.5 mm.	▪ The district has a forest area of 4135 sq kms	▪ The region is rich in limestone. However, the major part of the terrain is plain area, expect perhaps fora part of the Kaimur hills	▪ Kopra, Sonar, Gouraya and Bama are major rivers. Irrigation mainly depends upon monsoon rainfall	▪ Medium Black, Mixed Red and Black soil as well as Red and Yellow soil types are found in Ratlam district. The soil found is sulphur deficient	▪ Paddy, maize, black gram, green gram, soybean, pigeon pea are the major crops grown.

Source: Central Ground Water Authority Report and other District/Govt. Website.

Table III-B: Maximum Observed Ambient Air Quality during 2008

Area Classification	SO_2 ($\mu g/m^3$)	NO_2 ($\mu g/m^3$)	RSPM ($\mu g/m^3$)
Industrial (maximum observed value)	30	27	265
Residential (maximum observed value)	8	20	105
National Ambient Air Quality Standards for Industrial and Residential Areas	80	80	100

Source: National Ambient Air Quality Status, 2008, CPCB, and Table 3.3.

48. The above table reveals that the concentration of all the pollutants is higher in industrial areas especially respirable suspended particulate matter. The levels of sulphur dioxide and nitrogen dioxide are however, well within the limits (NAAQS). The higher particulate matter levels are attributed to the vehicular movement on unpaved roads and the loose dust in the agricultural fields that lead to formation of dust clouds over short periods. The same can be concluded from Table III-C, which provides a comparison of the air quality at different locations.

Table III-C: Ambient Air Quality Status of Madhya Pradesh in Previous Years

City	Location	Type of Area	SO2	NO2	RSPM	SPM
			2008	2008	2008	2008
Bhopal	Govindpura	1	7	17	91	205
	Arera colony	R	BDL	34	129	356
	Hamidia road	R	9	20	124	308
	T.T. Nagar	R	5	11	62	120
Dewas	Eid Parry(I)Ltd	I	20	27	96	218
	Vikas Nagar	R	15	22	72	187
Gwalior	Dindyal Nagar	R	8	18	133	234
	Maharaj Bada	R	9	14	92	306
Indore	Polo ground	I	12	22	240	357
	Kothari market	R	12	22	217	325
	Scheme no. 78	R	6	12	131	203
Jabalpur	Vijay Nagar	R	BDL	25	136	297
Nagda	Chem. D Labor club	I	30	18	113	158
	Grasim guest house no 2	R	15	25	92	132
	Grasim Kalyan Kendra	R	22	32	97	141
Sagar	Pt. Deendayal Nagar	R	3	17	115	232
Satna	Sub divisional Off.	I	4	BDL	265	410
	Regional office	R	BDL	BDL	115	166
Ujjain	District office	I	15	16	154	317
	Regional office	R	7	9	70	151
	Mahakal temple	S	12	12	82	174
Singrauli	Jayant township	R			78	386
	NTPC Vidyanagar	R			86	326
	Waidhan	R			49	227
National Ambient Air Quality Standards	Industrial Area (I) & Residential Area (R) (24 hourly average)	80	80	80	100	Not Prescribed

Source: National Ambient Air Quality Monitoring Series, CPCB

R – Residential and other areas, I – Industrial area, L- Low, M- Moderate, H – High and C – Critical levels of pollution based on exceedence factor (calculated for n > 50 days).

3. Noise

49. Along the proposed road construction proposals, there is neither significant industrial activity nor significant vehicular traffic contributing to ambient noise levels. The occasional vehicular movement on the unpaved roads contributes to increased noise levels over short duration and limited to daytime. The existing roads do not appear to have vehicular traffic in the nigh time. Therefore the ambient noise levels are expected to be within the National Ambient Noise Standards.

4. Topography and Geomorphology

50. The State of Madhya Pradesh is the second largest state of the country. It covers an area of 30.82 million hectare, which constitutes 9.37% of the land area of the country. “Madhya Pradesh” by virtue of its geographical location can be termed as “Heart of India”. The state is surrounded by Gujarat in the West, Rajasthan in the North-West, Uttar Pradesh in the North-east, Chhattisgarh in the East and Maharashtra in the South. Landlocked in the central part of the country, Madhya Pradesh has topography that crossed from north to south by plains separated by upland areas. Geographically, Madhya Pradesh consists of a plateau with a mean elevation of 1,600 ft above sea level, interspersed with the mountains of the Vindhya and the Satpura ranges with the Chhattisgarh plains to the east. The hills give rise to the main river systems - the Narmada and the Tapti, running from east to west, and the Chambal, Sone, Betwa, Mahanadi, and the Indravati west to east. Ground elevation varies from 270 m to 750 m above mean sea level.

51. The soils of state are rich and fertile. The state has a variety of soils ranging from richclayey to gravely. The major groups of soils found in the state can be divided in to following four categories i.e. alluvial, medium & deep black; shallow & medium black; and mixed red & black. Categorically state has two agro-climatic zones namely (i) Central Plateau & Hill Region, and (ii) Western Plateau & Hill Region. These two zones have been further sub-grouped and the description regarding area and its soil &geological features.

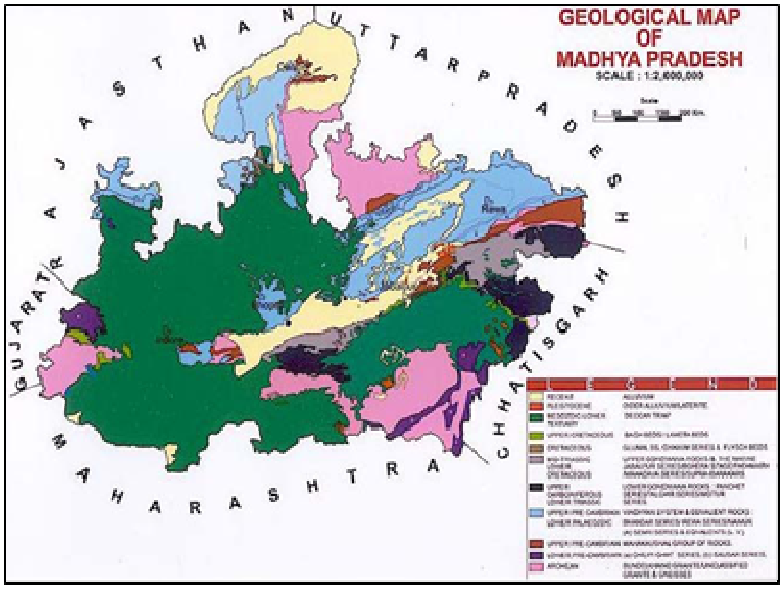


Figure III.1 :Geographical / Geological Map of Madhya Pradesh

5. Geology/Soil

52. The geology /soil of the state of Madhya Pradesh is given below:

Zone	Sub-group (Region)	District covered	Rainfall (mm)	Climate	Type of Soil
Central Plateau and Hill Region	Bundelkhand	Chattarpur, Datia, Tikamgarh	700	Dry sub-humid	Mixed red & Black
	Chhattisgarh Hills	Mandla, Dindori	1570	Moist sub-humid	Red & Yellow
	Kaimur Plateau & Satpura Hills	Jabalpur, Panna, Satna, Rewa, Sidhi, Seoni, Katni, Balaghat, Shahdol, Anuppur, Umariya	1100	Dry sub-humid	Medium Black
	Vindhya Plateau	Bhopal, Damoh, Raisen, Sagar, Sehore, Vidisha	1130	Dry sub-humid	Shallow to Medium Black
	Satpura Plateau	Betul, Chhindwara, Narsinghpur	1220	Dry sub-humid	Shallow to Medium Black
	Central Narmada Valley	Hosangabad, Harda	1300	Dry sub-humid	Deep Black
	Gird	Morena, Bhind, Gwalior, Guna, Shivpuri, Ashoknagar , Sheopur	670	Semi-arid	Medium Black alluvial
Western Plateau and Hill Region	Jhabua Hills	Jhabua	988	Semi-arid	Medium to black deep
	Malwa & Nimar Plateau	Indore, Dhar, Ujjain, Ratlam, Dewas, Mandsaur, Rajgarh, Shajapur, Khandwa, Khargone, Neemuch, Badwani, Burhanpur	874	Semi-arid	Medium to deep black

53. **Soil** -The major soil types within the project districts can be classified into three groups namely vertisol, altisol, and entisols. These soil types are further classified into red yellow loamy, black cotton soils. The entisols is sub-classified into younger alluvial, and laterite soils. The Atlisols is sub-classified into lateritic and alluvial soils. The vertisol is sub-classified into baslic black cotton soil, older alluvial soils. Textures of soils are medium to heavy grained.

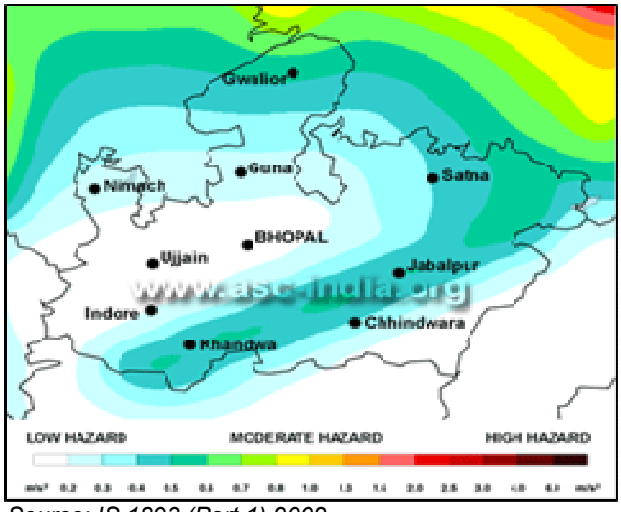
6. Earthquake & Seismicity

54. ***Seismic Hazard.*** The seismic hazard map of India was updated by Bureau of Indian Standards (BIS) in 2000.[4] The main change was merging of Zones I & II. As per this updation, Zone II and III (low to moderate Risk) stretches across the length of the MP State (**Figure 3.2**). According to GSHAP data, the state of Madhya Pradesh falls in a region of low to moderate seismic hazard.

[4] IS 1893 (Part 1): 2002 Indian Standard Criteria for Earthquake Resistant Design of Structures Part 1 General Provisions and Buildings (Fifth Revision).

Source: Amateur Seismic Centre, Pune

Figure III.2 : Seismic Zone Map



Source: IS 1893 (Part 1) 2002

Figure III.3 : Hazard Zone Map

7. Land use

55. The most of the geographical area (307560 sq. km i.e. about 98 percent) of the state is available for utilization. Agriculture is the major land use in state followed by forests. The area under various land uses in the state is presented in the **Table III-D.** Land use pattern along the project road is also mixed type dominated by agriculture, barren forest land and residential areas. (**Table 3.4**).

Table III-D: Land Use Pattern in the State

Land Use	Area in '000 ha	Percentage
Total Geographical area	30,825	
Reporting area for land Utilization	30,756	99.78
Forests	8683	28.17
Not Available for cultivation	3350	10.87
Permanent pastures and other grassing land	1360	4.41
Land under miscellaneous tree crops & groves	19	0.06
Culturable wasteland	1177	3.82
Fallow lands other current fallows	621	2.01
Current fallows	599	1.94
Net area sown (as per agriculture census 1995-96 expect total cropped area)	14,945	48.48

***Source: State** of Forest Report, 2005, Forest Survey of India Dehradun.*

8. Hydrology and Water Quality

56. Madhya Pradesh is criss-crossed by India's four major rivers namely Narmada, Tapti, Sone and Mahanadi along with their numerous tributaries. Availability of water in from these rivers to the state is more than 81000 million cubic meters annually, out of which approximately 56857million cubic meters i.e. 69.74% could be utilized.

57. None of the rural road crosses any natural stream except two roads, which crosses Keth River and Chamla rivers. Sample road are mostly crossed by seasonal small channels. Ground water being extracted through hand pumps or tubewell is the main source of water supply to villagers.

58. **Surface Water Quality**: In Madhya Pradesh, pollution is increasing in most of surface water resources in major towns due to increasing urbanization trend. The estimated surface water available for use is around 306682 Million Cubic Meter (MCM). None of the water sources are safe for drinking or bathing without conventional water treatment. Rivers such as Narmada, Sone,Tapti Chambal, ken and Betwa, etc. are found to be polluted at different stretches due to industrial, domestic and agricultural pollution. Among all the rivers, Narmada and Ken River is the most polluted.

59. **Groundwater Quality and Availability:** The total Net Ground Water availability of Madhya Pradesh (1998) is 31093575.60 ha of which total current Ground Water Draft is 1437520.00 ha. The state is currently exploiting 46% of the available ground water. On 70% dependable yield, groundwater usage is around 66%. In hilly and undulating regions, springs, rivulets and wells provide drinking water. Most households in rural areas now rely on hand pumps for their supply of drinking water.

60. Among the 50 districts of the state, current ground water condition is safe in 40 districts. In 10 districts the ground water condition is in critical in 5 blocks and overexploited in 24 blocks. In sample project districts, five blocks (Badnawar, Dhar, Manawar, Nalcha, and Tirla) in district Dar falls under overexploited category.

61. Fluoride, salinity and iron affect the quality of water in Madhya Pradesh. There are 4,018 villages with 7,746 sources in 22 districts that have been affected by fluoride; 562 villages with

1,269 sources in 13 districts that have been affected by salinity; and 856 villages with1, 449 sources in eight districts that have been affected by iron.

62. As per the central ground water board (CGWB) report, the groundwater quality of all the project districts Sagar, Sidhi, Dhar and Damoh, in both shallow and deeper aquifers is good and suitable for drinking, irrigation and industrial purposes. The Decadal (1995-2005) water table condition during pre-monsoon is shown in **Figure 3.4.**

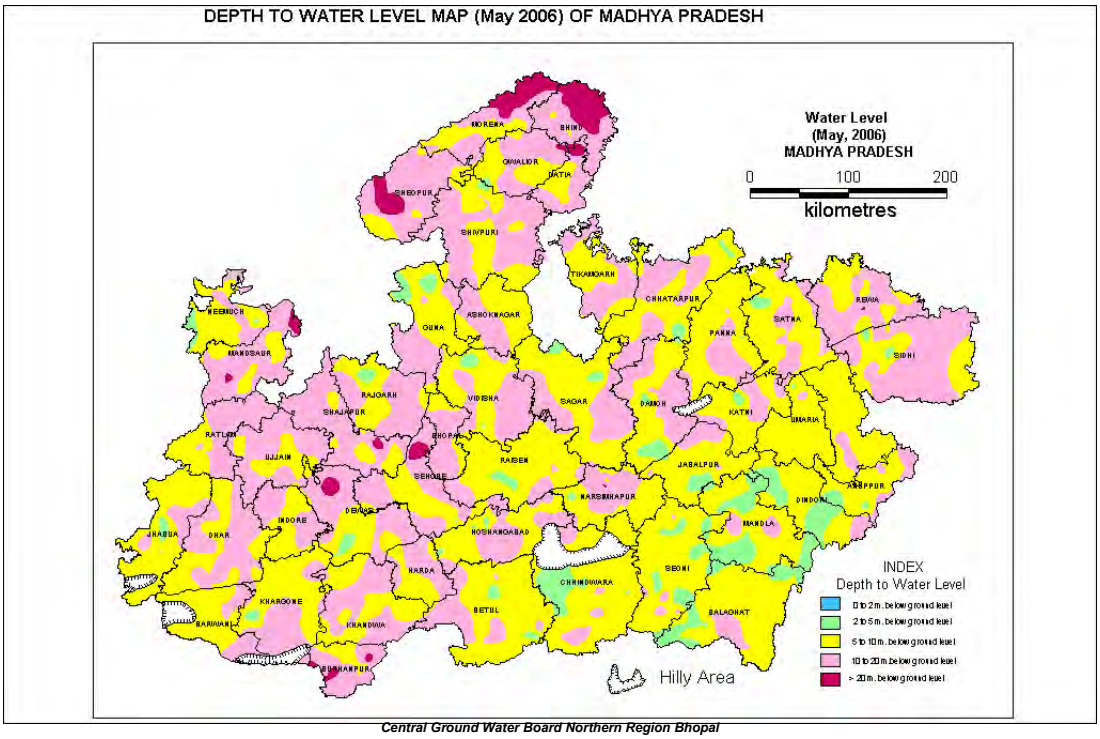


Figure III.4 : Decadal Water Table Conditions in the Project Districts

63. **Hydrogeology:** The largest State of the country is underlain by formations in age ranging from Achaean to Recent. One fifth of the area is occupied by granite gneisses and meta-sedimentary rocks, whereas one tenth by Gondwanas comprising sand stones, lime stones & marbles. The Deccan Trap covers a larger part of the State whereas the Quaternary alluvium covers 6% of the State area. The alluvial deposits form prolific aquifers where tube wells can yield in the range of 50-80 m3/hr. The yield of tube wells in sand stones of Gondwanas ranges between 20-30 m3/hr; whereas in limestone of Gondwanas, it varies between 50-80 m3/hr. The yield of tube wells in select area ranges between 20-30 m3/hr.

C. Ecological Resources

64. Variability in climatic and edaphic conditions brings about significant difference in the forest types of the state. There are four important forest types viz. Tropical Moist, Tropical Dry, Tropical Thorn, Subtropical broad leaved hill forests. The forest area can also be classified based on the composition of forest and terrain of the area. Based on composition, there are three important forest formations namely Teak forest, Sal forest and miscellaneous forests. Bamboo bearing areas are widely distributed in the state. To obviate pressure on the natural forests, plantations have been undertaken in forest and non forest areas to supplement the availability of fuel wood, small timber, fodder, etc.

65. The forest cover has been classified in dense forest and open forest. The latest estimates of Forest Survey of India (FSI), published in the State of Forest Report (SFR) 2003, suggest that the total forest cover of M.P. is 76,429 sq. km., which is 24.79% of the land area - dense forest constituting 13.57% and open forest 11.22%. In addition to these two categories of cover, the land having canopy cover of less than 10% is classified as scrub. The area under scrub is not included in the forest cover. Central, eastern and southern parts of the state are rich, whereas northern and western parts are deficient in forest. Figure 3.5 shows the forest map of the state. Project districts largely have open forests.

Figure III.5 : Forest Map of Madhya Pradesh

66. The project area lies in tropical climate zone.It has a medium range of flora and fauna. Flora, fauna and vegetation types found in the areas have been described separately below. However, none of the roads consists of any rare, endangered or threatened floral species.

67. Although, none of the road stretches passes through any forest land/area[5] but still has trees, which might require felling during clearing up operations for construction of rural roads. In most of cases, tree cutting has been minimized by suitably modifying the alignment. The list of commonly found flora in the sample road districts is given at **Table III-E.**

[5] The two sample project passes through small patches of forests land which already been converted to non forest land after obtaining necessary permission from forest department.

Table III-E: List of Common Flora of Project Districts

S. No.	Local Name	Botanical Name	Family
Large Trees			
1.	Achar	*Buchanania lanzan (spreg)*	Anacardiaceae
2.	Arjun	*Terminalia arjuna (Bedd)*	Combretaceae
3.	Aam	*Mangifera indica (Linn)*	Anacardiaceae
4.	Awla	*Emblica officinalis*	Euphorbiaceae
5.	Imli	*Tamarindus indica (Linn)*	Caesalpiniaceae
6.	Kardhai	*Anogeissus pendula*	Combrataceae
7.	Kala siras	*Albizia lebbek*	Leguminosae (Mimoseae)
8.	Kevlor	*Bauhinia purpurea*	Caesalpinaceae
9.	Kumbhi	*Careya arborea*	Myrtaceae
10.	Kullu	*Sterculia urens*	Stcrculiaceae
11.	Kem	*Mitragyna parvifolia*	Rubiaceae
12.	Khair	*Acacia catechu*	Leguminosae (Mimoseae)
13.	Gular	*Ficus glomerata*	Moraceae
14.	Gunja	*Gardenia pinnata*	Burseraceae
15.	Jamun	*Syzygium cuimini*	Myrataceae
16.	Tendu	*Diospyros melanoxeon*	Ebenaceae
17.	Dhavda	*Anogeissus latifolia*	Combretaceae
18.	Dhobin	*Dalbergia paniculata*	Leguminosae (Papilionaceae)
19.	Nilgiri	*Eucalyptus spp*	Myrtaceae
20.	Neem	*Azadirachta indica*	Meliaceae
21.	Palas	*Butea monosperma*	Leguminosea (papilionaceae)
22.	Pangra	*Erythrina Suberosa*	Leguminosae (Pipilionaceae)
23.	Pipal	*Ficus religiosa*	Moraceae
24.	Bad	*Ficus bengalensis*	Moraceae
25.	Bahera	*Terminalia belerica*	Combretaceae
26.	Babul	*Acacia nilotica*	Legumenosae (Mimoseae)
27.	Bel	*Aegle marmelos*	Rutaceae
28.	Bhirra	*Chloroxylon Swietenia*	Meliaceae
29.	Maharukh	*Ailanthus excelsa*	Simarubiaceae
30.	Mahua	*Madhuca indica*	Sapotaceae
31.	Shisham	*Delbergia latifolia, Roxb*	Leguminosae (Papilionaceae)
32.	Safed Siras	*Albizzia procera, Benth*	Leguminosae (Mimoseae)
33.	Sagwan	*Tectona grandis*	Verbenaceae
34.	Saj	*Terminalia tomentosa*	Combretaceae
35.	Salai	*Boswellia serrata*	Burseraceae
36.	Seja	*Lagerstroemia parviflora*	Lythraceae
37.	Semal	*Bombax cieba*	Malvaceae
38.	Haldu	*Adina Cardifolia*	Rubiaceae
Small Tree			
39.	Amaltash	*Cassia fistula*	Leguminosae (Caesalpiniaceae)
40.	Astara	*Bauhinia malabarica*	Leguminosae (Caesalpiniaceae)

S. No.	Local Name	Botanical Name	Family
41.	Asta	*Bauhinia racermosa*	Leguminosae (Caesalpiniaceae)
42.	Ghont	*Zizyphus xylopyra*	Rhamnaceae
43.	Ber	*Zizyphus jujube*	Rhamnaceae
44.	Lokhandi	*Ixora arborea*	Rubiaceae
45.	Sehra	*Bauhinia retusa*	Leguminosae (Caesalpiniaceae)
Shrubs and Herbs			
46.	Adusa	*Adhatoda vasica*	Acanthaceae
47.	Arandi	*Ricinus Communis*	Euphorbiaceae
48.	Aak	*Calotropis gigantean*	Asclepiadaceae
49.	Gokhru	*Tribulus terrestris*	Zygophllaceae
50.	Zhadneri	*Zizyphus nummularia*	Rhamnaceae
51.	Tulsi	*Ocimum Sanctum*	Labiatae
52.	Thuar	*Euphorbia nerifolia*	Euphorbiaceae
53.	Dhavai	*Woodfordia fruticosa*	Lythraceae
54.	Nirgudi	*Vitex negundo*	Verbenaceae
55.	Neel	*Indigofera pulchella*	Leguminosae
56.	Pawar	*Cassia tora*	Leguminosae (Caesalpiniaceae)
57.	Beshram	*Ipomoea pescaparae*	Convolvulaceae
58.	Bhatkatiya	*Solanum nigrum*	Solanaceae
59.	Vidyasini	*Lantana camara*	Verbenaceae
60.	Shatavari	*Asparagus recemosus*	Liliaceae
61.	Sitafal	*Anona Squamosa*	Anonaceae
62.	Harsingar	*Nyctanthes arbortristis*	Oleacaae
63.	Ratanjot	*Jatropha curacas*	Evphorbiaceae
64.	Gunja	*Abrus precatorious*	Leguminosea
65.	Amrbel	*Cuscuta reflexa*	Convolvulaceae

68. The clearance of the vegetation and felling of trees for the road construction is an environmental concern. However, very small number of tree is falling within ROW and which can be saved with design considerations.

1. Terrestrial/Avian fauna:

69. The general faunal assessment was carried out in subproject area. The species generally found are given in **Table III.F**.

Table III-F: List of Common Fauna of Project Districts

S. No.	Local Name	Zoological Name	Family
Mammals			
1.	Common Langur	*Presbytia entellus*	Colobidae
2.	Rhesus macaque	*Macaca mulatta*	Circopthecidae
3.	Common Mongoose	*Herpestes edwardsi*	Herpestidae
4.	Common five Stripped squirrel	*Funambulus pennanti*	Sciuridae
5.	Field rat	*Bandicota bengalensis*	Muridae
6.	Common house rat	*Rattus rattus-refescena*	Muridae
7.	Common Indian hare	*Lepus nigricollis*	Leporidae

S. No.	Local Name	Zoological Name	Family
Reptiles			
1.	*Python molurus*	Indian python	Pythonidae
2.	*Mabuya carinata*	Common skink	Scincidae
3.	*Ptyas mucosus*	Rat snake	Colubridae
4.	*Hemidactyhus flaviviridis*	House Lizard	Gekkonidae
5.	*Calotes versicolor*	Garden Lizard	Agamidae
6.	*Naja naja*	Indian cobra	Elapidae
7.	*Varanus bengalensis*	Moniter Lizard	varanidae
Avifauna			
1.	White Egret	*Egretta alba*	Ardeidae
2.	Little Egret	*Egretta garzetta*	Ardeidae
3.	Common or Grey Quail	*Cotuenix coturnix*	Phasianidae
4.	Red wattled Lapwing	*Vanellus indicus*	Charadridae
5.	Blue Rock Pigeon	*Columba livia*	Collumbidae
6.	Indian Ring Dove	*Streptopelia decaocto*	Collumbidae
7.	Spotted Dove	*Streptopelia chinensis*	Collumbidae
8.	Large Indian Parakeet	*Psittacula eupatria*	Psittacidae
9.	Rose Ringed Parakeet	*Psittacula Krameri*	Psittacidae
10.	Blossom Headed Parakeet	*Psittacula cyanocephala*	Psittacidae
11.	Koel	*Eudynamys scolopaceae*	Cuculidae
12.	Coucal	*Centropus sinensis*	Cuculidae
13.	Small Blue King Fisher or Common Kingfisher	*Alcedoatthis*	Alcedinidae
14.	White Breasted Kingfisher	*Halcyon smyrnensis*	Alcedinidae
15.	Green Bee Eater	*Merops orientalis*	Meropidae
16.	Indian Pitta	*Pitta brachyuran*	Pittiade
17.	King Crow; Black Drongo	*Dicrurus adsimilis*	Dicruidae
18.	Large Racket tailed Drango	*Dicrurus paradiseus*	Dicruidae
19.	Common Mynah	*Aeridotheres tristis*	Sturnidae
20.	Jungle Mynah	*Aeridotheres*	Sturnidae
21.	House Crow	*Corvus splendens*	Corvidae
22.	Jungle Crow	*Corvus macrorhynchos*	Corvidae
23.	Red vented Bulbul	*Pyenonotus cafer*	Pycnontidae
24.	Jungle Babbler	*Turdoidesstriatus*	Muscicapidae Timalinae
25.	Pied Bush Chat	*Saxicola caprata*	Muscicapidae
26.	Magpie Robin	*Copsychus-saularis*	Muscicapidae Turdinae
27.	Indian Robin	*Saxicola fulicatus*	Muscicapidae Turdinae
28.	Grey Wagtail	*Motacilla cinerea*	Motacillidae
29.	Purplesun Bird	*Nectarinia asiatica*	Nectarinidae
30.	House Sparrow	*Passer-domesticus*	passerinae
31.	Red Munia	*Estrilda amandava*	Estrildinae

2. Wild Life and Protected Areas

70. Madhya Pradesh is a pioneer state in the national movement for conservation of flora and fauna. Conservation oriented legal provisions were made in the erstwhile Acts regulating hunting of game-birds and wild animals. There are 9 national parks and 25 sanctuaries spread over an area of 10,862 sq. km constituting 11.40% of the total forest area and 3.52% of the geographical area of the state **(Figure 3.6).** Efforts are under way to increase the protected area network to 15% of the forest or 5% of the geographical area as suggested by State Wildlife Board. There is no wildlife Sanctuaries/National Parks, Tiger Reserves, etc. along the project area.

Legend: ☐ National Park ● Sanctuaries

SL No shown above are synchronised with Sl. No in the table below

Figure III.6 : Protected Areas of Madhya Pradesh

71. **Table III-G** provides details of national park and sanctuaries corresponding to serial Number indicated at **Figure 3.6** above.

Table III-G: List of Protected Areas in Madhya Pradesh

I. List of National Park in M. P. (Sl. No. Below Correspond to Figure above)			
S.No.	**Name and District of National Park**	**Area in Sq.Km.**	**Fauna**
1.	Kanha National Park, District Mandla	940 km²	Tiger, Panther, Gaur, Chital, Sambar, Nilgai, Chinkara, Barking Deer, Swamp Deer, (Barasingha), Wild Boar & variety of upland birds.
2	Bandhavgarh National Park, District Umaria	437 km²	Tiger, Panther, Gaur, Chital, Sambar, Nilgai, Chinkara, Barking Deer, Wild Boar & variety of upland birds.
3	Panna National Park, District Panna, Chhatarpur	543 km²	Tiger, Chital, Chinkara, Sambar and the Sloth Bear
4	Pench Tiger Reserve, District Seoni, Chhindwara	293 km²	Tiger, Panther, Bison, Chital, Sambhar, Nilgai, Chinkara, Barking Deer, Chowsingha, Wild Boar & variety of upland birds.
5	Satpura National Park, District Pachmarhi	524 km²	Tiger, Leopard, Sambar, Chital, Bherki, Nilgai, Four-horned antelope, Chinkara, Bison (gour), Wild Boar, Wild Dog, Bear, Black Buck, Fox, Porcupine

I. List of National Park in M. P. (Sl. No. Below Correspond to Figure above)			
S.No.	**Name and District of National Park**	**Area in Sq.Km.**	**Fauna**
6	Sanjay National Park, District Sidhi	1938 km²	Tiger, Panther, Sambar, Chital, Gaur, etc.
7	Madhav National Park, DistrictShivpuri	354 km²	Panther, Chital, Sambar, Nilgai, Chinkara, Black Buck, Chausingha, Wild Boar, Crocodiles in lake, & variety of upland birds.
8	Van Vihar National Park, DistrictBhopal	4.45 km²	Tiger, Panther, Lion, Bear, Hyena etc.
9	Mandla Plant Fossils National Park, District Mandla	0.27 km²	Plant Fossils
II. List of Wild Life Sanctuaries in M.P. (Sl. No. Below Correspond to Figure above)			
S. No.	**Sanctuary**	**SL. No.**	**Sanctuary**
1.	Bori	13.	Panpatha
2.	Bagdara	14.	Kuno
3.	Phen	15.	Pench
4.	Ghatigaon	16.	Ratapani
5.	Gandhisagar	17.	Sanjay Dubri
6.	Karera	18.	Singhori
7.	Ken Ghariyal	19.	Son Ghariyal
8.	Kheoni	20.	Sardarpur
9.	Narsinghgarh	21.	Sailana
10.	N. Chambal	22.	Ralamandal
11.	Nauradehi	23.	Orchha
12.	Pachmari	24.	Gangau
		25.	V. Durgawati

3. Aquatic Biology

72. No wetland or large water body falls in and around the selected project roads area. Fisheries activities are also minimal in subproject areas.

D. Socioeconomic Environment

1. Demography

73. As per census 2001, Madhya Pradesh has a total population of 60 million persons. (Table **III-H**). It has one of the largest tribal populations in the country. Out of the 50 districts in the State, 19 are predominantly tribal. Eighty-nine blocks (approx. 28%) of the total 313 development blocks are tribal blocks.

Table III-H: Demographic Profile

Indicators	**Status**
Population	
Total	6,03,85,218
Male	3,14,56,973 (52%)
Female	2,89,28,245 (48%)
SC	15.17%
ST	20.27%

Indicators	**Status**
Literacy	
Total	64.11%
Male	76.80%
Female	50.30%
SC	58.57%
ST	41.16%

Urban	1,61,02,400 (27%)	Urban	79.40%
Rural	4,42,82,528 (73%)	Rural	57.80%
Sex ratio	920		

2. Literacy and Education

74. The State literacy rate presently is 64.11% (source: Census 2001), which is close to the national literacy rate of 64.8 %. While the female literacy has considerably improved over the last decade, a great disparity persists in the literacy rates of males and females. Some blocks such as Alirajpur, Jobat (district Jhabua), Karahal (district Sheopur), Jhirniya (district Khargaon), Sendhwa (district Badwani), and Bajna (district Ratlam) have literacy rates below 35%.

3. Affluence

75. About 18.8 million People is considered living below poverty line in Madhya Pradesh, which constitutes about 43% of total population.

4. Agricultural

76. Agriculture is the main occupation in the state. About half of the land area is cultivable. The extent of availability of cultivable land varies depending on topography, rainfall, and soils. The larger cultivable land is found in the Chambal valley, Malwa Plateau, Rewa Plateau, and Chhattisgarh Plain.

77. The prime crop of the state is Cereals (about 41%), followed by pulses (about 20%), oilseed (about 30%) and vegetables, fruits, fodder, and other horticultural crops (about 9%).

5. Industries, Cottage and small industries

78. The state has various industrially developed estates. The major industrial produce includes cement, pigiron, steel ingots, news print, and sugar. Industrialization is low in the subproject areas. However, there is high potentiality for the growth of cottage and small industries in subproject areas. Better communication and transport facilities may be contributory in this growth.

6. Public Facilities (Communication, health services, water supply, power)

79. State has well-developed postage and telephone system. Subprojects areas also has good access to these facilities. Educational facilities are available in the village areas as well. However, rural population has to depend on urban areas for undergraduate level education. The urban area has well organised water supply systems. However, rural areas including subproject areas still depends on hand pumps.

80. MP state has total power generation capacity of 6305 MW. However, state is still power deficient. About 97.43% villages in the state are electrified.

E. Salient Environmental Features of Sample Roads

81. The salient environmental features of sample roads are summarized in **Table III-I** below:

Table III-I: Salient Environmental Features of Sample Roads

Sl No	Name of District	Block	Road Name (Length, in Km)	Salient Environmental Features
1	Ratlam	Ratlam	Mundri to Sarwani Jagir (2.80 Km)	• The topography of the project road is flat at almost all locations. • No part of the project road passes through any forest area and there are no endangered species • Habitation area located between CH-2000m to CH-2400m, CH-2700m CH-2800m with connecting village Sarwani Jagir • There was no grazing ground located on the chainage. • Agriculture land lies between CH-00m to CH-2000m, CH-2400m to CH-2700m. • There are no barren land on this road and it passes mostly through agricultural land • No part of the project road lies in hilly terrain prone to landslide or erosion. • Big ponds were found at CH-400-500m and CH-1700-1800m far away i.e. 300m from the proposed alignment • There was found some water crossing structures at Ch-00m to Ch-100m, Ch-1200m to Ch-1300m, CH-1800m to CH-1900m, CH-2200m to CH-2300m has proposed CD. • There are few points of water stagnation and other drainage issues on or near the road • No flood prone area was found on the road • There are 39 trees of dbh of 30 cm or more that were found on the road • No faunal habitat, breeding ground, rare, endangered or threatened species etc. are found within 100 m of the road shoulder • Some utility, community and religious structures are found along the road
2	Indore	Sanwer	Indore Ujjain Road to Brahman Khedi (3.10)	• The topography is flat at almost all locations • No part of the road passes through forest area, nor any endangered species are found alongside the project road • The project road passes through the target village, namely Brahmankhedi, at CH 2900 to 3100 mtrs. • Agriculture land lies on both sides of the road between Ch 00m to Ch 2700M • There are grazing grounds located between CH2700m till CH 2900m • The project road does not pass through any barren land • No part of the project road lies in hilly terrain that may be prone to landslides • A few water crossing are there between CH500-600m, Ch 800-900m, Ch 1800-1900m and CH 2600-2700m. CD's have been proposed on the

Sl No	Name of District	Block	Road Name (Length, in Km)	Salient Environmental Features
				above-mentioned locations • There are some points of water stagnation and related issues on or near the road. • A total of 19 trees are there within 10m of the center-line of the proposed alignment
3	Tikamgarh	Tikamgarh	Tikamgarh Jatara Road to Laxmanpura (0.95)	• The topography of the project road is flat at almost all locations. • No forest area or endangered species are found along the project road • The project road is passing through village namely Laxmanpura between CH-800m to CH-1000m. • Agriculture land lies on both side of road between Ch-00m to CH-500m. • The project road is not passing through grazing land or barren land. • No part of the project road lies in hilly terrain prone to landslide or erosion. • Some water crossings have been found between CH-00m to CH-100m, CH-400m to CH-500m, CH-700m to CH-800m at the proposed alignment. • There are some points of water stagnation and other drainage issues on or near the road • A total of 09 trees are falling within 10m of the center line of proposed alignment. • No rare, endangered or threatened species are there within 100 m of the road shoulder. • Some utility, community and religious structures are found along the road
4	Damoh	Tendukheda	Samnapur to Jamun (9.50)	• The topography of the road is flat in almost all the locations • However, some hills area is found at CH-1600m to CH-9500m along the proposed alignment. • Forestland is there at Ch-1400m to Ch-9500m at proposed alignment. However, no part of the chainage cuts thoruhg any forestland. • Inhabited area starts at Ch-400m to Ch-1200m, Ch-7400m to Ch-7800m and Ch-9000mto Ch-9500m with connecting village Samnapur, Khari and Jamun respectively. • Significant agricultural land was not found along the proposed alignment • Grazing ground land is no there along the proposed alignment. • No Barren land is there along the project road. • No part of the project road lies in hilly terrain prone to landslide or erosion. However, sufficient cross-drainage structures will be constructed to avoid any erosion. • There was not found any pond along the project road.

Sl No	Name of District	Block	Road Name (Length, in Km)	Salient Environmental Features
				• There was found at Ch-1400m to Ch-1600m, Ch-2600m to Ch-2800m, Ch-3600m to Ch-3800m, Ch-5400m to CH-5600m and Ch-7200m to Ch-7400m has been CD proposed and Ch-400m to Ch-600m Existing CD • There are not at some points of water stagnation and other drainage issues on or near the road • No flood prone area is there along the project road. • There was not found any faunal habitat at 11000 m of the road shoulder. • No rare, endangered or threatened species were found within 100 m of the road shoulder. • Some utility structures, religious/cultural and community structures/buildings were found alongside the proposed road alignment
5	Damoh	Damoh	MDR(ATP) to Rampura (1.00)	• Topography of the road is flat at almost all locations • No part of the project road passes through any forest area. • There are no endangered species on this alignment • Inhabited area starts at Ch-00m to Ch-200m with connecting village Rampura • Agriculture land lies between Ch-200m to Ch-700m • No barren land or grazing ground were found along the proposed alignment • No part of the project road lies in hilly terrain prone to landslide or erosion. However, sufficient cross-drainage structures will be constructed to avoid any erosion. • There was not found any pond at proposed alignment. • There was found some water crossing points at Ch-300m to Ch-400m • There are at some points of water stagnation and other drainage issues on or near the road • There are not found any flood prone area along the project road. • There are 19 trees of dbh of 30 cm or more, on the proposed alignment • There was not found any faunal habitat at 100 m of the road shoulder. • Some utility structures, religious/cultural and community structures/buildings were found alongside the proposed road alignment
6	Damoh	Tendukheda	L118 to Oriya Mal (2.00)	• The topography of the road is flat is almost all locations • No part of the project road passes through any forest area • Inhabited area starts at Ch-1600m to Ch-2000m

Sl No	Name of District	Block	Road Name (Length, in Km)	Salient Environmental Features
				starting village Oriya Mal • Agriculture land is at Ch00m to Ch-700m along the proposed alignment. • No grazing gorund or barren land is there along the proposed alignment. • No part of the project road lies in hilly terrain prone to landslide or erosion. However, sufficient cross-drainage structures will be constructed to avoid any erosion. • There was not found any pond along the proposed alignment. • There was found water crossing points at Ch-100m to Ch-200m, Ch-400m to Ch-500m, Ch-1000m to Ch-1100m have Existing CD. • There are at some points of water stagnation and other drainage issues on or near the road • No flood prone area is there along the project road • There are 09 trees of dbh of 30 cm or more, along the project road • There was not found any faunal habitat at 100 m of the road shoulder. • No rare, endangered or threatened species were found within 100 m of the road shoulder. • Some community, utility, religious and cultural structures are found alongside the road alignment
7	Bhopal	Berasiya	Bhopal Beraisya Road to Pardi (1.45)	• No part of the project road lies in hilly terrain prone to landlsides or erosion. However, sufficient cross-drainage structures will have to be constructed to avoid any erosion • No pond was found along the proposed alignment • Some water crossing structures a at CH 00m-100m, CH 200m-300m and CH 1200m-1300m. CD's have been proposed at CH 500m-600m. CH 800m-900m has existing CD's • There are some points of water stagnation and other drainage issues on or near the road • No flood prone area is found along the project road • There are 27 trees of dbh 30 cm or more that are found along the road • No rare, endangered or threatened species or faunal habitats were found within 100m of the road shoulder • Utility structures and some religious cultural or community structures/buildings are found on the road.
8	Jabalpur	Sehora	Sihora Silondi Road to Chhanagawa (2.70)	• The topography of the project road is flat at almost all locations. • No part of the project road passes through any forest area.

Sl No	Name of District	Block	Road Name (Length, in Km)	Salient Environmental Features
				• No endangered species are found along the project road • Inhabited area starts at Ch-2200m to Ch-2700m with connecting village Chhanagawa. • Agriculture land lies between Ch-00m to Ch-2100. • Grazing ground was not found along the proposed alignment. • No Barren land is there along the project road. • No part of the project road lies in hilly terrain prone to landslide or erosion. However, sufficient cross-drainage structures will be constructed to avoid any erosion. • There was found pond at Ch-2300m to Ch-2400m at the proposed alignment. • Small nullahs, streams and chhanels are there at Ch-00m to 100m, Ch-200-300m, Ch-300m to Ch-400m, Ch-600m to CH-700m, Ch-900m to Ch-1000m, CH-1900m to Ch-2000m, Ch-2000m to Ch-2100m and Ch-2400m to Ch-2500m has been proposed CDs. • There are at some points of water stagnation and other drainage issues on or near the road • No flood prone area is there along the road • There are 34 trees of dbh of 30 cm or more, along the road • There was not found any faunal habitat at 100 m of the road shoulder. • No rare, endangered or threatened species were found within 100 m of the road shoulder. • Utility structures are found. • Some of the religious cultural or community structures/buildings are found.
9	Ratlam	Ratlam	Dosaigoan to Borana (1.2)	• The topography of the project road is flat at almost all locations. • No part of the project road passes through any forest area. • Inhabited area starts at Ch-00mto Ch-100m connecting village Dosaigaon and at Ch-800m to Ch-1200m with connecting village Borana. • Agriculture land lies between Ch-100m to Ch-900m. • Grazing ground was not found along the proposed alignment. • No Barren land along the project road. • No part of the project road lies in hilly terrain prone to landslide or erosion. However, sufficient cross-drainage structures will be constructed to avoid any erosion. • There was not found any pond along the proposed alignment. • There was some water crossing structures like

Sl No	Name of District	Block	Road Name (Length, in Km)	Salient Environmental Features
				streams, nullahs and rivulets found at Ch-200m to Ch-300m, Ch- 500m to Ch-600m, CH-700m to Ch-800m has proposed CD. • There are at some points of water stagnation and other drainage issues on or near the road • No flood prone area is there on the road • There are 48 trees of dbh of 30 cm or more, that are there on the road. • There was not found any faunal habitat at 100 m of the road shoulder. • No rare, endangered or threatened species were found within 100 m of the road shoulder. • Some utility and religious cultural or community structures/buildings were found on the road
10	Ratlam	Ratlam	R. S. Road to Nandlai (2.80)	• The topography of the project road is flat at almost all locations. • No part of the project road passes through any forest area. • Inhabited area starts at Ch-2000m to 2800m with connecting village Nandlai • Agriculture land lies between Ch-00m to Ch-2000m at both side of the alignment. • Grazing ground was not found along the proposed alignment. • No barren land is there along the project road • No part of the project road lies in hilly terrain prone to landslide or erosion. However, sufficient cross-drainage structures will be constructed to avoid any erosion. • There was found at Ch-600m to Ch-700m, Ch-900m to Ch-1000m, Ch-1600m to Ch-1700m, Ch-2400m to CH-2500m, Ch-2700m to Ch-2800m pond the proposed alignment. • There was found some water crossing point at Ch-100m to Ch-200m, Ch-300m to Ch-400m, Ch-600m to Ch-700m, Ch-900m to Ch-1000m, Ch-1100m to Ch-1200m, Ch-1500m to Ch-1600m, Ch-1600m to Ch-1700m & Ch-1900m to Ch-2000m proposed CD. • There are some points of water stagnation and other drainage issues on or near the road. • No flood prone area is found alongside the project road • There are 22 trees of dbh of 30 cm or more that are there along the project road • There was not found any faunal habitat at 100 m of the road shoulder. • No rare, endangered or threatened species were found within 100 m of the road shoulder. • Some of the utility structures, community structures and religious structures are found along the road.

Sl No	Name of District	Block	Road Name (Length, in Km)	Salient Environmental Features
11	Mandsaur	Sitamou	Sitamou Basai to Larni (1.00)	• The topography of the project road is flat at almost all locations. • No part of the project road passes through and forest area • Inhabited area starts at Ch-700m to Ch-1000m with connecting village Larni. • Agriculture land was not found along the proposed alignment • No Barren land was found along the project road. • No part of the project road lies in hilly terrain prone to landslide or erosion. However, sufficient cross-drainage structures will be constructed to avoid any erosion. • No pond was found along the proposed alignment. • Some water crossing points at Ch-300m to Ch-400m. CD has been proposed at this point. • There are at some points of water stagnation and other drainage issues on or near the road • No flood prone area is there along the project road • There are 10 trees of dbh of 30 cm or more that are found alongside the project road • No rare or endangered and threatened species or faunal habitat were found within 100m of the road shoulder • Some utility structures and religious cultural or community structures/buildings were found alongside the road alignment
12	Sehore	Ichhawar	Gaji Khedi Road to Ramgarh (5.60)	• The topography of the project road is flat at almost all locations. • Unclassified forest area is there at Ch-600m to Ch-5000m along the proposed alignment. • Inhabited area starts at Ch-00m to Ch-600m and Ch5200m to Ch-5600m with connecting village Gaji Khedi To Ramgarh. • No agriculture land was found along the project road, neither were grazing ground or barren land found • No part of the project road lies in hilly terrain prone to landslide or erosion. However, sufficient cross-drainage structures will be constructed to avoid any erosion. • A river is there at Ch-5000m to Ch-5200m along the proposed alignment. • There was found some water crossing points at Ch-200m to Ch-400m, Ch-600m to CH-800m, CH-1000m to 1200m, Ch-1200m to Ch-1400,m, Ch-1400m to Ch-1600m, Ch-2200mto Ch-2400m, CH-2600m to Ch-2800m, Ch-3000m to CH-3200m, Ch-3600m to Ch-3800m, Ch-4200m to CH-4400m has been CD proposed. At CH-

Sl No	Name of District	Block	Road Name (Length, in Km)	Salient Environmental Features
				5000m to CH-5200m has proposed bridge. • There were some points of water stagnation and other drainage issues on or near the road • No flood prone area is there along the project road • There are 45 trees of dbh of 30 cm or more that are found along the project road • No faunal habitat is there at 100 m of the road shoulder. • No rare, endangered or threatened species were found within 100 m of the road shoulder. • Some religious cultural or community structures/buildings are there along the project road
13	Sehore	Sehore	T11-Heerapur Road to Alampura (1.60)	• The topography of the project road is flat at almost all locations. • No part of the project road passes through any forest area. • Inhabited area namely Barkhedi and Alampura are respectively located at Ch 00mto CH 100m, and CH 1100m to CH 1600m. • Agriculture land lise between CH100-600m, CH800-900m LHS and CH 600-1000m RHS • Grazing ground is there at CH 600-800m LHS alongside the proposed alignment. • No barren land is there on the proposed alignment • No part of the project road lies in hilly terrain prone to landslide or erosion. • There is a small pond at CH 900-1000m along the road shoulder of the proposed alignment. • Nullahs, stream and small rivulets are thereat CH 400-500m, CH 900-1000m and CH 1200-1300m. CD's have been proposed for the above-mentioned chainages • There are at some points of water stagnation and other drainage issues on or near the road • No flood prone area is there along the project road. • There are 5 trees of dbh of 30 cm or more that are found in the proposed alignment. • There was not found any faunal habitat at 100 m of the road shoulder. • No rare, endangered or threatened species were found within 100 m of the road shoulder. • Some utility structures, religious cultural or community structures/buildings were found on the proposed alignment
14	Jabalpur	Jabalpur	NH-7 to Dhadra (2.85)	• The topography of the project road is flat at almost all locations. • There was found hilly area between Ch-2400m

Sl No	Name of District	Block	Road Name (Length, in Km)	Salient Environmental Features
				to Ch-2500m on the proposed alignment • No forest area is there along the proposed alignment • The project road is passing through village namely new habitation, Dhadra between Ch-1400m to Ch-1500m, Ch-2700m to Ch-2800m respectively. • Agriculture land lies on both side of agriculture between Ch-00m to CH-1200m RHS and Ch-1700m to Ch-2200m both side. • The project road is not passing through grazing land. • The project road is not passing through the barren land. • No part of the project road lies in hilly terrain prone to landslide or erosion. • No pond is there on the proposed alignment. • Some water crossing points has been observed between Ch-1700m to Ch-1800m, Ch-2400m to Ch-2500m, Ch-2600m to Ch-2700m has been CD proposed on above mentioned locations and Ch-2200m to Ch-2300m has been existing CD. • There are some points of water stagnation and other drainage issues on or near the road • A total of 04 trees are falling within 10m of the center line of proposed alignment. • No rare, endangered or threatened species have been found within 100 m of the road shoulder. • Some utility, community and religious structures are there on the proposed alignment
15	Neemuch	Jawad	Neemuch Singoli Road to Gothada (1.00)	• The topography of the project road is flat at almost all locations. • No part of the project road passes through any forest area. • Inhabited area starts at Ch-800m to Ch-1000m with connecting village Gothada. • Agriculture land was found at Ch-00m to Ch-800m both side of the alignment • Grazing ground was not found along the proposed alignment. • No Barren land is there along the project road. • No part of the project road lies in hilly terrain prone to landslide or erosion. However, sufficient cross-drainage structures will be constructed to avoid any erosion. • No pond is there along the proposeds alignment • Some water crossing points are there at Ch-00m to Ch-100m, Ch-400m to Ch-500m, & Ch-700m to Ch-800. CD's are proposed at these points. • There are at some points of water stagnation

Sl No	Name of District	Block	Road Name (Length, in Km)	Salient Environmental Features
				and other drainage issues on or near the road. • No fold prone area is there along the project road • There are 13 trees of dbh of 30 cm or more, on the project road. • No faunal habitat, breeding ground etc. is found within 100 m of the road shoulder. • No rare, endangered or threatened species were found within 100 m of the road shoulder. • Some utility and religious/community/cultural structures were found alongside the proposed road
16	Indore	Sanwer	Indore Ujjain Road to Siloda Bujurg (13.70)	• The topography of the project road is flat at almost all locations. • No forest area was found alongside the proposed alignment • The project road passes through Siloda Bujurg (new habitation) spread in phases at CH400-600m and then at Ch 1800m (end-point). • The project road passes through agriculture land on both sides at CH-00m to 400m and at CH-700 to 1300m. • Grazing ground is there at CH-1400to Ch-1600m. • There is no barren land along the project road. • No part of the project road lies in hilly terrain prone to landslide or erosion. • No pond is there along the project road • Some nallahs, stream, rivulets and other water crossing are there at CH00-100m, Ch 1200-1300m and CH 1400-1500m. CD's are proposed on these points However, CH1500-1600m has existing CD and CH 100-200m, CH 300-400m and CH 900-1000m have field crosses. • There are few points of water stagnation and other drainage issues on or near the road • The area along the project road is not flood prone. • There was found 04 trees with a dbh of 30 cm are passing through the proposed alignment. • No faunal habitat, breeding ground etc. is found within 100 m of the road shoulder. • No rare, endangered or threatened species are found within 100 m of the road shoulder. • Some utility and community structures were found alongside the proposed alignment
17	Mandsaur	Mandsaur	Mandsuar Bypass Road to Aghoriya (2.95)	• The topography of the project road is flat at all locations. • The proposed alignment does not pass through any forest area • Inhabited area starts at Ch-2200m to Ch-2950m with connecting village Aghoriya.

Sl No	Name of District	Block	Road Name (Length, in Km)	Salient Environmental Features
				• Agriculture land was found at Ch-100m to Ch-2200m both side of the alignment • Grazing ground was not found along the proposed alignment. • No Barren land is there along the project road. • No part of the project road lies in hilly terrain prone to landslide or erosion. However, sufficient cross-drainage structures will be constructed to avoid any erosion. • No pond is there along the proposed alignment • There was found some water crossing points at Ch-200m to Ch-300m, Ch-800m to Ch-900m, Ch-1900m to Ch-2000m, Ch-2700m to Ch-2800m has proposed CD and Ch-1500m to Ch-1600m and Ch-2100m to Ch-2200m pipe proposed. • There are some points of water stagnation and other drainage issues on or near the road. • No flood prone area is there along the project road. • There are 46 trees with a dbh of 30 cm that are there along the proposed alignment • There is no grazing ground along the project road. • There is no barren land along the project road. • No part of the project road lies in hilly terrain prone to landslide or erosion. • No faunal habitat, breeding ground etc. is found within 100 m of the road shoulder. • No rare, endangered or threatened species are found within 100 m of the road shoulder. • Some utility and community structures were found alongside the proposed alignment
18	Jabalpur	Jabalpur	T05 to Pipariya (2.60)	• The topography of the project road is flat at almost all locations. • No part of the project road passes through any forest area. • Inhabited area starts at Ch-900m to Ch-1100m, Ch-2000m to Ch-2200m with connecting village Pipariya tola and at ch-2600m connecting village Pipariya. • Agriculture land lies between Ch-00m to Ch-200m, Ch-700m to Ch-900m, Ch-1400m to Ch-2000m and Ch-2300m to Ch-2600m. • Grazing ground was found at Ch-200m to Ch-700m along the proposed alignment. • No barren land is there on the project road. • No part of the project road lies in hilly terrain prone to landslide or erosion. • No pond is there alongside the project road. • There was found at Ch-00m to 100m, Ch-100-200m, Ch-600m to Ch-700m, Ch-800m-Ch-

Sl No	Name of District	Block	Road Name (Length, in Km)	Salient Environmental Features
				900m, Ch-1700m- Ch-1800m, Ch-1800m-Ch-1900m, Ch-2500m-2600m and where as Ch-1300m to Ch-1400m have existing causeway. • There are some points of water stagnation and other drainage issues on or near the road. • The proposed alignment is not flood prone in nature • There are 24 trees of dbh of 30 cm or more that are there alongside the proposed alignment. • No faunal habitat, breeding ground etc. is found within 100 m of the road shoulder. • No rare, endangered or threatened species were found within 100 m of the road shoulder. • Some utility and community structures were found along the proposed alignment.
19	Neemuch	Jawad	Neemuch Singoli Road to Panoli (2.50)	• The topography of the project road is flat at all locations. • Unclassified forest area is there at Ch-00m to Ch-1800m • Inhabited area starts at Ch-2100m to Ch-2500m with connecting village Panoli. • Agriculture land was not found along the proposed alignment. • Grazing grounds was not found along the proposed alignment. • There is no barren land along the project road. • No part of the project road lies in hilly terrain prone to landslide or erosion. However, sufficient cross-drainage structures will be constructed to avoid any erosion. • There was found at Ch-1300m to Ch-1400m RHS & Ch-1400m to Ch-1500m, Ch-1900m to Ch-2000m LHS pond which is far away 12-15m from the proposed alignment. • There was found some water crossing points at Ch-00m to Ch-100m, Ch-300m to Ch-400m, Ch-900m to Ch-1000m & Ch-1300m to Ch-1400m has CD proposed • There are at some points of water stagnation and other drainage issues on or near the road • There are 04 trees of dbh of 30 cm or more that are found alongside the alignment • There is no lake/swamp along the project road. • The area along the project road is not flood prone. • No faunal habitat, breeding ground etc. is found within 100 m of the road shoulder. • No rare, endangered or threatened species were found within 100 m of the road shoulder. • Some utility and community structures were found along the proposed alignment
20	Indore	Mhow	A. B. Road to	• The topography of the project road is flat at

Sl No	Name of District	Block	Road Name (Length, in Km)	Salient Environmental Features
			Shahda (2.10)	almost all locations. • No part of the project road passes through any forest area. • The project road is passing through village namely Shahda Ch-1800m to Ch-2100m • Agriculture land lies on both side of agriculture between Ch-1300m to Ch-1700m both side of the proposed alignment. • No grazing ground is there along the project road. • Barren land is there along the Ch-500m to Ch-1200m on both sides of the proposed project road. • No part of the project road lies in hilly terrain prone to landslide or erosion. • No pond is there along the proposed alignment • A few water crossing has been observed between at ch-1200m to Ch-1300m CD has been proposed on above mentioned locations • There are some points of water stagnation and other drainage issues on or near the road • A total of 40 trees is falling within 10m of the center line of proposed alignment. • No rare, endangered or threatened species have been found within 100 m of the road shoulder. • Some utility structures, religious, cultural or community structures/buildings are found on the proposed road alignment
21	Tikamgarh	Tikamgarh	Baldevgarh Kakarwaha Road to Atariya (6.10)	• The topography of the project road is flat at almost all locations. • No part of the project road passes through any forest area. • The project road is passing through village name Atariya between Ch-5400m to Ch-6000m • Agriculture land lies on both side of agriculture between Ch-400m to Ch-4200m. • The project road is passing through no grazing land. • The project road is not passing through barren land. • No part of the project road lies in hilly terrain prone to landslide or erosion. • Some water crossing points are there at Ch-400m to Ch-600m, Ch-600 to Ch-800m, Ch-1600 to Ch-1800m has been proposed CDs on above mentioned locations and Ch- 2400m to 2600m, Ch-3200m to Ch-3400m, Ch-3800m to Ch-4000m, Ch-4400m to Ch-4600m has been existing CDs. • There are some points of water stagnation and other drainage issues on or near the road

Sl No	Name of District	Block	Road Name (Length, in Km)	Salient Environmental Features
				• A total of 05 trees is falling within 10m of the center line of proposed alignment. • No rare, endangered or threatened species have been found within 100 m of the road shoulder. • Some community structures were found along the proposed alignment. However, there were no utility structures found.
22	Tikamgarh	Baldevgarh	Patha Patori Road to Midawali (7.00)	• The topography of the project road is flat at almost all locations. • No part of the project road passes through any forest area. • The project road is passing through village namely Bagrun, Kheda and Mithawali between Ch-600m to Ch-800m, Ch-1400m to Ch-1600m, Ch-6800m to Ch-7000m respectively. • Agriculture land lies on both sides between Ch-2400m to Ch-5800m. • The project road is not passing through grazing land. • The project road is not passing through the barren land. • No part of the project road lies in hilly terrain prone to landslide or erosion. • No rare or endangered species are there on the proposed alignment. • A pond has been found between Ch-1800m to Ch-2000m and Ch- 6200m to Ch-6400m LHS along the proposed alignment • Some water crossings are there between Ch-00m to Ch-200m, Ch-2200mto Ch-2400m, Ch-3200m to Ch-3400m, Ch-4600mto Ch-4800m, Ch-6200m to Ch-6400m CD have been proposed on above mentioned locations and between Ch-1800m to Ch-2000m, Ch-5400m to Ch-5600m has existing CDs and Ch-2800m to Ch-3000m, Ch-3400m to Ch-3600m, Ch-5000m to Ch-5200m field cross proposed. • There are some points of water stagnation and other drainage issues on between Ch-1800m to Ch-2000m RHS. • A total of 79 trees are falling within 10m of COI of proposed alignment. • No rare, endangered or threatened species have been found within 100 m of the road shoulder. • Some utility structures, religious and community structures are found along the project road
23	Indore	Mhow	Choraldam Road to Buralia (5.60)	• The topography of the project road is flat is all locations • There was found forest area between Ch-00m to Ch-3800m both side on the proposed alignment. • No rare, endangered or threatened species

Sl No	Name of District	Block	Road Name (Length, in Km)	Salient Environmental Features
				have been found within 100 m of the road shoulder. • The project road is passing through village namely Nachanvore and Buralia between Ch-4600m to Ch-4800m, and Ch-5400 to Ch-5600m respectively. • Agriculture land lies between Ch-4000m to CH-5200m and RHS proposed alignment. • The project road is not passing through any grazing land. • The project road is not passing through any barren land. • No part of the project road lies in hilly terrain prone to landslide or erosion. • A pond is located on the of project road between Ch-4800m to 5400m which is far away 15m from the proposed alignment • Some water crossings have been observed between Ch-00m to Ch-200m, Ch-200m to Ch-400m, Ch-600m to Ch-800m, Ch-800m to Ch-1000m, Ch-1200m to Ch-1400m, Ch-1400m to Ch-1600m, Ch-1600m to Ch-1800m, CH-2000m to Ch-2200m, Ch-2200m to Ch-2400m Ch-2600m to ch-2800m, Ch-2800m to Ch-3000m, Ch-3200m to Ch-3400m, Ch-3600m to Ch-3800m, Ch-3800m to Ch-4000m, Ch-4200m to Ch-4400m, Ch-4600m to Ch-4800m, Ch-5000m to Ch-5200m CDs have been proposed on above mentioned locations. • There are some points of water stagnation and other drainage issues on or near the road. • A total of 19 trees are falling within 10m of the center line of proposed alignment. • Some utility and community structures were found along the proposed alignment
24	Mandsaur	Mandsaur	Dalauda Digon Road to Pinda (3.10)	• The topography of the project road is flat at almost all locations. • The proposed alignment does not pass through any forest area • Inhabited area starts at Ch-2400m to Ch-3100m with connecting village Pinda • Agriculture land was found at Ch-00m to Ch-3000m both side along the proposed alignment • Grazing ground was not found along the proposed alignment. • No Barren land is there along the project road. • No part of the project road lies in hilly terrain prone to landslide or erosion. However, sufficient cross-drainage structures will be constructed to avoid any erosion. • No pond is there along the proposed alignment. • There was found some water crossing points at

Sl No	Name of District	Block	Road Name (Length, in Km)	Salient Environmental Features
				Ch-800m to Ch-900m has EX CD. • There are at some points of water stagnation and other drainage issues on or near the road. • There are not found any flood prone area along the project road. • There are 08 trees of dbh of 30 cm or more that are there along the proposed alignment. • No faunal habitat, breeding ground etc. is found within 100 m of the road shoulder. • No rare, endangered or threatened species are found within 100 m of the road shoulder. • Some utility and community structures as well as religious structures were found along the proposed alignment
25	Bhopal	Berasiya	T-11(Arjunkhedi) to Khejra Ghat (3.04)	• The topography of the project road is flat at almost all locations. • No forest area was found along the proposed alignment • Inhabited area starts at Ch-00m To Ch-100m With Connecting Arjunkhedi and at Ch-2200m To Ch-3040m Khejraghat. • Agriculture land lies between Ch-100m to Ch-2100m. • Grazing ground was not found along the proposed alignment. • No Barren land is there along the project road. • No part of the project road lies in hilly terrain prone to landslide or erosion. However, sufficient cross-drainage structures will be constructed to avoid any erosion. • No pond is there along the proposed alignment. • There was found 13 water crossing structures at Ch-00m to Ch-100m, Ch-100m to Ch-200m, Ch-200m to Ch-300m, Ch-300m to Ch-400m, Ch-400m to Ch-500m, Ch-500m to Ch-600m, Ch-600m to Ch-700m, Ch-800m to Ch-900m, Ch-900m to Ch-1000m, Ch-1300m to Ch-1400m, Ch-1500m to Ch-1600m, Ch-2000m to Ch-2100m, and Ch-2400m to Ch-2500m has proposed CD • There are at some points of water stagnation and other drainage issues on or near the road • There are not found any flood prone area along the project road. • There are 13 trees of dbh of 30 cm or more that are there along the proposed alignment. • There is no barren land along the project road. • No part of the project road lies in hilly terrain prone to landslide or erosion. • No faunal habitat, breeding ground etc. is found within 100 m of the road shoulder. • No rare, endangered or threatened species

Sl No	Name of District	Block	Road Name (Length, in Km)	Salient Environmental Features
				were found within 100 m of the road shoulder. • Some utility and community structures as well as religious structures were found along the proposed alignment
26	Sehore	Sehore	T08 (Jharkheda Ghati-Sehore MDR) to Toonakhurd (1.95)	• The topography of the project road is flat at almost all locations. • No part of the project road passes through any forest area. • Inhabited area starts at CH-1800m to Ch-1950m. It has the has connecting village Thunakhurd. • Agriculture land lies between Ch-100m to Ch-1700m. • Grazing ground is not there along the proposed alignment. • No barren land is there along the proposed alignment • No part of the project road lies in hilly terrain prone to landslide or erosion. However, sufficient cross-drainage structures will be constructed to avoid any erosion. • There is a small pond at CH-00m to Ch-100m along the road shoulder at the proposed alignment. • Some nullahs, streams and rivulets are there at Ch-00m to 100m, Ch-400-500m, CH-1300m to Ch-1400m, CH-1600m to Ch-1700m and Ch-1800m toCh-1900m has proposed CD. • There are at some points of water stagnation and other drainage issues on or near the road • There are not found any flood prone area along the project road. • There are 40 trees of dbh of 30 cm or more that are there along the proposed alignment • There was not found any faunal habitat at 100 m of the road shoulder. • No rare, endangered or threatened species were found within 100 m of the road shoulder. • Some utility and community structures as well as religious structures were found along the proposed alignment.
27	Ratlam	Ratlam	Dhatrawada to Kankarwa (5.40)	• The topography of the project road is flat at almost all locations. • Forest is located at Ch-2100m to Ch-2400m • Inhabited area starts at Ch-00m to Ch-400m, Ch-5200m to Ch-5400m with connecting village Dhatrawada and Kankarwa. • Agriculture land lies between Ch-800m to Ch-1900m Ch-3000m to CH-4100m at both side of the alignment. • Grazing ground was found Ch-400m to Ch-800m, Ch-1900m to Ch-3000m and Ch-4100m to Ch-5200m along the proposed alignment.

Sl No	Name of District	Block	Road Name (Length, in Km)	Salient Environmental Features
				• Barren land was not found along the project road. • No part of the project road lies in hilly terrain prone to landslide or erosion. However, sufficient cross-drainage structures will be constructed to avoid any erosion. • Some lakes and swamps was found Ch-3100m to Ch-4100m pond along the proposed alignment. • There was found few water crossing points at Ch-200m to Ch-300m, Ch-500m to Ch-600m, Ch-1500m to Ch-1600m, Ch-1700m to Ch-1900m, Ch-2200m to Ch-2300m, Ch-2900m to Ch-3000m, Ch-4300m to Ch-4400m, Ch-4500m to Ch-4600m & Ch-4700m to Ch-4800m proposed CD & Ch-3100m to Ch-3300m, Ch-3500m to Ch-3600m & Ch-4000m to Ch-4100m has EX CD. • There are at some points of water stagnation and other drainage issues on or near the road • There are not found any flood prone area along the project road. • There are 133 trees of dbh of 30 cm or more that were found along the proposed alignment • There was not found any faunal habitat at 100 m of the road shoulder. • No rare, endangered or threatened species were found within 100 m of the road shoulder. • Some utility and community structures as well as religious structures were found along the proposed alignment.
28	Bhopal	Berasiya	Rampura Balachoun Road to Goria Sankheda (3.35)	• The topography of the project road is flat at almost all locations. • No immediate forest area is there near to the proposed alignment. • Inhabited area starts at Ch-00m to CH-300m and Ch-3200m to CH-3350m with connecting village Rampura and Goria Sankheda. • Agriculture land lies between Ch-400m to CH-2400m • No part of the project road lies in hilly terrain prone to landslide or erosion. However, sufficient cross-drainage structures will be constructed to avoid any erosion. • There was found small pond at Ch-2600m to Ch-2800m • There was found some water crossing structures at Ch-00m t o Ch-200m, Ch-400m to CH-600m, CH-800m to Ch-1000m, CH-1200m to CH-1400m, Ch-1800m to CH-2000, CH-2200m to Ch-2400m and Ch-2400m to Ch-2600m has proposed CD. • There are some points of water stagnation and

Sl No	Name of District	Block	Road Name (Length, in Km)	Salient Environmental Features
				other drainage issues on or near the road • There are not found any flood prone area along the project road. • There are 25 trees of dbh of 30 cm or more that are there along the proposed alignment • No rare, endangered or threatened species were found within 100 m of the road shoulder. • Some utility and community structures as well as religious structures were found along the proposed alignment.

CD proposed at CH-3400m Road Name: Choraldam to Buraliya Block Name: Mhow District Name: Indore

Pond at RHS, CH-4000-4100M Road Name: Dhatrawada to Kankarwa Block Name: Ratlam District Name: Ratlam

CD proposed at CH 1900-2000M Road Name: Mandsaur Bypass Road to Aghoriya Block Name: Mandsaur District Name: Mandsaur

Pond at CH 1600-1700M, LHS Road Name: R. S. Road to Nandlai Block Name: Ratlam District Name: Ratlam

	
CD proposed at CH 2200M Road Name: Rampura Balachhoun to Goria Sankheda Block Name: Berasiya District Name: Bhopal	**Road environment at CH 100M Road Name: Sihora Silondi Road to Chhanagawa Block Name: Sehora District Name: Jabalpur**
	
Road condition at CH 400-500m, HP at LHS. Road Name: Sitamou Basai to Larni Block Name: Sitamou District Name: Mandsaur	**CD proposed at CH 00M, Starting Point Road Name: Tikamgarh Jatara Road to Laxmanpura Block Name: Tikamgarh District Name: Tikamgarh**

IV. ANTICIPATED ENVIRONMENTAL IMPACTS AND ITS MITIGATION MEASURES

82. Road improvements work brings substantial economic and social benefits to rural communities and national economies. However, it may also cause adverse environmental impacts though of smaller magnitude, since rural road subprojects are planned to follow the existing alignments and will be of 7.5 m width only. The impacts are largely expected to be during construction phase, which can be mitigated through engineering measures and adoption of best construction practices. This section outlines the identified impacts during design, construction and operation phases along with proposed mitigation measures to eliminate or minimize the adverse impacts.

83. The associated environmental impacts have been assessed considering present environmental setting of the project area, nature, and extent of the proposed activities. Impacts are analyzed on both generic and specific nature and are being classified as being insignificant, minor, moderate and major.

84. Since the issues associated with most of the roads are similar, the impacts and mitigation measures given below are applicable to most of the subprojects. Issues specific to any sample roads have been separately indicated.

A. Common Impacts during Design and Construction Phase

1. Climate change

85. **Impact**: The proposed roads are analyzed considering climate change vulnerability screening checklist defined under EARF to RCIP. The resource (like barrow earth, aggregate, cement, concrete) requirements for these rural roads as such are minimal. None of these resources is likely to be affected by climate changes such as changes in temperature and precipitation. None of the project roads is located in natural hazard area or passes through protected areas or flood-prone areas. Only three sample roads, Sawalkhedi to Semera Madho in Sagar district, Ratlam Gujri road to Jalod in Dhar district and SH 49 – Itwaheeralal in Damoh District are prone to flood from Keth River, Chamla River and Nala, respectively. The habitation is low along these rural roads and as such, no exponential population growth is expected considering the generic trend of population migration from rural to urban areas. Most of the subproject roads pass through agricultural fields and along the existing alignments with low embankment height of 1m (average) from ground to crust except at the approaches of cross-drainage structures. As such, the subproject roads are unlikely to be vulnerable or increase the vulnerability of surrounding areas (with respect to population growth, settlement patterns, increasing runoff or landslides).

86. **Mitigation Measures**: Compensatory tree plantations[6] (1:3) will be made to compensate the loss of trees cut for construction of subproject roads. Efforts shall be made to plant additional trees for increasing the carbon sink. The tree may be planted with help of village Panchayat.[7] All non-sample rural roads to be included in RCIP will also be screened for climate change vulnerability and necessary mitigation measures shall be adopted for minimisation of identified vulnerability if any.

[6] SRRDA mostly undertake this activity through state forest department. The forest department plants tree either along the proposed roads if land is available otherwise on nearby degraded forest land.

[7] Village Panchayats are planting trees at along rural roads with funding under Mahatma Gandhi National Rural Employment Act scheme. The PIUs may facilitate with them for planting trees along the road. Some of the PIUs in different states are already helping Village Panchayats for the same.

2. Finalization of Alignment

87. **Impact**: The proposed rural road will be constructed to provide 7.5 m roadway in accordance with PMGSY guidelines and technical specifications (IRC-SP 20: 2002) in plain terrains. Sample rural road construction works are proposed aligned to existing road (earthen track with some stretches of brickbat soling). The existing road passes through plain terrain and primarily agriculture areas. None of sample roads passes through any protected monument or protected areas. Impacts due to road alignment and design is expected to be minor and limited to shifting of some common utilities, community structures (temple, school) and trees located along the road alignment.

88. **Mitigation Measures**: The road alignment is finalized considering availability of right of way. The ROW is reduced in built up area or constricted areas to minimize land acquisition. The road alignment has also been modified to avoid tree cutting, shifting of utilities or community structure to the extent feasible. Some of the measures taken include widening of the road on one end to maintain the tree on the road edge to avoid its cutting, using retaining wall to minimize the road width to 5 m wherever required. The road is aligned to follow natural topography to avoid excessive cut and fill. All future roads to be included in RCIP will follow above measures. In addition these subprojects will comply with the following criteria for alignment finalization:

i. The road will be part of district core network and will comply with PMGSY guidelines
ii. Subproject shall not disturb any cultural heritage designated by the government or by the international agencies, such as UNESCO, and shall avoid any monuments of cultural or historical importance.
iii. Subproject will not pass through any designated wild life sanctuaries, national park, notified Eco sensitive areas or area of international significance such as protective wet land designated under Wetland Convention, and reserve forest area..
iv. Subproject to comply with local and National legislative requirements such as forest clearance for diversion of forest land and ADB's Safeguard Policy Statement 2009.

3. Land Acquisition

89. **Impact**: Minor impact since no land acquisition is involved due to various measures considered for finalization of road alignment. Villagers have volunteered to donate their land if at certain stages land is required for geometrical correction or alignment adjustment for avoiding tree cutting or shifting of community structure. There could be some impact on the encroachers. However, most of them have also volunteered to shift from the proposed alignment.

90. **Mitigation Measures**: All efforts shall be made to minimize the land acquisition while finalising the alignment. In an unavoidable situation, first adopt suitable engineering measures to reduce the ROW requirement or donation of land from land owners. In the encroached areas, efforts shall be made to restricted road construction to the available space.

4. Protected Areas (National parks, wild life sanctuaries, Eco sensitive zones, protected /historical monuments) and forest areas.

91. **Impact**: Madhya Pradesh has many wild life protected areas. Some of these are present in those districts where subprojects are located (**Figure 3.6 and Table III-A and Table III-G**). However, none of sample roads passes through any of these protected areas.

92. None of the sample road passes through any forest land except two roads (Kalkuwa To Bachhama, and Hatta Sehora Rd. SH-51 to Belkhedi Patera) where small patch of forest land is acquired.[8] As such, project has no impact on forest cover of the district/state/country. Madhya Pradesh is also known to have several archaeological monuments and historical monuments spread all over the state. However, none of them is located within 5 km of subproject roads.

93. **Mitigation Measures**: Since there are no impact protected/ecologically sensitive areas, no such measures are proposed. In case of any additional diversion of forest land is involved, prior forest clearance shall be obtained under Forest (Conservation) Act 1980 (amended 1988).

5. Land Clearing Operations

94. **Impact**: The site clearing operations may have impact on utilities, community properties a land use and vegetation profile of the area if adequate considerations not given to road alignment, utility and community structure shifting plan, tree felling, and demolition waste disposal.

95. **Mitigation Measures**: The following steps shall be taken to minimize the associated impact with land clearing operations.

i. The land clearing operation should be undertaken as per the defined road alignment and community structure, utility and road furniture shifting plan.
ii. The road land width shall be clearly demarcated on the ground.
iii. The utility and community structure shifting shall be as per plan and with consultations and concurrence of the community.
iv. Tree felling shall be limited to those, which could not be saved even by design measures. The tree shall be cut with a permission of Forest department. The vegetable cover shall be removed and disposed in consultation with community.
v. All public utilities shall be shifted with a concurrence of respective agencies/authority and to the adjacent location approved by them.
vi. The top soils shall be collected and preserved for reuse as a base for turfing of embankment slopes or development of barren areas along roadside. The top soil shall be preserved at identified location with the provision of watering /grass development on the heap surface to prevent air pollution.

6. Cut and Fill and Embankment construction

96. **Impact**: Inadequate alignment planning may increase the cut and fill requirement as well as need for more borrow earth for embankment formation leading to some impact on land use. Inadequate provision for drainage and embankment slop protection may lead to soil erosion, water logging. People have also raised concern of water stagnation along the road in certain section[9] and undulating road sections. Inadequate balancing of cut and fill and poor drainage design may lead to excessive road earth/hillock cutting and poor drainage.

97. **Mitigation Measures:** The alignment design shall consider options to minimize excessive cuts and fills. The cut and fill quantities shall be used for embankment to minimize

[8] Requisite permission has already been obtained from forest department for the diversion of the same vide its letter no 963 dated 25-03-2011 and No 19 dated 01-01-2010.
[9] Some of road were water stagnation problem is reported includes Road Hatta-Gaisabad to Devera, Hatta Sehera Road SH-51 to Belkhedi Patre, Itwaheeralal to Shikarpura in Damoh district.

barrow earth requirement. The design shall be as per relevant IRC provisions for cut and fill, slope protection and drainage. Adequate provision shall be made for cross-drainage structure for maintaining natural drainage pattern in the subproject area and preventing soil erosion. Adequate drainage shall be provided to prevent water logging. The top soil of the cut and fill area shall be used for embankment slope protection.

98. Due consideration is given to above aspect for alignment finalization of sample road. With the adoption of appropriate mitigation measures, the impact due to above activity on land use and other environmental component is expected to be minimal.

7. Establishment of Construction Camp, Temporary office and Storage Area

99. **Impact**: The congregation of labor population and technical staff in the subproject area during the construction phase is likely to put considerable stress on the limited resources of village areas. Some of the associated impacts are related to health, safety of the laborers at the construction campsites, availability of safe drinking water, and sanitation.

100. The establishment of construction camp temporary office and storage area will reduce land productivity if these are established on agricultural land. Loading and unloading of construction material, transportation of material, handling of fuel and waste disposal from these areas may have direct and indirect impact on soil, water and air quality.

101. **Mitigation Measures**: The following steps are taken to minimize/reduce these impacts:

- Construction campsites shall be located away from any local human settlements (minimum 500m away) and preferably located on lands, which are not productive barren/waste lands presently. Similarly temporary office and storage areas shall be located away from human settlement areas (minimum 500 m).
- The construction camps, office and storage areas shall have adequate water supply, sanitation and all requisite infrastructure facilities. This would minimize dependence of construction personnel on outside resources, presently being used by local populace and minimize undesirable social friction thereof.
- The construction camps shall be located at a minimum 500 m from forest land/areas to deter the construction labor in trespassing. Similarly, temporary office and storage areas shall be located at a minimum 500 m from forest land/areas.
- The construction camps, office and storage areas shall have septic tank/soak pit of adequate capacity so that it can function properly for the entire duration of its use.
- All construction camps shall have rationing facilities particularly for kerosene/LPG so that dependence on firewood for cooking is avoided completely to the extent possible.
- The construction camps, office and storage areas shall have health care facilities for adults, pregnant women and children.
- All construction personnel shall be subjected to routine vaccinations and other preventive/healthcare measures.
- Contractor shall arrange all personal protective equipment (PPEs) like helmet, boots, earplugs for workers, first-aid and fire fighting equipment at construction sites. An emergency plan shall be prepared to fight with any emergency like fire.
- Garbage bins must be provided in the camp and regularly emptied and disposed off in a hygienic manner. Domestic solid waste shall be disposed of in a control manner. The recyclable waste shall be sold off and non-saleable and biodegradable waste shall be disposed through secured land filling.

- All fuel oil/lubricant unloading and storage shall be made on the paved areas away from storm water drainage.
- After completion of construction work, the camp /temporary office/storage areas sites shall be restored to its original condition.

8. Traffic Movement

102. **Impact**: Construction work along the existing road could cause disturbances to traffic movements. It will also pose risk of accident to motorist at night if these blockages and disruption are not clearly demarcated.

103. **Mitigation Measures**: The contractor will prepare appropriate traffic diversion scheme, which shall be implemented in different stretches of the road as per the progress of the construction work. This plan shall be approved by PIU and implemented before start of any construction work to avoid any inconvenience to the present road users. The diversion plan should ensure smooth flow of traffic, minimize accidents to road users during construction works. Adequate signboards shall be placed much ahead of diversion site to caution the road users. The road signs should be bold, visible, and retro-reflective in nature for the night visibility

9. Associated Impacts due to Construction Activities

a. Loss of productive soil, erosion and land-use

104. **Impact**: No land use will change due to the project since required ROW is available throughout the alignment. Land use though will change temporarily of construction camp, temporary office storage areas for the period of construction. This will also result in loss of soil productivity. Soil erosion may take place along steep and un-compacted embankment slope, and wherever vegetation is cleared. Soil erosion may have cumulative effect viz. siltation, embankment damage, drainage clogging etc. The siltation, due to soil erosion may occur only in the ponds located close to the roads. There are two roads in Damoh district and two roads in Dhar district where ponds are located close to the existing road. Loss of soil due to run off from earth stockpiles may also lead to siltation. Land use may also change due to borrowing the earth.

105. **Mitigation Measures**: It shall be ensured that the land taken on lease for access road, construction camp and temporary office of the storage facilities is restored back to its original land use before handing it over back to land owner. The top soil from the productive land (borrow areas, road widening areas, etc.) shall be preserved and reused for plantation purposes. It shall also be used as top cover of embankment slope for growing vegetation to protect soil erosion. The topography of all the sample roads throughout the stretch is plain except in case of two roads where it is undulating for some stretches and two roads where it is hilly terrain. Therefore, cut and fill shall be planned as per IRC provisions and rural road manual. All steep cuts shall be flattened and benched. Shrubs shall be planted in loose soil area. IRC: 56 -1974 recommended practice for treatment of embankment slopes for erosion control shall be taken into consideration. Soil erosion shall be visually checked on slopes and embankment areas. In case soil erosion is found, suitable measures shall be taken to control the soil erosion.

b. Borrow Areas and Quarries

106. **Impact**: Borrow areas if left un-rehabilitated may pose risk to people, particularly children and animals of accidentally falling into it as well as become potential breeding ground

for mosquitoes and vector born disease. Illegal quarrying may lead to unstable soil condition; destroy the landscape of the terrain, air and noise pollution.

107. **Mitigation Measures**: The project area is generally having a flat terrain. It is recommended that borrowing from agricultural land shall be minimized to the extent possible. Further, no earth shall be borrowed from already low-lying areas. The borrow earth shall be obtained from identified locations and with prior permission for landowner and clear understanding for its rehabilitation. The Indian Road Congress (IRC):10-1961 guideline should be used for selection of borrow pits and amount that can be borrowed. The borrow area shall be located/ rehabilitated as per the guidelines given at **Appendix 4.1**. Fly ash will also be used in road embankment as per IRC guidelines wherever thermal power plant is located within 100 km of the road alignment. Opening of new quarries is not envisaged due to the proposed project. The strong aggregate shall be sourced from existing licensed quarries.

c. Hydrology and Drainage

108. **Impact**: The activities involved with proposed road development may alter the hydrology and drainage of the area if adequate provision is not made for cross-drainage structure, control disposal of waste, adequate provision of drainage in habitat areas.

109. None of the sample roads is crossing any natural stream. Certain project roads are crossing local and seasonal drain. Village ponds are also located close to few roads. Due to poorer drainage water stagnation found during primary survey of the existing roads. Inadequate design and poor handling of construction material may aggravate the water logging situation.

110. **Mitigation Measures**: Adequate engineering measures like embankment height above high flood line, retaining wall, cros drainage structures are proposed for protection of sample roads from flood. Adequate provisions are also made for bank stabilisation (like toe wall, slop stabilisation), and prevention of silt runoff during construction and operational stages.

111. The provision of adequate cross-drainage structure shall be made to ensure smooth passage of water and maintaining natural drainage pattern of the area. Side drainage connecting to nearby natural drains like nala shall be made in water stagnant area. The discharge capacity of the CD structure shall be designed accordingly. The construction work shall be planned in dry season so that water quality of the water channel is not affected due to siltation. Elaborate drainage system shall be provided to drain the storm water from the roadway and embankment and to ensure minimum disturbance to natural drainage of surface and subsurface water of the area. Provision of additional cross-drainage structure shall be made in the areas where nearby land is sloping towards road alignment in both the both sides.

112. Provision of concrete road construction in habitat area with drainage of both side of the road shall be made as per the design provision and with adequate slope to prevent any water logging.

d. Compaction and Contamination of Soil

113. **Impact**: Soil in the adjoining productive lands beyond the ROW, haulage roads, and construction camp area may be compacted due to movement of construction vehicles, machineries, equipments and construction camps/storage facilities. It may get contaminated due to inappropriate disposal of liquid waste, (lubricating oil and fuel spills, waste oil and lubricant and vehicle/equipment washing effluent) and solid waste (fuel filters, oily rags) likely to

be generated from repair and maintenance of transport vehicles, construction equipment and machinery.

114. **Mitigation Measures**: To prevent soil compaction in the adjoining productive lands beyond the ROW, the movement of construction vehicles, machinery and equipment shall be restricted to the designated haulage route. The productive land shall be reclaimed after construction activity. Septic tank or mobile toilets fitted with anaerobic treatment facility shall be provided at construction camp/temporary office/storage areas. Domestic solid waste at construction camp shall be segregated into biodegradable and non-biodegradable waste. The non-biodegradable and recyclable waste shall be sold off. Fuel and lubricants shall be stored at the predefined storage location. The storage area shall be paved with gentle slope to a corner and connected with a chamber to collect any spills of the oils. All efforts shall be made to minimize the waste generation. Unavoidable waste shall be stored at the designated place prior to disposal. To avoid soil contamination at the wash-down and re-fuelling areas, “oil interceptors” shall be provided. Oil and grease spill and oil soaked materials are to be collected and stored in labelled containers (Labelled: WASTE OIL; and hazardous sign be displayed) and sold off to SPCB/ MoEF authorized re-refiners.

e. Construction Debris and Wastes

115. **Impact**: Uncontrolled disposal of debris and waste may create unhygienic and unsafe condition around the disposal areas.

116. **Mitigation Measures**: All excavated materials from roadway, shoulders, verges, drains, cross-drainage will be used for backfilling embankments, filling pits, and landscaping. Unusable debris material should be suitably disposed off at pre-designated disposal locations, with approval of the concerned authority. The bituminous wastes shall be disposed in secure landfill sites only in environmentally accepted manner. For removal of debris, wastes and its disposal MOSRTH guidelines should be followed. Unproductive/wastelands shall be selected with the consent of villagers and Panchayat. The dumping site should be of adequate capacity. It should be located at least 1000 m away from the residential areas. Dumping sites should be away from water bodies to prevent any contamination of these bodies.

f. Air Quality

117. **Impact**: The potential sources of air emission during the construction phase of the project are:

- Dust from earth works (during site preparation).
- Emissions from the operation of construction equipment and machines.
- Fugitive emissions from vehicles plying on the road, during the transport of construction materials.
- Emissions other than dust particularly from the hot mix plants and laying of bitumen. Hot mix plant will generate carbon monoxide (CO), un-burnt hydrocarbon (HC), sulphur dioxide (SO_2), particulate matters (PM), and nitrogen oxides (NOx) emissions.
- Localised increased traffic congestion in construction areas. Most of the emissions will be in the form of coarse particulate matter, which will settle down in close vicinity of construction site. This may affect the air quality of nearby areas, especially, due to emission discharge from low height of the stack.

118. **Mitigation Measures**: All these impacts will be temporary and hence, no significant impact is envisaged. The following measures will be taken to minimize these:

- Vehicles delivering loose and fine materials like sand and aggregates shall be covered.
- Dust suppression measures like water sprinkling, shall be applied in all dust prone locations such as unpaved haulage roads[10], earthworks, stockpiles and asphalt mixing plant areas.
- Mixing plants and asphalt (hot mix) plants shall be located at least 0.5 km away and in downwind direction of the human settlements.
- Material storage areas shall also be located downwind of the habitation area.
- Hot mix plant shall be fitted with stack of adequate height (30 m) or as may be prescribed by state pollution control board (SPCB) to ensure enough dispersion of exit gases. Consent to establish and operate shall be obtained from State Pollution Control Board and comply with all consent conditions.
- Diesel Generating (DG) sets shall also be fitted with stack of adequate height. Low sulphur diesel shall be used in DG sets and other construction machineries. Construction vehicles and machineries shall be periodically maintained.
- The requisite PPE (helmet, mask, boot, hand gloves) shall be provided to the construction workers.
- **Permits**: Contractor must obtain "Consent to Establish" before setting up Hot Mix plant, batching plants. The consent can be obtained by applying to State Pollution Control Board in prescribed format and with requisite fee. The consent to establish must be converted to 'Consent to Operate" once condition of consent to establish is complied with.

g. Noise Quality

119. **Impact:** Ambient noise level may increase temporarily in the close vicinity of various construction activities, maintenance workshops and vehicles and earthmoving equipment. Blasting for cutting of hill areas may intermittently increase the ambient noise level.

120. **Mitigation Measures**: The noise level will be intermittent and temporary and will attenuate fast with increase in distance from noise source. Further, vehicles and equipment should be fitted with silencers and maintained regularly. No blasting shall be made for cutting the hillock areas. The workers shall be provided with personal protection devices such as earplugs and earmuffs. Workers' exposure to noise will be restricted to less than 8 hours a day. Workers duty shall be regulated accordingly.

h. Groundwater and Surface Water Quality and Availability

121. **Impact:** Water will be required for compaction of formation and domestic purposes in the workers camp. These requirements will be mainly sourced from groundwater. Also, the depth to water table in some part is depleting annually. Any uncontrolled abstraction can further deteriorate the situation. Contamination of groundwater is not envisaged since all construction camps will have septic tanks or mobile toilets depending on the number of workers in each camp. The drinking water supply to the habitat is primarily through hand pumps and bore wells. No significant impact is anticipated on surface water bodies except probability of siltation during construction. Due to non-availability of required water from surface water bodies, water requirements for drinking and construction purpose shall be met from ground water sources.

[10] Water suppression of fugitive dust can reduce emissions from 12% to 98%.

122. **Mitigation Measures**: Requisite permission shall be obtained for abstraction of groundwater from State Ground Water Board/Central Ground Water Authority[11] if applicable. The contractor shall arrange for water required during construction in such a way that the water availability and supply to nearby communities remains unaffected. Water-intensive activities shall not be undertaken during summer period to the extent feasible. Provision shall be made to link side drains with the nearby ponds for facilitating water harvesting. Where ponds are not available, the water harvesting pits shall be constructed as per the requirement and rainfall intensity. Measures are already purposed in earlier section for prevention of siltation in water bodies.

i. Biological Environment

123. **Impact:** Since the sample roads are not passing through any protected areas or forest area, there is no diversion of forest land**.** The major adverse impacts will be due to tree cutting, Siltation and contamination of as water bodies may affect the aquatic life. Since there are only ponds and non-perennial water bodies (Kath River and few canals), the aquatic life is minimal and no significant impact is anticipated on aquatic life.

124. **Mitigation Measures:** All efforts shall be taken to avoid tree cutting wherever possible. Requisite permission from forest department shall be obtained for cutting of roadside trees. Compensatory afforestation shall be made on 1:3 ratio basis. Additional trees shall be planted wherever feasible. All care will be taken to avoid siltation/contamination of water bodies. Movement of herbivores like cattle, goats, cows, etc., have been observed in the surrounding agriculture fields. Disturbance to these animals will be avoided to the extent possible.

j. Impact on Common Property Resources

125. **Impact**: There are public utilities like Electric transformer, electric poles, and hand pumps all along the rural roads. The road construction may require shifting of these utilities. There are many community structures like school, playground village office temples.

126. **Mitigation Measures**: All efforts are made to minimize shifting of common utilities and community structures. ROW has been reduced in constricted areas with appropriate engineering measures to minimize land acquisition and shifting of community structures. The community structures/utilities which cannot be saved will be shifted to adjacent area with the concurrence and in consultation with community.

F. Common Impacts during Post Construction and Operation Phase

1. Air Quality

127. **Impact:** Decrease in air quality due to increase in traffic, idling at congestions.

128. **Mitigation Measures:** The bad road conditions the main cause of poor air pollution at present. The improved road conditions will result in the improved ambient air quality. Also, the subproject road is largely traversing through vast open agriculture areas which will provide

[11] As per Central Ground Water Authority (CGWA), there are 43 notified blocks in India where prior permission is required fro extraction of ground water. Currently Dhar Block, Manawar Block Mandsaur Block, Sitamau Block, Neemuch Block, Jaora, and Indore block are notified in Madhya Pradesh. None of subproject area falls under notified block area.

adequate dispersion to gaseous pollutants generated from vehicles and will offset the increased pollutants.

2. Noise

129. **Impact**: During the operational phase, movement of traffic will be the prime source of noise. Traffic congestion and pedestrian interferences increase the use of horns. This may result in increased noise levels at habitat areas, nearby schools and religious places.
130. **Mitigation Measures**: Awareness signboard shall be provided for safe driving near the habitat areas. Speed limitation and honking restrictions may be enforced near sensitive locations.

3. Land, Soil, Tree Plantation

131. **Impact**: The better access can lead to conversion of agriculture land for residential and commercial purposes close to roads, which may result in loss of productive land and agricultural produce. Since the rural road are aimed at connecting the villages, and with the general trend of migration of rural population to urban areas, the phenomena of conversion of agriculture land to residential area is unlikely to change.

132. The land occupied for construction camp /temporary office/material storage area will remain unproductive if it is not restored after completion of construction activities.

133. It shall be essential to ensure the survivability of the compensatory tree planted.

134. **Mitigation Measures** It shall be ensured that all construction camp/temporary office/material storage areas are restored to its original conditions. The borrow area rehabilitation will also be ensured as per the agreed plan with the land owner. Contractor and PIC will ensure the same and obtained clearance from PIU before handling over the site to SRRDA.

135. The PIC will undertake survivability assessment and report to PIU the status of compensatory tree plantation at a stage of completion of construction with recommendation for improving the survivability of the tree if required.

4. Groundwater

136. No impact is anticipated on groundwater due to the project during operation phase, hence, no specific mitigation is proposed.

5. Hydrology and Drainage

137. **Impact**: Water accumulation incidence may occur due to inadequate availability of cross-drainage structure or clogging of cross-drainage structures.

138. **Mitigation Measures**: Regular removal/cleaning of deposited silt shall be done from drainage channels and outlet points before the monsoon season. Rejuvenation of the drainage system by removing encroachments/ congestions shall be regularly conducted.

6. Socioeconomic Impact

139. Assessment of project impact on socioeconomic conditions point to the conclusions that positive benefits are many fold compared to its adverse impact.

140. **Positive Impacts**: The better road access is likely to contribute the overall economic condition of village community. With the quick access to urban market areas, the farmers are likely to get better prices for their farm produce. Children will also be able to access the school and education facilities in the nearby urban areas.

141. **Safety Measures** shall be adopted as per NRRDA guidelines. Some of them are highlighted below :

- Speed breakers (rumble strips) as per IRC: 99-1988 shall be provided at sharp curves design and bends where the curve design speed is less than 40 km per hour in plain in rolling terrain.
- Speed breakers shall also be provided at a threshold of habitation (as per NRRDA guidelines) at regular intervals (150-200 m) through habitation.
- The speed breakers are provided and directional sight boards installed at sites where reverse horizontal curves are closely spaced and speed reduction is required.
- Hazard markers to be installed at each end of all box culverts, river crossing causeways and similar CD structures
- Shoulder side slopes shall not be steeper than 2h:1V unless stone pitching of the slopes is provided.
- Cement concrete pavement and V-shaped drain is constructed to the full width of the available roadway within densely populated habitation.
- Directional sight board are installed on all sharp curves and bends
- At a main road, intersection or crossing “STOP” sign and ‘T-intersection’ warning sign shall be installed on the village road.

G. Road Specific Impacts

142. Many adverse impacts of road projects can be avoided or minimized by applying environmentally sound design, construction and operation and maintenance practises. The review of the environmental salient features specific to sample roads given in chapter III identify that mitigation measures applicable to all the road are same except variation in terms of magnitude of the measures which depends on length of the road, presence of pond, number of community structure (mostly temples, playground, school) likely to be shifted, number and type of common utility (hand pump, water tank, electric transformer, electrical poles). The requisite forest clearance has already been obtained for diversion of some forestlands. However, more tree cutting may be involved in the areas where compensatory Afforestation will be undertaken. The appropriate design measures shall be taken for correcting the profile of the road or aligning the roads such that the cut and fill requirement is minimal.

143. Flooding is involved in three roads. Water stagnation and water logging problem is also identified along many existing sample road areas. Adequate design measures for drainage, road levels shall be taken for prevention of water logging or water stagnation or road overtopping during rains.

V. ENVIRONMENTAL MANAGEMENT PLAN, INSTITUTIONAL ARRANGEMENTS AND GRIEVANCE ADDRESS MECHANISM

A. Environmental Management Plan

144. The Environmental Management Plan (EMP) is prepared to facilitate effective implementation of recommended mitigations measures with defined roles and responsibility for implementation and monitoring, regulatory compliance requirements, stages of implementation with location, timeframe and costs. The mitigation measures are proposed to eliminate or minimize the identified impact associated with design, construction and operation stages of the project, to acceptable level by adopting the most feasible options.

145. The EMP is prepared as per Environmental Management Standard (ECOP) applicable to rural road defined be ADB in the EARF for RCIP.

146. The identified impacts are insignificant and are related to clearing operations of RoW, traffic diversions, setting and operation of construction camps, quarry and borrowing operations, transportation of materials, construction of cross-drainage structures, air & noise pollution due to construction activities and operation of construction equipment, tree cutting and shifting of utilities and physical community structure.

147. Appropriate mitigation measures are identified for all rural road construction and operation activities. The identified impacts associated with rural roads and mitigative measures are largely common to most of the roads. The EMP is detailed at **Appendix 5.1**. It provides action common to all roads at pre construction, construction and operation stage. Since IEE is carried out prior to preparation of DPR, the EMP will be updated specific to road as per DPR requirements by PIU and included with DPR which shall be available to contractor at the time of bidding. The areas to be updated as per DPR provisions are highlighted under location column of EMP.

148. Since, these are rural road, the vehicular density and speed will be low. Movement of vehicles would be confined primarily for transfer of agricultural produce to market places. As such, no major emergency is anticipated. In any accidental eventuality, local administration can be reached quickly for help though Gram Panchayat (village administration) communication systems.

B. Environmental Monitoring Plan

149. The environmental monitoring program is prepared with aim to monitor the environmental performance of environmental management plan. The EMOP is planned with the focus on following objectives:

- To the assess the effectiveness of mitigation measures proposed
- To assess the change in environmental quality during construction and operation stage with respect to before the project scenario.
- To assess compliance to regulatory requirements
- To monitor the status of corrective action taken in case of deviation from the planned measures or regulatory requirements.

150. For rural roads, Environmental Monitoring plan will be more observation oriented and it provides observation areas with frequency of monitoring at pre construction aspects,[12] construction stage and operation stage. A monitoring plan with monitoring indicator and frequency of monitoring is given at **Appendix 5.2.**

C. Institutional Arrangements and Responsibilities

1. Institutional Arrangement

151. NRRDA constituted by MORD is the nodal agency for the implementation of PMGSY in India. SRRDA is the state level agency responsible for implementation of PMGSY program in the state. NRRDA has developed various guidelines and defined institutional arrangements for effective and timely implementation of PMGSY program, which also covers measures for environmental and social safeguards. In line with the defined institutional requirements, each SRRDA has set up district level project implementation units (PIUs). NRRDA also appoints Technical Support Consultant (TSC) to provide technical support for capacity building in SRRDA/PIUs, facilitating them for environmental and social safeguard compliance monitoring and due diligence. SRRDA appoints PIC (project implementation consultant) for supervision of construction work. PIC also helps PIU in monitoring the EMP.

152. NRRDA is also responsible to coordinate with SRRDA and ensure compliance to ADB safeguard requirements.

153. The institutional arrangement at National Level and state level for implementation of PMGSY including RCIP is shown at **Figure 5.1.**

D. Institutional Environmental Responsibilities

154. The institutional environmental responsibilities for different level and function is elaborated below.

155. **MORD**[13] the executing agency has the responsibility for monitoring implementation of the EMP for all subprojects and undertaking necessary due diligence. MORD ensure this through its Nodal Agency NRRDA (National Rural Road Development Authority). MORD will also ensure that:

i. ADB is given access to undertake environmental due diligence for all subprojects, if and when needed as per EARF requirements
ii. SRRDA meet all environmental assessment requirements in accordance with EARF
iii. It undertakes random monitoring of the implementation of the EMP
iv. Ensure compliance to legislative requirements such as forest clearance for diversion of forest land for non-forest purposes and Consent to Establish/Operate for hot mix plant, batching plant
v. Appoint Technical Support Consultant (TSC) to assist SRRDA for various environmental aspect and safeguard compliances

[12] Aspects related to alignment selection for inclusion of new roads.
[13] MoRD implements it through its nodal agency NRRDA which undertakes this with the help of Environmental Expert of Technical Support Consultant

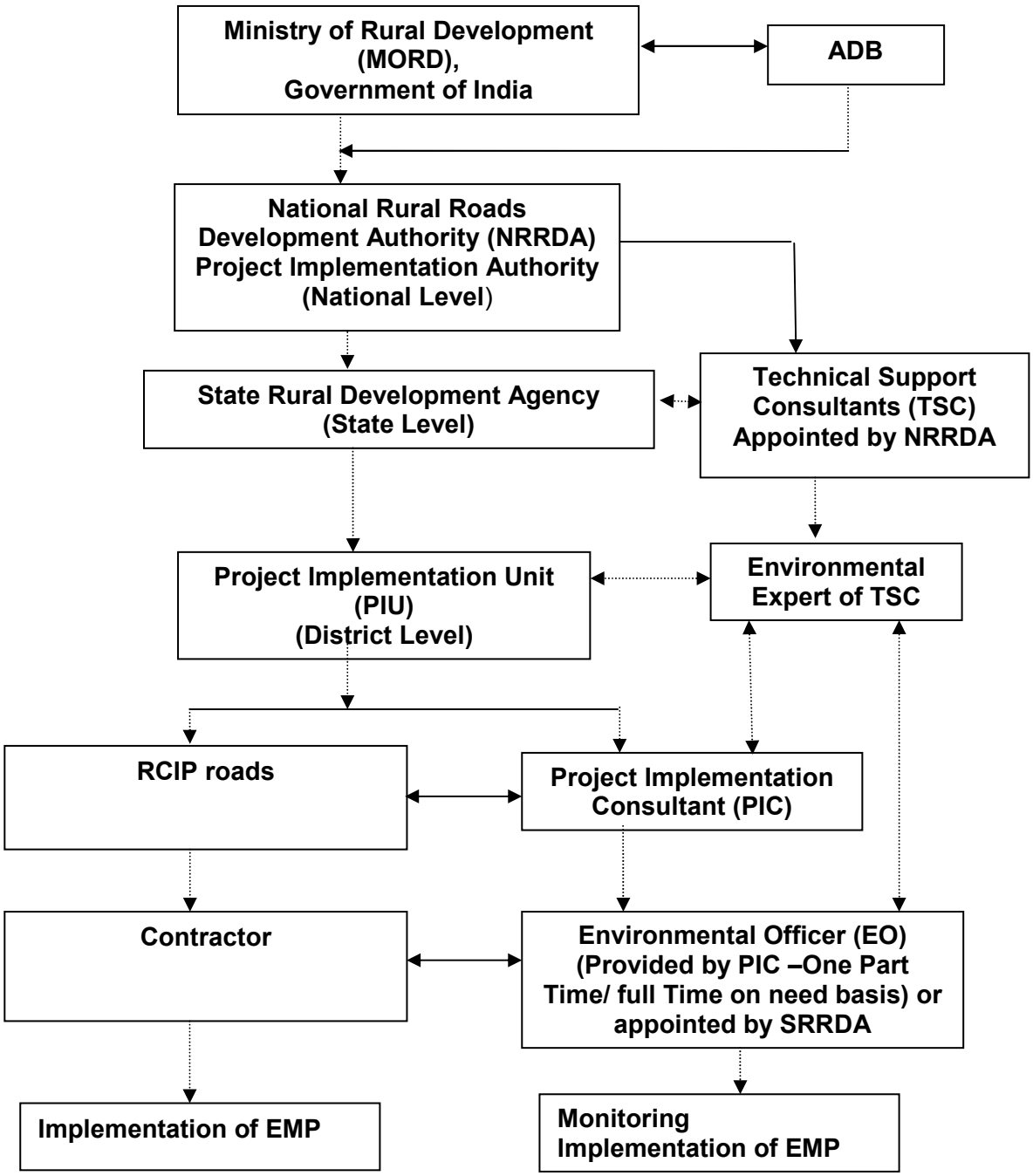


Figure V.1 : Institutional Arrangement for EMP Implementation

156. **SRRDA**[14] will ensure that:

i. ECOP checklist is prepared for each road
ii. The completed ECOP checklist is included in the DPR with the help of PIC.
iii. Ensure that all required statutory environmental clearances are obtained and comply with clearance conditions;
iv. Ensure that the subproject specific EMPs and respective budget are included in the bidding documents;
v. Ensure that the ECOP checklists and EMP (including general and site specific issues) are made available to the contractors
vi. Undertake routine monitoring of the implementation of the EMP including spot checks on site and prepare monitoring reports at least once a year
vii. With the support of technical support consultants prepare satisfactory environmental due diligence reports of the earlier tranche/periodic financing request before implementing the next tranche
viii. Appoint Project Implementation Consultant (PIC) for construction supervision and assist PIUs for EMP implementation and related safeguard compliances

157. **PIU** will be responsible to:

i. Complete the ECOP checklists and prepare subproject specific EMPs (including monitoring plan) for each subproject
ii. Obtain necessary statutory environmental clearance prior to commencement of civil works
iii. Update the respective ECOP checklists and EMPs if there are any changes in alignment of the subprojects
iv. To conduct monitoring of all subprojects and prepare pre-, during and post-construction monitoring checklists through the project implementation consultants
v. Prepare and submit to SRRDA annual monitoring report as per ADB defined format

158. **The Technical Support Consultants (TSC)** appointed by NRRDA. The Environmental Expert of TSC :

i. Will provide technical assistance to SRRDA/PIU regarding environmental aspects, environmental permitting/clearances requirement
ii. Periodically review EMP implementation status including spot site inspections
iii. Conduct workshops/capacity building program at different level and functions
iv. Prepare environmental Due Diligence report for each tranche before implementing next tranche
v. Prepare state Level IEE reports and EMPs for non sample roads based on the ECOP checklist completed by the PIC

159. **Project Implementation Consultant (PIC)** is appointed by SRRDA. PIC will provide one Environmental Officer (EO). The EO will be responsible to ensure adherence and implementation of EMP at all stages of works by the contractor. The EO, if found warranting may also conduct field tests, independent of the contractor to determine the effectiveness of EMP under approval of PIC/PIU. The broad duties/responsibilities of the Environmental Officer will include:

[14] With assistance from PIU (Project Implementation Unit).

- Review of project design and specifications to ensure their adequacy and suitability with respect to the implementation of EMP
- Collection and dissemination of relevant environmental documents including amendments to environmental protection acts issued by the various agencies, namely, ADB, Government of India / State and local bodies
- Interact with the counterpart of the Contractor(s), review work progress/plans and ensure implementation of the EMP
- Coordination with the NGOs, community groups and Government departments on environmental issues, provide clarifications/ and obtain clearances during project implementation if any, as required from the regulatory authorities and/or submitting periodic compliance reports as required by the State Authorities
- Monitoring sensitive environmental attributes during construction and operation stages[15] to ensure that the suggested mitigation measures in the EMP are implemented
- Facilitate PIU for preparation of annual monitoring report as per ADB defined format
- Documentation of the environmental management/monitoring activities for the regular project implementation progress report; which will serve as the basis for the annual environmental monitoring reports
- Conducting environmental training/awareness programs for the contractors, the project implementation personnel and the communities

160. **Contractor** is appointed by SRRDA for construction of road and ensure implementation of EMP proposed. The broad duties of contractor are as follows**:**

- Make adequate costs provision for EMP requirements while biding
- Ensure effective implementation of mitigative measures as per road specific EMP
- Comply with all applicable legislative requirements and obtain necessary consents for to Establish/Operate before start of hot mix plant and batching plants. Comply with al permit conditions
- Create awareness amongst workers for environment, occupational health and safety aspects. Participate in training and awareness programme along with its executives conducted by PIC
- Provide PPE and adequate resources for Environment Occupational Health and Safety
- Follow all the guidelines for borrowing earth and restoration of borrow areas, setting up construction camps
- Sourcing of quarry material from approved quarries only
- Provide all required input to PIC for environmental monitoring as per EMP.

E. Environmental Assessment and Review Framework (EARF) for RCIP

161. ADB has prepared an Environmental Assessment and Review Framework (EARF) which identifies the broad scope of the MFF, outlines the policy, environmental screening and

[15] Normally PIC is supposed to undertake five site visits and five monitoring reports as per contracts being issued by different SRRDA. It is proposed that PIC shall submit the following five monitoring reports: (1) First report at pre construction stage, (2) Second report after three months of start of construction or on completion of 25% construction, (3) Third report after seven months of start of construction or on completion of 75% of construction, (4) Fourth report after one month of completion of construction and first year of operation stage, and (5) Fifth report in second month of second year of operation stage.

assessment, and institutional requirements for preparing the environmental assessments to be followed for subsequent batches and tranches. This EARF also specifies criteria for eligibility for selection of rural roads under RCIP. The sample roads are selected following these criteria. The EMP, monitoring requirement, institutional aspects, capacity building, grievance redress mechanism presented in this chapter are developed in line with above EARF. The eligibility criteria for selection of roads under RCIP, environmental assessment requirement for each tranche and legal framework are given below:

2. Selection Criteria and Environmental Assessment Requirement

162. The following criteria will be followed for selection of non sample roads:
- (i) No Category A (as per ADB's SPS) subproject will be included in the MFF
- (ii) Subprojects will be eligible for construction or upgrading in accordance with the PMGSY guidelines, and be included in the respective district core network
- (iii) The subprojects shall not disturb any cultural heritage designated by the Government or by international agencies, such as UNESCO, and shall avoid any monuments of cultural or historical importance
- (iv) The subproject will not pass through any designated wildlife sanctuaries, national parks, other sanctuaries, notified ecological sensitive areas or area of internationally significance (e.g., protected wetland designated by the Wetland Convention)
- (v) The projects shall only involve activities that follow Government of India laws and regulations, ADB's Safeguard Policy Statement (2009)

163. The following environmental Assessment requirement will be followed roads included under RCIP:
- (i) ECOP checklists with annexes on trees, utility structures, community structures, strip plans and photographs will be completed for each and every road
- (ii) Based on the requirements of the PMGSY guidelines separate ECOP checklists will be prepared for bridges that are longer than 15 m
- (iii) Based on the completed ECOP checklists for roads and bridges, IEE reports will be prepared at a state level. These reports must contain a general EMP and a site specific EMP where there are site specific issue.
- (iv) ADB's REA checklist for roads and highways will be completed based on the state level IEE reports prepared and submitted to ADB to confirm categorization

164. The vulnerable to climate change will also be screened following screening checklists, which was integrated in the ADB REA Checklists and corresponding mitigation measures will be prepared.
- (i) Is the project area subject to hazards such as earthquakes, floods, landslides, tropical cyclone winds, storm surges, tsunami or volcanic eruptions and climate changes
- (ii) Could changes in precipitation patterns or evaporation rates over the lifespan of the project affect its sustainability and cost (i.e., increased landslides increase maintenance costs)?
- (iii) Does the project use or depend on resources which could be affected by climate changes such as changes in temperature, precipitation, wind (increased soil moisture content in the sub-grade)?
- (iv) Are there any demographic or socioeconomic aspects of the subproject and project area (e.g., population growth, settlement patterns) that increase the vulnerability of the project and surrounding area?

(v) Could the subproject potentially increase the vulnerability of the surrounding area (i.e., by increasing runoff, encouraging settlement in earthquake zones)

3. Legal Framework

165. As per Indian legislation, an environmental clearance is not required for rural roads. However, it may attract provisions of Forest Conservation Act, Wildlife (Protection) Act, and other legislation related with Air, Water and Noise pollution controls and prevention. The legislative applicability screening is presented in chapter 1 of this report and it will apply for non-sample road as well. Additionally, to ensure conformance to ADB's Safeguard Policy Statement, 2009 (SPS), the subprojects will be subject to the following requirements:

(i) Submission of a completed Rapid Environment Assessment (REA) checklist for Roads and Highways and a categorization form for each state level IEE that is prepared.
(ii) An Initial Environmental Examination[16] (IEE) report including the preparation of an Environmental Management Plan (EMP) and a Monitoring Plan.
(iii) Regular monitoring of implementation of the EMP and submission of monitoring reports and due diligence reports to ADB as necessary

F. Capacity Building

166. Existing capacity of the State Rural Roads Development Agencies (SRRDAs) and Project Implementation Units (PIUs) for implementing environmental safeguard issues need substantial strengthening. Capacity building activities will mainly comprise training workshops for SRRDA and PIU environmental officers on (i) completion of environmental code of practice (ECOP) checklists; (ii) preparation of environmental management plan (EMP) and monitoring plans; (iii) monitoring of EMP implementation and completion of pre-, during and post-construction monitoring checklists; and (iv) preparation of monitoring reports. These few workshops have already been conducted at participating states though ADB appointed Environmental specialist. Additional training will be carried out periodically, by In-house trained and experienced officials.

G. Consultation and Information Disclosure

167. During the preparation of ECOP and Detailed Project Report (DPR), the PIU has to ensure consultation, and attending to concerns of the affected people.
168. All environmental assessment documents are subject to ADB's Public Communication Policy (2011) and will be made available to the public, upon request. The SRRDAs are responsible for ensuring that all environmental checklist documentation, including the environmental due diligence and monitoring reports, are properly and systematically kept as part of the Investment Program specific records. MORD must disclose state specific sample road IEE reports on its website.

H. Grievance Redress Mechanism

169. PRI administered village level committee is the first contact point for any aggrieved person. This committee will try to settle the concern by them self or in consultation with contractor or PIU. The unresolved concerned are forwarded to PIU for further action. PIU

[16] As per selection criteria, no Category A subproject will be included under RCIP.

resolves these concerns in consultation with PIC, SRRDA, and contractor as the situation demands. This is an established practice and is seen effective enough in RRS II. PIC will also collect concerns received by this committee in the intervening period and report the effectiveness of action taken.

170. At national level NRRDA has made provision of registering complain /suggestion through its website. NRRDA forwards these complains to concerned SRRDA for necessary actions. SRRDA directly or through concerned PIU initiate the appropriate action and update the complainant as well as NRRDA. It is proposed that NRRDA website will be cross-linked to each SRRDA website as well or SRRDA will also make provision of complain registry at its website.

VI. PUBLIC CONSULTATION AND INFORMATION DISCLOSURE

A. General

171. Public consultation was undertaken consistent with the ADB requirements. All the five principles of information dissemination, information solicitation, integration, coordination and engagement into dialogue were incorporated in the consultation process. A framework of different environmental impacts likely from the project was strengthened and modified based on opinions of all those consulted, especially in the micro level by setting up dialogues with the village people from whom information on site facts and prevailing conditions were collected.

172. Stakeholder's consultations were held with the intent to understand their concerns, apprehensions, overall opinion and solicit recommendations to improve project design. Informal meetings, interviews were organized covering the entire project stretch. The informal consultation generally started with explaining the subprojects, followed by an explanation to potential impacts. Participant's views were gathered with regard to loss of agricultural land, effect on air and noise quality of the area due to traffic, water availability, accident and risk.

173. The discussions were designed to receive maximum inputs from the participants regarding their acceptability and environmental concerns arising out of the subproject. They were given the brief outline of the project to which their opinion was sought. Suggestions were also sought for mitigating any potential adverse impact.

B. Compliance with Relevant Regulatory Requirements

174. In India, public consultation is mandatory in case of Category A and B1 category projects[17] in select conditions. Being a category B project as per ADB Environmental Guidelines 2003, consultation was carried out during the early stage of IEE report preparation. The requirement of public consultation during the implementation of the project has been proposed as part of the mitigation plan.

C. Beneficiaries' Comments

175. The project has immense acceptability among the local people. They perceived that in addition to providing all weather connectivity, the subproject road would bring positive socioeconomic changes in the area. Local people mainly discussed on issues related to drainage and commencement of the construction work.

176. Some of the general issues raised during the different consultation sessions can be summed up as follows:

- **Construction Camp** - The participants did not apprehend any adverse impact due to the construction camp near to their villages. They responded positively towards providing support to these, if required, in terms of any food, water requirements.
- **Water Logging and Drainage** - Participants informed about few low-lying areas in sample roads where water logging takes place during monsoon season. The villagers requested for provision of adequate drainage and cross-drainage

[17] As per schedule I of EIA notification number S.O. 1533, dated 14th September 2006. This notification also defines when a public consultation is mandatory.

structures at these locations. Villagers also reported for road overtopping in one road where they have suggested to raise the road levels.

- **Loss of Livelihood and Income Restoration Options** - This issue was raised by those who had encroached on the proposed alignment. However, they offered the encroached space for the proposed project, if demanded.
- **Road Safety** - Safety issues did not raised concern among the inhabitants including women.
- **Land Acquisition** - People were in full support of the project and were ready to donate their land for the same, if required.
- **Losses of Idols/Shrines -** Participants supported the project and were willing to shift the idols, burial grounds and other religious structures observed at certain locations.
- **Loss of Trees Due to Road Construction** - Respondents were of the opinion that trees cutting should be avoided or else minimized. For trees to be cut compensatory plantation should be done. Some villagers expected additional plantation should be done. Recommended tree species for plantation were other local varieties.
- **Impacts on Health** - Separate consultation sessions were organised by social team to identify issues pertaining to health specifically for sexually transmitted diseases (STDs). Settlements along the rural roads were reported to be getting exposed to such diseases.
- **Ambient Air & Noise Quality** – The respondents viewed that these are the problems of urban areas and their villages are still untouched from this aspect. They even do not anticipate any of these problems after the completion of the project.
- **Inconvenience during Construction** - The participants viewed that they will manage it, as it will be temporary.
- **Employment during Construction** - The locals expected that they should be given preference in employment during project implementation.
- **Perceptions and Expectations** - Perceptions and expectations of the community recorded during the consultation sessions can be broadly listed as:
  - The public and the affected persons appreciated and supported the project with their open hearts.
  - Community at large appreciated overall benefits to them resulting from project development;
  - They were aware of the increased access, lesser commuting time after project implementation;

- **Addressal of Issues** - The project has tried its best to address all the issues raised during consultations under the constraints of suitability from engineering point of view. Some of the provisions made under the project to address the issues and concerns of the community are given in Table VI-A.

Table VI-A: Addressal of Issues and Concerns under the Project

Issue/Concern	Addressal under the project
Water Logging and Drainage	There is provision of adequate cross-drainage structures. Road level are also planed where water overtopping exists.
Road Safety	Adequate safely signage planned all along the rural road.
Land acquisition and	The proposed RoW is 12m along the rural road. No land acquisition

Issue/Concern	Addressal under the project
Mode of compensation	is planned in project road.
Loss of roadside idols/shrines	Roadside Shrines/Temples shall be relocated after consultations with villagers
Loss of trees	Compensatory afforestation will occur at the ratio of three trees for each tree that fell.
Increased pollution levels	Pollution levels are not crossing the prescribed limits of CPCB and planned plantation will screen the emission.
Utilities and basic infrastructure	All the utilities, electric poles, telephone lines, wells, tube wells etc. to be affected will be relocated under the project cost.
Employment of locals during construction	Locals will be given preference for employment during the project implementation

VII. CONCLUSIONS AND RECOMMENDATIONS

A. Conclusions

177. The findings of Environment Assessment of sample roads indicate that impacts are mostly similar and subprojects are unlikely to cause any significant environmental impacts. While some of the impacts are negative, there are many bearing benefits to the area. Most of the impacts are likely to occur during construction stage, are temporary in nature, and can be mitigated with minor to negligible residual impacts.

178. The project received immense support from local people as they perceive that this project will improve the overall connectivity and bring various economic opportunities to the people of the area.

179. All sample roads included under RCIP were selected based on ecological and climate change consideration defined under EARF. Accordingly, none of the sample roads passes through protected areas or encroaches precious ecology (sensitive or protected areas) or any historical or archeologically protected areas. As per selection guidelines, none of the selected sample road passes through reserved forests either. Few trees cutting though may be involved.

180. None of the rural road crosses any natural stream. However, in case it is so then adequate engineering measures are proposed for the protection of road from the flood.

181. All the sample roads are aligned with existing village roads and unpaved movement paths. As such, land acquisition is nil or very minimal which is also acquired through donations from villagers.

182. Considering insignificant environmental sensitivity, the project is categorized as category B as per ADB Safeguard Policy Statement 09.

183. No categorization is made under environmental legislation of India, since these small roads do not require any environmental clearance in accordance to Indian Environmental (Protection) Act and Rules, 1986 amended till date. However, clearance from Forest Department will be required for cutting of trees.

184. The impacts identified are mostly related to alignment selection, land clearing, borrowing earth, cutting of trees, shifting of utilities and community structures, establishment of construction camp or material storage areas, transportation of material and operation of hot mix plant. All identified impacts are either eliminated or minimized through design consideration and suitable mitigative measures.

185. Environmental Management plan covering all stages of road construction (design, construction and operation) is prepared with defined responsibility for its implementation. Environmental Monitoring plan is also prepared to ensure effective implementation of EMPs.

186. NRRDA/SRRDA has defined institutional setup including with specified responsibility for environmental management. Existing capacity of the State Rural Roads Development Agencies (SRRDAs) and Project Implementation Units (PIUs) for implementing environmental safeguard issues need substantial strengthening. The capacity enhancement is proposed through focused workshops and training session. Few workshops have already been conducted at participating

states through ADB appointed Environmental specialist. Trained and experienced in-house officials should carry out more raining in future periodically.

187. The IEE also indicate that rural road construction works does not warrant further EIA study for subsequent rural road construction works in MP State.

B. Key Recommendations

188. Any major changes or any major additional work other than the proposed project activities will require updation of ECOP and IEE. The updated ECOP and IEE will have to be submitted to NRRDA, and ADB for concurrence before civil works commence.

189. The implementation of prescribed mitigation measures will minimize/avoid the adverse impacts. Moreover, the impacts shall be monitored continually by implementing and updating the Environmental Management plan and Environmental Monitoring Plan.

190. These IEE is prepared based on ECOPs and feasibility stage. Subproject specific EMP shall be improved as per the final provisions made under DPRs. The updated EMP if there is any change, shall also be sent to ADB for information.

191. Executing agency shall ensure that updated road specific EMP forms part of DPR and is available to contractor at the time of bidding. . The contractor will specify the quantity and budget for various activities like rehabilitation of borrow earth pits, first aid and sanitation facilities at construction camp and temporary office/material storage place as per EMP requirements. The same shall be revised if there is any change in the project design. Any such change shall be reported to ADB as well.

Appendix 2.1: Details of Roads in Madhya Pradesh

S.No.	District	Blocks	Name of Roads	Length (kms.)
1	2	3	4	5
	Bhopal			
1	Bhopal	Berasiya	MDR to Mangalgarh	0.81
2			MDR to Ankia	1.8
3			Sukaliya to Pipaliya Kadim	1.3
4			Berasiya Sironj road to Khejra Misar	1.55
5			SH-18 - Dhaturia road to Dohaya	2.3
6			Bhopal Berasiya road to Khadampur	3.95
7			Rampura Balachoun to Goria Sankheda	3.35
8			Bhopal Berasiya road to Tanda	2.5
9			Arjunkhedi to Khejra Ghat	3.04
10			Berasiya Najirabad road to Hinotiya Piran	0.925
11			Badli-Bhilkho road to Damila	1.525
12			Lalriya Babchiya road to Chhapryai	1.6
13			Bhopal Berasiya road to Pardi	1.45
14			Behrawal- Barkhedi road to Bhatni	1.525
15			Runha to Bhakwaha	4.125
	15 Roads		**Bhopal Total**	**31.75**
			Damoh	
16	Damoh	Batiyagarh	Bhatera to Barkhera Nahar	1.5
17			Phutera to Menwar	3
18			To2 to Mahuakheda	2.5
19			L092 (Aanjani-Agara road) to Bandha	3.5
20		Damoh	Arthkheda to Dasonda	3
21			T04 Hinoti Jhapan to Hardua	1
22			Adhrota to Hatri	3
23			Bilai to Patouha	3.5
24			Mudiya To Bari	3.1
25			MDR (ATP) To Rampura	1
26			T03 Km 117/2 To Khairuwa	1.6
27			Hindoria Bilai Road To Chhapri Thakur	3
28		Hatta	Hatta-Gaisabad Road to Kuluwakalan	6.4
29			Madiyado-Bandha Road to Kanakpura	2
30			Madiyado-Bardha Road to Tidni Madiyado	2.2
31			Madiyado-Chouraiya Road to Ghogra	1.5
32	Damoh	Hatta	Madiyado-Bardha Road to Digi	2
33			Patera Raneh Road To Barkhera Chain	1.2
34		Jabera	Abhana-Tendukheda-Patan Road to Muderi Tejgarh	1.5
35			Sakha-Bhajiya to Kanepur	2.5
36			Dugani to Bhineni	3.1
37			Singhpur-Bhajiya to Salaiya Badi	0.7
38			Imaliya to Rampura	2.5
39			Abhana-Patan Road To Bhainsakhar	4
40		Patera	Damoh-Patera Road to Harpalpura	1
41			Nayagon-Kota App. Road to Muari	3
42			Saliya to Deori Chhoti	3
43			Harpalpur to Sarangpura	3
44			Muari to Munda	1.8
45			Hatta-Sehora Road to Pala Arjuni	1.4
46		Pathariya	(SH-14) To3 to Mahantpur	2.2

S.No.	District	Blocks	Name of Roads	Length (kms.)
47			Satouwa to Shahpur	3.2
48			Narisingarh to Mahuna	3.5
49			Jortala to Abookhedi	2.9
50		Pathariya	Jerat to Berkhera Jaisingh	3
51			Berkhera Jaisingh to Guda	2
52		Tendukheda	L118 to Oriya Mal	2
53	Damoh		T02 to Baheriya Mal	2.6
54			Tejgarh Pura Road to Keolari Upadhyay	1.3
55			Samnapur to Jamun	9.5
56			Bamnoda To Keolari	1.8
	41 Roads		**Damoh Total**	**104.1**
			Jabalpur	
57		Kundam	T02 to Jhirna	1.5
58			T 09 to Sunawal	1.8
59			Kastra (L066) to Rampurikala	2.3
60			SH22 (T08) to Dehrikala	1
61			Dewari Jamdori	3
62			SH 22 (T08) to Tikariya	1.05
63	Jabalpur		T-01 to Jungh	2.05
64			T-10 to Karanpura	1.55
65			Karaghat(L-034) to Bisanpura	1.9
66			T-01 to Chhirpani	2.25
67		Patan	Pondikala to Pondikhurd	2.15
68			MDR (Sakara) to Chhiturha	1.875
69			ORD-3 to Rampura	0.85
70		Shahpura	L 043 to Maili	5.2
71			NH12 to Dharampura	0.95
72			NH 12 to Khari	1.05
73			L-021 to Bamhori	1.3
74			T-02 MDR Tilwara-Chargawan Rd Sukha to Sagada	2.5
75			T-02 MDR Tilwara-Chargawan Rd Sukha to Bharatpur	0.95
76			NH-12 to Barkheda	2
77		Sihora	Sihora Silondi Road to Chhangawa	2.675
78			Sihora Silondi Road to Deori Naveen	2.05
79			Sihora Silondi Road to Deori Kanhai	0.78
80			NH-7 to Gorakoni	1.5
81			NH-7 to Ghugri Naween	2.3
82			Phanwani Kumhi to Junwani	1
83	Jabalpur		Sihora Silondi Road to Budari	0.6
84			NH-7 to Gunharu	0.8
85			Keolari to Deorikala	1.35
86		Panagar	Singod Road to Nunikala	2.8
87			ODR to Gurgaon	1.73
88			LPR to Bandhi	1.6
89			LPR to Tilgavan	3.375
90			Padariya Road to Tidni	1.85
91			Sonpur to Veerner	1.1
92		Jabalpur	(L 123) Chargaon to Sivni	1.5
93			T08 to Pipariya	0.92
94			T05 Pipariya	2.625
95			NH7 to Bamhni	3.55
96			T 04 to Padariya	1.6

S.No.	District	Blocks	Name of Roads	Length (kms.)
97			Harrai to Dhora	2.125
98			L-083 to Thana	0.75
99			T-08 to Padua	0.6
100			NH-7 to Dhadra	2.85
101		Majholi	Indrana to Mudari	1.525
102			Sihora Road to Sagodi	2
103			Lamkana Road to Richhi Pindrai	1.2
104	Jabalpur	Majholi	SH 37 to Jamuniya	1.1
105			Harsinghi to Jhingrai	4.1
106			Suhajani to Gathora	1.95
107			Padwar Road to Dungriya	1
	51 Roads		**Jabalpur Total**	**91.855**
			Neemuch	
108	Neemuch	Jawad	Neemuch Singoli Rd (SarwaniaMaharaj) To Upreda	3.3
109			Neemuch Singoli Rd To Kachhala	1
110			Neemuch Singoli Rd (Phusaria) To Lalganj	2.7
111			Jat - Gwaliorkala Rd To Daulatpura Jat	2.5
112			Neemuch Singoli Rd To Gothada	1
113			Ruppura To Ranawat Kheda	2.9
114			Bolkheda Rd To Akli	3.4
115			Neemuch Singoli Rd To Kheda Bhangota	1
116			Jawad - Morvan Rd To Lodh	1.5
117			Neemuch Singoli Rd To Panoli	2.5
118			Lalpura To Ghati	2.6
119		Manasa	Manasa Jharda Rd To Gaganyakhedi	0.75
120			Chandarpura Kanjarda To Bilwas	3
121			Rampura - Bhasara Rd To Basi Block	2.9
122			Piplya handi MalahedaRd To Aranyadhani	1
123			Dudlai Dewaran To Badodiya Buzurg	2.5
124			Rampura-Bhanpura Rd To Barwadiya	1
125			Manasa - Jharda Rd. To Sarsi	1
126			Manasa Rmpura Rd To Amad Amargarh Block	2.8
127		Neemuch	Berkheda hada To Champi	2
128			Kothdi Istmurar To Dalawada	3
129			Neemuch To Chauthkheda	3.4
130			Neemuch-Manasa road To Dulakheda	1.5
131			Lawasa choraha To Lewada	1
132			Lasudi tanwar To Umaheda	2.3
	25 Roads		**Neemuch Total**	**61.36**
			Ratlam	
133	Ratlam	Alot	Panthpiploda to Tajkheda	2.8
134			Mandawal to Kothadi (K)	2
135			Alote Barod Rd. to Dhapna	3
136			Lasudia Surjamal to Nimbakhedi	2.5
137			Pipliya Thukhar to Kammakhedi	2
138			Alot Gogarpur Rd. Jahanabad	5.5
139			Khajuri Devra to Garda	4.8
140			Alot- Barod Rd. to Kamlakhedi	3.7
141		Jaora	Dhatrawada to Kankarwa	4.5
142			Khokra to Khimakhedi	2.2
143			Barkhedi to Nagdi	2.4
144			Mhow Neemuch Rd. to Parvalia	0.6

S.No.	District	Blocks	Name of Roads	Length (kms.)
145			Mallakhedi to Bhanpur	3.9
146			Rola to Ranayara (D)	2.05
147			Ringnod to Manyakhedi	4.05
148		Piploda	Sukheda to Dhaturiya	4.5
149			Shakkerkhedi to Bilandpur	3
150			Shukheda to Bhakerkhedi	4.3
151		Ratlam	M.N.Road to Badchapra	11
152			Bati Badodiya to Nalkui	1.3
153			Becha to Laptiya	2
154			R.S.Road to Nandlai	1.7
155			Mundri to Sarwani Jagir	4
156	Ratlam	Ratlam	M.N Road to Amleti	2.1
157			Namli to Bharoda	1
158			Kanari To Dantora	0.8
	26 Roads		**Ratlam Total**	**75.475**
			Sehore	
159	Sehore	Astha	Astha Kannod Road To Guradiya Sirajjudin	2.5
160			Astha Shujalpur Road Dhanana	3.33
161			Guradiya Vajyapat To Magarkhedi	3.7
162			Rampurkalan To Awlikheda (Kerpani)	3.25
163		Sehore	Silkheda (T03) Mungawali	3.4
164			Hirapur road to Alampura	1.25
165			Jherkheda Ghati Sehore Road to Thoona Khurd	1.55
166			Sehor Sewaniya Road To Bakhtal (Molga)	5.63
167			Sehore Charnal Chandbad Road To Manpura	1.5
168			Khari to Awalikheda	3.05
169		Ichhawar	Gajikhedi To Ramgarh	4.7
170			Ichhawar To Mogra	4.05
171			Diwadiya Chainpura To Shahpura (Jamoniya Fatehpur)	3.4
172			Brijeshnagar To Kaneriya	1.95
	14 Roads		**Sehore Total**	**55.65**
			Tikamgarh	
173	Tikamgarh	Niwari	Mau Jhansi Road to Kalothra	3.4
174			Niwari-Teharka Road to Raipura Khas	2.5
175			Orcha-Chakarpur road to Radhapur	0.8
176		Prithvipur	Jeron Road To Bamroli	4.27
177			Simra Road to Mahuabag	1.2
178			Simra Jeron to Patariya	1.95
179			Jeron Road to Nayakhera	1.6
180			Orchha Road to Tenipura	2.4
181			Pathariya Road to Digwankala	3.7
182		Jatara	Lidhora to Antpura	3.35
183			Malpitha to Lakhepura	1.35
184		Palera	Ratanguwan to Alopa	3.2
185			Dinau Road to Kankanpura	4.45
186			Syawani Jawar Road to Banpura	0.9
187		Baldevgarh	Sirora to Shyampura	2.25
188			Tikamgarh-Chhatarpur Road to Dudiankhera	1.7
189			Futer-Teela Road to Bachhoda	0.9
190			Baisa to Banpura Khurd	3.1
191			Patha-Pathori Road to Midawali	6.8
192			Jatara-Khargapur Road to Banpura Sapon	1.6

S.No.	District	Blocks	Name of Roads	Length (kms.)
193		Tikamgarh	Baldevgarh-Kakarwaha road to Attariya	5.85
194			Baldevgarh-Kakarwaha road to Sunda Dharmapura	1.65
195			Tikamgarh-Jatara Road to Bamhori Nakiwan	1.9
196			Sukwaha Road to Shyampura	2.75
197			Darguwa Gudanwara road to Nagara	3
198			Tikamgarh-Jatara Road to Laxmanpura	0.95
199			Baldevgarh Kakarwaha Road to Rashankhera	3.1
	27 Roads		**Tikamgarh Total**	**75.45**
			Mandsaur	
200	Mandsour	Bhanpura	Garoth Bhanpura Road to Dhabla (Manohar)	1
201		Garoth	Sathkheda to Ranayara	3.5
202			Panwadi to Piplya Raja	2.6
203			Shamgarh to Junapani Dhornya	4.4
204		Malhargarh	Sokri to Kheda khadan	2.6
205			Hingoria to Akyamedi	2.5
206	Mandsour	Mandsour	Dalauda-Digon road ot Pinda	3.1
207			Katlar to PipalKhedi	1.6
208			Nandwel to Balodiya	2.8
209			NH-79 to Lakhmakhedi	0.7
210		Sitamou	Sitamou Basai road to Larni	1
211			Sitamou Basai road to Padli	3
212			Kachanara to Khajurimanda	2.9
213			Titrod to Gangakhedi	2.85
214			Sitamou Basai road to Khatrukhedi	1.8
215			Suwasara Shamgarh road to Hanspura	2.4
216			Suwasara Dokerkhedi Road to Lakhwa	2.1
217			Guradiyavijay to Dhanadakheda	2.4
218			Guradiyavijay to Kanakheda	2.9
	19 Roads		**Mandsaur Total**	**47.595**
			Indore	
219	Indore	Depalpur	Kishanpura (Machal) to Bajarangpura	4.15
220			Piranwas to Gadibillod	1.8
221			Limbodapar to Palasiyapar	4
222			Girota road to Parinalwasa (Pirnlwasa)	3.4
223			Atahada to Deora khedi	3.4
224			Dep.-Gautam. to Chitoda	3.8
225			Agra-Ataheda Road.to Nogawan Surf	0.7
226			Pirnawasa to Osara	4.9
227		Indore	Semliya Chau to Jalod Kau	3.75
228			Khudel Road to Mundla Jetkaram	0.51
229		Mhow	Bagdi Manpur Road to Julwanya	3.1
230			Gawloo Khandwa Road to Surtipura	2.6
231			Choraldam Road to Buralia	5.6
232			Mhow Mandleshwar to Jamniya	3
233			Jambuzurg to Ghodakhor	2.7
234			Rampuriya Manpur Road to Olani	4.3
235			A.B. Road to Shahda	2.1
236			Khurda Manpur Road to Rai Kunda	2.7
237			A.B. Road (Umaria) to Pipliya Malhar	1.9
238			Kadwali to Rampuriya	2.1
239			A.B. Road (Yeshwant) to Gol Kheda	4.3
240		Sanwer	Jambodi Sarvar to Ajnoti	4

S.No.	District	Blocks	Name of Roads	Length (kms.)
241			Gawala to Kamod Kamlya	3.85
242			Indore Ujjain Road to Siloda Bujurg	1.8
243			Indore Ujjain Road to Brahman Khedi	3.1
244			Jamodi to Solsindi	4.2
245			Kachaliya to Rang Karadia	4.2
246			Sanwer Road to Bawaliya Khedi	2.3
247			Kachaliya to Pipliya Kaysha (Kaystha)	4.1
248			Shahna to Mundla Husain	2.5
249			Faraspura to Bhondwas	2.1
250			Faraspura to Melkalma	3.6
251			Chituoda to Magar Khedi	2.1
252			Ajnod to Balghara	2.3
253			Indore Ujjain Road to Padriya (Padliya) Bajrang	5.1
254			Indore Ujjain Road to Amli Kheda	0.75
	36 Roads		**Indore Total**	**104.96**
254			**Grand Total**	**654.05**

Appendix 2.3 Rural Roads Environment Check List

RURAL ROADS: ENVIRONMENTAL CHECKLIST

Road Name: Mundri to Sarwani Jagir

Block Name: Ratlam

District Name: Ratlam

Total Length of the Road: 2.80 km

A. Climatic Conditions

Temperature	High: 48.2 **(May)** Low: 10 °C **(Dec)**
Humidity	High: 88 % **(Aug)** Low: 52 %
Rainfall Rainy Season	1145 mm/year **June** to **September**

B. Location of the Road and Generic description of Environment

S. No.	Type of Ecosystem	Yes	No	Explanation
1.	Coastal area Mangrove (along roadside)		√	Distance from Coastline: km ( ) more than 50% ( ) less than 20%
2.	Type of Terrain-(Plain/Hilly/ Mountainous etc.) *(Explain the topography of the area and how many km of the road are located in the hilly area)*		√	Altitude: The topography of the project road is flat at almost all locations.
4.	Forest Area *(Explain whether the road passes through forest areas or located along the forest areas and distance from shoulder to the forest area)?*		√	Type of Vegetation: Legal Status of the Forest Area: *(Reserved, National Park, Sanctuaries, Unclassified, etc.)* No part of the project road passes through any forest area.
5.	Wildlife (*Explain whether there are any wildlife species in the project area*)		√	Name of animals: **NA** Endangered species (if any): **None**
6.	Inhabited Area	√		Inhabited area starts at Ch-2000m to Ch-2400m, Ch-2700m Ch-2800m with connecting village Sarwani Jagir
7.	Agricultural Land	√		The agriculture land lies between Ch-00m to Ch-2000m, Ch-2400m to Ch-2700m.
8.	Grazing grounds		√	Grazing ground was not found along the proposed alignment.
9.	Barren Land		√	No Barren land along the project road.

C. Specific description of the Road Environment

(Note: Questions number 1, 4, 5, 7 and 8 must be answered after discussions with the local community people)

S. No.	Parameter/ Component	Yes	No	Explanation
1.	Are there any areas with landslide or erosion problems along the road? ***(If yes, indicate the location (right or left side) and the chainage)***		√	No part of the project road lies in hilly terrain prone to landslide or erosion. However, sufficient cross drainage structures will be constructed to avoid any erosion. ( ) No Secondary Information is available and Local Community is not aware of this matter
2.	Are there any lakes/swamps beside the road? ***(If yes, list them indicating the location (right or left side) and the chainage)***	√		There was found big pond at Ch-400m to CH-500m and Ch-1700m to Ch-1800m far away 300m from the proposed alignment.
3.	Are there any nallas/streams/rivers etc. along/crossing the road? ***(If yes, list them indicating the location (right, left or crossing) and the chainage***	√		There was found some water crossing structures at Ch-00m to Ch-100m, Ch-1200m to Ch-1300m, CH-1800m to Ch-1900m, CH-2200m to Ch-2300m has proposed CD.
4.	Are there problems of water stagnation and other drainage issues on or near the road? ***(If yes, mention chainage)***	√		There are at some points of water stagnation and other drainage issues on or near the road which is discussed above S.No.3. ( ) No Secondary Information is available and Local Community is not aware of this matter
5.	Is the area along the project road prone to flooding? ***(If yes, mention flood level and frequency)***		√	There are not found any flood prone area along the project road. ( ) No Secondary Information is available and Local Community is not aware of this matter
6.	Are there any trees with a dbh of 30 cm or more within 10 m on either side from the center line of the road alignment? ***(If yes attach list of trees indicating the location (right or left side)and the chainage)***	√		There are 39 trees of dbh of 30 cm or more as attached in **Attachment I.**
7.	Along the road and within 100m of the road shoulder, are there any faunal habitat areas, faunal breeding ground, bird migration area, or other similar areas? ***(If yes, specify details of habitat with chainage)***		√	There was not found any faunal habitat at 100 m of the road shoulder. ( ) No Secondary Information is available and Local Community is not aware of this matter
8.	Along the road and within 100m of the road shoulder is there any evidence of floral and faunal species that are classified as endangered species?		√	No rare, endangered or threatened species were found within 100 m of the road shoulder. ( ) No Secondary Information Available and Local Community is not aware of this matter

S. No.	Parameter/ Component	Yes	No	Explanation
9.	Are there any utility structures[18] within 10 m on either side from the center line of the road alignment? *(If yes, attach list with chainage)*	√		There are few utility structures found as listed in **Attachment II.**
10.	Are there any religious, cultural or community structures/buildings[19] within 10 m on either side from the center line of the road alignment? *(If yes attach list with chainage)*	√		Few religious cultural or community structures/buildings were found as listed in **Attachment III.**

D. Public Consultation

No.	Consultation Activities	Yes	No	Remarks
1.	Consultation with local community was conducted before finalizing the alignment. *(Attach list of people met and dates)*	√		Yes, consulting with the community.
2.	Any suggestion received in finalizing the alignment		√	NA
3.	If suggestions received, were they incorporated into the design.		√	NA

E. Please attach the following:

1) Sketch a map showing the bridge and the trees
2) List of trees indicating location (left or right side of the road) and chainage (as required under C. 6)
3) List of utility structures indicating location (left or right side of the road) and chainage (as required under C. 9)
4) List of community structures indicating location (left or right side of the road) and chainage (as required under C. 10)
5) Sketch of strip map of the road covering details of at least 10 m on either side from the center line of the road
6) Photographs of the project area showing at least 10 m on either side from center line of road alignment. Every 2 km or less of road must have at least 1 photograph.

[18] Water tap, hand pump, electric pole, telephone pole, water pipe and other similar strucutures.

[19] Mandir, Masjid, Church, religious/cultural/historical monuments, school, health center, public toilet and other similar structures.

Attachment I

List of Trees

Chainage (m)			Left	Right
0	-	100	-	2
100	-	200	1	-
200	-	300	-	1
300	-	400	1	-
400	-	500	3	-
700	-	800	-	1
800	-	900	-	1
900	-	1000	-	1
1000	-	1100	-	1
1100	-	1200	1	-
1200	-	1300	1	-
1300	-	1400	3	-
1400	-	1500	-	1
1500	-	1600	-	2
1600	-	1700	-	2
2000	-	2100	2	-
2100	-	2200	7	-
2300	-	2400	2	-
2400	-	2500	2	-
2500	-	2600	2	-
2600	-	2700	-	1
TOTAL			25	13

Attachment II

List of Utilities

Chainage (m)			Left	Right
1100	-	1200	-	ELC
1700	-	1800	-	ELC
1800	-	1900	ELC	-
2200	-	2300	ELC	-
2600	-	2700	ELC	-
2700	-	2800	2 ELC	ELC

Attachment III

List of Community Structures

Chainage (m)			Left	Right
0	-	100	-	waiting room
2000	-	2100	Panchyat	-
2100	-	2200	School	-
2200	-	2300	Temple	-

Attachment-IV

Left					Chainage (m)			Right				
8 to 10m	6 to 8m	4 to 6m	2 to 4m	0 to 2m				0 to 2m	2 to 4m	4 to 6m	6 to 8m	8 to 10m
-	-	-	-	-	0	-	100	-	-	2 tree	-	Waiting room
-	-	1 tree	-	-	100	-	200	-	-	-	-	-
-	-	-	-	-	200	-	300	-	1 tree	-	-	-
-	-	-	1 tree	-	300	-	400	-	-	-	-	-
-	-	-	3 tree	-	400	-	500	-	-	-	-	-
-	-	-	-	-	700	-	800	-	-	1 tree	-	-
-	-	-	-	-	800	-	900	1 tree	-	-	-	-
-	-	-	-	-	900	-	1000	1 tree	-	-	-	-
-	-	-	-	-	1000	-	1100	1 tree	-	-	-	-
-	-	-	-	1 tree	1100	-	1200	-	-	-	-	-
-	-	-	1 tree	-	1200	-	1300	-	-	-	-	-
-	-	2 tree	1 tree	-	1300	-	1400	-	-	-	-	-
-	-	-	-	-	1400	-	1500	-	-	1 tree	-	-
-	-	-	-	-	1500	-	1600	-	-	1 tree	1 tree	-
-	-	-	-	-	1600	-	1700	-	1 tree	1 tree	-	-
-	-	Panchyat	2 tree	-	2000	-	2100	-	-	-	-	-
School (100m)	-	-	7 tree	-	2100	-	2200	-	-	-	-	-
-	-	1 temple	-	-	2200	-	2300	-	-	-	-	-
-	-	1 tree	1 tree	-	2300	-	2400	-	-	-	-	-
-	-	-	-	2 tree	2400	-	2500	-	1 tree	-	-	-
-	-	2 tree	-	-	2500	-	2600	-	-	-	-	-
-	-	-	-	-	2600	-	2700	-	-	1 tree	-	-

Attachment V

Photo Plates

Ch-00m waiting room RHS at start point of the road

Ch-100m to Ch-200m

Ch-200m to Ch-300m

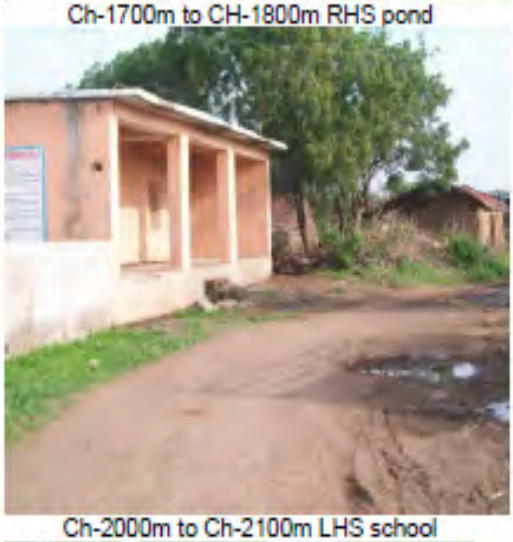
Ch-800m to Ch-900m

Ch-1000m to CH-1100m

Ch-1600m to Ch-1700m LHS curve

Ch-1700m to CH-1800m RHS pond

Ch-1900m to Ch-2000m Habitation starts



Ch-2000m to Ch-2100m LHS school

Ch-2800m new habitation

Transect walk

Consultation with community

Chainage wise Transect Walk Findings

Chainage (M)			Existing Land Width (m)	Additional Land Required		Losses		Type of loss		Village	Remarks/Suggestion
				LHS	RHS	LHS	RHS	LHS	RHS		
0	-	100	0	4	4	4	4	Pvt. Land	Pvt. Land	-	1 waiting room and farmers are agree to donate
100	-	200	0	4	4	4	4	Pvt. Land	Pvt. Land	-	-
200	-	300	0	4	4	4	4	Pvt. Land	Pvt. Land	-	-
300	-	400	8	-	-	-	-	-	-	-	RHS junction
400	-	500	8	-	-	-	-	-	-	-	RHS pond
500	-	600	8	-	-	-	-	-	-	-	LHS Junction
600	-	700	8	-	-	-	-	-	-	-	-
700	-	800	8	-	-	-	-	-	-	-	1 well RHS
800	-	900	8	-	-	-	-	-	-	-	-
900	-	1000	8	-	-	-	-	-	-	-	-
1000	-	1100	8	-	-	-	-	-	-	-	-
1100	-	1200	8	-	-	-	-	-	-	-	-
1200	-	1300	8	-	-	-	-	-	-	-	-
1300	-	1400	8	-	-	-	-	-	-	-	-
1400	-	1500	8	-	-	-	-	-	-	-	-
1500	-	1600	8	-	-	-	-	-	-	-	-
1600	-	1700	8	-	-	-	-	-	-	-	RHS, LHS Junction
1700	-	1800	0	4	4	4	4	Pvt. Land	Pvt. Land	-	Pond, ELC
1800	-	1900	0	4	4	4	4	Pvt. Land	Pvt. Land	-	CD, ELC
1900	-	2000	0	4	4	4	4	Pvt. Land	Pvt. Land	-	-
2000	-	2100	0	4	4	4	4	Pvt. Land	Pvt. Land	-	RHS turn and LHS junction
2100	-	2200	5	-	-	-	-	-	-	Sarwani Jagir	LHS junction and habitation starts
2200	-	2300	5	-	-	-	-	-	-	-	RHS curve, water tank ELC, LHS temple, Junction
2300	-	2400	5	-	-	-	-	-	-	-	HP LHS
2400	-	2500	5	-	-	-	-	-	-	-	-
2500	-	2600	5	-	-	-	-	-	-	-	RHS well
2600	-	2700	5	-	-	-	-	-	-	-	RHS curve, ELC
2700	-	2800	8	-	-	-	-	-	-	-	ELC, well

Road Name: Tikamgarh Jatara Road to Laxmanpura
Block Name: Tikamgarh
District Name: Tikamgarh

Total Length of the Road: 0.95 km

D. Climatic Conditions

Temperature	High: 47 **(May)** Low: 28 **°C (Dec)**
Humidity	High: 70 **% (Aug)** Low: 20 **% (Dec)**
Rainfall Rainy Season	1200.6 mm/year **June** to **September**

E. Location of the Road and Generic description of Environment

S. No.	Type of Ecosystem	Yes	No	Explanation
1.	Coastal area Mangrove (along roadside)		√	Distance from Coastline: km ( ) more than 50% ( ) less than 20%
2.	Type of Terrain (Plain/Hilly/ Mountainous etc.) *(Explain the topography of the area and how many km of the road are located in the hilly area)*		√	Altitude: The topography of the project road is flat at almost all locations.
3	Forest Area *(Explain whether the road passes through forest areas or located along the forest areas and distance from shoulder to the forest area)?*		√	Type of Vegetation: Legal Status of the Forest Area: (Reserved, National Park, Sanctuaries, Unclassified, etc.) No part of the project road passes through any forest area.
4.	Wildlife *(Explain whether there are any wildlife species in the project area)*		√	Name of animals: NA Endangered species (if any): None
5.	Inhabited Area	√		The project road is passing through village namely Laxmanpura between Ch-800m to Ch-1000m.
6	Agricultural Land	√		Agriculture land lies on both side of agriculture between Ch-00m to CH-500m.
7.	Grazing grounds		√	The project road is not passing through grazing land.
8.	Barren Land		√	The project road is not passing through the barren land.

Specific description of the Road Environment

(Note: Questions number 1, 4, 5, 7 and 8 must be answered after discussions with the local community people)

S. No.	Parameter/ Component	Yes	No	Explanation
1.	Are there any areas with landslide or erosion problems along the road? *(If yes, indicate the location (right or left side) and the chainage)*		√	No part of the project road lies in hilly terrain prone to landslide or erosion. ( ) No Secondary Information is available and local Community is not aware of this matter
2.	Are there any lakes/swamps beside the road? *(If yes, list them indicating the location (right or left side) and the chainage.*		√	The pond has been not found on the proposed alignment
3	Are there any nallas/streams/rivers etc. along/crossing the road? *(If yes, list them indicating the location (right, left or crossing) and the chainage)*	√		A few water crossing has been found between Ch-00m to CH-100m, Ch-400m to Ch-500m, Ch-700m to Ch-800m aty the proposed alignment.
4.	Are there problems of water stagnation and other drainage issues on or near the road? *(If yes, mention chainage)*		√	There are some points of water stagnation and other drainage issues on or near the road which is discussed as above in S.No.3. ( ) No Secondary Information is available and Local Community is not aware of this matter
5.	Is the area along the project road prone to flooding? *(If yes, mention flood level and frequency)*		√	Apart from above mentioned location no other area is flood prone along the alignment. (√) No Secondary Information is available and Local Community is not aware of this matter
6.	Are there any trees with a dbh of 30 cm or more within 10 m on either side of the center line of the road alignment? *(If yes attach list of trees indicating the location (right or left side)and the chainage)*	√		A total of 09 trees are falling within 10m of the center line of proposed alignment. The list of trees on giving in as Attachment I.
7.	Along the road and within 100m of the road shoulder, are there any faunal habitat areas, faunal breeding ground, bird migration area, or other similar areas? *(If yes, specify details of habitat with chainage)*		√	( ) No Secondary Information is available and Local Community is not aware of this matter
8.	Along the road and within 100m of the road shoulder is there any evidence of floral and faunal species that are classified as endangered species?		√	No rare, endangered or threatened species have been found within 100 m of the road shoulder. ( ) No Secondary Information Available and Local Community is not aware of this matter.

9.	Are there any utility structures[20] within 10 m on either side from the center line of the road alignment? *(If yes, attach list with chainage)*	√		There are few utility structures found as listed in **Attachment II**.
10.	Are there any religious, cultural or community structures/buildings[21] within 10 m on either side from the center line of the road alignment? *(If yes attach list with chainage)*	√		Few religious cultural or community structures/buildings were found as listed in **Attachment III**.

D. Public Consultation

No.	Consultation Activities	Yes	No	Remarks
1.	Consultation with local community was conducted before finalizing the alignment. *(Attach list of people met and dates)*	√		Yes, consulting held with the community.
2.	Any suggestion received in finalizing the alignment		√	NA
3.	If suggestions received, were they incorporated into the design.		√	NA

E. Please attach the following:

7) Sketch a map showing the bridge and the trees
8) List of trees indicating location (left or right side of the road) and chainage (as required under C. 8)
9) List of utility structures indicating location (left or right side of the road) and chainage (as required under C. 9)
10) List of community structures indicating location (left or right side of the road) and chainage (as required under C. 10)
11) Sketch of strip map of the road covering details of at least 10 m on either side from the center line of the road
12) Photographs of the project area showing at least 10 m on either side from center line of road alignment. Every 2 km or less of road must have at least 1 photograph.

[20] Water tap, hand pump, electric pole, telephone pole, water pipe and other similar structures.
[21] Mandir, Masjid, Church, religious/cultural/historical monuments, school, health center, public toilet and other similar structures.

Attachment I

List of Trees

Chainage (m)			Left	Right
0	-	100	-	1
100	-	200	4	4
Total			4	5

Attachment II

List of Utilities

Chainage (m)			Left	Right
0	-	100	-	HP
100	-	300	HT	HT
700	-	800	HT	HT

Attachment III

List of Community Structures

Chainage (m)			Left	Right
800	-	900	School	-

Attachment-IV

Left					Chainage (m)			Right				
8 to 10m	6 to 8m	4 to 6m	2 to 4m	0 to 2m				0 to 2m	2 to 4m	4 to 6m	6 to 8m	8 to 10m
-	-	-	-	-	0	-	100	-	1 tree	-	-	-
-	-	-	4 trees	-	100	-	200	-	-	4 trees	-	-
School	-	-	-	-	800	-	900	-	-	-	-	-

Attachment V

Photo Plates

Ch-00m Start point, CD proposed

Ch-300m to Ch-400m Curve-LHS

Ch-400m to Ch-500m CD proposed

Ch-800m Habitation area, CC road proposed

Ch-800m to Ch-900m School

Community Consultation

Chainage (M)			Existing Land Width (m)	Additional Land Required		Losses		Type of loss		Village	Remarks /Suggestion
				LHS	RHS	LHS	RHS	LHS	RHS		
0	-	100	8	-	-	-	-	-	-	-	HP-RHS, CD proposed
100	-	200	8	-	-	-	-	-	-	-	HT
200	-	300	8	-	-	-	-	-	-	-	HT
300	-	400	8	-	-	-	-	-	-	-	Curve-RHS
400	-	500	8	-	-	-	-	-	-	-	CD proposed
500	-	600	5	-	-	-	-	-	-	-	CD proposed
600	-	700	5	-	-	-	-	-	-	-	-
700	-	800	5	-	-	-	-	-	-	-	CD proposed
800	-	900	5	-	-	-	-	-	-	-	School, Habitation area, CC road proposed
900	-	1000	5	-	-	-	-	-	-	-	CC road proposed

Road Name: Samnapur to Jamun

Block Name: Tendukheda

District Name: Damoh

Total Length of the Road: 9.50 km

F. Climatic Conditions

Temperature	High: 48.2 **(May)** Low: 10 **°C (Dec)**
Humidity	High: 88 % **(Aug)** Low: 52 **%**
Rainfall Rainy Season	1145 mm/year **June** to **September**

G. Location of the Road and Generic description of Environment

S. No.	Type of Ecosystem	Yes	No	Explanation
1.	Coastal area Mangrove (along roadside)		√	Distance from Coastline: km ( ) more than 50% ( ) less than 20%
2.	Type of Terrain (Plain/Hilly/ Mountainous etc.) *(Explain the topography of the area and how many km of the road are located in the hilly area)*	√		There was found hills area at Ch-1600m to Ch-9500m along the proposed alignment. Altitude: The topography of the project road is flat at almost all locations
3	Forest Area *(Explain whether the road passes through forest areas or located along the forest areas and distance from shoulder to the forest area)?*	√		There was found forest land at Ch-1400m to Ch-9500m at proposed alignment Type of Vegetation: Legal Status of the Forest Area: *(Reserved, National Park, Sanctuaries, Unclassified, etc.)* No part of the project road passes through any forest area.
4	Wildlife *(Explain whether there are any wildlife species in the project area)*		√	Name of animals: **NA** Endangered species (if any): **None**
5	Inhabited Area	√		Inhabited area starts at Ch-400m to Ch-1200m, Ch-7400m to Ch-7800m and Ch-9000mto Ch-9500m with connecting village Samnapur, Khari and Jamun respectively.
6	Agricultural Land		√	The agriculture land was not found lies along the proposed alignment
7	Grazing grounds		√	Grazing ground land was not found lies along the proposed alignment.
8	Barren Land		√	No Barren land along the project road.

H. Specific description of the Road Environment

(Note: Questions number 1, 4, 5, 7 and 8 must be answered after discussions with the local community people)

S. No.	Parameter/ Component	Yes	No	Explanation
1.	Are there any areas with landslide or erosion problems along the road? *(If yes, indicate the location (right or left side) and the chainage)*		√	No part of the project road lies in hilly terrain prone to landslide or erosion. However, sufficient cross drainage structures will be constructed to avoid any erosion. ( ) No Secondary Information is available and Local Community is not aware of this matter
2.	Are there any lakes/swamps beside the road? *(If yes, list them indicating the location (right or left side) and the chainage)*		√	There was not found any pond along the project road.
3.	Are there any nallas/streams/rivers etc. along/crossing the road? *(If yes, list them indicating the location (right, left or crossing) and the chainage*	√		There was found at Ch-1400m to Ch-1600m, Ch-2600m to Ch-2800m, Ch-3600m to Ch-3800m, Ch-5400m to CH-5600m and Ch-7200m to Ch-7400m has been CD proposed and Ch-400m to Ch-600m Existing CD.
4.	Are there problems of water stagnation and other drainage issues on or near the road? *(If yes, mention chainage)*		√	There are not at some points of water stagnation and other drainage issues on or near the road which is discussed above S.No.3. ( ) No Secondary Information is available and Local Community is not aware of this matter
5.	Is the area along the project road prone to flooding? *(If yes, mention flood level and frequency)*		√	There are not found any flood prone area along the project road. ( ) No Secondary Information is available and Local Community is not aware of this matter
6.	Are there any trees with a dbh of 30 cm or more within 10 m on either side from the center line of the road alignment? *(If yes attach list of trees indicating the location (right or left side)and the chainage)*	√		There are 57 trees of dbh of 30 cm or more as attached in **Attachment I.**
7.	Along the road and within 100m of the road shoulder, are there any faunal habitat areas, faunal breeding ground, bird migration area, or other similar areas? *(If yes, specify details of habitat with chainage)*		√	There was not found any faunal habitat at 11000 m of the road shoulder. ( ) No Secondary Information is available and Local Community is not aware of this matter
8.	Along the road and within 100m of the road shoulder is there any evidence of floral and faunal species that are classified as endangered species?		√	No rare, endangered or threatened species were found within 100 m of the road shoulder. ( ) No Secondary Information Available and Local Community are not aware of this matter.

S. No.	Parameter/ Component	Yes	No	Explanation
9.	Are there any utility structures[22] within 10 m on either side from the center line of the road alignment? *(If yes, attach list with chainage)*	√		There are few utility structures found as listed in **Attachment II**.
10.	Are there any religious, cultural or community structures/buildings[23] within 10 m on either side from the center line of the road alignment? *(If yes attach list with chainage)*	√		Few religious cultural or community structures/buildings were found as listed in 0**Attachment III**.

D. Public Consultation

No.	Consultation Activities	Yes	No	Remarks
1.	Consultation with local community was conducted before finalizing the alignment. *(Attach list of people met and dates)*	√		Yes, consulting with the community
2.	Any suggestion received in finalizing the alignment		√	NA
3.	If suggestions received, were they incorporated into the design.		√	NA

E. Please attach the following:

13) Sketch a map showing the bridge and the trees
14) List of trees indicating location (left or right side of the road) and chainage (as required under C. 6)
15) List of utility structures indicating location (left or right side of the road) and chainage (as required under C. 9)
16) List of community structures indicating location (left or right side of the road) and chainage (as required under C. 10)
17) Sketch of strip map of the road covering details of at least 10 m on either side from the center line of the road
18) Photographs of the project area showing at least 10 m on either side from center line of road alignment. Every 2 km or less of road must have at least 1 photograph.

[22] Water tap, hand pump, electric pole, telephone pole, water pipe and other similar strucutures.
[23] Mandir, Masjid, Church, religious/cultural/historical monuments, school, health center, public toilet and other similar structures.

Attachment I

List of Trees

Chainage (m)			Left	Right
1000	-	1200	1	-
2000	-	2200	2	4
2200	-	2400	5	6
2400	-	2600	-	3
2600	-	2800	3	4
3000	-	3200	3	2
3200	-	3400	-	1
3400	-	3600	3	2
3600	-	3800	2	-
3800	-	4000	1	2
4000	-	4200	-	1
4200	-	4400	1	-
4400	-	4600	-	2
4800	-	5000	1	-
5900	-	6000	-	1
6000	-	6200	1	-
7000	-	7200	1	3
7200	-	7400	2	-
Total			26	31

Attachment II

List of Utilities

Chainage (m)			Left	Right
200	-	400	ELC	ELC
800	-	1000	well	-

Attachment III

List of Community Structures

Chainage (m)			Left	Right
0	-	200	-	Hospital
1000	-	1200	-	School
4000	-	4200	-	Temple
9500	-	-	School	-

Attachment-IV

Left					Chainage (m)			Right				
8 to 10m	6 to 8m	4 to 6m	2 to 4m	0 to 2m				0 to 2m	2 to 4m	4 to 6m	6 to 8m	8 to 10m
-	-	-	-	-	0	-	200	-	Hospital	-	-	-
-	-	-	well	-	800	-	1000	-	-	-	-	-
-	-	-	1 tree	-	1000	-	1200	-	School	-	-	-
-	-	-	2 tree	-	2000	-	2200	-	4 tree	-	-	-
-	-	-	5 tree	-	2200	-	2400	-	6 tree	-	-	-
-	-	-	-	-	2400	-	2600	-	3 tree	-	-	-
-	-	-	3 tree	-	2600	-	2800	-	4 tree	-	-	-
-	-	-	3 tree	-	3000	-	3200	-	2 tree	-	-	-
-	-	-	-	-	3200	-	3400	-	1 tree	-	-	-
-	-	-	3 tree	-	3400	-	3600	-	2 tree	-	-	-
-	-	-	2 tree	-	3600	-	3800	-	-	-	-	-
-	-	-	1 tree	-	3800	-	4000	-	2 tree	-	-	-
-	-	-	-	-	4000	-	4200	-	1 tree	Temple	-	-
-	-	-	1 tree	-	4200	-	4400	-	-	-	-	-
-	-	-	-	-	4400	-	4600	-	2 tree	-	-	-
-	-	-	1 tree	-	4800	-	5000	-	-	-	-	-
-	-	-	-	-	5900	-	6000	-	1 tree	-	-	-
-	-	-	1 tree	-	6000	-	6200	-	-	-	-	-
-	-	-	1 tree	-	7000	-	7200	-	-	-	-	-
-	-	-	2 tree	-	7200	-	7400	-	-	-	-	-
-	-	-	School	-	9400	-	9500	-	-	-	-	-

Attachment V

Photo Plates

CH-00m Starting point, Hospital RHS

Ch-400m CD Existing

Ch-800m Well LHS

Ch-1200m Junction LHS

School session awareness

Ch-2800m CD proposed

Ch-3800m CD proposed

Ch-5600m CD proposed

Ch-7600m Habitation area, CC road proposed

Community Consultation

Ch-9500m End point

Community Consultation

Chainage wise Transect Walk Findings

Chainage (M)			Existing Land Width (m)	Additional Land Required		Losses		Type of loss		Village	Remarks /Suggestion
				LHS	RHS	LHS	RHS	LHS	RHS		
0	-	200	8	-	-	-	-	-	-	-	Hospital RHS
200	-	400	8	-	-	-	-	-	-	-	ELC
400	-	600	5	-	-	-	-	-	-	-	CD Existing, Habitation area
600	-	800	5	-	-	-	-	-	-	-	-
800	-	1000	5	-	-	-	-	-	-	-	Well LHS
1000	-	1200	5	-	-	-	-	-	-	-	School RHS
1200	-	1400	8	-	-	-	-	-	-	-	Junction RHS
1400	-	1600	8	-	-	-	-	-	-	-	CD Proposed
1600	-	1800	8	-	-	-	-	-	-	-	-
1800	-	2000	8	-	-	-	-	-	-	-	-
2000	-	2200	8	-	-	-	-	-	-	-	-
2200	-	2400	8	-	-	-	-	-	-	-	-
2400	-	2600	8	-	-	-	-	-	-	-	-
2600	-	2800	8	-	-	-	-	-	-	-	CD Proposed
2800	-	3000	8	-	-	-	-	-	-	-	-
3000	-	3200	8	-	-	-	-	-	-	-	-
3200	-	3400	8	-	-	-	-	-	-	-	-
3400	-	3600	8	-	-	-	-	-	-	-	-
3600	-	3800	8	-	-	-	-	-	-	-	CD Proposed
3800	-	4000	8	-	-	-	-	-	-	-	-
4000	-	4200	8	-	-	-	-	-	-	-	Temple RHS
4200	-	4400	8	-	-	-	-	-	-	-	-
4400	-	4600	8	-	-	-	-	-	-	-	-
4600	-	4800	8	-	-	-	-	-	-	-	-
4800	-	5000	8	-	-	-	-	-	-	-	-
5000	-	5200	8	-	-	-	-	-	-	-	-
5200	-	5400	8	-	-	-	-	-	-	-	-
5400	-	5600	8	-	-	-	-	-	-	-	CD proposed
5600	-	5800	8	-	-	-	-	-	-	-	-
5800	-	6000	8	-	-	-	-	-	-	-	-
6000	-	6200	8	-	-	-	-	-	-	-	-
6200	-	6400	8	-	-	-	-	-	-	-	-
6400	-	6600	8	-	-	-	-	-	-	-	-
6600	-	6800	8	-	-	-	-	-	-	-	-
6800	-	7000	8	-	-	-	-	-	-	-	-
7000	-	7200	8	-	-	-	-	-	-	-	-
7200	-	7400	8	-	-	-	-	-	-	-	CD proposed
7400	-	7600	5	-	-	-	-	-	-	Khari	Habitation area, CC road proposed
7600	-	7800	5	-	-	-	-	-	-	-	-
7800	-	8000	8	-	-	-	-	-	-	-	-
8000	-	8200	8	-	-	-	-	-	-	-	-
8200	-	8400	8	-	-	-	-	-	-	-	-
8400	-	8600	8	-	-	-	-	-	-	-	-
8600	-	8800	8	-	-	-	-	-	-	-	-
8800	-	9000	8	-	-	-	-	-	-	-	-
9000	-	9200	5	-	-	-	-	-	-	Jamun	Habitation area
9200	-	9400	5	-	-	-	-	-	-	-	Habitation area
9400	-	9500	5	-	-	-	-	-	-	-	School-LHS

Road Name: MDR (ATP) To Rampura

Block Name: Damoh

District Name: Damoh

Total Length of the Road: 1.00 Km

I. Climatic Conditions

Temperature	High: 48.2 **(May)** Low: 10 **°C (Dec)**
Humidity	High: 88 % **(Aug)** Low: 52 **%**
Rainfall Rainy Season	1145 mm/year **June** to **September**

J. Location of the Road and Generic description of Environment

S. No.	Type of Ecosystem	Yes	No	Explanation
1.	Coastal area Mangrove (along roadside)		√	Distance from Coastline: km ( ) more than 50% ( ) less than 20%
2.	Type of Terrain-(Plain/Hilly/ Mountainous etc.) *(Explain the topography of the area and how many km of the road are located in the hilly area)*		√	Altitude: The topography of the project road is flat at almost all locations.
3	Forest Area *(Explain whether the road passes through forest areas or located along the forest areas and distance from shoulder to the forest area)?*		√	Type of Vegetation: Legal Status of the Forest Area: *(Reserved, National Park, Sanctuaries, Unclassified, etc.)* No part of the project road passes through any forest area.
4	Wildlife *(Explain whether there are any wildlife species in the project area)*		√	Name of animals: **NA** Endangered species (if any): **None**
5	Inhabited Area	√		Inhabited area starts at Ch-00m to Ch-200m with connecting village Rampura
6	Agricultural Land	√		The agriculture land lies between Ch-200m to Ch-700m
7	Grazing grounds		√	Grazing ground was not found along the proposed alignment.
8	Barren Land		√	No Barren land along the project road.

K. Specific description of the Road Environment

(Note: Questions number 1, 4, 5, 7 and 8 must be answered after discussions with the local community people)

S. No.	Parameter/ Component	Yes	No	Explanation
1.	Are there any areas with landslide or erosion problems along the road? *(If yes, indicate the location (right or left side) and the chainage)*		√	No part of the project road lies in hilly terrain prone to landslide or erosion. However, sufficient cross drainage structures will be constructed to avoid any erosion. ( ) No Secondary Information is available and Local Community is not aware of this matter
2.	Are there any lakes/swamps beside the road? *(If yes, list them indicating the location (right or left side) and the chainage)*		√	There was not found any pond at proposed alignment.
3.	Are there any nallas/streams/rivers etc. along/crossing the road? *(If yes, list them indicating the location (right, left or crossing) and the chainage*	√		There was found some water crossing points at Ch-300m to Ch-400m.
4.	Are there problems of water stagnation and other drainage issues on or near the road? *(If yes, mention chainage)*	√		There are at some points of water stagnation and other drainage issues on or near the road which is discussed above S.No.3. ( ) No Secondary Information is available and Local Community is not aware of this matter
5.	Is the area along the project road prone to flooding? *(If yes, mention flood level and frequency)*		√	There are not found any flood prone area along the project road. ( ) No Secondary Information is available and Local Community is not aware of this matter
6.	Are there any trees with a dbh of 30 cm or more within 10 m on either side from the center line of the road alignment? *(If yes attach list of trees indicating the location (right or left side)and the chainage)*	√		There are 19 trees of dbh of 30 cm or more as attached in **Attachment I.**
7.	Along the road and within 100m of the road shoulder, are there any faunal habitat areas, faunal breeding ground, bird migration area, or other similar areas? *(If yes, specify details of habitat with chainage)*		√	There was not found any faunal habitat at 100 m of the road shoulder. ( ) No Secondary Information is available and Local Community is not aware of this matter
8.	Along the road and within 100m of the road shoulder is there any evidence of floral and faunal species that are classified as endangered species?		√	No rare, endangered or threatened species were found within 100 m of the road shoulder. ( ) No Secondary Information Available and Local Community is not aware of this matter

S. No.	Parameter/ Component	Yes	No	Explanation
9.	Are there any utility structures[24] within 10 m on either side from the center line of the road alignment? *(If yes, attach list with chainage)*		√	There are few utility structures found as listed in **Attachment II**.
10.	Are there any religious, cultural or community structures/buildings[25] within 10 m on either side from the center line of the road alignment? *(If yes attach list with chainage)*	√		Few religious cultural or community structures/buildings were found as listed in **Attachment III**.

D. Public Consultation

No.	Consultation Activities	Yes	No	Remarks
1.	Consultation with local community was conducted before finalizing the alignment. *(Attach list of people met and dates)*	√		Yes, consulting with the community.
2.	Any suggestion received in finalizing the alignment		√	NA
3.	If suggestions received, were they incorporated into the design.		√	NA

E. Please attach the following:

19) Sketch a map showing the bridge and the trees
20) List of trees indicating location (left or right side of the road) and chainage (as required under C. 6)
21) List of utility structures indicating location (left or right side of the road) and chainage (as required under C. 9)
22) List of community structures indicating location (left or right side of the road) and chainage (as required under C. 10)
23) Sketch of strip map of the road covering details of at least 10 m on either side from the center line of the road
24) Photographs of the project area showing at least 10 m on either side from center line of road alignment. Every 2 km or less of road must have at least 1 photograph.

[24] Water tap, hand pump, electric pole, telephone pole, water pipe and other similar strucutures.
[25] Mandir, Masjid, Church, religious/cultural/historical monuments, school, health center, public toilet and other similar structures.

Attachment I

List of Trees

Chainage (m)			Left	Right
0	-	100	12	6
300	-	400	-	1
TOTAL			12	7

Attachment II

List of Utilities

Chainage (m)			Left	Right
0		100	2EP	-
400		500	ELC	ELC
500		600	ELC	ELC
700		800	ELC	ELC

Attachment III

List of Community Structures

Chainage (m)			Left	Right
100		200	temple	
900		1000	School	-

Attachment-IV

Left					Chainage (m)			Right				
8 to 10m	6 to 8m	4 to 6m	2 to 4m	0 to 2m				0 to 2m	2 to 4m	4 to 6m	6 to 8m	8 to 10m
-	-	12 tree, 2 EP	-	-	0	-	100	-	-	6 tree	-	-
		Temple			100	-	200					
-	-	-	-	-	300	-	400	-	-	1 tree	-	-
-	School	-	-	-	900	-	1000	-	-	-	-	-

Attachment V

Photo Plates

CH-00m Starting point

Ch-200m

Ch-400m CD proposed

Ch-500m ELC height raise up

Ch-1000m END point, School

Community Consultation

Chainage wise Transect Walk Findings

Chainage (M)			Existing Land Width (m)	Additional Land Required		Losses		Type of loss		Village	Remarks /Suggestion
				LHS	RHS	LHS	RHS	LHS	RHS		
0	-	100	5	-	-	-	-	-	-	Habitation area	CC road proposed, EP LHS
100	-	200	5	-	-	-	-	-	-	-	temple
200	-	300	8	-	-	-	-	-	-	-	-
300	-	400	8	-	-	-	-	-	-	-	CD proposed
400	-	500	8	-	-	-	-	-	-	-	ELC
500	-	600	8	-	-	-	-	-	-	-	ELC
600	-	700	8	-	-	-	-	-	-	-	-
700	-	800	8	-	-	-	-	-	-	-	ELC
800	-	900	8	-	-	-	-	-	-	-	-
900	-	1000	8	-	-	-	-	-	-	-	School end point

Road Name: L118 to Oriya Mal

Block Name: Tendukheda

District Name: Damoh

Total Length of the Road: 2.00 km

L. Climatic Conditions

Temperature	High: 48.2 **(May)** Low: 10 **°C (Dec)**
Humidity	High: 88 % **(Aug)** Low: 52 **%**
Rainfall Rainy Season	1145 mm/year **June** to **September**

M. Location of the Road and Generic description of Environment

S. No.	Type of Ecosystem	Yes	No	Explanation
1.	Coastal area Mangrove (along roadside)		√	Distance from Coastline: km ( ) more than 50% ( ) less than 20%
2.	Type of Terrain (Plain/Hilly/ Mountainous etc.) *(Explain the topography of the area and how many km of the road are located in the hilly area)*		√	Altitude: The topography of the project road is flat at almost all locations.
3	Forest Area *(Explain whether the road passes through forest areas or located along the forest areas and distance from shoulder to the forest area)?*		√	Type of Vegetation: Legal Status of the Forest Area: *(Reserved, National Park, Sanctuaries, Unclassified, etc.)* No part of the project road passes through any forest area.
4	Wildlife *(Explain whether there are any wildlife species in the project area)*		√	Name of animals: **NA** Endangered species (if any): **None**
5	Inhabited Area	√		Inhabited area starts at Ch-1600m to Ch-2000m starting village Oriya Mal
6	Agricultural Land	√		The agriculture land was found at Ch00m to Ch-700m along the proposed alignment.
7	Grazing grounds		√	Grazing ground was not found along the proposed alignment.
8	Barren Land		√	No Barren land along the project road

N. Specific description of the Road Environment

(Note: Questions number 1, 4, 5, 7 and 8 must be answered after discussions with the local community people)

S. No.	Parameter/ Component	Yes	No	Explanation
1.	Are there any areas with landslide or erosion problems along the road? *(If yes, indicate the location (right or left side) and the chainage)*		√	No part of the project road lies in hilly terrain prone to landslide or erosion. However, sufficient cross drainage structures will be constructed to avoid any erosion. ( ) No Secondary Information is available and Local Community is not aware of this matter
2.	Are there any lakes/swamps beside the road? *(If yes, list them indicating the location (right or left side) and the chainage)*		√	There was not found any pond along the proposed alignment.
3.	Are there any nallas/streams/rivers etc. along/crossing the road? *(If yes, list them indicating the location (right, left or crossing) and the chainage*	√		There was found water crossing points at Ch-100m to Ch-200m, Ch-400m to Ch-500m, Ch-1000m to Ch-1100m have Existing CD.
4.	Are there problems of water stagnation and other drainage issues on or near the road? *(If yes, mention chainage)*	√		There are at some points of water stagnation and other drainage issues on or near the road which is discussed above S.No.3. ( ) No Secondary Information is available and Local Community is not aware of this matter
5.	Is the area along the project road prone to flooding? *(If yes, mention flood level and frequency)*		√	There are not found area along the project road. ( ) No Secondary Information is available and Local Community is not aware of this matter
6.	Are there any trees with a dbh of 30 cm or more within 10 m on either side from the center line of the road alignment? *(If yes attach list of trees indicating the location (right or left side)and the chainage)*	√		There are 09 trees of dbh of 30 cm or more as attached in **Attachment I.**
7.	Along the road and within 100m of the road shoulder, are there any faunal habitat areas, faunal breeding ground, bird migration area, or other similar areas? *(If yes, specify details of habitat with chainage)*		√	There was not found any faunal habitat at 100 m of the road shoulder. ( ) No Secondary Information is available and Local Community is not aware of this matter
8.	Along the road and within 100m of the road shoulder is there any evidence of floral and faunal species that are classified as endangered species?		√	No rare, endangered or threatened species were found within 100 m of the road shoulder. ( ) No Secondary Information Available and Local Community is not aware of this matter

S. No.	Parameter/ Component	Yes	No	Explanation
9.	Are there any utility structures[26] within 10 m on either side from the center line of the road alignment? *(If yes, attach list with chainage)*	√		There are few utility structures found as listed in **Attachment II**.
10.	Are there any religious, cultural or community structures/buildings[27] within 10 m on either side from the center line of the road alignment? *(If yes attach list with chainage)*	√		Few religious cultural or community structures/buildings were found as listed in **Attachment III**.

D. Public Consultation

No.	Consultation Activities	Yes	No	Remarks
1.	Consultation with local community was conducted before finalizing the alignment. *(Attach list of people met and dates)*	√		Yes, consulting with the community.
2.	Any suggestion received in finalizing the alignment		√	NA
3.	If suggestions received, were they incorporated into the design.		√	NA

E. Please attach the following:

25) Sketch a map showing the bridge and the trees
26) List of trees indicating location (left or right side of the road) and chainage (as required under C. 6)
27) List of utility structures indicating location (left or right side of the road) and chainage (as required under C. 9)
28) List of community structures indicating location (left or right side of the road) and chainage (as required under C. 10)
29) Sketch of strip map of the road covering details of at least 10 m on either side from the center line of the road
30) Photographs of the project area showing at least 10 m on either side from center line of road alignment. Every 2 km or less of road must have at least 1 photograph.

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[26] Water tap, hand pump, electric pole, telephone pole, water pipe and other similar strucutures.
[27] Mandir, Masjid, Church, religious/cultural/historical monuments, school, health center, public toilet and other similar structures.

Attachment I

List of Trees

Chainage (m)			Left	Right
400	-	500	3	1
500	-	600	1	-
700	-	800	-	1
1100	-	1200	1	-
1500	-	1600	1	-
1700	-	1800	1	-
Total			7	2

Attachment II

List of Utilities

Chainage (m)			Left	Right
1400	-	1500	ELC	ELC
1500	-	1600	TF	ELC
1700	-	1800	ELC	ELC
1800	-	1900	HP	-

Attachment III

List of Community Structures

Chainage (m)			Left	Right
1800	-	1900	School	-

Attachment-IV

Left					Chainage (m)			Right				
8 to 10m	6 to 8m	4 to 6m	2 to 4m	0 to 2m				0 to 2m	2 to 4m	4 to 6m	6 to 8m	8 to 10m
-	-	-	3 tree	-	400	-	500	-	1 tree	-	-	-
-	-	1 tree	-	-	500	-	600	-	-	-	-	-
-	-	-	-	-	700	-	800	-	-	1 tree	-	-
-	-	1 tree	-	-	1100	-	1200	-	-	-	-	-
-	-	TF	1 tree	-	1500	-	1600	-	-	-	-	-
-	-	-	1 tree	-	1700	-	1800	-	-	-	-	-
-	-	-	School, HP	-	1800	-	1900	-	-	-	-	-

Attachment-V

Photo Plates

Ch-00m starting point

Ch-100m Existing CD

Ch-400m Existing CD

Ch-1000m Existing CD

Ch-1800m School Session

Community Consultation

Chainage wise Transect Walk Findings

Chainage (M)			Existing Land Width (m)	Additional Land Required		Losses		Type of loss		Village	Remarks/Suggestion
				LHS	RHS	LHS	RHS	LHS	RHS		
0	-	100	8	-	-	-	-	-	-	-	-
100	-	200	8	-	-	-	-	-	-	-	Existing CD
200	-	300	8	-	-	-	-	-	-	-	-
300	-	400	8	-	-	-	-	-	-	-	-
400	-	500	8	-	-	-	-	-	-	-	Existing CD
500	-	600	8	-	-	-	-	-	-	-	-
600	-	700	8	-	-	-	-	-	-	-	-
700	-	800	8	-	-	-	-	-	-	-	-
800	-	900	8	-	-	-	-	-	-	-	-
900	-	1000	8	-	-	-	-	-	-	-	-
1000	-	1100	8	-	-	-	-	-	-	-	Existing CD
1100	-	1200	8	-	-	-	-	-	-	-	-
1200	-	1300	8	-	-	-	-	-	-	-	-
1300	-	1400	6	1	1	1	1	Agl	Agl	-	-
1400	-	1500	6	1	1	1	1	Agl	Agl	-	-
1500	-	1600	8	-	-	-	-	-	-	-	-
1600	-	1700	4	0.5	0.5	0.5	0.5	house boundary	-	Oriya mal	village area, CC road proposed
1700	-	1800	4	0.5	0.5	0.5	0.5	house boundary	-	"	-
1800	-	1900	4	0.5	0.5	0.5	0.5	house boundary	-	"	School, sign board & speed breaker proposed
1900	-	2000	4	0.5	0.5	0.5	0.5	house boundary	-	"	-

Road Name: Sihora Silondi Road Chhanagwa

Block Name: Sehora

District Name: Jabalpur

Total Length of the Road: 2.7 km

O. Climatic Conditions

Temperature	High: 41.4 **(May)** Low: 21 °C **(Dec)**
Humidity	High: 86 % **(Aug)** Low: 47 %
Rainfall Rainy Season	1386 mm/year **June** to **September**

P. Location of the Road and Generic description of Environment

S. No.	Type of Ecosystem	Yes	No	Explanation
1.	Coastal area Mangrove (along roadside)		√	Distance from Coastline: km ( ) more than 50% ( ) less than 20%
2.	Type of Terrain-(Plain/Hilly/ Mountainous etc.) *(Explain the topography of the area and how many km of the road are located in the hilly area)*		√	Altitude: The topography of the project road is flat at almost all locations.
3	Forest Area *(Explain whether the road passes through forest areas or located along the forest areas and distance from shoulder to the forest area)?*		√	Type of Vegetation: Legal Status of the Forest Area: *(Reserved, National Park, Sanctuaries, Unclassified, etc.)* No part of the project road passes through any forest area.
4	Wildlife *(Explain whether there are any wildlife species in the project area)*		√	Name of animals: **NA** Endangered species (if any): **None**
5	Inhabited Area	√		Inhabited area starts at Ch-2200m to Ch-2700m with connecting village Chhanagawa.
6	Agricultural Land	√		The agriculture land lies between Ch-00m to Ch-2100.
7	Grazing grounds		√	Grazing ground was not found along the proposed alignment.
8	Barren Land		√	No Barren land along the project road.

Q. Specific description of the Road Environment

(Note: Questions number 1, 4, 5, 7 and 8 must be answered after discussions with the local community people)

S. No.	Parameter/ Component	Yes	No	Explanation
1.	Are there any areas with landslide or erosion problems along the road? *(If yes, indicate the location (right or left side) and the chainage)*		√	No part of the project road lies in hilly terrain prone to landslide or erosion. However, sufficient cross drainage structures will be constructed to avoid any erosion. ( ) No Secondary Information is available and Local Community is not aware of this matter
2.	Are there any lakes/swamps beside the road? *(If yes, list them indicating the location (right or left side) and the chainage)*	√		There was found pond at Ch-2300m to Ch-2400m at the proposed alignment.
3.	Are there any nallas/streams/rivers etc. along/crossing the road? *(If yes, list them indicating the location (right, left or crossing) and the chainage*	√		There was found at Ch-00m to 100m, Ch-200-300m, Ch-300m to Ch-400m, Ch-600m to CH-700m, Ch-900m to Ch-1000m, CH-1900m to Ch-2000m, Ch-2000m to Ch-2100m and Ch-2400m to Ch-2500m has been proposed CDs.
4.	Are there problems of water stagnation and other drainage issues on or near the road? *(If yes, mention chainage)*	√		There are at some points of water stagnation and other drainage issues on or near the road which is discussed above S.No.3. ( ) No Secondary Information is available and Local Community is not aware of this matter
5.	Is the area along the project road prone to flooding? *(If yes, mention flood level and frequency)*		√	There are not found any flood prone area along the project road. ( ) No Secondary Information is available and Local Community is not aware of this matter
6.	Are there any trees with a dbh of 30 cm or more within 10 m on either side from the center line of the road alignment? *(If yes attach list of trees indicating the location (right or left side)and the chainage)*	√		There are 34 trees of dbh of 30 cm or more as attached in **Attachment I.**
7.	Along the road and within 100m of the road shoulder, are there any faunal habitat areas, faunal breeding ground, bird migration area, or other similar areas? *(If yes, specify details of habitat with chainage)*		√	There was not found any faunal habitat at 100 m of the road shoulder. ( ) No Secondary Information is available and Local Community is not aware of this matter
8.	Along the road and within 100m of the road shoulder is there any evidence of floral and faunal species that are classified as endangered species?		√	No rare, endangered or threatened species were found within 100 m of the road shoulder. ( ) No Secondary Information Available and Local Community is not aware of this matter

S. No.	Parameter/ Component	Yes	No	Explanation
9.	Are there any utility structures[28] within 10 m on either side from the center line of the road alignment? *(If yes, attach list with chainage)*	√		There are few utility structures found as listed in **Attachment II**.
10.	Are there any religious, cultural or community structures/buildings[29] within 10 m on either side from the center line of the road alignment? *(If yes attach list with chainage)*	√		Few religious cultural or community structures/buildings were found as listed in **Attachment III**.

D. Public Consultation

No.	Consultation Activities	Yes	No	Remarks
1.	Consultation with local community was conducted before finalizing the alignment. *(Attach list of people met and dates)*	√		Yes, consulting with the community.
2.	Any suggestion received in finalizing the alignment		√	NA
3.	If suggestions received, were they incorporated into the design.		√	NA

E. Please attach the following:

31) Sketch a map showing the bridge and the trees
32) List of trees indicating location (left or right side of the road) and chainage (as required under C. 8)
33) List of utility structures indicating location (left or right side of the road) and chainage (as required under C. 9)
34) List of community structures indicating location (left or right side of the road) and chainage (as required under C. 10)
35) Sketch of strip map of the road covering details of at least 10 m on either side from the center line of the road
36) Photographs of the project area showing at least 10 m on either side from center line of road alignment. Every 2 km or less of road must have at least 1 photograph.

[28] Water tap, hand pump, electric pole, telephone pole, water pipe and other similar strucutures.
[29] Mandir, Masjid, Church, religious/cultural/historical monuments, school, health center, public toilet and other similar structures.

Attachment I

List of Trees

Chainage (m)			Left	Right
300	-	400	-	1
700	-	800	2	-
1200	-	1300	2	3
1300	-	1400	1	2
1400	-	1500	1	2
1500	-	1600	2	-
1600	-	1700	2	3
1700	-	1800	3	3
2000	-	2100	3	4
TOTAL			16	18

Attachment II

List of Utilities

Chainage (m)			Left	Right
500	-	600	ELC	HT
2200	-	2300	HP	-
2400	-	2500	ELC	ELC,HP
2500	-	2600	ELC	ELC

Attachment III

List of Community Structures

Chainage (m)			Left	Right
2100		2200	-	School
2200		2300	TEMPLE	-
2300		2400	pond	-
2500		2600	school	-

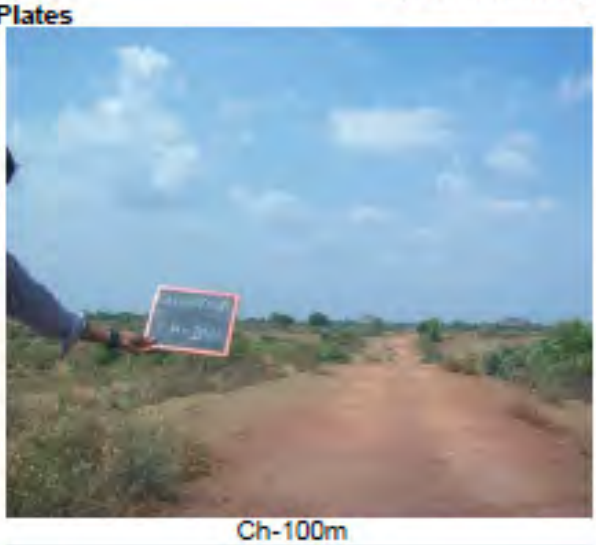
Attachment-IV

Left					Chainage (m)			Right				
8 to 10m	6 to 8m	4 to 6m	2 to 4m	0 to 2m				0 to 2m	2 to 4m	4 to 6m	6 to 8m	8 to 10m
-	-	-	-	-	300	-	400	-	1 tree	-	-	-
-	-	-	2 tree	-	700	-	800	-	-	-	-	-
-	-	-	2 tree	-	1200	-	1300	-	3 tree	-	-	-
-	-	-	1 tree	-	1300	-	1400	-	2 tree	-	-	-
-	-	-	1 tree	-	1400	-	1500	-	2 tree	-	-	-
-	-	-	2 tree	-	1500	-	1600	-	-	-	-	-
-	-	-	2 tree	-	1600	-	1700	-	3 tree	-	-	-
-	-	-	3 tree	-	1700	-	1800	-	3 tree	-	-	-
-	-	-	3 tree	-	2000	-	2100	-	4 tree	-	-	-
-	-	-	-	-	2100	-	2200	-	-	School	-	-
-	-	-	HP,TEMPLE	-	2200	-	2300	-	-	-	-	-
-	-	-	pond	-	2300	-	2400	-	-	-	-	-
-	-	-	-	-	2400	-	2500	-	HP	-	-	-
-	-	-	School	-	2500	-	2600	-	-	-	-	-

Attachment V

Photo Plates

Ch-00m start point of the road



Ch-100m

Ch-230m existing FC

Ch-500m ELC

Ch-675m FC proposed

Ch-900m almost straight alignment

Ch-1600m

Ch-1800m

Ch-2000m existing CD

Ch-2550m

Community consultation

Consulting with community

Chainage wise Transect Walk Findings

Chainage (M)			Existing Land Width (m)	Additional Land Required		Losses		Type of loss		Village	Remarks/Suggestion
				LHS	RHS	LHS	RHS	LHS	RHS		
0	-	100	8	-	-	-	-	-	-	-	CD and speed breaker proposed
100	-	200	8	-	-	-	-	-	-	-	-
200	-	300	8	-	-	-	-	-	-	-	CD proposed
300	-	400	8	-	-	-	-	-	-	-	CD proposed
400	-	500	8	-	-	-	-	-	-	-	-
500	-	600	8	-	-	-	-	-	-	-	-
600	-	700	8	-	-	-	-	-	-	-	CD proposed
700	-	800	8	-	-	-	-	-	-	-	-
800	-	900	8	-	-	-	-	-	-	-	-
900	-	1000	8	-	-	-	-	-	-	-	CD proposed
1000	-	1100	8	-	-	-	-	-	-	-	-
1100	-	1200	8	-	-	-	-	-	-	-	-
1200	-	1300	8	-	-	-	-	-	-	-	-
1300	-	1400	8	-	-	-	-	-	-	-	-
1400	-	1500	8	-	-	-	-	-	-	-	-
1500	-	1600	8	-	-	-	-	-	-	-	-
1600	-	1700	8	-	-	-	-	-	-	-	-
1700	-	1800	8	-	-	-	-	-	-	-	-
1800	-	1900	8	-	-	-	-	-	-	-	-
1900	-	2000	8	-	-	-	-	-	-	-	CD proposed
2000	-	2100	8	-	-	-	-	-	-	-	CD proposed
2100	-	2200	8	-	-	-	-	-	-	-	School, speed breaker proposed
2200	-	2300	5	-	-	-	-	-	-	Chhangawa	Village area, CC road proposed
2300	-	2400	5	-	-	-	-	-	-	-	-
2400	-	2500	5	-	-	-	-	-	-	-	CD proposed
2500	-	2600	5	-	-	-	-	-	-	-	-
2600	-	2700	5	-	-	-	-	-	-	-	-

Road Name: R.S.Road to Nandlai

Block Name: Ratlam

District Name: Ratlam

Total Length of the Road: 2.80 km

R. Climatic Conditions

Temperature	High: 48.0 **(May)** Low: 14 °C **(Dec)**
Humidity	High: 90 % **(Aug)** Low: 32 %
Rainfall Rainy Season	900 mm/year **June** to **September**

S. Location of the Road and Generic description of Environment

S. No.	Type of Ecosystem	Yes	No	Explanation
1.	Coastal area Mangrove (along roadside)		√	Distance from Coastline: km ( ) more than 50% ( ) less than 20%
2.	Type of Terrain-(Plain/Hilly/ Mountainous etc.) *(Explain the topography of the area and how many km of the road are located in the hilly area)*		√	Altitude: The topography of the project road is flat at almost all locations.
3.	Forest Area *(Explain whether the road passes through forest areas or located along the forest areas and distance from shoulder to the forest area)?*		√	Type of Vegetation: Legal Status of the Forest Area: *(Reserved, National Park, Sanctuaries, Unclassified, etc.)* No part of the project road passes through any forest area.
4.	Wildlife *(Explain whether there are any wildlife species in the project area)*		√	Name of animals: **NA** Endangered species (if any): **None**
5.	Inhabited Area	√		Inhabited area starts at Ch-2000m to 2800m with connecting village Nandlai
6.	Agricultural Land	√		The agriculture land lies between Ch-00m to Ch-2000m at both side of the alignment.
7.	Grazing grounds		√	Grazing ground was not found along the proposed alignment.
8.	Barren Land		√	No Barren land along the project road.

T. Specific description of the Road Environment

(Note: Questions number 1, 4, 5, 7 and 8 must be answered after discussions with the local community people)

S. No.	Parameter/ Component	Yes	No	Explanation
1.	Are there any areas with landslide or erosion problems along the road? *(If yes, indicate the location (right or left side) and the chainage)*		√	No part of the project road lies in hilly terrain prone to landslide or erosion. However, sufficient cross drainage structures will be constructed to avoid any erosion. ( ) No Secondary Information is available and Local Community is not aware of this matter
2.	Are there any lakes/swamps beside the road? *(If yes, list them indicating the location (right or left side) and the chainage)*	√		There was found at Ch-600m to Ch-700m, Ch-900m to Ch-1000m, Ch-1600m to Ch-1700m, Ch-2400m to CH-2500m, Ch-2700m to Ch-2800m pond the proposed alignment.
3.	Are there any nallas/streams/rivers etc. along/crossing the road? *(If yes, list them indicating the location (right, left or crossing) and the chainage*	√		There was found some water crossing point at Ch-100m to Ch-200m, Ch-300m to Ch-400m, Ch-600m to Ch-700m, Ch-900m to Ch-1000m, Ch-1100m to Ch-1200m, Ch-1500m to Ch-1600m, Ch-1600m to Ch-1700m & Ch-1900m to Ch-2000m proposed CD.
4.	Are there problems of water stagnation and other drainage issues on or near the road? *(If yes, mention chainage)*	√		There are at some points of water stagnation and other drainage issues on or near the road which is discussed above S.No.3. ( ) No Secondary Information is available and Local Community is not aware of this matter
5.	Is the area along the project road prone to flooding? *(If yes, mention flood level and frequency)*		√	There are not found any flood prone area along the project road. ( ) No Secondary Information is available and Local Community is not aware of this matter
6.	Are there any trees with a dbh of 30 cm or more within 10 m on either side from the center line of the road alignment? *(If yes attach list of trees indicating the location (right or left side)and the chainage)*	√		There are 22 trees of dbh of 30 cm or more as attached in **Attachment I.**
7.	Along the road and within 100m of the road shoulder, are there any faunal habitat areas, faunal breeding ground, bird migration area, or other similar areas? *(If yes, specify details of habitat with chainage)*		√	There was not found any faunal habitat at 100 m of the road shoulder. ( ) No Secondary Information is available and Local Community is not aware of this matter
8.	Along the road and within 100m of the road shoulder is there any evidence of floral and faunal species that are classified as endangered species?		√	No rare, endangered or threatened species were found within 100 m of the road shoulder. ( ) No Secondary Information Available and Local Community is not aware of this matter

S. No.	Parameter/ Component	Yes	No	Explanation
9.	Are there any utility structures[30] within 10 m on either side from the center line of the road alignment? *(If yes, attach list with chainage)*	√		There are few utility structures found as listed in **Attachment II**.
10.	Are there any religious, cultural or community structures/buildings[31] within 10 m on either side from the center line of the road alignment? *(If yes attach list with chainage)*			Few religious cultural or community structures/buildings were found as listed in **Attachment III.**

D. Public Consultation

No.	Consultation Activities	Yes	No	Remarks
1.	Consultation with local community was conducted before finalizing the alignment. *(Attach list of people met and dates)*	√		Yes, Consulting with the community
2.	Any suggestion received in finalizing the alignment		√	NA
3.	If suggestions received, were they incorporated into the design.		√	NA

E. Please attach the following:

37) Sketch a map showing the bridge and the trees
38) List of trees indicating location (left or right side of the road) and chainage (as required under C. 6)
39) List of utility structures indicating location (left or right side of the road) and chainage (as required under C. 9)
40) List of community structures indicating location (left or right side of the road) and chainage (as required under C. 10)
41) Sketch of strip map of the road covering details of at least 10 m on either side from the center line of the road
42) Photographs of the project area showing at least 10 m on either side from center line of road alignment. Every 2 km or less of road must have at least 1 photograph.

[30] Water tap, hand pump, electric pole, telephone pole, water pipe and other similar strucutures.
[31] Mandir, Masjid, Church, religious/cultural/historical monuments, school, health center, public toilet and other similar structures.

Attachment I

List of Trees

Chainage (m)			Left	Right
600	-	700	-	1
700	-	800	-	3
800	-	900	2	1
1300	-	1400	2	-
1700	-	1800	-	2
1800	-	1900	1	-
2000	-	2100	1	4
2100	-	2200	1	-
2200	-	2300	-	1
2300	-	2400	-	1
2600	-	2700	1	-
2700	-	2800	1	-
Total			9	13

Attachment II

List of Utilities

Chainage (m)			Left	Right
0	-	100	ELC	ELC
400	-	500	ELC	ELC
500	-	600	ELC	ELC
600	-	700	ELC	ELC
900	-	1000	ELC	ELC
1000	-	1100	DP	ELC
2200	-	2300	ELC	ELC
2600	-	2700	ELC	ELC
2700	-	2800	ELC	ELC

Attachment III

List of Community Structures

Chainage (m)			Left	Right
1600	-	1700	-	Temple
1800	-	1900	Temple	-
2200	-	2300	-	School, temple
2300	-	2400	-	Temple
2400	-	2500	-	Temple
2500	-	2600	-	School
2600	-	2700	-	Temple

Attachment-IV

Left					Chainage (m)			Right				
8 to 10m	6 to 8m	4 to 6m	2 to 4m	0 to 2m				0 to 2m	2 to 4m	4 to 6m	6 to 8m	8 to 10m
-	-	-	-	-	600	-	700	-	1 tree	-	-	-
-	-	-	-	-	700	-	800	-	3 tree	-	-	-
-	-	-	2 tree	-	800	-	900	-	-	1 tree	-	-
-	-	-	-	-	900	-	1000	-	-	-	-	-
-	-	DP	-	-	1000	-	1100	-	-	-	-	-
-	-	-	2 tree	-	1300	-	1400	-	-	-	-	-
-	-	-	-	-	1700	-	1800	-	2 tree	-	-	-
-	-	1 tree	temple	-	1800	-	1900	-	-	-	-	-
-	-	-	-	-	1900	-	2000	-	-	-	-	-
-	-	-	1 tree	-	2000	-	2100	1 tree	3 tree	-	-	-
-	-	-	1 tree	-	2100	-	2200	-	-	-	-	-
-	-	-	-	-	2200	-	2300	-	temple, 1 tree	-	-	School
-	-	-	-	-	2300	-	2400	-	1 tree	-	-	temple
-	-	-	-	-	2400	-	2500	Temple	-	-	-	-
-	-	-	-	-	2500	-	2600	-	-	-	-	School
-	-	-	1 tree	-	2600	-	2700	-	-	temple	-	-
-	-	-	1 tree	-	2700	-	2800	-	-	-	-	-

Attachment V

Photo Plates

Ch-00m starting point

Ch-1000m to Ch-1100m DP(LHS)

Ch-1400m to Ch-1500m junction

Ch-1600m to Ch-1700m pond(LHS)

Ch-1900m to Ch-2000m CD proposed

Community consultation

Road safety

Road safety awareness

Road safety awareness

Road safety awareness with Community

Road safety awareness

Road safety awareness

Transect walk

Transect walk

Transect walk

Transect walk

Community Consultation

Community Consultation

Community Consultation

Chainage wise Transect Walk Findings

Chainage (M)			Existing Land Width (m)	Additional Land Required		Losses		Type of loss		Village	Remarks/Suggestion
				LHS	RHS	LHS	RHS	LHS	RHS		
0	-	100	8	-	-	-	-	-	-	Bangli	Stone Creaser need approach proposed RHS
100	-	200	0	4	4	4	4	PL	PL		CD and LHS approach proposed and private land affected farmer not agree
200	-	300	0	4	4	4	4	PL	PL		"
300	-	400	0	4	4	4	4	PL	PL		CD proposed and RHS Curve Guard stone proposed
400	-	500	0	4	4	4	4	PL	PL		Stone Creaser need approach proposed LHS, Curve-RHS
500	-	600	0	4	4	4	4	PL	PL		-
600	-	700	0	4	4	4	4	PL	PL		CD proposed
700	-	800	0	4	4	4	4	PL	PL		-
800	-	900	0	4	4	4	4	PL	PL		-
900	-	1000	0	4	4	4	4	PL	PL		CD and LHS approach proposed and private land affected farmer not agree
1000	-	1100	0	4	4	4	4	PL	PL		"
1100	-	1200	0	4	4	4	4	PL	PL		"
1200	-	1300	0	4	4	4	4	PL	PL		"
1300	-	1400	8	-	-	-	-	-	-		Govt. land available both side
1400	-	1500	8	-	-	-	-	-	-		Junction-LHS
1500	-	1600	8	-	-	-	-	-	-		CD proposed
1600	-	1700	8	-	-	-	-	-	-		-
1700	-	1800	8	-	-	-	-	-	-		-
1800	-	1900	8	-	-	-	-	-	-		-
1900	-	2000	8	-	-	-	-	-	-		CD proposed
2000	-	2100	8	-	-	-	-	-	-	Nandlai	Tube well
2100	-	2200	5	-	-	-	-	-	-	"	Habitation area start, CC road proposed
2200	-	2300	5	-	-	-	-	-	-	"	CC road proposed, 2 HP
2300	-	2400	5	-	-	-	-	-	-	"	CC road proposed & HP Shifting
2400	-	2500	5	-	-	-	-	-	-	"	CC road proposed & Temple Shifting, Pond
2500	-	2600	5	-	-	-	-	-	-	"	School, CC road & Speed breaker proposed
2600	-	2700	5	-	-	-	-	-	-	"	HP Shift RHS
2700	-	2800	5	-	-	-	-	-	-	"	-

Road Name: Sitamou basai to Larni

Block Name: Sitamou

District Name: Mandsour

Total Length of the Road: 1.00 km

U. Climatic Conditions

Temperature	High: 42.1 °C **(May)** Low: 4.9 °C **(Dec)**
Humidity	High: 55 % **(Aug)** Low: 20 **% (Dec)**
Rainfall Rainy Season	870 mm/year **June to September**

V. Location of the Road and Generic description of Environment

S. No.	Type of Ecosystem	Yes	No	Explanation
1.	Coastal area Mangrove (along roadside)		√	Distance from Coastline: km ( ) more than 50% ( ) less than 20%
2.	Type of Terrain-(Plain/Hilly/ Mountainous etc.) *(Explain the topography of the area and how many km of the road are located in the hilly area)*		√	Altitude: The topography of the project road is flat at almost all locations.
3	Forest Area *(Explain whether the road passes through forest areas or located along the forest areas and distance from shoulder to the forest area)?*		√	Type of Vegetation: Legal Status of the Forest Area: Sanctuaries *(Reserved, National Park, Sanctuaries, Unclassified, etc.)* No part of the project road passes through any forest area.
4	Wildlife *(Explain whether there are any wildlife species in the project area)*		√	Name of animals: **NA** Endangered species (if any): **None**
5	Inhabited Area	√		Inhabited area starts at Ch-700m to Ch-1000m with connecting village Larni.
6	Agricultural Land		√	The agriculture land was not found along the proposed alignment
7	Grazing grounds	√		Grazing ground was found at Ch-00m to Ch-500m along the proposed alignment.
8	Barren Land		√	No Barren land along the project road.

W. Specific description of the Road Environment

(Note: Questions number 1, 4, 5, 7 and 8 must be answered after discussions with the local community people)

S. No.	Parameter/ Component	Yes	No	Explanation
1.	Are there any areas with landslide or erosion problems along the road? *(If yes, indicate the location (right or left side) and the chainage)*		√	No part of the project road lies in hilly terrain prone to landslide or erosion. However, sufficient cross drainage structures will be constructed to avoid any erosion. ( ) No Secondary Information is available and Local Community is not aware of this matter
2.	Are there any lakes/swamps beside the road? *(If yes, list them indicating the location (right or left side) and the chainage)*		√	There was not found any pond along the proposed alignment.
3.	Are there any nallas/streams/rivers etc. along/crossing the road? *(If yes, list them indicating the location (right, left or crossing) and the chainage*	√		There was found some water crossing points at Ch-300m to Ch-400m has proposed CD.
4.	Are there problems of water stagnation and other drainage issues on or near the road? *(If yes, mention chainage)*	√		There are at some points of water stagnation and other drainage issues on or near the road which is discussed above S.No.3. ( ) No Secondary Information is available and Local Community is not aware of this matter
5.	Is the area along the project road prone to flooding? *(If yes, mention flood level and frequency)*		√	There are not found any flood prone area along the project road. ( ) No Secondary Information is available and Local Community is not aware of this matter
6.	Are there any trees with a dbh of 30 cm or more within 10 m on either side from the center line of the road alignment? *(If yes attach list of trees indicating the location (right or left side)and the chainage)*	√		There are 10 trees of dbh of 30 cm or more as attached in **Attachment I.**
7.	Along the road and within 100m of the road shoulder, are there any faunal habitat areas, faunal breeding ground, bird migration area, or other similar areas? *(If yes, specify details of habitat with chainage)*		√	There was not found any faunal habitat at 100 m of the road shoulder. ( ) No Secondary Information is available and Local Community is not aware of this matter
8.	Along the road and within 100m of the road shoulder is there any evidence of floral and			No rare, endangered or threatened species were found within 100 m of the road shoulder.

S. No.	Parameter/ Component	Yes	No	Explanation
	faunal species that are classified as endangered species?		√	( ) No Secondary information Available and Local Community is not aware of this matter
9.	Are there any utility structures[32] within 10 m on either side from the center line of the road alignment? *(If yes, attach list with chainage)*	√		There are few utility structures found as listed in **Attachment II**.
10.	Are there any religious, cultural or community structures/buildings[33] within 10 m on either side from the center line of the road alignment? *(If yes attach list with chainage)*	√		Few religious cultural or community structures/buildings were found as listed in **Attachment III**.

D. Public Consultation

No.	Consultation Activities	Yes	No	Remarks
1.	Consultation with local community was conducted before finalizing the alignment. *(Attach list of people met and dates)*	√		Yes, consulting with the community.
2.	Any suggestion received in finalizing the alignment		√	NA
3.	If suggestions received, were they incorporated into the design.		√	NA

E. Please attach the following:

43) Sketch a map showing the bridge and the trees
44) List of trees indicating location (left or right side of the road) and chainage (as required under C. 6)
45) List of utility structures indicating location (left or right side of the road) and chainage (as required under C. 9)
46) List of community structures indicating location (left or right side of the road) and chainage (as required under C. 10)
47) Sketch of strip map of the road covering details of at least 10 m on either side from the center line of the road
48) Photographs of the project area showing at least 10 m on either side from center line of road alignment. Every 2 km or less of road must have at least 1 photograph.

[32] Water tap, hand pump, electric pole, telephone pole, water pipe and other similar strucutures.
[33] Mandir, Masjid, Church, religious/cultural/historical monuments, school, health center, public toilet and other similar structures.

Attachment I

List of Trees

Chainage (m)			Left	Right
400	-	500	-	5
500	-	600	5	-
TOTAL			5	5

Attachment II

List of Utilities

Chainage (m)			Left	Right
100	-	200	HT	HT
200	-	300	ELC	ELC
400	-	500	HP	-

Attachment III

List of Community Structures

Chainage (m)			Left	Right
900	-	1000	School	-

Attachment-IV

Left					Chainage (m)			Right				
8 to 10m	6 to 8m	4 to 6m	2 to 4m	0 to 2m				0 to 2m	2 to 4m	4 to 6m	6 to 8m	8 to 10m
-	-	-	HP	-	400	-	500	-	1 tree	4 tree	-	-
-	-	5 tree	-	-	500	-	600	-	-	-	-	-
School	-	-	-	-	900	-	1000	-	-	-	-	-

Attachment V

Photo Plates

Ch-00m starting point & CD proposed

Ch-100m to Ch-200m HT line

Ch-400m to Ch-500m HP LHS

Ch-900m to Ch-1000m School

School session

Community Consultation

Chainage wise Transect Walk Findings

Chainage (M)			Existing Land Width (m)	Additional Land Required		Losses		Type of loss		Village	Remarks /Suggestion
				LHS	RHS	LHS	RHS	LHS	RHS		
0	-	100	8	-	-	-	-	-	-	-	CD proposed
100	-	200	8	-	-	-	-	-	-	-	HT
200	-	300	8	-	-	-	-	-	-	-	ELC
300	-	400	8	-	-	-	-	-	-	-	CD proposed
400	-	500	8	-	-	-	-	-	-	-	HP LHS
500	-	600	8	-	-	-	-	-	-	-	-
600	-	700	5	-	-	-	-	-	-	-	CC proposed
700	-	800	4	0.5	0.5	0.5	0.5	plate from	plate from	-	-
800	-	900	4	0.5	0.5	0.5	0.5	plate from	plate from	-	-
900	-	1000	5	-	-	-	-	-	-	-	School

Road Name: Gaji Khedi To Ramgarh

Block Name: Ichhawar

District Name: Sehore

Total Length of the Road: 5.60 km

X. Climatic Conditions

Temperature	High: 42.4 °C **(May)** Low: 7.9 °C **(Dec)**
Humidity	High: 93 % **(Aug)** Low: 76 %
Rainfall Rainy Season	1261 mm/year **June** to **September**

Y. Location of the Road and Generic description of Environment

S. No.	Type of Ecosystem	Yes	No	Explanation
1.	Coastal area Mangrove (along roadside)		√	Distance from Coastline: km ( ) more than 50% ( ) less than 20%
2.	Type of Terrain (Plain/Hilly/ Mountainous etc.) (Explain the topography of the area and how many km of the road are located in the hilly area)		√	Altitude: The topography of the project road is flat at almost all locations.
3	Forest Area (Explain whether the road passes through forest areas or located along the forest areas and distance from shoulder to the forest area)?	√		There was found forest area at Ch-600m to Ch-5000m along the proposed alignment. Type of Vegetation: Unclassified Legal Status of the Forest Area: (Reserved, National Park, Sanctuaries, Unclassified, etc.)
4	Wildlife (Explain whether there are any wildlife species in the project area)		√	Name of animals: NA Endangered species (if any): None
5	Inhabited Area	√		Inhabited area starts at Ch-00m to Ch-600m and Ch5200m to Ch-5600m with connecting village Gaji Khedi To Ramgarh.
6	Agricultural Land		√	The agriculture land was not found along the project road.
7	Grazing grounds		√	Grazing ground was not found along the project road
8	Barren Land		√	No Barren land along the project road.

Z. Specific description of the Road Environment

(Note: Questions number 1, 4, 5, 7 and 8 must be answered after discussions with the local community people)

S. No.	Parameter/ Component	Yes	No	Explanation
1.	Are there any areas with landslide or erosion problems along the road? *(If yes, indicate the location (right or left side) and the chainage)*		√	No part of the project road lies in hilly terrain prone to landslide or erosion. However, sufficient cross drainage structures will be constructed to avoid any erosion. ( ) No Secondary Information is available and Local Community is not aware of this matter
2.	Are there any lakes/swamps beside the road? *(If yes, list them indicating the location (right or left side) and the chainage)*	√		There was found river at Ch-5000m to Ch-5200m along the proposed alignment.
3.	Are there any nallas/streams/rivers etc. along/crossing the road? *(If yes, list them indicating the location (right, left or crossing) and the chainage*	√		There was found some water crossing points at Ch-200m to Ch-400m, Ch-600m to CH-800m, CH-1000m to 1200m, Ch-1200m to Ch-1400,m, Ch-1400m to Ch-1600m, Ch-2200mto Ch-2400m, CH-2600m to Ch-2800m, Ch-3000m to CH-3200m, Ch-3600m to Ch-3800m, Ch-4200m to CH-4400m has been CD proposed. At CH-5000m to CH-5200m has proposed bridge.
4.	Are there problems of water stagnation and other drainage issues on or near the road? *(If yes, mention chainage)*	√		There were some points of water stagnation and other drainage issues on or near the road which is discussed above S.No.3. ( ) No Secondary Information is available and Local Community is not aware of this matter
5.	Is the area along the project road prone to flooding? *(If yes, mention flood level and frequency)*		√	There are not found any flood prone area along the project road. ( ) No Secondary Information is available and Local Community is not aware of this matter
6.	Are there any trees with a dbh of 30 cm or more within 10 m on either side from the center line of the road alignment? *(If yes attach list of trees indicating the location (right or left side)and the chainage)*	√		There are 45 trees of dbh of 30 cm or more as attached in **Attachment I.**
7.	Along the road and within 100m of the road shoulder, are there any faunal habitat areas, faunal breeding ground, bird migration area, or other similar areas? *(If yes, specify details of habitat with chainage)*		√	There was not found any faunal habitat at 100 m of the road shoulder. ( ) No Secondary Information is available and Local Community is not aware of this matter
8.	Along the road and within 100m of the road shoulder is there any evidence of floral and faunal species that are classified as endangered species?		√	No rare, endangered or threatened species were found within 100 m of the road shoulder. ( ) No Secondary Information Available and Local Community is not aware of this matter

S. No.	Parameter/ Component	Yes	No	Explanation
9.	Are there any utility structures[34] within 10 m on either side from the center line of the road alignment? *(If yes, attach list with chainage)*	√		There are few utility structures found as listed in **Attachment II**.
10.	Are there any religious, cultural or community structures/buildings[35] within 10 m on either side from the center line of the road alignment? *(If yes attach list with chainage)*	√		Few religious cultural or community structures/buildings were found as listed in **Attachment III.**

D. Public Consultation

No.	Consultation Activities	Yes	No	Remarks
1.	Consultation with local community was conducted before finalizing the alignment. *(Attach list of people met and dates)*	√		Yes, consulting with the community.
2.	Any suggestion received in finalizing the alignment		√	No
3.	If suggestions received, were they incorporated into the design.		√	No

E. Please attach the following:

49) Sketch a map showing the bridge and the trees
50) List of trees indicating location (left or right side of the road) and chainage (as required under C. 8)
51) List of utility structures indicating location (left or right side of the road) and chainage (as required under C. 9)
52) List of community structures indicating location (left or right side of the road) and chainage (as required under C. 10)
53) Sketch of strip map of the road covering details of at least 10 m on either side from the center line of the road
54) Photographs of the project area showing at least 10 m on either side from center line of road alignment. Every 2 km or less of road must have at least 1 photograph.

[34] Water tap, hand pump, electric pole, telephone pole, water pipe and other similar structures.
[35] Mandir, Masjid, Church, religious/cultural/historical monuments, school, health center, public toilet and other similar structures.

Attachment I

List of Trees

Chainage (m)			Left	Right
0	-	200	5	4
200	-	400	1	1
600	-	800	-	2
800	-	1000	1	-
1800	-	2000	-	1
2800	-	3000	1	1
3200	-	3400	-	1
3400	-	3600	3	4
3600	-	3800	6	5
3800	-	4000	4	5
Total			**21**	**24**

Attachment II

List of Utilities

Chainage (m)			Left	Right
200	-	400	HP	-
2200	-	2400	ELC	ELC
5200	-	5400	-	HP
5400	-	5600	-	HP

Attachment III

List of Community Structures

Chainage (m)			Left	Right
0	-	200	Panchyat Bhawan	Well
200	-	400	-	Temple
400	-	600	-	School
5400	-	5600	-	School

Attachment-IV

Left					Chainage (m)			Right				
8 to 10m	6 to 8m	4 to 6m	2 to 4m	0 to 2m				0 to 2m	2 to 4m	4 to 6m	6 to 8m	8 to 10m
-	-	-	Panchyat Bhawan, 5 tree	-	0	-	200	-	Well, 4 tree	-	-	-
-	1 tree	-	HP	-	200	-	400	-	Temple	-	1 tree	-
-	-	-	-	-	400	-	600	-	-	-	-	School(50m)
-	-	-	-	-	600	-	800	-	-	2 tree	-	-
-	-	-	1 tree	-	800	-	1000	-	-	-	-	-
-	-	-	-	-	1800	-	2000	-	1 tree	-	-	-
-	-	-	1 tree	-	2800	-	3000	-	1 tree	-	-	-
-	-	-	-	-	3200	-	3400	-	-	1 tree	-	-
-	-	3 tree	-	-	3400	-	3600	-	4 tree	-	-	-
-	-	-	6 tree	-	3600	-	3800	-	5 tree	-	-	-
-	-	-	4 tree	-	3800	-	4000	-	5 tree	-	-	-
-	-	-	-	-	5200	-	5400	-	HP	-	-	-
-	-	-	-	-	5400	-	5600	-	School, HP	-	-	-

Attachment V

Photo Plates

Ch-00m Starting point , Panchyat Bhawan-LHS

Ch-100m Tree-RHS

Ch-200m Temple-RHS

CH-300m CD proposed

Ch-600m Forest land starting

Ch-800m CD proposed

Ch-1000m CD proposed

Ch-1600m CD proposed

Ch-2300m CD proposed

Ch-2700m CD proposed and Curve-LHS

Ch-3100m CD proposed, Curve-RHS

Ch-5000m Pond

Road safety photos

Ch-00m Panchyat Bhawan Required speed breaker

CH-5400m School

Road safety session in school

Road safety session in school

Transect walk

Transect walk

Photo during transect walk

Chainage wise Transect Walk Findings

Chainage (M)			Existing Land Width (m)	Additional Land Required		Losses		Type of loss		Village	Remarks /Suggestion
				LHS	RHS	LHS	RHS	LHS	RHS		
0	-	200	5	-	-	-	-	-	-	Gaji Khedi	Panchyat-LHS, Well-RHS
200	-	400	5	-	-	-	-	-	-	-	Temple-RHS, HP-LHS and CD proposed
400	-	600	5	-	-	-	-	-	-	-	School-RHS
600	-	800	6	-	-	-	-	-	-	-	Forest land start and CD proposed
800	-	1000	6	-	-	-	-	-	-	-	-
1000	-	1200	6	-	-	-	-	-	-	-	Forest land and CD proposed
1200	-	1400	6	-	-	-	-	-	-	-	Curve e-RHS, CD proposed
1400	-	1600	6	-	-	-	-	-	-	-	Curve-LHS, CD proposed
1600	-	1800	6	-	-	-	-	-	-	-	-
1800	-	2000	6	-	-	-	-	-	-	-	Junction-LHS
2000	-	2200	6	-	-	-	-	-	-	-	Junction-RHS
2200	-	2400	6	-	-	-	-	-	-	-	ELC height raise up, CD proposed
2400	-	2600	6	-	-	-	-	-	-	-	-
2600	-	2800	6	-	-	-	-	-	-	-	Curve-LHS, CD proposed
2800	-	3000	6	-	-	-	-	-	-	-	-
3000	-	3200	6	-	-	-	-	-	-	-	Curve-RHS CD proposed
3200	-	3400	6	-	-	-	-	-	-	-	-
3400	-	3600	6	-	-	-	-	-	-	-	-
3600	-	3800	6	-	-	-	-	-	-	-	CD proposed
3800	-	4000	6	-	-	-	-	-	-	-	-
4000	-	4200	6	-	-	-	-	-	-	-	Junction RHS and LHS
4200	-	4400	6	-	-	-	-	-	-	-	CD proposed
4400	-	4600	6	-	-	-	-	-	-	-	Junction-RHS
4600	-	4800	6	-	-	-	-	-	-	-	-
4800	-	5000	6	-	-	-	-	-	-	-	End Forest land
5000	-	5200	6	-	-	-	-	-	-	-	CD proposed and Pond
5200	-	5400	5	-	-	-	-	-	-	-	CC road proposed, Curve-LHS
5400	-	5600	5	-	-	-	-	-	-	-	Curve-RHS, HP-RHS, School-RHS

Road Name: NH-7 to Dhadra

Block Name: Jabalpur

District Name: Jabalpur

Total Length of the Road: 2.85 km

AA. Climatic Conditions

Temperature	High: 41.4 **(May)** Low: 21 °C **(Dec)**
Humidity	High: 86 % **(Aug)** Low: 47 %
Rainfall Rainy Season	1386 mm/year **June** to **September**

BB. Location of the Road and Generic description of Environment

S.No.	Type of Ecosystem	Yes	No	Explanation
1.	Coastal area Mangrove (along roadside)		√	Distance from Coastline: km ( ) more than 50% ( ) less than 20%
2.	Type of Terrain-(Plain/Hilly/ Mountainous etc.) *(Explain the topography of the area and how many km of the road are located in the hilly area)*	√		There was found hilly area between Ch-2400m to Ch-2500m on the proposed alignment. Altitude: The topography of the project road is flat at almost all locations.
3	Forest Area *(Explain whether the road passes through forest areas or located along the forest areas and distance from shoulder to the forest area)?*		√	Type of Vegetation: Legal Status of the Forest Area: (Reserved, National Park, Sanctuaries, Unclassified, etc.)
4.	Wildlife *(Explain whether there are any wildlife species in the project area)*		√	Name of animals: NA Endangered species (if any): None
5.	Inhabited Area	√		The project road is passing through village namely new habitation, Dhadra between Ch-1400m to Ch-1500m, Ch-2700m to Ch-2800m respectively.
6	Agricultural Land	√		Agriculture land lies on both side of agriculture between Ch-00m to CH-1200m RHS and Ch-1700m to Ch-2200m both side.
7.	Grazing grounds		√	The project road is not passing through grazing land.
8.	Barren Land		√	The project road is not passing through the barren land.

Specific description of the Road Environment

(Note: Questions number 1, 4, 5, 7 and 8 must be answered after discussions with the local community people)

S. No.	Parameter/ Component	Yes	No	Explanation
1.	Are there any areas with landslide or erosion problems along the road? *(If yes, indicate the location (right or left side) and the chainage)*		√	No part of the project road lies in hilly terrain prone to landslide or erosion. ( ) No Secondary Information is available and local Community is not aware of this matter
2.	Are there any lakes/swamps beside the road? *(If yes, list them indicating the location (right or left side) and the chainage*		√	The pond has been not found on the proposed alignment.
3	Are there any nallas/streams/rivers etc. along/crossing the road? *(If yes, list them indicating the location (right, left or crossing) and the chainage)*	√		A few water crossing points has been observed between Ch-1700m to Ch-1800m, Ch-2400m to Ch-2500m, Ch-2600m to Ch-2700m has been CD proposed on above mentioned locations and Ch-2200m to Ch-2300m has been existing CD.
4.	Are there problems of water stagnation and other drainage issues on or near the road? *(If yes, mention chainage)*	√		There are some points of water stagnation and other drainage issues on or near the road which is discussed as above in S.No.3. ( ) No Secondary Information is available and Local Community is not aware of this matter
5.	Is the area along the project road prone to flooding? *(If yes, mention flood level and frequency)*		√	( ) No Secondary Information is available and Local Community is not aware of this matter Apart from above mentioned location no other area is flood prone along the alignment.
6.	Are there any trees with a dbh of 30 cm or more within 10 m on either side of the center line of the road alignment? *(If yes attach list of trees indicating the location (right or left sideJand the chainage)*	√		A total of 04 trees are falling within 10m of the center line of proposed alignment. The list of trees on giving in as **Attachment I.**
7.	Along the road and within 100m of the road shoulder, are there any faunal habitat areas, faunal breeding ground, bird migration area, or other similar areas? *(If yes, specify details of habitat with chainage)*		√	**( ) No Secondary Information is available and Local Community is not aware of this matter**
8.	Along the road and within 100m of the road shoulder is there any evidence of floral and faunal species that are classified as endangered species?		√	No rare, endangered or threatened species have been found within 100 m of the road shoulder. ( ) No Secondary Information Available and Local Community is not aware of this matter

9.	Are there any utility structures[36] within 10 m on either side from the center line of the road alignment? *(If yes, attach list with chainage)*	√		There are few utility structures found as listed in **Attachment II**.
10.	Are there any religious, cultural or community structures/buildings[37] within 10 m on either side from the center line of the road alignment? *(If yes attach list with chainage)*	√		Few religious cultural or community structures/buildings were found as listed in **Attachment III**.

D. Public Consultation

No.	Consultation Activities	Yes	No	Remarks
1.	Consultation with local community was conducted before finalizing the alignment. *(Attach list of people met and dates)*	√		Yes, consulting held with the community.
2.	Any suggestion received in finalizing the alignment		√	NA
3.	If suggestions received, were they incorporated into the design.		√	NA

E. Please attach the following:

55) Sketch a map showing the bridge and the trees
56) List of trees indicating location (left or right side of the road) and chainage (as required under C. 6)
57) List of utility structures indicating location (left or right side of the road) and chainage (as required under C. 9)
58) List of community structures indicating location (left or right side of the road) and chainage (as required under C. 10)
59) Sketch of strip map of the road covering details of at least 10 m on either side from the center line of the road
60) Photographs of the project area showing at least 10 m on either side from center line of road alignment. Every 2 km or less of road must have at least 1 photograph.

[36] Water tap, hand pump, electric pole, telephone pole, water pipe and other similar strucutures.
[37] Mandir, Masjid, Church, religious/cultural/historical monuments, school, health center, public toilet and other similar structures.

Attachment I

List of Trees

Chainage (m)			Left	Right
00	-	100	-	3
1000	-	1100	-	1
Total			-	4

Attachment II

List of Utilities

Chainage (m)			Left	Right
700	-	800	HT	HT
1400	-	1400	ELC, water tank	ELC

Attachment III

List of Community Structures

Chainage (m)			Left	Right
2700		2800	School	-

Attachment-IV

Left					Chainage (m)			Right				
8 to 10m	6 to 8m	4 to 6m	2 to 4m	0 to 2m				0 to 2m	2 to 4m	4 to 6m	6 to 8m	8 to 10m
-	-	-	-	-	0	-	100	-	-	3 trees	-	-
-	-	-	-	-	1000	-	1100	-	1 tree	-	-	-
-	-	Water tank	-	-	1400	-	1500	-	-	-	-	-
-	-	School	-	-	2700	-	2800	-	-	-	-	-

Attachment V

Photo Plates

Ch-00m Start point

Ch-400m Canal, Guard stone proposed

Ch-1200m Junction-LHS

Ch-1400m Habitation area

Ch-1800m CD proposed

Ch-2800m End point

Road safety session

Chainage wise Transect Walk Findings

Chainage (M)			Existing Land Width (m)	Additional Land Required		Losses		Type of loss		Village	Remarks /Suggestion
				LHS	RHS	LHS	RHS	LHS	RHS		
0	-	100	8	-	-	-	-	-	-	-	Canal-LHS, Guard stone proposed
100	-	200	8	-	-	-	-	-	-	-	Canal-LHS, Guard stone proposed
200	-	300	8	-	-	-	-	-	-	-	Canal-LHS, Guard stone proposed
300	-	400	8	-	-	-	-	-	-	-	Canal-LHS, Guard stone proposed
400	-	500	8	-	-	-	-	-	-	-	Canal-LHS, Guard stone proposed
500	-	600	8	-	-	-	-	-	-	-	Canal-LHS, Guard stone proposed
600	-	700	8	-	-	-	-	-	-	-	Canal-LHS, Guard stone proposed
700	-	800	8	-	-	-	-	-	-	-	Canal-LHS, Guard stone proposed
800	-	900	8	-	-	-	-	-	-	-	Canal-LHS, Guard stone proposed
900	-	1000	8	-	-	-	-	-	-	-	Canal-LHS, Guard stone proposed
1000	-	1100	8	-	-	-	-	-	-	-	Canal-LHS, Guard stone proposed
1100	-	1200	8	-	-	-	-	-	-	-	Canal-LHS, Guard stone proposed
1200	-	1300	8	-	-	-	-	-	-	-	Junction-LHS, Curve-RHS
1300	-	1400	8	-	-	-	-	-	-	-	-
1400	-	1500	5	-	-	-	-	-	-	-	Habitation area, CC road proposed, Water tank
1500	-	1600	8	-	-	-	-	-	-	-	-
1600	-	1700	8	-	-	-	-	-	-	-	-
1700	-	1800	8	-	-	-	-	-	-	-	CD proposed
1800	-	1900	8	-	-	-	-	-	-	-	-
1900	-	2000	8	-	-	-	-	-	-	-	-
2000	-	2100	8	-	-	-	-	-	-	-	-
2100	-	2200	8	-	-	-	-	-	-	-	-
2200	-	2300	8	-	-	-	-	-	-	-	Existing CD
2300	-	2400	8	-	-	-	-	-	-	-	-
2400	-	2500	8	-	-	-	-	-	-	-	Hills area, CD proposed
2500	-	2600	8	-	-	-	-	-	-	-	-
2600	-	2700	5	-	-	-	-	-	-	-	CC road proposed, Schhol
2700	-	2800	5	-	-	-	-	-	-	-	Habitation area, CC road proposed, CD proposed

Road Name: Neemuch Singoli Rd to Gothada

Block Name: Jawad

District Name: Neemuch

Total Length of the Road: 1.00 km

CC. **Climatic Conditions**

Temperature	High: 42 °C **(May)** Low: 10 °C **(Dec)**
Humidity	High: 83 % **(Aug)** Low: 31 **% (Dec)**
Rainfall Rainy Season	900 mm/year **June** to **September**

DD. **Location of the Road and Generic description of Environment**

S. No.	Type of Ecosystem	Yes	No	Explanation
1.	Coastal area Mangrove (along roadside)		√	Distance from Coastline: km ( ) more than 50% ( ) less than 20%
2.	Type of Terrain-(Plain/Hilly/ Mountainous etc.) *(Explain the topography of the area and how many km of the road are located in the hilly area)*		√	Altitude: The topography of the project road is flat at almost all locations.
3	Forest Area *(Explain whether the road passes through forest areas or located along the forest areas and distance from shoulder to the forest area)?*		√	Type of Vegetation: Legal Status of the Forest Area: Sanctuaries *(Reserved, National Park, Sanctuaries, Unclassified, etc.)* No part of the project road passes through any forest area.
4	Wildlife *(Explain whether there are any wildlife species in the project area)*		√	Name of animals: **NA** Endangered species (if any): **None**
5	Inhabited Area	√		Inhabited area starts at Ch-800m to Ch-1000m with connecting village Gothada.
6	Agricultural Land	√		The agriculture land was found at Ch-00m to Ch-800m both side of the alignment
7	Grazing grounds		√	Grazing ground was not found along the proposed alignment.
8	Barren Land		√	No Barren land along the project road.

EE. Specific description of the Road Environment

(Note: Questions number 1, 4, 5, 7 and 8 must be answered after discussions with the local community people)

S. No.	Parameter/ Component	Yes	No	Explanation
1.	Are there any areas with landslide or erosion problems along the road? *(If yes, indicate the location (right or left side) and the chainage)*		√	No part of the project road lies in hilly terrain prone to landslide or erosion. However, sufficient cross drainage structures will be constructed to avoid any erosion. ( ) No Secondary Information is available and Local Community is not aware of this matter
2.	Are there any lakes/swamps beside the road? *(If yes, list them indicating the location (right or left side) and the chainage)*		√	There was not found any pond along the proposed alignment.
3.	Are there any nallas/streams/rivers etc. along/crossing the road? *(If yes, list them indicating the location (right, left or crossing) and the chainage*	√		There was found some water crossing points at Ch-00m to Ch-100m, Ch-400m to Ch-500m, & Ch-700m to Ch-800 has CD proposed.
4.	Are there problems of water stagnation and other drainage issues on or near the road? *(If yes, mention chainage)*	√		There are at some points of water stagnation and other drainage issues on or near the road which is discussed above S.No.3. ( ) No Secondary Information is available and Local Community is not aware of this matter
5.	Is the area along the project road prone to flooding? *(If yes, mention flood level and frequency)*		√	There are not found any flood prone area along the project road. ( ) No Secondary Information is available and Local Community is not aware of this matter
6.	Are there any trees with a dbh of 30 cm or more within 10 m on either side from the center line of the road alignment? *(If yes attach list of trees indicating the location (right or left side)and the chainage)*	√		There are 13 trees of dbh of 30 cm or more as attached in **Attachment I.**
7.	Along the road and within 100m of the road shoulder, are there any faunal habitat areas, faunal breeding ground, bird migration area, or other similar areas? *(If yes, specify details of habitat with chainage)*		√	There was not found any faunal habitat at 100 m of the road shoulder. ( ) No Secondary Information is available and Local Community is not aware of this matter
8.	Along the road and within 100m of the road shoulder is there any evidence of floral and faunal species that are classified as endangered species?		√	No rare, endangered or threatened species were found within 100 m of the road shoulder. ( ) No Secondary Information Available and Local Community is not aware of this matter

S. No.	Parameter/ Component	Yes	No	Explanation
9.	Are there any utility structures[38] within 10 m on either side from the center line of the road alignment? *(If yes, attach list with chainage)*	√		There are few utility structures found as listed in **Attachment II**.
10.	Are there any religious, cultural or community structures/buildings[39] within 10 m on either side from the center line of the road alignment? *(If yes attach list with chainage)*	√		Few religious cultural or community structures/buildings were found as listed in **Attachment III**.

D. Public Consultation

No.	Consultation Activities	Yes	No	Remarks
1.	Consultation with local community was conducted before finalizing the alignment. *(Attach list of people met and dates)*	√		Yes, consulting with the community.
2.	Any suggestion received in finalizing the alignment		√	NA
3.	If suggestions received, were they incorporated into the design.		√	NA

E. Please attach the following:

61) Sketch a map showing the bridge and the trees
62) List of trees indicating location (left or right side of the road) and chainage (as required under C. 6)
63) List of utility structures indicating location (left or right side of the road) and chainage (as required under C. 9)
64) List of community structures indicating location (left or right side of the road) and chainage (as required under C. 10)
65) Sketch of strip map of the road covering details of at least 10 m on either side from the center line of the road
66) Photographs of the project area showing at least 10 m on either side from center line of road alignment. Every 2 km or less of road must have at least 1 photograph.

[38] Water tap, hand pump, electric pole, telephone pole, water pipe and other similar strucutures.
[39] Mandir, Masjid, Church, religious/cultural/historical monuments, school, health center, public toilet and other similar structures.

Attachment I

List of Trees

Chainage (m)			Left	Right
0	-	100	6	1
200	-	300	-	3
800	-	900	2	1
Total			8	5

Attachment II

List of Utilities

Chainage (m)			Left	Right
0	-	100	ELC	HP
200	-	300	-	EP
400	-	500	EP, Water sink	ELC
500	-	600	EP	-
600	-	700	DP, 2 ELC, EP	ELC

Attachment III

List of Community Structures

Chainage (m)			Left	Right
0	-	100	-	School
100	-	200	Temple	-
400	-	500	Plot from	-
500	-	600	-	School
900	-	1000	School	Temple

Attachment-IV

Left					Chainage (m)			Right				
8 to 10m	6 to 8m	4 to 6m	2 to 4m	0 to 2m				0 to 2m	2 to 4m	4 to 6m	6 to 8m	8 to 10m
-	-	6 tree	-	-	0	-	100	-	HP	school, 1 tree	-	-
-	-	Temple	-	-	100	-	200	-	-	-	-	-
-	-	-	-	-	200	-	300	-	EP	3 tree	-	-
-	-	-	-	-	300	-	400	-	-	-	-	-
-	-	Plot from, EP, Water sink	-	-	400	-	500	-	-	-	-	-
-	-	EP	-	-	500	-	600	-	-	School	-	-
-	-	-	DP, EP	-	600	-	700	-	-	-	-	-
-	-	-	-	-	700	-	800	-	-	-	-	-
-	-	2 tree	-	-	800	-	900	-	-	1 tree	-	-
School	-	-	-	-	900	-	1000	-	-	Temple	-	-

Attachment V

Photo Plates

Ch-00m Starting point & ELC height raise up

Ch-100m ELC height raise up

Ch-400m EX CD

Ch-400m

Ch-500m Side drain proposed in RHS

Ch-600m DP LHS & ELC height raise up

Ch-1000m End Point


School


Transect walk


Community Consultation

Chainage wise Transect Walk Findings

Chainage (M)			Existing Land Width (m)	Additional Land Required		Losses		Type of loss		Village	Remarks /Suggestion
				LHS	RHS	LHS	RHS	LHS	RHS		
0	-	100	0	4	4	4	4	AL	AL	Gothada	CD proposed, ELC height raise up
100	-	200	0	4	4	4	4	AL	AL	"	Sign board proposed
200	-	300	0	4	4	4	4	AL	AL	"	-
300	-	400	10	-	-	-	-	-	-	"	EX CD
400	-	500	9	-	-	-	-	-	-	"	-
500	-	600	9	-	-	-	-	-	-	"	Side drain proposed RHS
600	-	700	8	-	-	-	-	-	-	"	ELC height raise up
700	-	800	8	-	-	-	-	-	-	"	CD proposed
800	-	900	8	-	-	-	-	-	-	"	Sign board proposed
900	-	1000	8	-	-	-	-	-	-	"	-

Road Name: Mandsaur Bypass road to Aghoriya

Block Name: Mandsaur

District Name: Mandsaur

Total Length of the Road: 2.95 km

FF. Climatic Conditions

Temperature	High: 42.1 °C **(May)** Low: 4.9 °C **(Dec)**
Humidity	High: 55 % **(Aug)** Low: 20 % **(Dec)**
Rainfall Rainy Season	870 mm/year **June** to **September**

GG. Location of the Road and Generic description of Environment

S. No.	Type of Ecosystem	Yes	No	Explanation
1.	Coastal area Mangrove (along roadside)		√	Distance from Coastline: km ( ) more than 50% ( ) less than 20%
2.	Type of Terrain-(Plain/Hilly/ Mountainous etc.) *(Explain the topography of the area and how many km of the road are located in the hilly area)*		√	Altitude: The topography of the project road is flat at almost all locations.
3	Forest Area *(Explain whether the road passes through forest areas or located along the forest areas and distance from shoulder to the forest area)?*		√	Type of Vegetation: Legal Status of the Forest Area: Sanctuaries *(Reserved, National Park, Sanctuaries, Unclassified, etc.)* No part of the project road passes through any forest area.
4	Wildlife *(Explain whether there are any wildlife species in the project area)*		√	Name of animals: **NA** Endangered species (if any): **None**
5	Inhabited Area	√		Inhabited area starts at Ch-2200m to Ch-2950m with connecting village Adhoriya.
6	Agricultural Land	√		The agriculture land was found at Ch-100m to Ch-2200m both side of the alignment
7	Grazing grounds		√	Grazing ground was not found along the proposed alignment.
8	Barren Land		√	No Barren land along the project road.

HH. Specific description of the Road Environment

(Note: Questions number 1, 4, 5, 7 and 8 must be answered after discussions with the local community people)

S. No.	Parameter/ Component	Yes	No	Explanation
1.	Are there any areas with landslide or erosion problems along the road? *(If yes, indicate the location (right or left side) and the chainage)*		√	No part of the project road lies in hilly terrain prone to landslide or erosion. However, sufficient cross drainage structures will be constructed to avoid any erosion. ( ) No Secondary Information is available and Local Community is not aware of this matter
2.	Are there any lakes/swamps beside the road? *(If yes, list them indicating the location (right or left side) and the chainage)*		√	There was not found any pond along the proposed alignment.
3.	Are there any nallas/streams/rivers etc. along/crossing the road? *(If yes, list them indicating the location (right, left or crossing) and the chainage*	√		There was found some water crossing points at Ch-200m to Ch-300m, Ch-800m to Ch-900m, Ch-1900m to Ch-2000m, Ch-2700m to Ch-2800m has proposed CD and Ch-1500m to Ch-1600m and Ch-2100m to Ch-2200m pipe proposed.
4.	Are there problems of water stagnation and other drainage issues on or near the road? *(If yes, mention chainage)*	√		There are at some points of water stagnation and other drainage issues on or near the road which is discussed above S.No.3. Other then Ch-1300m to Ch-1400m LHS also water stagnation problem. ( ) No Secondary Information is available and Local Community is not aware of this matter
5.	Is the area along the project road prone to flooding? *(If yes, mention flood level and frequency)*		√	There are not found any flood prone area along the project road. ( ) No Secondary Information is available and Local Community is not aware of this matter
6.	Are there any trees with a dbh of 30 cm or more within 10 m on either side from the center line of the road alignment? *(If yes attach list of trees indicating the location (right or left side)and the chainage)*	√		There are 46 trees of dbh of 30 cm or more as attached in **Attachment I.**
7.	Along the road and within 100m of the road shoulder, are there any faunal habitat areas, faunal breeding ground, bird migration area, or other similar areas? *(If yes, specify details of habitat with chainage)*		√	There was not found any faunal habitat at 100 m of the road shoulder. ( ) No Secondary Information is available and Local Community is not aware of this matter
8.	Along the road and within 100m of the road shoulder is there any evidence of floral and faunal species that are classified as endangered species?		√	No rare, endangered or threatened species were found within 100 m of the road shoulder. ( ) No Secondary Information Available and Local Community is not aware of this matter

S. No.	Parameter/ Component	Yes	No	Explanation
9.	Are there any utility structures[40] within 10 m on either side from the center line of the road alignment? *(If yes, attach list with chainage)*	√		There are few utility structures found as listed in **Attachment II**.
10.	Are there any religious, cultural or community structures/buildings[41] within 10 m on either side from the center line of the road alignment? *(If yes attach list with chainage)*	√		Few religious cultural or community structures/buildings were found as listed in **Attachment III.**

D. Public Consultation

No.	Consultation Activities	Yes	No	Remarks
1.	Consultation with local community was conducted before finalizing the alignment. *(Attach list of people met and dates)*	√		Yes, consulting with the community.
2.	Any suggestion received in finalizing the alignment	√		Community has suggested that to extend the alignment more 500m at Ch-2400m to Ch-2900m which is connected middle school.
3.	If suggestions received, were they incorporated into the design.	√		PIU will incorporate their suggestion and fulfill in their maximum ends.

E. Please attach the following:

67) Sketch a map showing the bridge and the trees
68) List of trees indicating location (left or right side of the road) and chainage (as required under C. 6)
69) List of utility structures indicating location (left or right side of the road) and chainage (as required under C. 9)
70) List of community structures indicating location (left or right side of the road) and chainage (as required under C. 10)
71) Sketch of strip map of the road covering details of at least 10 m on either side from the center line of the road
72) Photographs of the project area showing at least 10 m on either side from center line of road alignment. Every 2 km or less of road must have at least 1 photograph.

[40] Water tap, hand pump, electric pole, telephone pole, water pipe and other similar strucutures.
[41] Mandir, Masjid, Church, religious/cultural/historical monuments, school, health center, public toilet and other similar structures.

Attachment I

List of Trees

Chainage (m)			Left	Right
0	-	100	8	-
100	-	200	4	-
200	-	300	3	-
300	-	400	1	1
400	-	500	1	1
500	-	600	2	1
600	-	700	1	-
700	-	800	1	1
900	-	1000	-	3
1000	-	1100	4	2
1300	-	1400	-	1
2200	-	2300	1	2
2400	-	2500	2	-
2500	-	2600	-	5
2600	-	2700	-	1
Total			**28**	**18**

Attachment II

List of Utilities

Chainage (m)			Left	Right
0	-	100	-	EP
100	-	200	-	EP
200	-	300	-	EP
300	-	400	-	EP
700	-	800	TP	EP
1100	-	1200	well	EP
2600	-	2700	-	EP

Attachment III

List of Community Structures

Chainage (m)			Left	Right
0	-	100	From house	-
1700	-	1800	Play ground	-
1900	-	2000	Shamshan ghat	-
2400	-	2500	School	-
2900	-	2950	School	-

Attachment-IV

Left					Chainage (m)			Right				
8 to 10m	6 to 8m	4 to 6m	2 to 4m	0 to 2m				0 to 2m	2 to 4m	4 to 6m	6 to 8m	8 to 10m
from house	8 tree	-	-	-	0	-	100	-	-	-	-	-
-	3 tree	1 tree	-	-	100	-	200	-	-	-	-	-
-	-	3 tree	-	-	200	-	300	-	-	-	-	-
-	-	1 tree	-	-	300	-	400	-	-	1 tree	-	-
-	-	1 tree	-	-	400	-	500	-	-	-	1 tree	-
-	-	2 tree	-	-	500	-	600	-	-	-	1 tree	-
-	-	1 tree	-	-	600	-	700	-	-	-	-	-
-	1 tree	-	TP	-	700	-	800	-	1 tree	-	-	-
-	-	-	-	-	900	-	1000	-	-	-	-	3 tree
-	4 tree	-	-	-	1000	-	1100	-	-	-	2 tree	-
well	-	-	-	-	1100	-	1200	-	-	-	-	-
-	-	-	-	-	1300	-	1400	-	-	-	1 tree	-
Play ground	-	-	-	-	1700	-	1800	-	-	-	-	-
Shamshan ghat	-	-	-	-	1900	-	2000	-	-	-	-	-
-	-	1 tree	-	-	2200	-	2300	-	-	2 tree	-	-
School	-	2 tree	-	-	2400	-	2500	-	-	-	-	-
-	-	-	-	-	2500	-	2600	-	5 tree	-	-	-
-	-	-	-	-	2600	-	2700	-	-	1 tree	-	-
School	-	-	-	-	2900	-	2950	-	-	-	-	-

Attachment V

Photo Plates

Ch-00m starting point

Ch-00m to Ch-100m EP

Ch-200m to Ch-300m CD proposed

Ch-800m to Ch-900m CD proposed

Ch-900m to Ch-1000m junction

Ch-1900m to Ch-2000m CD proposed

Ch-2400m to Ch-2500m School

Ch-2900m to Ch-2950m School

School Session

Road safety rules

Transect Walk

Community Consultation

Chainage wise Transect Walk Findings

Chainage (M)			Existing Land Width (m)	Additional Land Required		Losses		Type of loss		Village	Remarks /Suggestion
				LHS	RHS	LHS	RHS	LHS	RHS		
0	-	100	8	-	-	-	-	-	-	-	ELC, EP, form house
100	-	200	8	-	-	-	-	-	-	-	EP
200	-	300	8	-	-	-	-	-	-	-	EP, CD proposed, Junction LHS
300	-	400	8	-	-	-	-	-	-	-	Junction LHS & RHS
400	-	500	8	-	-	-	-	-	-	-	-
500	-	600	8	-	-	-	-	-	-	-	Junction RHS
600	-	700	8	-	-	-	-	-	-	-	-
700	-	800	8	-	-	-	-	-	-	-	EP, ELC TP
800	-	900	8	-	-	-	-	-	-	-	CD proposed, Junction-RHS
900	-	1000	8	-	-	-	-	-	-	-	Junction LHS
1000	-	1100	8	-	-	-	-	-	-	-	HT crossing
1100	-	1200	8	-	-	-	-	-	-	-	Well
1200	-	1300	8	-	-	-	-	-	-	-	ELC
1300	-	1400	8	-	-	-	-	-	-	-	junction RHS, hills
1400	-	1500	8	-	-	-	-	-	-	-	Hills
1500	-	1600	8	-	-	-	-	-	-	-	Hills, Pipe proposed
1600	-	1700	8	-	-	-	-	-	-	-	-
1700	-	1800	8	-	-	-	-	-	-	-	Play ground
1800	-	1900	8	-	-	-	-	-	-	-	ELC
1900	-	2000	8	-	-	-	-	-	-	-	CD proposed
2000	-	2100	8	-	-	-	-	-	-	-	Junction LHS
2100	-	2200	8	-	-	-	-	-	-	-	Water tank, pipe proposed
2200	-	2300	8	-	-	-	-	-	-	Adhoriya	Habitation
2300	-	2400	8	-	-	-	-	-	-	"	-
2400	-	2500	8	-	-	-	-	-	-	"	Temple, junction LHS and RHS, School
2500	-	2600	8	-	-	-	-	-	-	"	ELC, junction RHS
2600	-	2700	8	-	-	-	-	-	-	"	Junction LHS, EP
2700	-	2800	8	-	-	-	-	-	-	"	CD proposed
2800	-	2900	8	-	-	-	-	-	-	"	ELC,
2900	-	2950	8	-	-	-	-	-	-	"	School

Road Name: Neemuch Singoli Rd to Panoli

Block Name: Jawad

District Name: Neemuch

Total Length of the Road: 2.50 km

LL. Climatic Conditions

Temperature	High: 42 °C **(May)** Low: 10 °C **(Dec)**
Humidity	High: 83 % **(Aug)** Low: 31 % **(Dec)**
Rainfall Rainy Season	900 mm/year **June** to **September**

MM. Location of the Road and Generic description of Environment

S. No.	Type of Ecosystem	Yes	No	Explanation
1.	Coastal area Mangrove (along roadside)		√	Distance from Coastline: km ( ) more than 50% ( ) less than 20%
2.	Type of Terrain-(Plain/Hilly/ Mountainous etc.) *(Explain the topography of the area and how many km of the road are located in the hilly area)*		√	Altitude: The topography of the project road is flat at almost all locations.
3	Forest Area *(Explain whether the road passes through forest areas or located along the forest areas and distance from shoulder to the forest area)?*	√		There was found forest area at Ch-00m to Ch-1800m Type of Vegetation: Legal Status of the Forest Area: Unclassified *(Reserved, National Park, Sanctuaries, Unclassified, etc.)* No part of the project road passes through any forest area.
4	Wildlife *(Explain whether there are any wildlife species in the project area)*		√	Name of animals: **NA** Endangered species (if any): **None**
5	Inhabited Area	√		Inhabited area starts at Ch-2100m to Ch-2500m with connecting village Panoli.
6	Agricultural Land		√	The agriculture land was not found along the proposed alignment.
7	Grazing grounds		√	Grazing ground was not found along the proposed alignment.
8	Barren Land		√	No Barren land along the project road.

NN. Specific description of the Road Environment

(Note: Questions number 1, 4, 5, 7 and 8 must be answered after discussions with the local community people)

S. No.	Parameter/ Component	Yes	No	Explanation
1.	Are there any areas with landslide or erosion problems along the road? *(If yes, indicate the location (right or left side) and the chainage)*		√	No part of the project road lies in hilly terrain prone to landslide or erosion. However, sufficient cross drainage structures will be constructed to avoid any erosion. ( ) No Secondary Information is available and Local Community is not aware of this matter
2.	Are there any lakes/swamps beside the road? *(If yes, list them indicating the location (right or left side) and the chainage)*	√		There was found at Ch-1300m to Ch-1400m RHS & Ch-1400m to Ch-1500m, Ch-1900m to Ch-2000m LHS pond which is far away 12-15m from the proposed alignment.
3.	Are there any nallas/streams/rivers etc. along/crossing the road? *(If yes, list them indicating the location (right, left or crossing) and the chainage*	√		There was found some water crossing points at Ch-00m to Ch-100m, Ch-300m to Ch-400m, Ch-900m to Ch-1000m & Ch-1300m to Ch-1400m has CD proposed.
4.	Are there problems of water stagnation and other drainage issues on or near the road? *(If yes, mention chainage)*	√		There are at some points of water stagnation and other drainage issues on or near the road which is discussed above S.No.3. ( ) No Secondary Information is available and Local Community is not aware of this matter
5.	Is the area along the project road prone to flooding? *(If yes, mention flood level and frequency)*		√	There are not found any flood prone area along the project road. ( ) No Secondary Information is available and Local Community is not aware of this matter
6.	Are there any trees with a dbh of 30 cm or more within 10 m on either side from the center line of the road alignment? *(If yes attach list of trees indicating the location (right or left sidejand the chainage)*	√		There are 04 trees of dbh of 30 cm or more as attached in **Attachment I.**
7.	Along the road and within 100m of the road shoulder, are there any faunal habitat areas, faunal breeding ground, bird migration area, or other similar areas? *(If yes, specify details of habitat with chainage)*		√	There was not found any faunal habitat at 100 m of the road shoulder. ( ) No Secondary Information is available and Local Community is not aware of this matter
8.	Along the road and within 100m of the road shoulder is there any evidence of floral and faunal species that are classified as endangered species?		√	No rare, endangered or threatened species were found within 100 m of the road shoulder. ( ) No Secondary Information Available and Local Community is not aware of this matter

S. No.	Parameter/ Component	Yes	No	Explanation
9.	Are there any utility structures[44] within 10 m on either side from the center line of the road alignment? *(If yes, attach list with chainage)*	√		There are few utility structures found as listed in **Attachment II**.
10.	Are there any religious, cultural or community structures/buildings[45] within 10 m on either side from the center line of the road alignment? *(If yes attach list with chainage)*	√		Few religious cultural or community structures/buildings were found as listed in **Attachment III**.

D. Public Consultation

No.	Consultation Activities	Yes	No	Remarks
1.	Consultation with local community was conducted before finalizing the alignment. *(Attach list of people met and dates)*	√		Yes, consulting with the community.
2.	Any suggestion received in finalizing the alignment		√	NA
3.	If suggestions received, were they incorporated into the design.		√	NA

E. Please attach the following:

79) Sketch a map showing the bridge and the trees
80) List of trees indicating location (left or right side of the road) and chainage (as required under C. 6)
81) List of utility structures indicating location (left or right side of the road) and chainage (as required under C. 9)
82) List of community structures indicating location (left or right side of the road) and chainage (as required under C. 10)
83) Sketch of strip map of the road covering details of at least 10 m on either side from the center line of the road
84) Photographs of the project area showing at least 10 m on either side from center line of road alignment. Every 2 km or less of road must have at least 1 photograph.

[44] Water tap, hand pump, electric pole, telephone pole, water pipe and other similar strucutures.
[45] Mandir, Masjid, Church, religious/cultural/historical monuments, school, health center, public toilet and other similar structures.

Attachment I

List of Trees

Chainage (m)			Left	Right
1400	-	1500	-	1
2000	-	2100	1	1
2200	-	2300	1	-
Total			2	2

Attachment II

List of Utilities

Chainage (m)			Left	Right
200	-	300	ELC	EP
700	-	800	ELC	-
1300	-	1400	-	Pond
1400	-	1500	Pond	-
1700	-	1800	ELC	EP
1900	-	2000	Pond	-
2200	-	2300	HP	-
2300	-	2400	EP	ELC, EP

Attachment III

List of Community Structures

Chainage (m)			Left	Right
0	-	100	school	-
2100	-	2200	-	School

Attachment-IV

Left					Chainage (m)			Right				
8 to 10m	6 to 8m	4 to 6m	2 to 4m	0 to 2m				0 to 2m	2 to 4m	4 to 6m	6 to 8m	8 to 10m
School(15m)	-	-	-	-	0	-	100	-	-	-	-	-
-	-	-	-	-	100	-	200	-	-	-	-	-
-	-	-	-	-	200	-	300	-	-	EP	-	-
-	-	-	-	-	1300	-	1400	-	-	-	-	Pond(15m)
Pond	-	-	-	-	1400	-	1500	-	-	1 tree	-	-
-	-	-	-	-	1700	-	1800	-	-	-	-	EP
Pond(30m)	-	-	-	-	1900	-	2000	-	-	-	-	-
-	-	-	1 tree	-	2000	-	2100	-	-	1 tree	-	-
-	HP	1 tree	-	-	2200	-	2300	-	-	-	-	-
-	-	-	EP	-	2300	-	2400	-	-	EP	-	-

Attachment V

Photo Plates

Ch-00m Starting point forest area start

Ch-1800m Forest end

Ch-2000m Sign board proposed

Ch-2100m habitation area start

Ch-2200m School Speed breaker & sign board proposed

Ch-2400m to Ch-2500m End point

Community Consultation

Community Consultation

Chainage wise Transect Walk Findings

Chainage (M)			Existing Land Width (m)	Additional Land Required		Losses		Type of loss		Village	Remarks /Suggestion
				LHS	RHS	LHS	RHS	LHS	RHS		
0	-	100	8	-	-	-	-	-	-	-	CD proposed & Forest area start
100	-	200	10	-	-	-	-	-	-	-	-
200	-	300	10	-	-	-	-	-	-	-	-
300	-	400	9	-	-	-	-	-	-	-	CD proposed
400	-	500	9	-	-	-	-	-	-	-	-
500	-	600	10	-	-	-	-	-	-	-	-
600	-	700	9	-	-	-	-	-	-	-	-
700	-	800	8	-	-	-	-	-	-	-	-
800	-	900	9	-	-	-	-	-	-	-	-
900	-	1000	10	-	-	-	-	-	-	-	CD proposed
1000	-	1100	10	-	-	-	-	-	-	-	-
1100	-	1200	8	-	-	-	-	-	-	-	-
1200	-	1300	9	-	-	-	-	-	-	-	-
1300	-	1400	9	-	-	-	-	-	-	-	CD proposed
1400	-	1500	10	-	-	-	-	-	-	-	-
1500	-	1600	10	-	-	-	-	-	-	-	-
1600	-	1700	9	-	-	-	-	-	-	-	-
1700	-	1800	9	-	-	-	-	-	-	-	-
1800	-	1900	8	-	-	-	-	-	-	-	Forest area end
1900	-	2000	9	-	-	-	-	-	-	-	sign board proposed
2000	-	2100	9	-	-	-	-	-	-	-	habitation area start
2100	-	2200	8	-	-	-	-	-	-	-	speed breaker & sign board proposed
2200	-	2300	8	-	-	-	-	-	-	-	CC road proposed
2300	-	2400	8	-	-	-	-	-	-	-	CC road proposed
2400	-	2500	8	-	-	-	-	-	-	-	CC road proposed

Road Name: Patha Patori Road to Midawali

Block Name: Baldevgarh

District Name: Tikamgarh

Total Length of the Road: 7.00 km

OO. Climatic Conditions

Temperature	High: 47 **(May)** Low: 29 **°C (Dec)**
Humidity	High: 70 **% (Aug)** Low: 20 **% (Dec)**
Rainfall Rainy Season	1200.6 mm/year **June** to **September**

PP.Location of the Road and Generic description of Environment

S. No.	Type of Ecosystem	Yes	No	Explanation
1.	Coastal area Mangrove (along roadside)		√	Distance from Coastline: km ( ) more than 50% ( ) less than 20%
2.	Type of Terrain (Plain/Hilly/ Mountainous etc.) *(Explain the topography of the area and how many km of the road are located in the hilly area)*		√	Altitude: The topography of the project road is flat at almost all locations.
3	Forest Area *(Explain whether the road passes through forest areas or located along the forest areas and distance from shoulder to the forest area)?*		√	Type of Vegetation: Legal Status of the Forest Area: (Reserved, National Park, Sanctuaries, Unclassified, etc.) No part of the project road passes through any forest area.
4.	Wildlife *(Explain whether there are any wildlife species in the project area)*		√	Name of animals: NA Endangered species (if any): None
5.	Inhabited Area	√		The project road is passing through village namely Bagrun, Kheda and Mithawali between Ch-600m to Ch-800m, Ch-1400m to Ch-1600m, Ch-6800m to Ch-7000m respectively.
6	Agricultural Land	√		Agriculture land lies on both side of agriculture between Ch-2400m to Ch-5800m.
7.	Grazing grounds		√	The project road is not passing through grazing land.
8.	Barren Land		√	The project road is not passing through the barren land.

Specific description of the Road Environment

(Note: Questions number 1, 4, 5, 7 and 8 must be answered after discussions with the local community people)

S. No.	Parameter/ Component	Yes	No	Explanation
1.	Are there any areas with landslide or erosion problems along the road? *(If yes, indicate the location (right or left side) and the chainage)*		√	No part of the project road lies in hilly terrain prone to landslide or erosion. ( ) No Secondary Information is available and local Community is not aware of this matter
2.	Are there any lakes/swamps beside the road? *(If yes, list them indicating the location (right or left side) and the chainage).*	√		The pond has been found between Ch-1800m to Ch-2000m and Ch- 6200m to Ch-6400m LHS along the proposed alignment
3	Are there any nallas/streams/rivers etc. along/crossing the road? *(If yes, list them indicating the location (right, left or crossing) and the chainage)*	√		A few water crossing has been observed between Ch-00m to Ch-200m, Ch-2200mto Ch-2400m, Ch-3200m to Ch-3400m, Ch-4600mto Ch-4800m, Ch-6200m to Ch-6400m CD have been proposed on above mentioned locations and between Ch-1800m to Ch-2000m, Ch-5400m to Ch-5600m has existing CDs and Ch-2800m to Ch-3000m, Ch-3400m to Ch-3600m, Ch-5000m to Ch-5200m field cross proposed.
4.	Are there problems of water stagnation and other drainage issues on or near the road? *(If yes, mention chainage)*	√		There are some points of water stagnation and other drainage issues on between Ch-1800m to Ch-2000m RHS.
5.	Is the area along the project road prone to flooding? *(If yes, mention flood level and frequency)*		√	Apart from above mentioned location no other area is flood prone along the alignment. (√) No Secondary Information is available and Local Community is not aware of this matter
6.	Are there any trees with a dbh of 30 cm or more within 10 m on either side of the center line of the road alignment? *(If yes attach list of trees indicating the location (right or left side)and the chainage)*	√		A total of 79 trees are falling within 10m of the center line of proposed alignment. The list of trees on giving in as Attachment I.
7.	Along the road and within 100m of the road shoulder, are there any faunal habitat areas, faunal breeding ground, bird migration area, or other similar areas? *(If yes, specify details of habitat with chainage)*		√	( ) No Secondary Information is available and Local Community is not aware of this matter
8.	Along the road and within 100m of the road shoulder is there any evidence of floral and faunal species that are classified as endangered species?		√	No rare, endangered or threatened species have been found within 100 m of the road shoulder. ( ) No Secondary Information Available and Local Community is not aware of this matter.

S. No.	Parameter/ Component	Yes	No	Explanation

9.	Are there any utility structures[46] within 10 m on either side from the center line of the road alignment? *(If yes, attach list with chainage)*	√		There are few utility structures found as listed in **Attachment II**.
10.	Are there any religious, cultural or community structures/buildings[47] within 10 m on either side from the center line of the road alignment? *(If yes attach list with chainage)*	√		Few religious cultural or community structures/buildings were found as listed in **Attachment III**.

D. Public Consultation

No.	Consultation Activities	Yes	No	Remarks
1.	Consultation with local community was conducted before finalizing the alignment. *(Attach list of people met and dates)*	√		Yes, consulting held with the community.
2.	Any suggestion received in finalizing the alignment		√	NA
3.	If suggestions received, were they incorporated into the design.		√	NA

E. Please attach the following:

85) Sketch a map showing the bridge and the trees
86) List of trees indicating location (left or right side of the road) and chainage (as required under C. 6)
87) List of utility structures indicating location (left or right side of the road) and chainage (as required under C. 9)
88) List of community structures indicating location (left or right side of the road) and chainage (as required under C. 10)
89) Sketch of strip map of the road covering details of at least 10 m on either side from the center line of the road
90) Photographs of the project area showing at least 10 m on either side from center line of road alignment. Every 2 km or less of road must have at least 1 photograph.

[46] Water tap, hand pump, electric pole, telephone pole, water pipe and other similar structures.
[47] Mandir, Masjid, Church, religious/cultural/historical monuments, school, health center, public toilet and other similar structures

Attachment I

List of Trees

Chainage (m)			Left	Right
0	-	200	6	5
200	-	400	-	5
400	-	600	-	3
800	-	1000	4	6
1000	-	1200	4	3
2400	-	2600	8	6
2600	-	2800	-	2
2800	-	3000	-	5
3000	-	3200	4	2
3200	-	3400	2	-
3600	-	3800	2	1
4200	-	4400	-	4
4400	-	4600	2	-
4600	-	4800	2	-
5000	-	5200	-	1
5600	-	5800	1	-
5800	-	6000	1	-
Total			**36**	**43**

Attachment II

List of Utilities

Chainage (m)			Left	Right
1200	-	1400	ELC	ELC
1600	-	1800	ELC, Well	ELC
4000	-	4200	ELC	ELC
5200	-	5400	HTL	HTL
5400	-	5600	HTL	HTL

Attachment III

List of Community Structures

Chainage (m)			Left	Right
6800	-	7000	-	School

Attachment-IV

Left					Chainage (m)			Right				
8 to 10m	6 to 8m	4 to 6m	2 to 4m	0 to 2m				0 to 2m	2 to 4m	4 to 6m	6 to 8m	8 to 10m
-	-	6 trees	-	-	0	-	200	-	-	5 trees	-	-
-	-	-	-	-	200	-	400	-	-	5 trees	-	-
-	-	-	-	-	400	-	600	-	-	3 trees	-	-
-	-	4 trees	-	-	800	-	1000	-	6 trees	-	-	-
-	-	-	4 trees	-	1000	-	1200	-	-	3 trees	-	-
-	-	Well	-	-	1600	-	1800	-	-	-	-	-
Pond	-		-	-	2400	-	2600	-	-	6 trees	-	-
-	-	2 trees	-	-	2400	-	2600	-	-	6 trees	-	-
-	-	-	-	-	2600	-	2800	-	2 trees	-	-	-
-	-	-	-	-	2800	-	3000	-	-	5 trees	-	-
-	-	4 trees	-	-	3000	-	3200	-	-	2 trees	-	-
-	-	2 trees	-	-	3200	-	3400	-	-	-	-	-
-	-	2 trees	-	-	3600	-	3800	-	1 tree	-	-	-
-	-	-	-	-	4200	-	4400	-	-	4 trees	-	-
-	-	2 trees	-	-	4400	-	4600	-	-	-	-	-
-	-	2 trees	-	-	4600	-	4800	-	-	-	-	-
-	-	-	-	-	5000	-	5200	-	-	-	1 tree	-
-	-	1 tree	-	-	5600	-	5800	-	-	-	-	-
-	-	1 tree	-	-	5800	-	6000	-	-	-	-	-
-	-	Pond	-	-	6200	-	6400	-	-		-	-
-	-	-	-	-	6800	-	7000	-	-	School	-	-

Attachment V

Photo Plates

Ch-00m start point of the road

Ch-1800m Existing CD and water logged

Ch-2300m CD proposed

Ch-3300m

Community consultation


मिडावली
END point

Road safety session

Chainage wise Transect Walk Findings

Chainage (M)			Existing Land Width (m)	Additional Land Required		Losses		Type of loss		Village	Remarks /Suggestion
				LHS	RHS	LHS	RHS	LHS	RHS		
0	-	200	8	-	-	-	-	-	-	-	CD proposed
200	-	400	8	-	-	-	-	-	-	-	-
400	-	600	8	-	-	-	-	-	-	-	Curve-LHS
600	-	800	5	-	-	-	-	-	-	-	Habitation area, CC road proposed, Curve-LHS
800	-	1000	8	-	-	-	-	-	-	-	-
1000	-	1200	8	-	-	-	-	-	-	-	-
1200	-	1400	8	-	-	-	-	-	-	-	ELC
1400	-	1600	5	-	-	-	-	-	-	-	Habitation area
1600	-	1800	8	-	-	-	-	-	-	-	Well, ELC
1800	-	2000	8	-	-	-	-	-	-	-	Pond-LHS, Existing CD, Guard stone proposed
2000	-	2200	8	-	-	-	-	-	-	-	Curve-LHS
2200	-	2400	8	-	-	-	-	-	-	-	CD proposed
2400	-	2600	8	-	-	-	-	-	-	-	-
2600	-	2800	8	-	-	-	-	-	-	-	-
2800	-	3000	8	-	-	-	-	-	-	-	Field cross
3000	-	3200	8	-	-	-	-	-	-	-	-
3200	-	3400	8	-	-	-	-	-	-	-	CD proposed
3400	-	3600	8	-	-	-	-	-	-	-	Field cross
3600	-	3800	8	-	-	-	-	-	-	-	-
3800	-	4000	8	-	-	-	-	-	-	-	-
4000	-	4200	8	-	-	-	-	-	-	-	ELC
4200	-	4400	8	-	-	-	-	-	-	-	-
4400	-	4600	8	-	-	-	-	-	-	-	-
4600	-	4800	8	-	-	-	-	-	-	-	CD proposed
4800	-	5000	8	-	-	-	-	-	-	-	-
5000	-	5200	8	-	-	-	-	-	-	-	Field cross
5200	-	5400	8	-	-	-	-	-	-	-	HTL
5400	-	5600	8	-	-	-	-	-	-	-	HTL, Existing CD
5600	-	5800	8	-	-	-	-	-	-	-	-
5800	-	6000	8	-	-	-	-	-	-	-	Junction-RHS
6000	-	6200	8	-	-	-	-	-	-	-	-
6200	-	6400	5	-	-	-	-	-	-	-	Pond-LHS, CC road proposed, Guard stone proposed
6400	-	6600	5	-	-	-	-	-	-	-	CC road proposed
6600	-	6800	5	-	-	-	-	-	-	-	CC road proposed
6800	-	7000	5	-	-	-	-	-	-	-	Habitation area, CC road proposed, School

Road Name: T-08 (Jharkheda Ghati -Sehore MDR) To Thunakhurd

Block Name: Sehore

District Name: Sehore

Total Length of the Road: 1.95 km

QQ. Climatic Conditions

Temperature	High: 42.4 °C **(May)** Low: 7.9 °C **(Dec)**
Humidity	High: 93 % **(Aug)** Low: 76 %
Rainfall Rainy Season	1261 mm/year **June** to **September**

RR. Location of the Road and Generic description of Environment

S. No.	Type of Ecosystem	Yes	No	Explanation
1.	Coastal area Mangrove (along roadside)		√	Distance from Coastline: km ( ) more than 50% ( ) less than 20%
2.	Type of Terrain-(Plain/Hilly/ Mountainous etc.) *(Explain the topography of the area and how many km of the road are located in the hilly area)*		√	Altitude: The topography of the project road is flat at almost all locations.
4.	Forest Area *(Explain whether the road passes through forest areas or located along the forest areas and distance from shoulder to the forest area)?*		√	Type of Vegetation: Legal Status of the Forest Area: *(Reserved, National Park, Sanctuaries, Unclassified, etc.)* No part of the project road passes through any forest area.
5.	Wildlife (*Explain whether there are any wildlife species in the project area*)		√	Name of animals: **NA** Endangered species (if any): **None**
6.	Inhabited Area	√		An inhabited area start at CH-1800m to Ch-1950m has connecting village Thunakhurd.
7.	Agricultural Land	√		The agriculture land lies between Ch-100m to Ch-1700m.
8.	Grazing grounds		√	Grazing ground was not found along the proposed alignment.
9.	Barren Land		√	No Barren land along the project road.

SS.Specific description of the Road Environment

(Note: Questions number 1, 4, 5, 7 and 8 must be answered after discussions with the local community people)

S. No.	Parameter/ Component	Yes	No	Explanation
1.	Are there any areas with landslide or erosion problems along the road? *(If yes, indicate the location (right or left side) and the chainage)*		√	No part of the project road lies in hilly terrain prone to landslide or erosion. However, sufficient cross drainage structures will be constructed to avoid any erosion. ( ) No Secondary Information is available and Local Community is not aware of this matter
2.	Are there any lakes/swamps beside the road? *(If yes, list them indicating the location (right or left side) and the chainage)*	√		There was a small pond at CH-00m to Ch-100m along with the road shoulder at the proposed alignment.
3.	Are there any nallas/streams/rivers etc. along/crossing the road? *(If yes, list them indicating the location (right, left or crossing) and the chainage*	√		There was found at Ch-00m to 100m, Ch-400-500m, CH-1300m to Ch-1400m, CH-1600m to Ch-1700m and Ch-1800m toCh-1900m has proposed CD.
4.	Are there problems of water stagnation and other drainage issues on or near the road? *(If yes, mention chainage)*	√		There are at some points of water stagnation and other drainage issues on or near the road which is discussed above S.No.3. ( ) No Secondary Information is available and Local Community is not aware of this matter
5.	Is the area along the project road prone to flooding? *(If yes, mention flood level and frequency)*		√	There are not found any flood prone area along the project road. ( ) No Secondary Information is available and Local Community is not aware of this matter
6.	Are there any trees with a dbh of 30 cm or more within 10 m on either side from the center line of the road alignment? *(If yes attach list of trees indicating the location (right or left sideJand the chainage)*	√		There are 40 trees of dbh of 30 cm or more as attached in **Attachment I.**
7.	Along the road and within 100m of the road shoulder, are there any faunal habitat areas, faunal breeding ground, bird migration area, or other similar areas? *(If yes, specify details of habitat with chainage)*		√	There was not found any faunal habitat at 100 m of the road shoulder. ( ) No Secondary Information is available and Local Community is not aware of this matter
8.	Along the road and within 100m of the road shoulder is there any evidence of floral and faunal species that are classified as endangered species?		√	No rare, endangered or threatened species were found within 100 m of the road shoulder. ( ) No Secondary Information Available and Local Community is not aware of this matter

S. No.	Parameter/ Component	Yes	No	Explanation
9.	Are there any utility structures[48] within 10 m on either side from the center line of the road alignment? *(If yes, attach list with chainage)*	√		There are few utility structures found as listed in **Attachment II**.
10.	Are there any religious, cultural or community structures/buildings[49] within 10 m on either side from the center line of the road alignment? *(If yes attach list with chainage)*	√		Few religious cultural or community structures/buildings were found as listed in **Attachment III**.

D. Public Consultation

No.	Consultation Activities	Yes	No	Remarks
1.	Consultation with local community was conducted before finalizing the alignment. *(Attach list of people met and dates)*	√		Yes, consulting with the community.
2.	Any suggestion received in finalizing the alignment		√	No
3.	If suggestions received, were they incorporated into the design.		√	No

E. Please attach the following:

91) Sketch a map showing the bridge and the trees
92) List of trees indicating location (left or right side of the road) and chainage (as required under C. 6)
93) List of utility structures indicating location (left or right side of the road) and chainage (as required under C. 9)
94) List of community structures indicating location (left or right side of the road) and chainage (as required under C. 10)
95) Sketch of strip map of the road covering details of at least 10 m on either side from the center line of the road
96) Photographs of the project area showing at least 10 m on either side from center line of road alignment. Every 2 km or less of road must have at least 1 photograph.

[48] Water tap, hand pump, electric pole, telephone pole, water pipe and other similar structures.
[48] Mandir, Masjid, Church, religious/cultural/historical monuments, school, health center, public toilet and other similar structures.

Attachment I

List of Trees

Chainage (m)			Left	Right
300	-	400	1	-
400	-	500	2	2
600	-	700	-	1
700	-	800	2	2
800	-	900	2	3
900	-	1000	3	9
1000	-	1100	1	4
1200	-	1300	4	4
Total			15	25

Attachment II

List of Utilities

Chainage (m)			Left	Right
0	-	100	2ELC	2ELC
100	-	200	ELC, EP	ELC
200	-	300	ELC	Increase height of ELC
500	-	600	ELC	Increase height of ELC
900	-	1000	ELC	Increase height of ELC
1100	-	1200	ELC	ELC
1300	-	1400	ELC	ELC
1600	-	1700	ELC	TF
1700	-	1800	HP	-
1800	-	1900	HP,ELC	ELC

Attachment III

List of Community Structures

Chainage (m)			Left	Right
0	-	100	Pond	Hostel, School
1700	-	1800	well	-
1900	-	1950	School, Aganwadi	

Attachment-IV

Left					Chainage (m)			Right				
8 to 10m	6 to 8m	4 to 6m	2 to 4m	0 to 2m				0 to 2m	2 to 4m	4 to 6m	6 to 8m	8 to 10m
-	-	-	Pond	-	0	-	100	-	-	-	-	Hostel, School (15m)
-	-	-	1 tree	-	300	-	400	-	-	-	-	-
-	-	-	2 tree	-	400	-	500	-	2 tree	-	-	-
-	-	-	-	-	600	-	700	-	1 tree	-	-	-
-	-	-	-	2 tree	700	-	800	2 tree	-	-	-	-
-	-	-	-	2 tree	800	-	900	3 tree	-	-	-	-
-	-	-	1 tree	2 tree	900	-	1000	3 tree	6 tree	-	-	-
-	-	-	1 tree	-	1000	-	1100	-	4 tree	-	-	-
-	-	-	4 tree	-	1200	-	1300	-	4 tree	-	-	-
-	-	-	-	-	1600	-	1700	-	Transformer	-	-	-
-	-	-	HP, well	-	1700	-	1800	-	-	-	-	-
-	-	-	HP, school, Aganwadi	-	1900	-	1950	-	-	-	-	-

Attachment V

Photo Plates

Ch-00m start point of the road

Existing alignment near the start point

Ch-100m LHS junction

Ch-200m LHS EP

Transect walk

Transect walk along the alignment

Ch-400m CD proposed

Ch-900m left turn and junction

Condition of existing alignment

Available land measurement

Ch-1000m RHS turn

Transect walk with women

Ch-1900m End point of the road

Community consultation

Awareness about the road

Road safety session among students

Active participation of women's

Active participation of women's

Road safety Photo

Ch-00m Start of the point

Ch-1900m End point of the road

Awareness about the road

Road safety session among students

Transect walk

Transect walk

Ch-400m CD proposed

Ch-1000m RHS turn

Transect walk along the alignment

Condition of existing alignment

Transect walk with women

Chainage wise Transect Walk Findings

Chainage (M)			Existing Land Width (m)	Additional Land Required		Losses		Type of loss		Village	Remarks/ Suggestion
				LHS	RHS	LHS	RHS	LHS	RHS		
0	-	100	7	-	1	-	1	-	GL	Jamoniya	Pond along with the road shoulder, School boundary, CD and speed breaker proposed
100	-	200	6	1	1	1	1	Agl	Agl	-	Farmer encroachers land
200	-	300	6	1	1	1	1	Agl	Agl	-	-
300	-	400	6	1	1	1	1	Agl	Agl	-	-
400	-	500	6	1	1	1	1	Agl	Agl	-	Proposed CD
500	-	600	6	1	1	1	1	Agl	Agl	-	-
600	-	700	5	1.5	1.5	1.5	1.5	Agl	Agl	-	-
700	-	800	5	1.5	1.5	1.5	1.5	Agl	Agl	-	-
800	-	900	6	1	1	1	1	Agl	Agl	-	-
900	-	1000	6	1	1	1	1	Agl	Agl	-	-
1000	-	1100	6	1	1	1	1	Agl	Agl	-	-
1100	-	1200	4	2	2	2	2	Agl	Agl	-	Farmer encroachers land
1200	-	1300	4	2	2	2	2	Agl	Agl	-	-
1300	-	1400	8	-	-	-	-	-	-	-	Proposed CD
1400	-	1500	8	-	-	-	-	-	-	-	-
1500	-	1600	8	-	-	-	-	-	-	-	-
1600	-	1700	8	-	-	-	-	-	-	-	Proposed CD
1700	-	1800	8	-	-	-	-	-	-	-	HP, Well-along with road shoulder
1800	-	1900	5	-	-	-	-	-	-	Thoona khurd	Village area, CC road proposed and speed breaker proposed
1900	-	1950	5	-	-	-	-	-	-	-	-

Road Name: Rampura Balachoun to Goria Sankheda

Block Name: Berasiya

District Name: Bhopal

Total Length of the Road: 3.35 km

TT. Climatic Conditions

Temperature	High: 41 **(May)** Low: 8 °C **(Dec)**
Humidity	High: 86 % **(Aug)** Low: 40 %
Rainfall Rainy Season	1146 mm/year **June** to **September**

UU. Location of the Road and Generic description of Environment

S. No.	Type of Ecosystem	Yes	No	Explanation
1.	Coastal area Mangrove (along roadside)		√	Distance from Coastline: km ( ) more than 50% ( ) less than 20%
2.	Type of Terrain (Plain/Hilly/ Mountainous etc.) *(Explain the topography of the area and how many km of the road are located in the hilly area)*		√	Altitude: The topography of the project road is flat at almost all locations.
4.	Forest Area *(Explain whether the road passes through forest areas or located along the forest areas and distance from shoulder to the forest area)?*	√		Forest area located at CH-1400m to Ch-1800m Type of Vegetation: Teak Legal Status of the Forest Area: Unclassified *(Reserved, National Park, Sanctuaries, Unclassified, etc.)* No part of the project road passes through any forest area.
5.	Wildlife *(Explain whether there are any wildlife species in the project area)*		√	Name of animals: **NA** Endangered species (if any): **None**
6.	Inhabited Area	√		Inhabited area starts at Ch-00m to CH-300m and Ch-3200m to CH-3350m with connecting village Rampura and Goria sankheda.
7.	Agricultural Land	√		The agriculture land lies between Ch-400m to CH-2400m
8.	Grazing grounds	√		Grazing ground was found at Ch-2400m to Ch-3200m along the proposed alignment.
9.	Barren Land		√	No Barren land along the project road.

VV.Specific description of the Road Environment

(Note: Questions number 1, 4, 5, 7 and 8 must be answered after discussions with the local community people)

S. No.	Parameter/ Component	Yes	No	Explanation
1.	Are there any areas with landslide or erosion problems along the road? *(If yes, indicate the location (right or left side) and the chainage)*		√	No part of the project road lies in hilly terrain prone to landslide or erosion. However, sufficient cross drainage structures will be constructed to avoid any erosion. ( ) No Secondary Information is available and Local Community is not aware of this matter
2.	Are there any lakes/swamps beside the road? *(If yes, list them indicating the location (right or left side) and the chainage)*	√		There was found small pond at Ch-2600m to Ch-2800m
3.	Are there any nallas/streams/rivers etc. along/crossing the road? *(If yes, list them indicating the location (right, left or crossing) and the chainage*	√		There was found some water crossing structures at Ch-00m t o Ch-200m, Ch-400m to CH-600m, CH-800m to Ch-1000m, CH-1200m to CH-1400m, Ch-1800m to CH-2000, CH-2200m to Ch-2400m and Ch-2400m to Ch-2600m has proposed CD.
4.	Are there problems of water stagnation and other drainage issues on or near the road? *(If yes, mention chainage)*	√		There are at some points of water stagnation and other drainage issues on or near the road which is discussed above S.No.3. ( ) No Secondary Information is available and Local Community is not aware of this matter
5.	Is the area along the project road prone to flooding? *(If yes, mention flood level and frequency)*		√	There are not found any flood prone area along the project road. ( ) No Secondary Information is available and Local Community is not aware of this matter
6.	Are there any trees with a dbh of 30 cm or more within 10 m on either side from the center line of the road alignment? *(If yes attach list of trees indicating the location (right or left side)and the chainage)*	√		There are 25 trees of dbh of 30 cm or more as attached in **Attachment I.**
7.	Along the road and within 100m of the road shoulder, are there any faunal habitat areas, faunal breeding ground, bird migration area, or other similar areas? *(If yes, specify details of habitat with chainage)*		√	There was not found any faunal habitat at 100 m of the road shoulder. ( ) No Secondary Information is available and Local Community is not aware of this matter
8.	Along the road and within 100m of the road shoulder is there any evidence of floral and faunal species that are classified as endangered species?		√	No rare, endangered or threatened species were found within 100 m of the road shoulder. ( ) No Secondary Information Available and Local Community is not aware of this matter

S. No.	Parameter/ Component	Yes	No	Explanation
9.	Are there any utility structures[50] within 10 m on either side from the center line of the road alignment? *(If yes, attach list with chainage)*	√		There are few utility structures found as listed in **Attachment II.**
10.	Are there any religious, cultural or community structures/buildings[51] within 10 m on either side from the center line of the road alignment? *(If yes attach list with chainage)*	√		Few religious cultural or community structures/buildings were found as listed in **Attachment III.**

D. Public Consultation

S No.	Consultation Activities	Yes	No	Remarks
1.	Consultation with local community was conducted before finalizing the alignment. *(Attach list of people met and dates)*	√		Yes, consulting with the community.
2.	Any suggestion received in finalizing the alignment		√	NA
3.	If suggestions received, were they incorporated into the design.		√	NA

E. Please attach the following:

97) Sketch a map showing the bridge and the trees
98) List of trees indicating location (left or right side of the road) and chainage (as required under C. 6)
99) List of utility structures indicating location (left or right side of the road) and chainage (as required under C. 9)
100) List of community structures indicating location (left or right side of the road) and chainage (as required under C. 10)
101) Sketch of strip map of the road covering details of at least 10 m on either side from the center line of the road
102) Photographs of the project area showing at least 10 m on either side from center line of road alignment. Every 2 km or less of road must have at least 1 photograph.

[50] Water tap, hand pump, electric pole, telephone pole, water pipe and other similar strucutures.
[51] Mandir, Masjid, Church, religious/cultural/historical monuments, school, health center, public toilet and other similar structures.

Attachment I

List of Trees

Chainage (m)			Left	Right
0	-	200	1	-
600	-	800	2	1
800	-	1000	2	1
1000	-	1200	-	3
1400	-	1600	-	4
1600	-	1800	-	5
2000	-	2200	-	1
2800	-	3000	-	1
3200	-	3350	-	4
Total			5	20

Attachment II

List of Utilities

Chainage (m)			Left	Right
800	-	1000	ELC height increase	-
2000	-	2200	ELC height increase	-

Attachment III

List of Community Structures

Chainage (m)			Left	Right
0	-	200	HP	-
400	-	600	-	HP, well
2600	-	2800	pond	-
3200	-	3350	School, temple	School

Attachment-IV

Left					Chainage (m)			Right				
8 to 10m	6 to 8m	4 to 6m	2 to 4m	0 to 2m				0 to 2m	2 to 4m	4 to 6m	6 to 8m	8 to 10m
-	-	-	HP	2 tree	0	-	200	-	-	-	-	-
-	-	-	-	-	400	-	600	-	-	HP, well	-	-
-	-	-	2 tree	-	600	-	800	-	1 tree	-	-	-
-	-	-	2 tree	-	800	-	1000	-	1 tree	-	-	-
-	-	-	-	-	1000	-	1200	-	3 tree	-	-	-
-	-	-	-	-	1400	-	1600	-	4 tree	-	-	-
-	-	-	-	-	1600	-	1800	-	5 tree	-	-	-
-	-	-	-	-	2000	-	2200	-	1 tree	-	-	-
Pond (100m)	-	-	-	-	2600	-	2800	-	-	-	-	-
-	-	-	-	-	2800	-	3000	-	1 tree	-	-	-
-	-	School, temple	-	-	3200	-	3350	-	4 tree	-	-	School

Attachment V

Photo Plates

Ch-00m Start point of the road

RHS curve

Both side habitation

Ch-600m

Ch-1000m

Ch-1400m LHS curve

Ch-1800m

Ch-2000m

Ch-2200M CD Proposed

Ch-2400m Junction

Junction

Ch-3100m Junction

Ch-3550m RHS temple

Community consultation

Govt. primary school

Road safety awarness

Chainage wise Transect Walk Findings

Chainage (M)			Existing Land Width (m)	Additional Land Required		Losses		Type of loss		Village	Remarks/Suggestion
				LHS	RHS	LHS	RHS	LHS	RHS		
0	-	200	5	-	-	-	-	-	-	Rampura	Habitation area, CC road proposed, approach road and CD proposed
200	-	400	5	-	-	-	-	-	-	-	Approach road RHS
400	-	600	8	-	-	-	-	-	-	-	Proposed CD, approach RHS and well
600	-	800	8	-	-	-	-	-	-	-	Approach road RHS and LHS
800	-	1000	8	-	-	-	-	-	-	-	Proposed CD
1000	-	1200	8	-	-	-	-	-	-	-	-
1200	-	1400	8	-	-	-	-	-	-	-	Proposed CD and approach road RHS
1400	-	1600	8	-	-	-	-	-	-	-	Forest land
1600	-	1800	8	-	-	-	-	-	-	-	Forest land
1800	-	2000	8	-	-	-	-	-	-	-	Proposed CD
2000	-	2200	8	-	-	-	-	-	-	-	-
2200	-	2400	8	-	-	-	-	-	-	-	Proposed CD
2400	-	2600	8	-	-	-	-	-	-	-	2 CD proposed, Approach road RHS
2600	-	2800	8	-	-	-	-	-	-	-	Pond 100m
2800	-	3000	8	-	-	-	-	-	-	-	-
3000	-	3200	5	-	-	-	-	-	-	-	approach road LHS and RHS
3200	-	3400	5	-	-	-	-	-	-	-	Village area CC road proposed

Road Name: A.B. Road to Shahda

Block Name: Mhow

District Name: Indore

Total Length of the Road: 2.10 Km

WW. Climatic Conditions

Temperature	High: 48.2 **(May)** Low: 10 **°C (Dec)**
Humidity	High: 88 % **(Aug)** Low: 52 %
Rainfall Rainy Season	1145 mm/year **June** to **September**

XX.Location of the Road and Generic description of Environment

S. No.	Type of Ecosystem	Yes	No	Explanation
1.	Coastal area Mangrove (along roadside)		√	Distance from Coastline: km ( ) more than 50% ( ) less than 20%
2.	Type of Terrain (Plain/Hilly/ Mountainous etc.) *(Explain the topography of the area and how many km of the road are located in the hilly area)*		√	Altitude: The topography of the project road is flat at almost all locations.
3	Forest Area *(Explain whether the road passes through forest areas or located along the forest areas and distance from shoulder to the forest area)?*		√	Type of Vegetation: Legal Status of the Forest Area: *(Reserved, National Park, Sanctuaries, Unclassified, etc.)* No part of the project road passes through any forest area.
4	Wildlife *(Explain whether there are any wildlife species in the project area)*		√	Name of animals: **NA** Endangered species (if any): **None**
5	Inhabited Area	√		The project road is passing through village namely Shahda Ch-1800m to Ch-2100m village name Shah
6	Agricultural Land	√		Agriculture land lies on both side of agriculture between Ch-1300m to Ch-1700m both side of the proposed alignment.
7	Grazing grounds		√	No Barren land along the project road.
8	Barren Land	√		Barren land along the Ch-500m to Ch-1200m Both side of the proposed project road.

YY.Specific description of the Road Environment

(Note: Questions number 1, 4, 5, 7 and 8 must be answered after discussions with the local community people)

S. No.	Parameter/ Component	Yes	No	Explanation
1.	Are there any areas with landslide or erosion problems along the road? *(If yes, indicate the location (right or left side) and the chainage)*		√	No part of the project road lies in hilly terrain prone to landslide or erosion. ( ) No Secondary Information is available and Local Community is not aware of this matter
2.	Are there any lakes/swamps beside the road? *(If yes, list them indicating the location (right or left side) and the chainage)*		√	The pond has been not found on the proposed alignment
3.	Are there any nallas/streams/rivers etc. along/crossing the road? *(If yes, list them indicating the location (right, left or crossing) and the chainage*	√		A few water crossing has been observed between at ch-1200m to Ch-1300m CD has been proposed on above mentioned locations
4.	Are there problems of water stagnation and other drainage issues on or near the road? *(If yes, mention chainage)*	√		There are some points of water stagnation and other drainage issues on or near the road which is discussed as above in S.No.3. ( ) No Secondary Information is available and Local Community is not aware of this matter
5.	Is the area along the project road prone to flooding? *(If yes, mention flood level and frequency)*		√	There are not found any flood prone area along the project road. ( ) No Secondary Information is available and Local Community is not aware of this matter
6.	Are there any trees with a dbh of 30 cm or more within 10 m on either side from the center line of the road alignment? *(If yes attach list of trees indicating the location (right or left side)and the chainage)*	√		A total of 40 trees is falling within 10m of the center line of proposed alignment. The list of trees on giving in as Attachment I.
7.	Along the road and within 100m of the road shoulder, are there any faunal habitat areas, faunal breeding ground, bird migration area, or other similar areas? *(If yes, specify details of habitat with chainage)*		√	**( ) No Secondary Information is available and Local Community is not aware of this matter** No rare, endangered or threatened species have been found within 100 m of the road shoulder.
8.	Along the road and within 100m of the road shoulder is there any evidence of floral and faunal species that are classified as endangered species?		√	( ) No Secondary Information Available and Local Community is not aware of this matter **( ) No Secondary Information is available and Local Community is not aware of this matter**

S. No.	Parameter/ Component	Yes	No	Explanation
9.	Are there any utility structures[52] within 10 m on either side from the center line of the road alignment? *(If yes, attach list with chainage)*		√	There are few utility structures found as listed in **Attachment II**.
10.	Are there any religious, cultural or community structures/buildings[53] within 10 m on either side from the center line of the road alignment? *(If yes attach list with chainage)*	√		Few religious cultural or community structures/buildings were found as listed in **Attachment III.**

D. Public Consultation

No.	Consultation Activities	Yes	No	Remarks
1.	Consultation with local community was conducted before finalizing the alignment. *(Attach list of people met and dates)*	√		Yes, consulting held with the community.
2.	Any suggestion received in finalizing the alignment		√	
3.	If suggestions received, were they incorporated into the design.		√	

E. Please attach the following:

103) Sketch a map showing the bridge and the trees
104) List of trees indicating location (left or right side of the road) and chainage (as required under C. 6)
105) List of utility structures indicating location (left or right side of the road) and chainage (as required under C. 9)
106) List of community structures indicating location (left or right side of the road) and chainage (as required under C. 10)
107) Sketch of strip map of the road covering details of at least 10 m on either side from the center line of the road
108) Photographs of the project area showing at least 10 m on either side from center line of road alignment. Every 2 km or less of road must have at least 1 photograph.

[52] Water tap, hand pump, electric pole, telephone pole, water pipe and other similar strucutures.
[53] Mandir, Masjid, Church, religious/cultural/historical monuments, school, health center, public toilet and other similar structures.

List of Trees

Attachment I

Chainage (m)			Left	Right
500	-	600	6	-
600	-	700	5	-
700	-	800	5	-
800	-	900	4	1
900	-	1000	7	2
1000	-	1100	6	-
1300	-	1400	2	1
1700	-	1800	-	1
Total			35	5

Attachment II

List of Utilities

Chainage(m)			Left	Right
1200	-	1300	EP	-
1600	-	1700	ELC	ELC,HP

Attachment III

List of Community Structures

Chainage (m)			Left	Right
1700	-	1800	-	School
2100	-		Mosque-Center line	

Attachment-IV

Left					Chainage (m)			Right				
8 to 10m	6 to 8m	4 to 6m	2 to 4m	0 to 2m				0 to 2m	2 to 4m	4 to 6m	6 to 8m	8 to 10m
-	-	6 Trees	-	-	500	-	600	-	-	-	-	-
-	5 Trees	-	-	-	600	-	700	-	-	-	-	-
-	-	5 Trees	-	-	700	-	800	-	-	-	-	-
-	-	4 Trees	-	-	800	-	900	-	-	1 Tree	-	-
-	7 Trees	-	-	-	900	-	1000	-	-	-	2 Trees	-
-	6 Trees	-	-	-	1000	-	1100	-	-	-	-	-
-	-	2 Trees	-	-	1300	-	1400	-	-	1Tree	-	-
-	-	-	-	-	1700	-	1800	-	-	1Tree	-	-
-	-	EP	-	-	1200	-	1300	-	-		-	-
-	-		-	-	1600	-	1700	-	-	ELC, HP	-	-
-	-	-	-	-	1700	-	1800	-	-		-	School(50m)
-	-	Mosque	-	-	2100	-	2200	-	-	-	-	-

Attachment V

Photo Plates

Ch-00m Start point

Ch-200m

Ch-500m Army area

Ch-1200m Proposed CD

Ch-1800m Habitation area

Community Consultation

Transect walk

Chainage wise Transect Walk Findings

Chainage (M)			Existing Land Width (m)	Additional Land Required		Losses		Type of loss		Village	Remarks /Suggestion
				LHS	RHS	LHS	RHS	LHS	RHS		
0	-	100	8	-	-	-	-	-	-	Army Area	Army House
100	-	200	8	-	-	-	-	-	-	"	Army House
200	-	300	8	-	-	-	-	-	-	"	Army House
300	-	400	8	-	-	-	-	-	-	-	-
400	-	500	8	-	-	-	-	-	-	-	-
500	-	600	8	-	-	-	-	-	-	-	-
600	-	700	8	-	-	-	-	-	-	-	-
700	-	800	8	-	-	-	-	-	-	-	-
800	-	900	8	-	-	-	-	-	-	-	-
900	-	1000	8	-	-	-	-	-	-	-	-
1000	-	1100	8	-	-	-	-	-	-	-	-
1100	-	1200	8	-	-	-	-	-	-	-	-
1200	-	1300	8	-	-	-	-	-	-	-	CD Propose , EP
1300	-	1400	8	-	-	-	-	-	-	-	-
1400	-	1500	8	-	-	-	-	-	-	-	-
1500	-	1600	8	-	-	-	-	-	-	-	-
1600	-	1700	8	-	-	-	-	-	-	-	ELC,HP
1700	-	1800	8	-	-	-	-	-	-	-	School
1800	-	1900	5	-	-	-	-	-	-	Shahda	Habitation, CC Propose
1900	-	2000	5	-	-	-	-	-	-	"	Habitation, CC Propose
2000	-	2100	5	-	-	-	-	-	-	"	Habitation, CC Propose

Road Name: Dalauda- Digon road to Pinda

Block Name: Mandsour

District Name: Mandsour

Total Length of the Road: 3.10 km

ZZ. Climatic Conditions

Temperature	High: 42.1 °C **(May)** Low: 4.9 °C **(Dec)**
Humidity	High: 55 % **(Aug)** Low: 20 % **(Dec)**
Rainfall Rainy Season	870 mm/year **June** to **September**

AAA. Location of the Road and Generic description of Environment

S. No.	Type of Ecosystem	Yes	No	Explanation
1.	Coastal area Mangrove (along roadside)		√	Distance from Coastline: km ( ) more than 50% ( ) less than 20%
2.	Type of Terrain-(Plain/Hilly/ Mountainous etc.) *(Explain the topography of the area and how many km of the road are located in the hilly area)*		√	Altitude: The topography of the project road is flat at almost all locations.
3	Forest Area *(Explain whether the road passes through forest areas or located along the forest areas and distance from shoulder to the forest area)?*		√	Type of Vegetation: Legal Status of the Forest Area: Sanctuaries *(Reserved, National Park, Sanctuaries, Unclassified, etc.)* No part of the project road passes through any forest area.
4	Wildlife *(Explain whether there are any wildlife species in the project area)*		√	Name of animals: **NA** Endangered species (if any): **None**
5	Inhabited Area	√		Inhabited area starts at Ch-2400m to Ch-3100m with connecting village Pinda
6	Agricultural Land	√		The agriculture land was found at Ch-00m to Ch-3000m both side along the proposed alignment
7	Grazing grounds		√	Grazing ground was not found along the proposed alignment.
8	Barren Land		√	No Barren land along the project road.

BBB. Specific description of the Road Environment

(Note: Questions number 1, 4, 5, 7 and 8 must be answered after discussions with the local community people)

S. No.	Parameter/ Component	Yes	No	Explanation
1.	Are there any areas with landslide or erosion problems along the road? *(If yes, indicate the location (right or left side) and the chainage)*		√	No part of the project road lies in hilly terrain prone to landslide or erosion. However, sufficient cross drainage structures will be constructed to avoid any erosion. ( ) No Secondary Information is available and Local Community is not aware of this matter
2.	Are there any lakes/swamps beside the road? *(If yes, list them indicating the location (right or left side) and the chainage)*		√	There was not found any pond along the proposed alignment.
3.	Are there any nallas/streams/rivers etc. along/crossing the road? *(If yes, list them indicating the location (right, left or crossing) and the chainage*	√		There was found some water crossing points at Ch-800m to Ch-900m has EX CD.
4.	Are there problems of water stagnation and other drainage issues on or near the road? *(If yes, mention chainage)*	√		There are at some points of water stagnation and other drainage issues on or near the road which is discussed above S.No.3. ( ) No Secondary Information is available and Local Community is not aware of this matter
5.	Is the area along the project road prone to flooding? *(If yes, mention flood level and frequency)*		√	There are not found any flood prone area along the project road. ( ) No Secondary Information is available and Local Community is not aware of this matter
6.	Are there any trees with a dbh of 30 cm or more within 10 m on either side from the center line of the road alignment? *(If yes attach list of trees indicating the location (right or left side)and the chainage)*	√		There are 08 trees of dbh of 30 cm or more as attached in **Attachment I.**
7.	Along the road and within 100m of the road shoulder, are there any faunal habitat areas, faunal breeding ground, bird migration area, or other similar areas? *(If yes, specify details of habitat with chainage)*		√	There was not found any faunal habitat at 100 m of the road shoulder. ( ) No Secondary Information is available and Local Community is not aware of this matter
8.	Along the road and within 100m of the road shoulder is there any evidence of floral and faunal species that are classified as endangered species?		√	No rare, endangered or threatened species were found within 100 m of the road shoulder. ( ) No Secondary Information Available and Local Community is not aware of this matter

S. No.	Parameter/ Component	Yes	No	Explanation
9.	Are there any utility structures[64] within 10 m on either side from the center line of the road alignment? *(If yes, attach list with chainage)*	√		There are few utility structures found as listed in **Attachment II**.
10.	Are there any religious, cultural or community structures/buildings[65] within 10 m on either side from the center line of the road alignment? *(If yes attach list with chainage)*	√		Few religious cultural or community structures/buildings were found as listed in **Attachment III**.

D. Public Consultation

No.	Consultation Activities	Yes	No	Remarks
1.	Consultation with local community was conducted before finalizing the alignment. *(Attach list of people met and dates)*	√		Yes, consulting with the community.
2.	Any suggestion received in finalizing the alignment		√	NA
3.	If suggestions received, were they incorporated into the design.		√	NA

E. Please attach the following:

109) Sketch a map showing the bridge and the trees
110) List of trees indicating location (left or right side of the road) and chainage (as required under C. 6)
111) List of utility structures indicating location (left or right side of the road) and chainage (as required under C. 9)
112) List of community structures indicating location (left or right side of the road) and chainage (as required under C. 10)
113) Sketch of strip map of the road covering details of at least 10 m on either side from the center line of the road
114) Photographs of the project area showing at least 10 m on either side from center line of road alignment. Every 2 km or less of road must have at least 1 photograph.

[64] Water tap, hand pump, electric pole, telephone pole, water pipe and other similar strucutures.
[65] Mandir, Masjid, Church, religious/cultural/historical monuments, school, health center, public toilet and other similar structures.

Attachment I

List of Trees

Chainage (m)			Left	Right
0	-	100	-	2
500	-	600	1	-
600	-	700	1	-
900	-	1000	1	-
1600	-	1700	1	-
1700	-	1800	2	-
Total			6	2

Attachment II

List of Utilities

Chainage (m)			Left	Right
300	-	400	-	well
700	-	800	well	-
900	-	1000	well	-
1100	-	1200	well	-
1200	-	1300	well	-
1600	-	1700	well	well
1700	-	1800	-	well
2000	-	2100	-	well
2100	-	2200	well	well
2800	-	2900	-	well

Attachment III

List of Community Structures

Chainage (m)			Left	Right
3000	-	3100	-	School

Attachment-IV

Left					Chainage (m)			Right				
8 to 10m	6 to 8m	4 to 6m	2 to 4m	0 to 2m				0 to 2m	2 to 4m	4 to 6m	6 to 8m	8 to 10m
-	-	-	-	-	0	-	100	-	-	2 tree	-	-
-	-	-	-	-	300	-	400	-	-	-	-	Well
-	-	1 tree	-	-	500	-	600	-	-	-	-	-
-	-	-	1 tree	-	600	-	700	-	-	-	-	-
Well	-	-	-	-	700	-	800	-	-	-	-	-
Well, 1 tree	-	-	-	-	900	-	1000	-	-	Well	-	-
Well	-	-	-	-	1100	-	1200	-	-	-	-	-
Well	-	-	-	-	1200	-	1300	-	-	-	-	-
Well	, 1 tree	-	-	-	1600	-	1700	-	-	-	Well	-
-	, 2 tree	-	-	-	1700	-	1800	-	-	-	-	Well
Well	-	-	-	-	2000	-	2100	-	-	-	-	Well
-	-	-	-	-	2800	-	2900	-	-	-	-	Well
-	-	-	-	-	3000	-	3100	-	-	-	-	School

Attachment V

Photo Plates

Ch-00m starting point

CH-200m to CH-300m ELC

CH-500m to CH-600m junction

CH-700m junction LHS

CH-900m EX CD

CH-1000m HT LHS

CH-1700m pipe proposed

Transect walk

CH-3000m to CH-3100m School

CH-3100m END point

Community Consultation

Community Consultation

Chainage wise Transect Walk Findings

Chainage (M)			Existing Land Width (m)	Additional Land Required		Losses		Type of loss		Village	Remarks /Suggestion
				LHS	RHS	LHS	RHS	LHS	RHS		
0	-	100	8	-	-	-	-	-	-	Pinda	-
100	-	200	8	-	-	-	-	-	-	-	-
200	-	300	8	-	-	-	-	-	-	-	ELC
300	-	400	8	-	-	-	-	-	-	-	junction LHS
400	-	500	8	-	-	-	-	-	-	-	ELC
500	-	600	8	-	-	-	-	-	-	-	junction RHS
600	-	700	8	-	-	-	-	-	-	-	-
700	-	800	8	-	-	-	-	-	-	-	junction LHS , pipe
800	-	900	8	-	-	-	-	-	-	-	EX CD
900	-	1000	8	-	-	-	-	-	-	-	-
1000	-	1100	8	-	-	-	-	-	-	-	HT, TP
1100	-	1200	8	-	-	-	-	-	-	-	-
1200	-	1300	8	-	-	-	-	-	-	-	-
1300	-	1400	8	-	-	-	-	-	-	-	junction LHS
1400	-	1500	8	-	-	-	-	-	-	-	-
1500	-	1600	8	-	-	-	-	-	-	-	-
1600	-	1700	8	-	-	-	-	-	-	-	Pipe
1700	-	1800	8	-	-	-	-	-	-	-	junction LHS & RHS
1800	-	1900	8	-	-	-	-	-	-	-	pipe
1900	-	2000	8	-	-	-	-	-	-	-	HT
2000	-	2100	8	-	-	-	-	-	-	-	-
2100	-	2200	8	-	-	-	-	-	-	-	junction LHS
2200	-	2300	8	-	-	-	-	-	-	-	-
2300	-	2400	8	-	-	-	-	-	-	-	-
2400	-	2500	8	-	-	-	-	-	-	-	junction LHS
2500	-	2600	8	-	-	-	-	-	-	-	-
2600	-	2700	8	-	-	-	-	-	-	-	-
2700	-	2800	8	-	-	-	-	-	-	-	junction RHS
2800	-	2900	8	-	-	-	-	-	-	-	-
2900	-	3000	8	-	-	-	-	-	-	-	HT, ELC
3000	-	3100	8	-	-	-	-	-	-	-	School

Road Name: Choraldam Road to Buralia

Block Name: Mhow

District Name: Indore

Total Length of the Road: 5.60 km

CCC. Climatic Conditions

Temperature	High: 40.4 **(May)** Low: 9.8 **°C (Dec)**
Humidity	High: 58 % **(Aug)** Low: 23 **%**
Rainfall Rainy Season	890 mm/year **June** to **September**

DDD. Location of the Road and Generic description of Environment

S. No.	Type of Ecosystem	Yes	No	Explanation
1.	Coastal area Mangrove (along roadside)		√	Distance from Coastline: km ( ) more than 50% ( ) less than 50%
2.	Type of Terrain-(Plain/Hilly/ Mountainous etc.) *(Explain the topography of the area and how many km of the road are located in the hilly area)*		√	Altitude: The topography of the project road is flat at almost all locations.
3	Forest Area *(Explain whether the road passes through forest areas or located along the forest areas and distance from shoulder to the forest area)?*	√		There was found forest area between Ch-00m to Ch-3800m both side on the proposed alignment. Type of Vegetation: Legal Status of the Forest Area: (Reserved, National Park, Sanctuaries, Unclassified, etc.)
4.	Wildlife *(Explain whether there are any wildlife species in the project area)*		√	Name of animals: NA Endangered species (if any): None
5.	Inhabited Area	√		The project road is passing through village namely Nachanvore and Buralia between Ch-4600m to Ch-4800m, and Ch-5400 to Ch-5600m respectively.
6	Agricultural Land	√		Agriculture land lies agriculture between Ch-4000m to CH-5200m and RHS proposed alignment.
7.	Grazing grounds		√	The project road is not passing through grazing land.
8.	Barren Land		√	The project road is not passing through the barren land.

Specific description of the Road Environment

(Note: Questions number 1, 4, 5, 7 and 8 must be answered after discussions with the local community people)

S. No.	Parameter/ Component	Yes	No	Explanation
1.	Are there any areas with landslide or erosion problems along the road? *(If yes, indicate the location (right or left side) and the chainage)*		√	No part of the project road lies in hilly terrain prone to landslide or erosion. ( ) No Secondary Information is available and local Community is not aware of this matter
2.	Are there any lakes/swamps beside the road? *(If yes, list them indicating the location (right or left side) and the chainage.*	√		The pond has been found on the of project road between Ch-4800m to 5400m which is far away 15m from the proposed alignment
3	Are there any nallas/streams/rivers etc. along/crossing the road? *(If yes, list them indicating the location (right, left or crossing) and the chainage)*	√		A few water crossing has been observed between Ch-00m to Ch-200m, Ch-200m to Ch-400m, Ch-600m to Ch-800m, Ch-800m to Ch-1000m, Ch-1200m to Ch-1400m, Ch-1400m to Ch-1600m, Ch-1600m to Ch-1800m, CH-2000m to Ch-2200m, Ch-2200m to Ch-2400m Ch-2600m to ch-2800m, Ch-2800m to Ch-3000m, Ch-3200m to Ch-3400m, Ch-3600m to Ch-3800m, Ch-3800m to Ch-4000m, Ch-4200m to Ch-4400m, Ch-4600m to Ch-4800m, Ch-5000m to Ch-5200m CDs have been proposed on above mentioned locations.
4.	Are there problems of water stagnation and other drainage issues on or near the road? *(If yes, mention chainage)*	√		There are some points of water stagnation and other drainage issues on or near the road which is discussed as above in S.No.3. ( ) No Secondary Information is available and Local Community is not aware of this matter
5.	Is the area along the project road prone to flooding? *(If yes, mention flood level and frequency)*		√	Apart from above mentioned location no other area is flood prone along the alignment. (√) No Secondary Information is available and Local Community is not aware of this matter
6.	Are there any trees with a dbh of 30 cm or more within 10 m on either side of the center line of the road alignment? *(If yes attach list of trees indicating the location (right or left side)and the chainage)*	√		A total of 19 trees are falling within 10m of the center line of proposed alignment. The list of trees on giving in as **Attachment I.**
7.	Along the road and within 100m of the road shoulder, are there any faunal habitat areas, faunal breeding ground, bird migration area, or other similar areas? *(If yes, specify details of habitat with chainage)*		√	( ) No Secondary Information is available and Local Community is not aware of this matter
8.	Along the road and within 100m of the road shoulder			No rare, endangered or threatened species have been found within 100 m of the road

S. No.	Parameter/ Component	Yes	No	Explanation
	is there any evidence of floral and faunal species that are classified as endangered species?		√	shoulder. ( ) No Secondary Information Available and Local Community is not aware of this matter

9.	Are there any utility structures[56] within 10 m on either side from the center line of the road alignment? *(If yes, attach list with chainage)*	√		There are few utility structures found as listed in **Attachment II.**
10.	Are there any religious, cultural or community structures/buildings[57] within 10 m on either side from the center line of the road alignment? *(If yes attach list with chainage)*	√		Few religious cultural or community structures/buildings were found as listed in **Attachment III.**

D. Public Consultation

No.	Consultation Activities	Yes	No	Remarks
1.	Consultation with local community was conducted before finalizing the alignment. *(Attach list of people met and dates)*	√		Yes, consulting held with the community.
2.	Any suggestion received in finalizing the alignment		√	NA
3.	If suggestions received, were they incorporated into the design.		√	NA

E. Please attach the following:

115) Sketch a map showing the bridge and the trees
116) List of trees indicating location (left or right side of the road) and chainage (as required under C. 6)
117) List of utility structures indicating location (left or right side of the road) and chainage (as required under C. 9)
118) List of community structures indicating location (left or right side of the road) and chainage (as required under C. 10)
119) Sketch of strip map of the road covering details of at least 10 m on either side from the center line of the road
120) Photographs of the project area showing at least 10 m on either side from center line of road alignment. Every 2 km or less of road must have at least 1 photograph.

[56] Water tap, hand pump, electric pole, telephone pole, water pipe and other similar structures.
[57] Mandir, Masjid, Church, religious/cultural/historical monuments, school, health center, public toilet and other similar structures.

Attachment I

List of Trees

Chainage (m)			Left	Right
00	-	200	-	2
200	-	400	1	1
1200	-	1400	1	-
1400	-	1600	3	-
1600	-	1800	-	1
1800	-	2000	2	-
2400	-	2600	-	3
3000	-	3200	2	1
4800	-	5000	-	1
5400	-	5600	1	-
Total			10	9

Attachment II

List of Utilities

Chainage (m)			Left	Right
3800	-	4000	HTL	HTL
4800	-	5000	ELC	ELC
5000	-	5200	HTL	HTL

Attachment III

List of Community Structures

Chainage (m)			Left	Right
4200	-	4400	-	School
5400	-	5600	School	-

Attachment-IV

Left					Chainage (m)			Right				
8 to 10m	6 to 8m	4 to 6m	2 to 4m	0 to 2m				0 to 2m	2 to 4m	4 to 6m	6 to 8m	8 to 10m
-	-	-	-	-	0	-	200	-	-	-	2 trees	-
-	-	1 Tree	-	-	200	-	400	-	-	1 Tree	-	-
-	-	1 Tree	-	-	1200	-	1400	-	-	-	-	-
-	3 Trees	-	-	-	1400	-	1600	-	-	-	-	-
-	-	-	-	-	1600	-	1800	-	-	-	1 Tree	-
-	2 Trees	-	-	-	1800	-	2000	-	-	-	-	-
-	-	-	-	-	2400	-	2600	-	-	-	3 Trees	-
-	2 Trees	-	-	-	3000	-	3200	-	-	1 Tree	-	-
-	-	-	-	-	4200	-	4400	-	-	-	-	School (20m)
-	-	-	-	-	4800	-	5000	-	-	-	-	1 Tree
School (30m)	1 Tree	-	-	-	5400	-	5600	-	-	-	-	-

Attachment V

Photo Plates

Ch-00m Start point

Ch-200m CD proposed

Ch-1000m CD proposed

Ch-3000m CD proposed

Ch-3400m CD proposed

Ch-5900m End point

Transect walk

Chainage (M)			Existing Land Width (m)	Additional Land Required		Losses		Type of loss		Village	Remarks /Suggestion
				LHS	RHS	LHS	RHS	LHS	RHS		
0	-	200	8	-	-	-	-	-	-	-	CD Proposed
200	-	400	8	-	-	-	-	-	-	-	CD Proposed
400	-	600	8	-	-	-	-	-	-	-	-
600	-	800	8	-	-	-	-	-	-	-	CD Proposed
800	-	1000	8	-	-	-	-	-	-	-	CD Proposed
1000	-	1200	8	-	-	-	-	-	-	-	-
1200	-	1400	8	-	-	-	-	-	-	-	CD Proposed
1400	-	1600	8	-	-	-	-	-	-	-	CD Proposed
1600	-	1800	8	-	-	-	-	-	-	-	CD Proposed
1800	-	2000	8	-	-	-	-	-	-	-	-
2000	-	2200	8	-	-	-	-	-	-	-	CD Proposed
2200	-	2400	8	-	-	-	-	-	-	-	CD Proposed
2400	-	2600	8	-	-	-	-	-	-	-	-
2600	-	2800	8	-	-	-	-	-	-	-	CD Proposed
2800	-	3000	8	-	-	-	-	-	-	-	CD Proposed
3000	-	3200	8	-	-	-	-	-	-	-	-
3200	-	3400	8	-	-	-	-	-	-	-	CD Proposed
3400	-	3600	8	-	-	-	-	-	-	-	-
3600	-	3800	8	-	-	-	-	-	-	-	CD Proposed
3800	-	4000	8	-	-	-	-	-	-	-	CD Proposed, HT
4000	-	4200	8	-	-	-	-	-	-	-	-
4200	-	4400	8	-	-	-	-	-	-	-	CD Proposed, School
4400	-	4600	8	-	-	-	-	-	-	-	-
4600	-	4800	8	-	-	-	-	-	-	Nachanvore	CD Proposed, Habitation
4800	-	5000	8	-	-	-	-	-	-	-	ELC, Pond
5000	-	5200	8	-	-	-	-	-	-	-	HT,CD Proposed, Pond
5200	-	5400	8	-	-	-	-	-	-	-	Pond
5400	-	5600	5	-	-	-	-	-	-	Buralia	School, Habitation, CC road Proposed

Road Name: Dosigaon to Borana

Block Name: Ratlam

District Name: Ratlam

Total Length of the Road: 1.2 km

EEE. Climatic Conditions

Temperature	High: 48.2 **(May)** Low: 10 **°C (Dec)**
Humidity	High: 88 **% (Aug)** Low: 52 **%**
Rainfall Rainy Season	1145 mm/year **June** to **September**

FFF. Location of the Road and Generic description of Environment

S. No.	Type of Ecosystem	Yes	No	Explanation
1.	Coastal area Mangrove (along roadside)		√	Distance from Coastline: km ( ) more than 50% ( ) less than 20%
2.	Type of Terrain-(Plain/Hilly/ Mountainous etc.) *(Explain the topography of the area and how many km of the road are located in the hilly area)*		√	Altitude: The topography of the project road is flat at almost all locations.
4.	Forest Area *(Explain whether the road passes through forest areas or located along the forest areas and distance from shoulder to the forest area)?*		√	Type of Vegetation: Legal Status of the Forest Area: *(Reserved, National Park, Sanctuaries, Unclassified, etc.)* No part of the project road passes through any forest area.
5.	Wildlife *(Explain whether there are any wildlife species in the project area)*		√	Name of animals: **NA** Endangered species (if any): **None**
6.	Inhabited Area	√		Inhabited area starts at Ch-00mto Ch-100m connecting village Dosigaon and at Ch-800m to Ch-1200m with connecting village Borana.
7.	Agricultural Land	√		The agriculture land lies between Ch-100m to Ch-900m.
8.	Grazing grounds		√	Grazing ground was not found along the proposed alignment.
9.	Barren Land		√	No Barren land along the project road.

GGG. Specific description of the Road Environment

(Note: Questions number 1, 4, 5, 7 and 8 must be answered after discussions with the local community people)

S. No.	Parameter/ Component	Yes	No	Explanation
1.	Are there any areas with landslide or erosion problems along the road? *(If yes, indicate the location (right or left side) and the chainage)*		√	No part of the project road lies in hilly terrain prone to landslide or erosion. However, sufficient cross drainage structures will be constructed to avoid any erosion. ( ) No Secondary Information is available and Local Community is not aware of this matter
2.	Are there any lakes/swamps beside the road? *(If yes, list them indicating the location (right or left side) and the chainage)*		√	There was not found any pond along the proposed alignment.
3.	Are there any nallas/streams/rivers etc. along/crossing the road? *(If yes, list them indicating the location (right, left or crossing) and the chainage*	√		There was found some water crossing structures at Ch-200m to Ch-300m, Ch- 500m to Ch-600m, CH-700m to Ch-800m has proposed CD.
4.	Are there problems of water stagnation and other drainage issues on or near the road? *(If yes, mention chainage)*	√		There are at some points of water stagnation and other drainage issues on or near the road which is discussed above S.No.3. ( ) No Secondary Information is available and Local Community is not aware of this matter
5.	Is the area along the project road prone to flooding? *(If yes, mention flood level and frequency)*		√	There are not found any flood prone area along the project road. ( ) No Secondary Information is available and Local Community is not aware of this matter
6.	Are there any trees with a dbh of 30 cm or more within 10 m on either side from the center line of the road alignment? *(If yes attach list of trees indicating the location (right or left side)and the chainage)*	√		There are 48 trees of dbh of 30 cm or more as attached in **Attachment I.**
7.	Along the road and within 100m of the road shoulder, are there any faunal habitat areas, faunal breeding ground, bird migration area, or other similar areas? *(If yes, specify details of habitat with chainage)*		√	There was not found any faunal habitat at 100 m of the road shoulder. ( ) No Secondary Information is available and Local Community is not aware of this matter
8.	Along the road and within 100m of the road shoulder is there any evidence of floral and faunal species that are classified as endangered species?		√	No rare, endangered or threatened species were found within 100 m of the road shoulder. ( ) No Secondary Information Available and Local Community is not aware of this matter

S. No.	Parameter/ Component	Yes	No	Explanation
9.	Are there any utility structures[58] within 10 m on either side from the center line of the road alignment? *(If yes, attach list with chainage)*	√		There are few utility structures found as listed in **Attachment II**.
10.	Are there any religious, cultural or community structures/buildings[59] within 10 m on either side from the center line of the road alignment? *(If yes attach list with chainage)*	√		Few religious cultural or community structures/buildings were found as listed in **Attachment III**.

D. Public Consultation

No.	Consultation Activities	Yes	No	Remarks
1.	Consultation with local community was conducted before finalizing the alignment. *(Attach list of people met and dates)*	√		Yes, consulting with the community.
2.	Any suggestion received in finalizing the alignment		√	NA
3.	If suggestions received, were they incorporated into the design.		√	NA

E. Please attach the following:

121) Sketch a map showing the bridge and the trees
122) List of trees indicating location (left or right side of the road) and chainage (as required under C. 6)
123) List of utility structures indicating location (left or right side of the road) and chainage (as required under C. 9)
124) List of community structures indicating location (left or right side of the road) and chainage (as required under C. 10)
125) Sketch of strip map of the road covering details of at least 10 m on either side from the center line of the road
126) Photographs of the project area showing at least 10 m on either side from center line of road alignment. Every 2 km or less of road must have at least 1 photograph.

[58] Water tap, hand pump, electric pole, telephone pole, water pipe and other similar strucutures.
[59] Mandir, Masjid, Church, religious/cultural/historical monuments, school, health center, public toilet and other similar structures.

Attachment I

List of Trees

Chainage (m)			Left	Right
100	-	200	1	1
200	-	300	-	4
300	-	400	-	2
400	-	500	1	1
500	-	600	15	-
600	-	700	2	-
700	-	800	2	-
800	-	900	3	1
900	-	1000	-	2
1000	-	1100	4	2
1100	-	1200	5	2
TOTAL			33	15

Attachment II

List of Utilities

Chainage (m)			Left	Right
800	-	900	-	EP shifting
900	-	1000	-	EP shifting, near the well support wall proposed

Attachment III

List of Community Structures

Chainage (m)			Left	Right
400	-	500	-	Furnal place
600	-	700	Factory	-
700	-	800	School	-
900	-	1000	2 temple	temple

Attachment-IV

Left					Chainage (m)			Right				
8 to 10m	6 to 8m	4 to 6m	2 to 4m	0 to 2m				0 to 2m	2 to 4m	4 to 6m	6 to 8m	8 to 10m
-	1 tree	-	-	-	100	-	200	-	1 tree	-	-	-
-	-	-	-	-	200	-	300	-	4 tree	-	-	-
-	-	-	-	-	300	-	400	-	2 tree	-	-	-
-	-	-	-	1 tree	400	-	500	-	1 tree	-	-	Furnal place
-	8 tree	6 tree	1 tree	-	500	-	600	-	-	-	-	-
factory (20m)	-	-	2 tree	-	600	-	700	-	-	-	-	-
School	-	-	1 tree	1 tree	700	-	800	-	-	-	-	-
-	-	-	3 tree	-	800	-	900	EP	1 tree	-	-	-
2 temple	-	-	-	-	900	-	1000	EP	2 tree, temple	-	-	-
-	-	1 tree	1 tree	2 tree	1000	-	1100	1 tree, well	-	1 tree	-	-
-	-	4 tree	1 tree	-	1100	-	1200	-	-	1 tree	1 tree	-

Attachment V

Photo Plates

Ch-00m start point of the road

Ch-100m to Ch-200m

Ch-200m to Ch-300m existing CD

Ch-700m to Ch-800m existing CD

Govt Middle School

Ch-800m to Ch-900m both side habitation

Ch-900m to Ch-1000m RHS well

Ch-1000m to 1100m LHS tree loss

Community consultation

Ch-1100m t oCh-1200m LHS curve

Transect walk

Road Safety awareness

Chainage wise Transect Walk Findings

Chainage (M)			Existing Land Width (m)	Additional Land Required		Losses		Type of loss		Village	Remarks/Suggestion
				LHS	RHS	LHS	RHS	LHS	RHS		
0	-	100	8	-	-	-	-	-	-	-	Habitation areas of the Dosi village
100	-	200	8	-	-	-	-	-	-	-	-
200	-	300	8	-	-	-	-	-	-	-	Existing CD and CD proposed
300	-	400	8	-	-	-	-	-	-	-	RHS curve
400	-	500	8	-	-	-	-	-	-	-	LHS approach road proposed
500	-	600	8	-	-	-	-	-	-	Borwana	CD proposed and LHS RHS curve
600	-	700	8	-	-	-	-	-	-	-	LHS factory at 20m, approach road proposed
700	-	800	8	-	-	-	-	-	-	-	LHS School, required speed breaker and approach proposed, existing CD, proposed new CD
800	-	900	5	-	-	-	-	-	-	Habitation	CC road proposed
900	-	1000	5	-	-	-	-	-	-	-	RHS blind curve required 2 speed breaker proposed, CC road proposed
1000	-	1100	4	0.5	0.5	0.5	0.5	tree	tree	-	tree can be save to paint with color for safety
1100	-	1200	8	-	-	-	-	-	-	-	Water tank and habitation end point

Road Name: Baldevgarh Kakarwaha Road to Atariya

Block Name:Tikamgarh

District Name: Tikamgarh

Total Length of the Road: 6.10 km

HHH. Climatic Conditions

Temperature	High: 47 **(May)** Low: 29 °C **(Dec)**
Humidity	High: 70 % **(Aug)** Low: 20 **% (Dec)**
Rainfall Rainy Season	1200.6 mm/year **June** to **September**

III. Location of the Road and Generic description of Environment

S. No.	Type of Ecosystem	Yes	No	Explanation
1.	Coastal area Mangrove (along roadside)		√	Distance from Coastline: km ( ) more than 50% ( ) less than 20%
2.	Type of Terrain (Plain/Hilly/ Mountainous etc.) *(Explain the topography of the area and how many km of the road are located in the hilly area)*		√	Altitude: The topography of the project road is flat at almost all locations.
3	Forest Area *(Explain whether the road passes through forest areas or located along the forest areas and distance from shoulder to the forest area)?*		√	Type of Vegetation: Legal Status of the Forest Area: (Reserved, National Park, Sanctuaries, Unclassified, etc.)
4.	Wildlife *(Explain whether there are any wildlife species in the project area)*		√	Name of animals: NA Endangered species (if any): None
5.	Inhabited Area	√		The project road is passing through village name Atariya between Ch-5400m to Ch-6000m
6	Agricultural Land	√		Agriculture land lies on both side of agriculture between Ch-400m to Ch-4200m.
7.	Grazing grounds		√	The project road is passing through no grazing land .
8.	Barren Land		√	The project road is not passing through the barren land.

Specific description of the Road Environment

(Note: Questions number 1, 4, 5, 7 and 8 must be answered after discussions with the local community people)

S. No.	Parameter/ Component	Yes	No	Explanation
1.	Are there any areas with landslide or erosion problems along the road? *(If yes, indicate the location (right or left side) and the chainage)*		√	No part of the project road lies in hilly terrain prone to landslide or erosion. ( ) No Secondary Information is available and local Community is not aware of this matter
2.	Are there any lakes/swamps beside the road? *(If yes, list them indicating the location (right or left side) and the chainage.*		√	The pond has been not found on the proposed alignment
3	Are there any nallas/streams/rivers etc. along/crossing the road? *(If yes, list them indicating the location (right, left or crossing) and the chainage)*	√		A few water crossing points has been Ch-400m to Ch-600m, Ch-600 to Ch-800m, Ch-1600 to Ch-1800m has been proposed CDs on above mentioned locations and Ch- 2400m to 2600m, Ch-3200m to Ch-3400m, Ch-3800m to Ch-4000m, Ch-4400m to Ch-4600m has been existing CDs.
4.	Are there problems of water stagnation and other drainage issues on or near the road? *(If yes, mention chainage)*		√	There are some points of water stagnation and other drainage issues on or near the road which is discussed as above in S.No.3. ( ) No Secondary Information is available and Local Community is not aware of this matter
5.	Is the area along the project road prone to flooding? *(If yes, mention flood level and frequency)*		√	Apart from above mentioned locations no other area is flood prone along the alignment. (√) No Secondary Information is available and Local Community is not aware of this matter
6.	Are there any trees with a dbh of 30 cm or more within 10 m on either side of the center line of the road alignment? *(If yes attach list of trees indicating the location (right or left side)and the chainage)*	√		A total of 05 trees is falling within 10m of the center line of proposed alignment. The list of trees on giving in as **Attachment I.**
7.	Along the road and within 100m of the road shoulder, are there any faunal habitat areas, faunal breeding ground, bird migration area, or other similar areas? *(If yes, specify details of habitat with chainage)*		√	**( ) No Secondary Information is available and Local Community is not aware of this matter**
8.	Along the road and within 100m of the road shoulder is there any evidence of floral and faunal species that are classified as endangered species?		√	No rare, endangered or threatened species have been found within 100 m of the road shoulder. ( ) No Secondary Information Available and Local Community is not aware of this matter

9.	Are there any utility structures[80] within 10 m on either side from the center line of the road alignment? *(If yes, attach list with chainage)*	√		There are few utility structures found as listed in **Attachment II**.
10.	Are there any religious, cultural or community structures/buildings[81] within 10 m on either side from the center line of the road alignment? *(If yes attach list with chainage)*	√		Few religious cultural or community structures/buildings were found as listed in **Attachment III**.

D. Public Consultation

No.	Consultation Activities	Yes	No	Remarks
1.	Consultation with local community was conducted before finalizing the alignment. *(Attach list of people met and dates)*	√		Yes, consulting held with the community.
2.	Any suggestion received in finalizing the alignment		√	NA
3.	If suggestions received, were they incorporated into the design.		√	NA

E. Please attach the following:

127) Sketch a map showing the bridge and the trees
128) List of trees indicating location (left or right side of the road) and chainage (as required under C. 6)
129) List of utility structures indicating location (left or right side of the road) and chainage (as required under C. 9)
130) List of community structures indicating location (left or right side of the road) and chainage (as required under C. 10)
131) Sketch of strip map of the road covering details of at least 10 m on either side from the center line of the road
132) Photographs of the project area showing at least 10 m on either side from center line of road alignment. Every 2 km or less of road must have at least 1 photograph.

[80] Water tap, hand pump, electric pole, telephone pole, water pipe and other similar strucutures.
[81] Mandir, Masjid, Church, religious/cultural/historical monuments, school, health center, public toilet and other similar structures.

Attachment I

List of Trees

Chainage (m)			Left	Right
0	-	200	1	-
1200	-	1400	1	1
3800	-	4000	1	-
4200	-	4400	-	1
Total			3	2

Attachment II

List of Utilities

Chainage (m)			Left	Right
3800	-	4000	ELC	ELC
4800	-	5000	ELC	ELC
5800	-	6000	EP	-

Attachment III

List of Community Structures

Chainage (m)			Left	Right
6100	-	-	-	School

Attachment-IV

Left					Chainage (m)			Right				
8 to 10m	6 to 8m	4 to 6m	2 to 4m	0 to 2m				0 to 2m	2 to 4m	4 to 6m	6 to 8m	8 to 10m
-	-	-	1 Tree	-	0	-	200	-	-	-	-	-
-	-	-	1 Tree	-	1200	-	1400	-	1 Tree	-	-	-
-	-	-	1 Tree	-	3800	-	4000	-	-	-	-	-
-	-	-	-	-	4200	-	4400	-	1 Tree	-	-	-
-	-	-	-	-	4800	-	5000	-	-	-	-	-
-	-	-	EP	-	5800	-	6000	-	-	-	-	-
-	-	-	-	-	6100	-	-	-	-	-	School	-

Attachment V

Photo Plate

Ch-00m Start point

Ch-400m CD proposed

Ch-1400m Junction-LHS

Ch-2400m Existing CD

Ch-3200m Existing CD

Ch-5800m Habitation area

Chainage wise Transect Walk Findings

Chainage (M)			Existing Land Width (m)	Additional Land Required		Losses		Type of loss		Village	Remarks /Suggestion
				LHS	RHS	LHS	RHS	LHS	RHS		
0	-	200	8	-	-	-	-	-	-	-	-
200	-	400	8	-	-	-	-	-	-	-	-
400	-	600	8	-	-	-	-	-	-	-	CD Proposed
600	-	800	8	-	-	-	-	-	-	-	CD Proposed
800	-	1000	8	-	-	-	-	-	-	-	-
1000	-	1200	8	-	-	-	-	-	-	-	-
1200	-	1400	8	-	-	-	-	-	-	-	-
1400	-	1600	8	-	-	-	-	-	-	-	Junction LHS
1600	-	1800	8	-	-	-	-	-	-	-	CD Proposed
1800	-	2000	8	-	-	-	-	-	-	-	-
2000	-	2200	8	-	-	-	-	-	-	-	-
2200	-	2400	8	-	-	-	-	-	-	-	-
2400	-	2600	8	-	-	-	-	-	-	-	2 Existing CDs
2600	-	2800	8	-	-	-	-	-	-	-	-
2800	-	3000	8	-	-	-	-	-	-	-	-
3000	-	3200	8	-	-	-	-	-	-	-	-
3200	-	3400	8	-	-	-	-	-	-	-	Existing CD
3400	-	3600	8	-	-	-	-	-	-	-	-
3600	-	3800	8	-	-	-	-	-	-	-	-
3800	-	4000	8	-	-	-	-	-	-	-	Existing CD, ELC
4000	-	4200	8	-	-	-	-	-	-	-	-
4200	-	4400	8	-	-	-	-	-	-	-	Junction LHS
4400	-	4600	8	-	-	-	-	-	-	-	-
4600	-	4800	8	-	-	-	-	-	-	-	Existing CD
4800	-	5000	8	-	-	-	-	-	-	-	-
5000	-	5200	8	-	-	-	-	-	-	-	ELC, Junction
5200	-	5400	8	-	-	-	-	-	-	-	-
5400	-	5600	5	-	-	-	-	-	-	-	-
5600	-	5800	5	-	-	-	-	-	-	-	Habitation area, CC road Proposed
5800	-	6000	5	-	-	-	-	-	-	-	EP LHS
6000	-	6100	5	-	-	-	-	-	-	-	
6100	-	-	-	-	-	-	-	-	-	-	School

Road Name: Arjunkhedi to Khejra Ghat

Block Name: Berasiya

District Name: Bhopal

Total Length of the Road: 3.04 km

JJJ. Climatic Conditions

Temperature	High: 41 **(May)** Low: 8 **°C (Dec)**
Humidity	High: 86 % **(Aug)** Low: 40 %
Rainfall	1146 mm/year
Rainy Season	**June** to **September**

KKK. Location of the Road and Generic description of Environment

S. No.	Type of Ecosystem	Yes	No	Explanation
1.	Coastal area Mangrove (along roadside)		√	Distance from Coastline: km ( ) more than 50% ( ) less than 20%
2.	Type of Terrain (Plain/Hilly/ Mountainous etc.) *(Explain the topography of the area and how many km of the road are located in the hilly area)*		√	Altitude: The topography of the project road is flat at almost all locations.
4.	Forest Area *(Explain whether the road passes through forest areas or located along the forest areas and distance from shoulder to the forest area)?*		√	Type of Vegetation: Legal Status of the Forest Area: *(Reserved, National Park, Sanctuaries, Unclassified, etc.)* No part of the project road passes through any forest area.
5.	Wildlife *(Explain whether there are any wildlife species in the project area)*		√	Name of animals: **NA** Endangered species (if any): **None**
6.	Inhabited Area	√		Inhabited Area Starts At Ch-00m To Ch-100m With Connecting Arjunkhedi And At Ch-2200m To Ch-3040m Khejraghat.
7.	Agricultural Land	√		The agriculture land lies between Ch-100m to Ch-2100m.
8.	Grazing grounds		√	Grazing ground was not found along the proposed alignment.
9.	Barren Land		√	No Barren land along the project road.

LLL. Specific description of the Road Environment

(Note: Questions number 1, 4, 5, 7 and 8 must be answered after discussions with the local community people)

S. No.	Parameter/ Component	Yes	No	Explanation
1.	Are there any areas with landslide or erosion problems along the road? *(If yes, indicate the location (right or left side) and the chainage)*		√	No part of the project road lies in hilly terrain prone to landslide or erosion. However, sufficient cross drainage structures will be constructed to avoid any erosion. ( ) No Secondary Information is available and Local Community is not aware of this matter
2.	Are there any lakes/swamps beside the road? *(If yes, list them indicating the location (right or left side) and the chainage)*		√	There was not found any pond along the proposed alignment
3.	Are there any nallas/streams/rivers etc. along/crossing the road? *(If yes, list them indicating the location (right, left or crossing) and the chainage*	√		There was found 13 water crossing structures at Ch-00m to Ch-100m, Ch-100m to Ch-200m, Ch-200m to Ch-300m, Ch-300m to Ch-400m, Ch-400m to Ch-500m, Ch-500m to Ch-600m, Ch-600m to Ch-700m, Ch-800m to Ch-900m, Ch-900m to Ch-1000m, Ch-1300m to Ch-1400m, Ch-1500m to Ch-1600m, Ch-2000m to Ch-2100m, and Ch-2400m to Ch-2500m has proposed CD
4.	Are there problems of water stagnation and other drainage issues on or near the road? *(If yes, mention chainage)*	√		There are at some points of water stagnation and other drainage issues on or near the road which is discussed above S.No.3. ( ) No Secondary Information is available and Local Community is not aware of this matter
5.	Is the area along the project road prone to flooding? *(If yes, mention flood level and frequency)*		√	There are not found any flood prone area along the project road. ( ) No Secondary Information is available and Local Community is not aware of this matter
6.	Are there any trees with a dbh of 30 cm or more within 10 m on either side from the center line of the road alignment? *(If yes attach list of trees indicating the location (right or left side)and the chainage)*	√		There are 13 trees of dbh of 30 cm or more as attached in **Attachment I.**
7.	Along the road and within 100m of the road shoulder, are there any faunal habitat areas, faunal breeding ground, bird migration area, or other similar areas? *(If yes, specify details of habitat with chainage)*		√	There was not found any faunal habitat at 100 m of the road shoulder. ( ) No Secondary Information is available and Local Community is not aware of this matter
8.	Along the road and within 100m of the road shoulder is there any evidence of floral and faunal species that are classified as endangered species?		√	No rare, endangered or threatened species were found within 100 m of the road shoulder. ( ) No Secondary Information Available and Local Community is not aware of this matter

S. No.	Parameter/ Component	Yes	No	Explanation
9.	Are there any utility structures[62] within 10 m on either side from the center line of the road alignment? *(If yes, attach list with chainage)*	√		There are few utility structures found as listed in **Attachment II**.
10.	Are there any religious, cultural or community structures/buildings[63] within 10 m on either side from the center line of the road alignment? *(If yes attach list with chainage)*	√		Few religious cultural or community structures/buildings were found as listed in **Attachment III.**

D. Public Consultation

No.	Consultation Activities	Yes	No	Remarks
1.	Consultation with local community was conducted before finalizing the alignment. *(Attach list of people met and dates)*	√		Yes, consulting with the community.
2.	Any suggestion received in finalizing the alignment		√	NA
3.	If suggestions received, were they incorporated into the design.		√	NA

E. Please attach the following:

133) Sketch a map showing the bridge and the trees
134) List of trees indicating location (left or right side of the road) and chainage (as required under C. 6)
135) List of utility structures indicating location (left or right side of the road) and chainage (as required under C. 9)
136) List of community structures indicating location (left or right side of the road) and chainage (as required under C. 10)
137) Sketch of strip map of the road covering details of at least 10 m on either side from the center line of the road
138) Photographs of the project area showing at least 10 m on either side from center line of road alignment. Every 2 km or less of road must have at least 1 photograph.

[62] Water tap, hand pump, electric pole, telephone pole, water pipe and other similar strucutures.
[63] Mandir, Masjid, Church, religious/cultural/historical monuments, school, health center, public toilet and other similar structures.

Attachment I

List of Trees

Chainage (m)			Left	Right
0	-	100	-	3
300	-	400	1	1
400	-	500	-	1
1200	-	1300	1	-
1800	-	1900	-	1
2200	-	2300	2	-
2600	-	2700	3	-
Total			7	6

Attachment II

List of Utilities

Chainage (m)			Left	Right
100	-	200	ELC	ELC
200	-	300	ELC	ELC, TF
2500	-	2600	HP	ELC

Attachment III

List of Community Structures

Chainage (m)			Left	Right
0	-	100	-	School, Panchyat Building
1300	-	1400	-	well
2500	-	2600	Temple	-
2600	-	2700	-	School

Attachment-IV

Left					Chainage (m)			Right				
8 to 10m	6 to 8m	4 to 6m	2 to 4m	0 to 2m				0 to 2m	2 to 4m	4 to 6m	6 to 8m	8 to 10m
-	-	-	-	-	0	-	100	-	3 tree	temple	-	-
-	-	-	1 tree	-	300	-	400	-	1 tree	-	-	-
-	-	-	-	-	400	-	500	-	1 tree	-	-	-
-	-	-	1 tree	-	1200	-	1300	-	-	-	-	-
-	-	-	-	-	1300	-	1400	-	well	-	-	-
-	-	-	-	-	1800	-	1900	-	1 tree	-	-	-
-	-	-	2 tree	-	2200	-	2300	-	-	-	-	-
-	-	-	HP, temple	-	2500	-	2600	-	-	-	-	-
-	-	-	3 tree	-	2600	-	2700	-	-	School	-	-

Attachment V

Photo Plates

Ch-00m Start point of the Road

Ch-200m LHS curve

Ch-1000m private land

Ch- 1300m Well along the road

Ch-2700m

Ch-2800m Primary school

Ch-2860m HP

Community consultation

Road safety pamphlet

Chainage wise Transect Walk Findings

Chainage (M)			Existing Land Width (m)	Additional Land Required		Losses		Type of loss		Village	Remarks/Suggestion
				LHS	RHS	LHS	RHS	LHS	RHS		
0	-	100	5	-	-	-	-	-	-	Arjunkhedi	Village habitation area, CC road and CD proposed
100	-	200	5	-	-	-	-	-	-	-	Proposed CD
200	-	300	5	-	-	-	-	-	-	-	Proposed CD, Junction RHS
300	-	400	8	-	-	-	-	-	-	-	Proposed CD and Junction RHS
400	-	500	8	-	-	-	-	-	-	-	-
500	-	600	8	-	-	-	-	-	-	-	Proposed CD
600	-	700	8	-	-	-	-	-	-	-	Proposed CD
700	-	800	8	-	-	-	-	-	-	-	-
800	-	900	8	-	-	-	-	-	-	-	Proposed CD
900	-	1000	8	-	-	-	-	-	-	-	Proposed CD
1000	-	1100	4	2	2	2	2	Agl	Agl	-	-
1100	-	1200	4	2	2	2	2	Agl	Agl	-	-
1200	-	1300	4	2	2	2	2	Agl	Agl	-	-
1300	-	1400	4	2	2	2	2	Agl	Agl	-	Proposed CD, Well RHS
1400	-	1500	4	2	2	2	2	Agl	Agl	-	-
1500	-	1600	4	2	2	2	2	Agl	Agl	-	Proposed CD
1600	-	1700	8	-	-	-	-	-	-	-	-
1700	-	1800	8	-	-	-	-	-	-	-	-
1800	-	1900	8	-	-	-	-	-	-	-	-
1900	-	2000	8	-	-	-	-	-	-	-	-
2000	-	2100	8	-	-	-	-	-	-	-	Proposed CD
2100	-	2200	8	-	-	-	-	-	-	-	-
2200	-	2300	5	-	-	-	-	-	-	Khejraghat	Habitation area, CC road Proposed
2300	-	2400	5	-	-	-	-	-	-	-	-
2400	-	2500	5	-	-	-	-	-	-	-	Proposed CD
2500	-	2600	5	-	-	-	-	-	-	-	CC road proposed
2600	-	2700	5	-	-	-	-	-	-	-	CC road proposed
2700	-	2800	5	-	-	-	-	-	-	-	CC road proposed
2800	-	2900	5	-	-	-	-	-	-	-	CC road proposed
2900	-	3040	5	-	-	-	-	-	-	-	CC road proposed

Road Name: Dhatrawada to Kankarwa

Block Name: Ratlam

District Name: Ratlam

Total Length of the Road: 5.40 km

Climatic Conditions

Temperature	High: 48.0 **(May)** Low: 14 **°C (Dec)**
Humidity	High: 90 % **(Aug)** Low: 32 **%**
Rainfall Rainy Season	900 mm/year **June** to **September**

MMM. Location of the Road and Generic description of Environment

S. No.	Type of Ecosystem	Yes	No	Explanation
9.	Coastal area Mangrove (along roadside)		√	Distance from Coastline: km ( ) more than 50% ( ) less than 20%
10	Type of Terrain-(Plain/Hilly/ Mountainous etc.) *(Explain the topography of the area and how many km of the road are located in the hilly area)*		√	Altitude: The topography of the project road is flat at almost all locations.
11	Forest Area *(Explain whether the road passes through forest areas or located along the forest areas and distance from shoulder to the forest area)?*	√		Forest is located at Ch-2100m to Ch-2400m Type of Vegetation: Legal Status of the Forest Area: *(Reserved, National Park, Sanctuaries, Unclassified, etc.)*
12	Wildlife *(Explain whether there are any wildlife species in the project area)*		√	Name of animals: **NA** Endangered species (if any): **None**
13	Inhabited Area	√		Inhabited area starts at Ch-00m to Ch-400m, Ch-5200m to Ch-5400m with connecting village Dhatrawada and Kankarwa.
14	Agricultural Land	√		The agriculture land lies between Ch-800m to Ch-1900m Ch-3000m to CH-4100m at both side of the alignment.
15	Grazing grounds	√		Grazing ground was found Ch-400m to Ch-800m, Ch-1900m to Ch-3000m and Ch-4100m to Ch-5200m along the proposed alignment.
16	Barren Land		√	Barren land was not along the project road.

NNN. Specific description of the Road Environment

(Note: Questions number 1, 4, 5, 7 and 8 must be answered after discussions with the local community people)

S. No.	Parameter/ Component	Yes	No	Explanation
1.	Are there any areas with landslide or erosion problems along the road? *(If yes, indicate the location (right or left side) and the chainage)*		√	No part of the project road lies in hilly terrain prone to landslide or erosion. However, sufficient cross drainage structures will be constructed to avoid any erosion. ( ) No Secondary Information is available and Local Community is not aware of this matter
2.	Are there any lakes/swamps beside the road? *(If yes, list them indicating the location (right or left side) and the chainage)*	√		There was found Ch-3100m to Ch-4100m pond along the proposed alignment.
3.	Are there any nallas/streams/rivers etc. along/crossing the road? *(If yes, list them indicating the location (right, left or crossing) and the chainage*	√		There was found few water crossing points at Ch-200m to Ch-300m, Ch-500m to Ch-600m, Ch-1500m to Ch-1600m, Ch-1700m to Ch-1900m, Ch-2200m to Ch-2300m, Ch-2900m to Ch-3000m, Ch-4300m to Ch-4400m, Ch-4500m to Ch-4600m & Ch-4700m to Ch-4800m proposed CD & Ch-3100m to Ch-3300m, Ch-3500m to Ch-3600m & Ch-4000m to Ch-4100m has EX CD.
4.	Are there problems of water stagnation and other drainage issues on or near the road? *(If yes, mention chainage)*	√		There are at some points of water stagnation and other drainage issues on or near the road which is discussed above S.No.3. ( ) No Secondary Information is available and Local Community is not aware of this matter
5.	Is the area along the project road prone to flooding? *(If yes, mention flood level and frequency)*		√	There are not found any flood prone area along the project road. ( ) No Secondary Information is available and Local Community is not aware of this matter
6.	Are there any trees with a dbh of 30 cm or more within 10 m on either side from the center line of the road alignment? *(If yes attach list of trees indicating the location (right or left side)and the chainage)*	√		There are 133 trees of dbh of 30 cm or more as attached in **Attachment I.**
7.	Along the road and within 100m of the road shoulder, are there any faunal habitat areas, faunal breeding ground, bird migration area, or other similar areas? *(If yes, specify details of habitat with chainage)*		√	There was not found any faunal habitat at 100 m of the road shoulder. ( ) No Secondary Information is available and Local Community is not aware of this matter
8.	Along the road and within 100m of the road shoulder is there any evidence of floral and faunal species that are classified as endangered species?		√	No rare, endangered or threatened species were found within 100 m of the road shoulder. ( ) No Secondary Information Available and Local Community is not aware of this matter

S. No.	Parameter/ Component	Yes	No	Explanation
9.	Are there any utility structures[64] within 10 m on either side from the center line of the road alignment? *(If yes, attach list with chainage)*	√		There are few utility structures found as listed in **Attachment II**.
10.	Are there any religious, cultural or community structures/buildings[65] within 10 m on either side from the center line of the road alignment? *(If yes attach list with chainage)*			Few religious cultural or community structures/buildings were found as listed in **Attachment III**.

D. Public Consultation

No.	Consultation Activities	Yes	No	Remarks
1.	Consultation with local community was conducted before finalizing the alignment. *(Attach list of people met and dates)*	√		Yes, Consulting with the community.
2.	Any suggestion received in finalizing the alignment		√	NA
3.	If suggestions received, were they incorporated into the design.		√	NA

E. Please attach the following:

139) Sketch a map showing the bridge and the trees
140) List of trees indicating location (left or right side of the road) and chainage (as required under C. 8)
141) List of utility structures indicating location (left or right side of the road) and chainage (as required under C. 9)
142) List of community structures indicating location (left or right side of the road) and chainage (as required under C. 10)
143) Sketch of strip map of the road covering details of at least 10 m on either side from the center line of the road
144) Photographs of the project area showing at least 10 m on either side from center line of road alignment. Every 2 km or less of road must have at least 1 photograph.

[64] Water tap, hand pump, electric pole, telephone pole, water pipe and other similar strucutures.
[65] Mandir, Masjid, Church, religious/cultural/historical monuments, school, health center, public toilet and other similar structures.

Attachment I

List of Trees

Chainage (m)			Left	Right
0	-	100	5	-
100	-	200	-	5
200	-	300	-	5
700	-	800	1	-
800	-	900	2	-
900	-	1000	6	1
1000	-	1100	3	3
1100	-	1200	-	5
1200	-	1300	3	5
1300	-	1400	-	-
1400	-	1500	1	-
1500	-	1600	2	1
1600	-	1700	1	1
1700	-	1800	-	-
1800	-	1900	1	2
1900	-	2000	1	-
2700	-	2800	1	-
2900	-	3000	-	1
3000	-	3100	11	5
3100	-	3200	5	3
3200	-	3300	1	2
3300	-	3400	6	21
3400	-	3500	2	4
3600	-	3700	2	1
3700	-	3800	6	4
5200	-	5300	3	-
5300	-	5400	-	-
Total			**63**	**69**

Attachment II

List of Utilities

Chainage (m)			Left	Right
200	-	300	ELC	ELC
300	-	400	ELC	DP
3000	-	3100	ELC	ELC
3400	-	3500	ELC	ELC
4100	-	4200	ELC	ELC

Attachment III

List of Community Structures

Chainage (m)			Left	Right
0	-	100	-	School
100	-	200	-	Temple
3300	-	3400	-	Temple
5000	-	5100	School	-
5100	-	5200	-	Waiting room

Attachment IV

Left					Chainage (m)			Right				
8 to 10m	6 to 8m	4 to 6m	2 to 4m	0 to 2m				0 to 2m	2 to 4m	4 to 6m	6 to 8m	8 to 10m
-	-	5 tree	-	-	0	-	100	-	-	School	-	-
-	-	-	-	-	100	-	200	-	4 tree	Temple, 1 tree	-	-
-	-	-	-	-	200	-	300	-	1 tree	4 tree	-	-
-	-	-	-	-	300	-	400	-	DP	-	-	-
-	-	1 tree	-	-	700	-	800	-	-	-	-	-
-	-	2 tree	-	-	800	-	900	-	-	-	-	-
-	-	6 tree	-	-	900	-	1000	-	-	1 tree	-	-
-	-	3 tree	-	-	1000	-	1100	-	-	3 tree	-	-
-	-	-	-	-	1100	-	1200	-	-	-	5 tree	-
-	-	-	3 tree	-	1200	-	1300	-	-	5 tree	-	-
-	-	-	-	-	1300	-	1400	-	-	-	-	-
-	-	1 tree	-	-	1400	-	1500	-	-	-	-	-
-	-	2 tree	-	-	1500	-	1600	-	-	-	1 tree	-
-	-	1 tree	-	-	1600	-	1700	-	-	1 tree	-	-
-	-	-	-	-	1700	-	1800	-	-	-	-	-
-	-	1 tree	-	-	1800	-	1900	-	-	2 tree	-	-
-	-	1 tree	-	-	1900	-	2000	-	-	-	-	-
-	-	-	-	1 tree	2700	-	2800	-	-	-	-	-
-	-	-	-	-	2900	-	3000	-	1 tree	-	-	-
-	-	3 tree	8 tree	-	3000	-	3100	1 tree	2 tree	-	2 tree	-
-	-	1 tree	2 tree	2 tree	3100	-	3200	-	-	3 tree	-	-
-	-	-	1 tree	-	3200	-	3300	-	2 tree	-	-	-
-	-	6 tree	-	-	3300	-	3400	-	-	20 tree	-	Temple, 1 tree
-	-	2 tree	-	-	3400	-	3500	-	4 tree	-	-	-
-	-	-	-	-	3500	-	3600	-	-	-	-	-
-	-	2 tree	-	-	3600	-	3700	-	-	1 tree	-	-
6 tree	-	-	-	-	3700	-	3800	-	-	-	4 tree	-
-	-	-	3 tree	-	5200	-	5300	-	-	-	-	-

Attachment V

Photo Plates

Ch-00m Start point

Ch-300m to Ch-400 junction & DP

Ch-1700m to Ch-1800m irrigation pipe proposed

Ch-2100m to Ch-2400m Forest Land(10m)

Ch-2700m to Ch-2800m Curve RHS

CH-3200m to Ch-3300m well RHS

Ch-3300m to Ch-3400m Temple

Ch-4000m to Ch-4100m Pond RHS

Ch-5300m to Ch-5400m junction, HP RHS

Community Consultation

Chainage wise Transect Walk Findings

Chainage (M)			Existing Land Width (m)	Additional Land Required		Losses		Type of loss		Village	Remarks /Suggestion
				LHS	RHS	LHS	RHS	LHS	RHS		
0	-	100	5	-	-	-	-	-	-	Dhatrawada	Junction)(LHS), School(RHS)
100	-	200	5	-	-	-	-	-	-	"	Temple & HP(RHS)
200	-	300	5	-	-	-	-	-	-	"	junction & CD proposed
300	-	400	5	-	-	-	-	-	-	"	Junction (LHS), DP(RHS)
400	-	500	8	-	-	-	-	-	-	-	Barren land
500	-	600	8	-	-	-	-	-	-	-	Pond, junction, HP
600	-	700	8	-	-	-	-	-	-	-	-
700	-	800	8	-	-	-	-	-	-	-	-
800	-	900	8	-	-	-	-	-	-	-	-
900	-	1000	8	-	-	-	-	-	-	-	-
1000	-	1100	8	-	-	-	-	-	-	-	Junction(RHS)
1100	-	1200	8	-	-	-	-	-	-	-	-
1200	-	1300	8	-	-	-	-	-	-	-	-
1300	-	1400	8	-	-	-	-	-	-	-	-
1400	-	1500	8	-	-	-	-	-	-	-	-
1500	-	1600	8	-	-	-	-	-	-	-	CD proposed
1600	-	1700	8	-	-	-	-	-	-	-	-
1700	-	1800	8	-	-	-	-	-	-	-	-
1800	-	1900	8	-	-	-	-	-	-	-	CD proposed
1900	-	2000	8	-	-	-	-	-	-	-	-
2000	-	2100	8	-	-	-	-	-	-	-	-
2100	-	2200	8	-	-	-	-	-	-	-	Forest(10m)
2200	-	2300	8	-	-	-	-	-	-	-	CD proposed
2300	-	2400	8	-	-	-	-	-	-	-	Forest(10m) End
2400	-	2500	8	-	-	-	-	-	-	-	Junction
2500	-	2600	8	-	-	-	-	-	-	-	-
2600	-	2700	8	-	-	-	-	-	-	-	-
2700	-	2800	8	-	-	-	-	-	-	-	Junction(RHS)
2800	-	2900	8	-	-	-	-	-	-	-	-
2900	-	3000	8	-	-	-	-	-	-	-	CD proposed
3000	-	3100	8	-	-	-	-	-	-	-	EWC
3100	-	3200	8	-	-	-	-	-	-	-	EX CD & Pond(RHS)
3200	-	3300	8	-	-	-	-	-	-	-	EX CD & Pond(RHS)
3300	-	3400	4	2	2	2	2	AL	AL	-	Temple
3400	-	3500	4	2	2	2	2	AL	AL	-	Junction(RHS)
3500	-	3600	4	2	2	2	2	AL	AL	-	Junction(RHS), EX CD
3600	-	3700	8	-	-	-	-	-	-	-	-
3700	-	3800	8	-	-	-	-	-	-	-	Junction(LHS)
3800	-	3900	8	-	-	-	-	-	-	-	Junction(RHS)

Chainage (M)			Land Width (m)	Land Required		Losses		Type of loss		Village	Remarks /Suggestion
				LHS	RHS	LHS	RHS	LHS	RHS		
0	-	100	8	-	-	-	-	-	-	-	CD proposed & Forest area start
100	-	200	10	-	-	-	-	-	-	-	-
200	-	300	10	-	-	-	-	-	-	-	-
300	-	400	9	-	-	-	-	-	-	-	CD proposed
400	-	500	9	-	-	-	-	-	-	-	-
500	-	600	10	-	-	-	-	-	-	-	-
600	-	700	9	-	-	-	-	-	-	-	-
700	-	800	8	-	-	-	-	-	-	-	-
800	-	900	9	-	-	-	-	-	-	-	-
900	-	1000	10	-	-	-	-	-	-	-	CD proposed
1000	-	1100	10	-	-	-	-	-	-	-	-
1100	-	1200	8	-	-	-	-	-	-	-	-
1200	-	1300	9	-	-	-	-	-	-	-	-
1300	-	1400	9	-	-	-	-	-	-	-	CD proposed
1400	-	1500	10	-	-	-	-	-	-	-	-
1500	-	1600	10	-	-	-	-	-	-	-	-
1600	-	1700	9	-	-	-	-	-	-	-	-
1700	-	1800	9	-	-	-	-	-	-	-	-
1800	-	1900	8	-	-	-	-	-	-	-	Forest area end
1900	-	2000	9	-	-	-	-	-	-	-	sign board proposed
2000	-	2100	9	-	-	-	-	-	-	-	habitation area start
2100	-	2200	8	-	-	-	-	-	-	-	speed breaker & sign board proposed
2200	-	2300	8	-	-	-	-	-	-	-	CC road proposed
2300	-	2400	8	-	-	-	-	-	-	-	CC road proposed
2400	-	2500	8	-	-	-	-	-	-	-	CC road proposed

CD, Pond(RHS)

proposed,
ction(RHS)

proposed

proposed

ction(LHS)

ool

iting room

road proposed

ction(LHS)

Appendix 4.1: Guidelines for Borrow Areas Management

I. SELECTION OF BURROUGH AREAS

1. Location of borrow areas shall be finalized as per IRC: 10-1961guidlines. The finalization of locations in case of borrows areas identified in private land shall depend upon the formal agreement between landowners and contractor. If, agreement is not reached between the contractor and landowners for the identified borrow areas sites, arrangement for locating the source of supply of material for embankment and sub-grade as well as compliance to environment requirements in respect of excavation and borrow areas as stipulated from time to time by the Ministry of Environment and Forests, Government of India, and local bodies, as applicable shall be the sole responsibility of the contractor.

2. The contractor in addition to the established practices, rules and regulation will also consider following criteria before finalizing the locations.

i. The borrow area should not be located in agriculture field unless unavoidable i.e. barren land is not available.

ii. The borrow pits preferably should not be located along the roads.

iii. The loss of productive and agriculture soil should be minimum.

iv. The loss of vegetation is almost nil or minimum.

v. The Contractor will ensure that suitable earth is available.

II. CONTRACTOR'S RESPONSIBILITY

3. The Contractor shall obtain representative samples from each of the identified borrow areas and have these tested at the site laboratory following a testing program approved by the Engineer. It shall be ensured that the sub-grade material when compacted to the density requirements shall yield the design CBR value of the sub-grade. Contractor shall begin operations keeping in mind following;

i. Haulage of material to embankments or other areas of fill shall proceed only when sufficient spreading and compaction plants is operating at the place of deposition.

ii. No excavated acceptable material other than surplus to requirements of the Contract shall be removed from the site. Contractor should be permitted to remove acceptable material from the site to suit his operational procedure, then shall make consequent deficit of material arising there from.

iii. Where the excavation reveals a combination of acceptable and un-acceptable materials, the Contractor shall, unless otherwise agreed by the Engineer, carry out the excavation in such a manner that the acceptable materials are excavated separately for use in the permanent works without contamination by the un-acceptable materials. The acceptable material shall be stockpiled separately.

III. BORROWING FROM DIFFERENT LAND-FORMS

A. Borrow Areas located in Agricultural Lands

(i) The preservation of topsoil will be carried out in stockpile.
(ii) A 15 cm topsoil will be stripped off from the borrow pit and this will be stored in stockpiles in a designated area for height not exceeding 2m and side slopes not steeper than 1:2 (Vertical: Horizontal).
(iii) Borrowing of earth will be carried out up to a depth of 1.5m from the existing ground level.
(iv) Borrowing of earth will not be done continuously through out the stretch.
(v) Ridges of not less than 8m widths will be left at intervals not exceeding 300m.
(vi) Small drains will be cut through the ridges, if necessary, to facilitate drainage.
(vii) The slope of the edges will be maintained not steeper than 1:4 (vertical: Horizontal).
(viii) The depth of borrow pits will not be more than 30 cm after stripping the 15 cm topsoil aside.

B. Borrow Areas located in Elevated Lands

(i) The preservation of topsoil will be carried out in stockpile.
(ii) A 15 cm topsoil will be stripped off from the borrow pit and this will be stored in stockpiles in a designated area for height not exceeding 2m and side slopes not steeper than 1:2 (Vertical: Horizontal).
(iii) At location where private owners desire their fields to be levelled, the borrowing shall be done to a depth of not more than 1.5m or up to the level of surrounding fields

C. Borrow Areas near River side

(i) The preservation of topsoil will be carried out in stockpile.
(ii) A 15 cm topsoil will be stripped off from the borrow pit and this will be stored in stockpiles in a designated area for height not exceeding 2m and side slopes not steeper than 1:2 (Vertical: Horizontal).
(iii) Borrow area near to any surface water body will be at least at a distance of 15m from the toe of the bank or high flood level, whichever is maximum.

D. Borrow Areas near Settlements

(i) The preservation of topsoil will be carried out in stockpile.
(ii) A 15 cm topsoil will be stripped off from the borrow pit and this will be stored in stockpiles in a designated area for height not exceeding 2m and side slopes not steeper than 1:2 (Vertical: Horizontal).
(iii) Borrow pit location will be located at least 0.75 km from villages and settlements. If un-avoidable, the pit will not be dug for more than 30 cm and drains will be cut to facilitate drainage.
(iv) Borrow pits located in such location will be re-developed immediately after borrowing is completed. If spoils are dumped, that will be covered with a layers

of stockpiled topsoil in accordance with compliance requirements with respect MOEF/SPCB guidelines.

E. Borrow Pits along the Road

4. Borrow pits along the road shall be discouraged and if deemed necessary and permitted by the Engineer. The following precautions are recommended:

(i) The preservation of topsoil will be carried out in stockpile.

(ii) A 15 cm topsoil will be stripped off from the borrow pit and this will be stored in stockpiles in a designated area for height not exceeding 2m and side slopes not steeper than 1:2 (Vertical: Horizontal).

(iii) Ridges of not less than 8m widths should be left at intervals not exceeding 300m.

(iv) Small drains shall be cut through the ridges of facilitate drainage.

(v) The depth of the pits shall be so regulated that there bottom does not cut an imaginary line having a slope of 1 vertical to 4 horizontal projected from the edge of the final section of bank, the maximum depth of any case being limited to 1.5m.

(vi) Also, no pit shall be dug within the offset width from the toe of the embankment required as per the consideration of stability with a minimum width of 10m.

IV. REHABILITATION OF BORROW AREAS

5. The objective of the rehabilitation program is to return the borrow pit sites to a safe and secure area, which the public should be able to safely enter and enjoy. Securing borrow pits in a stable condition is fundamental requirement of the rehabilitation process. This could be achieved by filling the borrow pit floor to approximately the access road level.

6. Re-development plan shall be prepared by the Contractor before the start of work inline with the owners will require and to the satisfaction of owner. The Borrow Areas shall be rehabilitated as per following;

- Borrow pits shall be backfilled with rejected construction wastes and will be given a vegetative cover. If this is not possible, then excavation sloped will be smoothed and depression will be filled in such a way that it looks more or less like the original round surface.
- Borrow areas might be used for aquaculture in case landowner wants such development. In that case, such borrow area will be photographed after their post use restoration and Environment Expert of Supervision Consultant will certify the post use redevelopment.

7. The Contractor will keep record of photographs of various stages i.e., before using materials from the location (pre-project), for the period borrowing activities (construction Phase) and after rehabilitation (post development), to ascertain the pre and post borrowing status of the area.

Appendix 5.1: Environmental Management Plan

SL. No.	Project Action/Environmental Attributes	Mitigation Measures	Location	Time Frame	Cost	Responsible for Implementing	Responsible for Monitoring
	Measures common to all sample roads						
	Design and Pre Construction Stage						
1.	Climate Change Consideration and Vulnerability screening	o Compliance to climate change vulnerability check point given under EARF and adoption of necessary mitigative measures as may be required o Efforts shall be made to plant additional trees for increasing the carbon sink. The tree may be planted with help of PRI (Panchati Raj Institution)	All through the alignment of each rural road	Pre Construction Phase	Part of Project Cost	Project Preparation Consultant/ design consultant	PIU/ MPRRDA
2.	Finalization of alignment	o The road will be part of district core network and will comply with PMGSY guidelines o Subproject shall not disturb any cultural heritage designated by the government or by the international agencies, such as UNESCO, and shall avoid any monuments of cultural or historical importance. o Subproject will not pass through any designated wild life sanctuaries, national park, notified Eco sensitive areas or area of international significance such as protective wet land designated under Wetland Convention, and reserve forest area.. o Subproject to comply with local and National legislative requirements	o All through the alignment of each rural road	Pre Construction Phase	Part of Project Cost	Project Preparation Consultant/ design consultant	PIU/ MPRRDA

SL. No.	Project Action/Environmental Attributes	Mitigation Measures	Location	Time Frame	Cost	Responsible for Implementing	Responsible for Monitoring
		such as forest clearance for diversion of forestland and ADB's Safeguard Policy Statement 2009. o Alignment finalization considering availability of right of way and in consultation with local people. o ROW may be reduced in built up area or constricted areas to minimize land acquisition as per PMGSY Guidelines. o Adjust alignment to the extent feasible to avoid tree cutting, shifting of utilities or community structure. o The road shall follow natural topography to avoid excessive cut and fill.					
3.	Land acquisition	o Avoid or minimize land acquisition. o Land acquisition, compensation packages, resettlement and rehabilitation, poverty alleviation programs for affected people and all other related issues are addressed through Social Impacts and Resettlement & Rehabilitation report.	o All through the alignment of each rural road	Pre Construction Phase	Land to be made available by the state Government	PIU, Govt. of Madhya Pradesh , and other	Environmental officer under the PIC will also coordinate and ensure implementation
4.	Biological environment - Tree planting	o All efforts shall be taken to avoid tree cutting wherever possible. o Requisite permission from forest department shall be obtained for cutting of roadside trees. o Provision of Compensatory Afforestation shall be made on	Throughout the project section of the road. *(Highlight Tree cutting locations &*				

SL. No.	Project Action/Environmental Attributes	Mitigation Measures	Location	Time Frame	Cost	Responsible for Implementing	Responsible for Monitoring
		1:3.ratio basis. o Permission shall be taken for diversion of any forest land if involved. Provision shall be made for additional compensatory tree plantation.	*proposed likely plantation location)*				
5.	Planning for land clearing	o The road land width shall be clearly demarcated on the ground. o The utility and community structure shifting shall be planned in consultations and concurrence of the community. o Tree felling shall be limited to those, which could not be saved even by design measures. The tree shall be cut with a prior permission of Forest department. o The vegetable cover shall be removed and disposed in consultation with community. o All public utilities shifting shall be planned with prior concurrence of respective agencies/authority and to the adjacent location approved by them	All through the Rural roads excepting in stretches of habitations *(Attach or Refer to specific sections of DPR for the utilities to be shifted along with chainages for the location of such structures)*	Pre Construction Phase	Necessary cost provisions have been made. All other costs are included under project cost.	PIC, PIU, Forest Department NGOs (shifting of utilities shall be carried out by respective governmental bodies at cost to be reimbursed by project, implementing agency). To increase survival rate of new saplings, a core Tree Management Committee is to be created to ensure complete retrieval of vegetative cover and timely	Environmental officer under the PIC will coordinate and ensure Officials of Forest Department, Contractor and local NGOs and coordinated by Environmental officer of Construction Supervision Consultant for specific package.

SL. No.	Project Action/Environmental Attributes	Mitigation Measures	Location	Time Frame	Cost	Responsible for Implementing	Responsible for Monitoring
						replacement of perished plantations. implementation Unit (PIU) of MPRRDA,	
8.	Shifting on Common Properties Resources	o All efforts are made to minimize shifting of common utilities and community structures. o The community structures/utilities which can not be saved will be shifted to adjacent area with the concurrence and in consultation with community.	As determined by contractor under approval of PIC /PIU *(Attach or Refer to specific sections of DPR for community structures to be shifted along with chainages for the location of such structures)*	Construct ion Phase	Borne by Contractor	Contractor is responsible for ensuring provision of facilities under approval by PIC / PIU	Environmental officer and other team members of PIC will monitor and ensure appropriate implementation Environmental officer will regularly interact with the local people who are likely to be affected to ensure that their interests are protected and no social resentment sets in.
6.	Cut and Fill and Embankment Construction design & planning	o The alignment design shall consider options to minimize excessive cuts and fills. o The cut and fill quantities shall be used for embankment to minimize barrow earth requirement. o The design shall be as per relevant	All through the alignment of each rural road *(Highlight the high flood*	Pre Construct ion Phase	Part of Project Cost	Project Preparation Consultant/ design consultant	PIU/ MPRRDA

SL. No.	Project Action/Environmental Attributes	Mitigation Measures	Location	Time Frame	Cost	Responsible for Implementing	Responsible for Monitoring
		IRC provisions for cut and fill, slope protection and drainage. o Adequate provision shall be made for cross-drainage structure for maintaining natural drainage pattern in the subproject area and preventing soil erosion. o Side drain for channelizing water to nearby natural drain in water stagnation /logging prone area. o The top soil of the cut and fill area shall be used for embankment slope protection o Embankment will be designed above High Flood Level (HFL) wherever, area is prone to flood.	*level, chainage for action and linkages to DPR section)*				
7.	Hydrology and Drainage	o Provision of adequate cross-drainage structure shall be made to ensure smooth passage of water and maintaining natural drainage pattern of the area. The discharge capacity of the CD structure shall be designed accordingly. o Provision of adequate side drainage shall be made in water stagnant/logging areas. o The construction work near water body shall be planned preferably in dry season so that water quality of the water channel is not affected due to siltation and rain water runoff. o Elaborate drainage system shall be	Near all drainage crossing, nalas and river crossings etc. *(indicate HFL Level and Highlight the chainage for action and linkages to DPR section)*				

SL. No.	Project Action/Environmental Attributes	Mitigation Measures	Location	Time Frame	Cost	Responsible for Implementing	Responsible for Monitoring
		provided to drain the storm water from the roadway and embankment to ensure minimum disturbance to natural drainage of surface and subsurface water of the area. o Provision of additional cross-drainage structure shall be made in the areas where nearby land is sloping towards road alignment on both the sides. o Provision of concrete road construction in habitat area with drainage of both side of the road shall be made as per the design provision and with adequate slope to prevent any water logging. o Road level shall be fixed above HFL. Embankment slope stabilization measures shall be planned. Stabilization measures may include vegetative treatment, stone pitching, retaining wall where feasible, low cost options such as bamboo / eucalyptus tree pilling .					
8.	Establishment of Construction Camp, temporary office and storage area	o Construction camp sites shall be located away from any local human settlements (minimum 0.5 km away) and preferably located on lands, which are not productive barren/waste lands presently. o Similarly temporary office and storage areas shall be located away from human settlement areas	As determined by contractor under approval of PIC/PIU/ (ref- Labelled: WASTE OIL;	Pre-construction and construction stage	To be included in contractor's cost	All facilities are to be planned and implemented by contractor under approval by PIU / PIC	PIU

SL. No.	Project Action/Environmental Attributes	Mitigation Measures	Location	Time Frame	Cost	Responsible for Implementing	Responsible for Monitoring
		(minimum 500 m). o The construction camps, office and storage areas shall have provision of adequate water supply, sanitation and all requisite infrastructure facilities. o The construction camps shall be located at a minimum 0.5 km from forest land/areas to deter the construction labor in trespassing. Similarly, temporary office and storage areas shall be located at a minimum 0.5 km from forest land/areas. o The construction camps, office and storage areas shall have provision of septic tank/soak pit of adequate capacity so that it can function properly for the entire duration of its use. o All construction camps shall have provision of rationing facilities particularly for kerosene/LPG so that dependence on firewood for cooking is avoided completely to the extent possible. o The construction camps, office and storage areas shall have provision of health care facilities for adults, pregnant women and children. o Personal Protective Equipments (PPEs) like helmet, boots, earplugs for workers, first aid and fire fighting	and hazardous sign be displayed at oil handling areas and sold off to SPCB/ MoEF authorized re-refiners). *(Contractor to specify the cost provision made for PPE and other environmental sanitation measures required per construction camp* / temporary office / storage area)				

SL. No.	Project Action/Environmental Attributes	Mitigation Measures	Location	Time Frame	Cost	Responsible for Implementing	Responsible for Monitoring
		equipments shall be available at construction sites before start of construction. An emergency plan shall be prepared to fight with any emergency like fire. o Provision shall be made for domestic solid waste disposal in a control manner. The recyclable waste shall be sold off and non-saleable and biodegradable waste shall be disposed through secured land filling. o Provision of paved area for unloading and storage of fuel oil, lubricant oil, away from storm water drainage.					
9.	Traffic Movement	o The contractor will identify the areas were temporary traffic diversion may be required. He would prepare appropriate traffic movement plan for ensuring continued flow of traffic during construction phase. This may include movement of the traffic from the site of the construction area. This kind of a temporary diversion shall be finalized with the concurrence of respective PIU. o Wherever, cross-drainage structure work require longer construction time and road is to be blocked for longer duration, the PIU / DPR Consultant shall define appropriate	As proposed under DPR and determined by contractor and approved by PIC/PIU/ *(Highlight the chainages which may require traffic diversions)*	Pre-construction and construction stage	To be included in contractor's cost	All facilities are to be planned and implemented by contractor under approval by PIU / PIC	PIU

SL. No.	Project Action/Environmental Attributes	Mitigation Measures	Location	Time Frame	Cost	Responsible for Implementing	Responsible for Monitoring
		measures for traffic diversion before the start of the construction. o The diversion plan should ensure smooth flow of traffic, minimize accidents to road users during construction works. o Adequate signboards shall be placed much ahead of diversion site to caution the road users. The road signs should be bold and retro reflective in nature for good visibility in day and night both.					
10.	Occupational Health and Safety	o Speed breakers (Rumble strips) as per IRC: 99-1988 shall be provided at sharp corves design and bends where the curve design speed is less than 40 km per hour in plain and rolling terrain. o Speed breakers shall also be provided at a threshold of habitation (as per NRRDA guidelines) at regular intervals (150-200 m) through habitation and near schools or religious places. o The speed breakers shall be provided and directional sign boards installed at sites where reverse horizontal curves are closely spaced and speed reduction is required. o Provision shall be made for Hazard markers at each end of all box culverts, river crossing causeways	Throughout the project section at the location determined by contractor and approved by PIU (Highlight the location with chainage for such requirements)				

SL. No.	Project Action/Environmental Attributes	Mitigation Measures	Location	Time Frame	Cost	Responsible for Implementing	Responsible for Monitoring
		and similar CD structures o Shoulder side slopes shall not be steeper than 2h:1V unless stone pitching of the slopes is provided. o Cement concrete pavement and V-shaped drain shall be constructed to the full width of the available roadway within densely populated habitation and as per feasibility. o Provision shall be made for Directional sight board shall be installed on all sharp curves and bends o At a main road, intersection or crossing "STOP" sign and 'T-intersection' warning sign shall be installed on the village road. o It is proposed to approach railways for adequate safety at unmanned railway crossing where applicable. Adequate clearly visible sign shall be provided on both side of the railway crossing					
	Construction Stage						
11.	Sourcing and transportation of construction material (aggregates , earth)	**Borrow Earth:** o The borrow earth shall be obtained from identified locations and with prior permission for landowner and clear understanding for its rehabilitation. The Indian Road Congress (IRC):10-1961 guideline should be used for selection of borrow pits and amount that can be	As Borrow sites and quarries (if required) location. (List the probable locations for	During Design and construction Stage	Engineering cost	The selection of quarries and material selection will be the responsibility of contractor under approval of PIC	PIC /PIU/TSC Environmental officer and other team members of PIC will monitor

SL. No.	Project Action/Environmental Attributes	Mitigation Measures	Location	Time Frame	Cost	Responsible for Implementing	Responsible for Monitoring
		borrowed. o Borrowing earth from agricultural land shall be minimized to the extent possible. Further, no earth shall be borrowed from already low-lying areas. o A 15 cm topsoil will be stripped off from the borrow pit and this will be stored in stockpiles in a designated area for height not exceeding 2m and side slopes not steeper than 1:2 (Vertical: Horizontal). o Borrowing of earth will not be done continuously throughout the stretch. o Ridges of not less than 8m widths will be left at intervals not exceeding 300m. o Small drains will be cut through the ridges, if necessary, to facilitate drainage. o The slope of the edges will be maintained not steeper than 1:4 (vertical: Horizontal). o The depth of borrow pits will not be more than 30 cm after stripping the 15 cm topsoil aside. o Fly ash will also be used in road embankment as per IRC guidelines wherever thermal power plant is located within 100 km of the road alignment. o The borrow area shall be rehabilitated as per the	borrow areas. (Highlight the identified quarries, if already identified. Contractors should also indicate the quarry they are likely to use if not already identified at DPR stag)			/PIU/TSC Environmental officer and other team members of PIC will ensure appropriate implementation of mitigation actions.	

SL. No.	Project Action/Environmental Attributes	Mitigation Measures	Location	Time Frame	Cost	Responsible for Implementing	Responsible for Monitoring
		understanding arrived with the land-owner. The rehabilitation plan may include the following: ▪ Borrow pits shall be backfilled with rejected construction wastes and will be given a vegetative cover. If this is not possible, then excavation sloped will be smoothed and depression will be filled in such a way that it looks more or less like the original ground surface. ▪ Borrow areas might be used for aquaculture in case landowner wants such development. **Aggregate :** o The stone aggregate shall be sourced from existing licensed quarries o Copies of consent/ approval / rehabilitation plan for use of existing source will be submitted to PIU. o Topsoil to be stockpiled and protected for use at the rehabilitation stage **Transportation of Construction Material** o Existing tracks / roads are to be used for hauling of materials to the extent possible. o Prior to construction of roads,					

SL. No.	Project Action/Environmental Attributes	Mitigation Measures	Location	Time Frame	Cost	Responsible for Implementing	Responsible for Monitoring
		topsoil shall be preserved or at least shall be used for any other useful purposes like using in turfing of embankment rather than allowing its loss by construction activities. o The vehicles deployed for material transportation shall be spillage proof to avoid or minimize the spillage of the material during transportation. In any case, the transportation links are to be inspected at least twice daily to clear accidental spillage, if any.					
12.	Loss of Productive Soil, erosion and land use change	o It shall be ensured that the land taken on lease for access road, construction camp and temporary office of the storage facilities is restored back to its original land use before handing it over back to land owner. o The top soil from the productive land (borrow areas, road widening areas etc.) shall be preserved and reused for plantation purposes. o It shall also be used as top cover of embankment slope for growing vegetation to protect soil erosion. o Cut and fill shall be planned as per IRC provisions and rural road manual. o All steep cuts shall be flattened and benched. o Shrubs shall be planted in loose	Thought out the road section (The contractor shall include the cost for the measures as part of the construction cost)	During the Construction stage	Included in project cost	Design Consultant and Contractor	PIU / MPRRDA

SL. No.	Project Action/Environmental Attributes	Mitigation Measures	Location	Time Frame	Cost	Responsible for Implementing	Responsible for Monitoring
		soil area. o IRC: 56 -1974 recommended practice for treatment of embankment slopes for erosion control shall be taken into consideration. o Soil erosion shall be visually checked on slopes and embankment areas. In case soil erosion is found, suitable measures shall be taken to control the soil erosion					
13.	Compaction and Contamination of Soil	o To prevent soil compaction in the adjoining productive lands beyond the ROW, the movement of construction vehicles, machinery and equipment shall be restricted to the designated haulage route. o The productive land shall be reclaimed after construction activity. o Septic tank or mobile toilets fitted with anaerobic treatment facility shall be provided at construction camp/temporary office/storage areas. o Domestic solid waste at construction camp shall be segregated into biodegradable and non-biodegradable waste. o The non-biodegradable and recyclable waste shall be sold off. o Fuel and lubricants shall be stored at the predefined storage location.	Throughout the project section of the road s (The contractor shall include the cost for the measures as part of the construction cost)	• Design and construction stage	• Project preparation cost and construction cost	• Design consultant and Contractor,	PIU

SL. No.	Project Action/Environmental Attributes	Mitigation Measures	Location	Time Frame	Cost	Responsible for Implementing	Responsible for Monitoring
		o The storage area shall be paved with gentle slope to a corner and connected with a chamber to collect any spills of the oils. o All efforts shall be made to minimize the waste generation. Unavoidable waste shall be stored at the designated place prior to disposal. o To avoid soil contamination at the wash-down and re-fuelling areas, “oil interceptors” shall be provided. Oil and grease spill and oil soaked materials are to be collected and stored in labelled containers (Labelled: WASTE OIL; and hazardous sign be displayed) and sold off to SPCB/ MoEF authorized re-refiners.					
14.	Construction Debris and waste	o All excavated materials from roadway, shoulders, verges, drains, cross-drainage will be used for backfilling embankments, filling pits, and landscaping. o Unusable debris material should be suitably disposed off at pre-designated disposal locations, with approval of the concerned authority. o The bituminous wastes shall be disposed in secure manner at designated landfill sites only in an environmentally accepted manner.	• Throughout the project section of the road	• Design and construction stage	• Project preparation cost and construction cost	• Design consultant and Contractor,	PIU

SL. No.	Project Action/Environmental Attributes	Mitigation Measures	Location	Time Frame	Cost	Responsible for Implementing	Responsible for Monitoring
		o For removal of debris, wastes and its disposal MOSRTH guidelines should be followed. Unproductive/wastelands shall be selected with the consent of villagers and Panchayat for the same. The dumping site should be of adequate capacity. It should be located at least 500 m away from the residential areas. Dumping sites should be away from water bodies to prevent any contamination of these bodies.					
15.	Air and Noise Quality	o Vehicles delivering loose and fine materials like sand and aggregates shall be covered. o Dust suppression measures like water sprinkling, shall be applied in all dust prone locations such as unpaved haulage roads, earthworks, stockpiles and asphalt mixing areas. o Mixing plants and asphalt (hot mix) plants shall be located at least 0.5 km away and in downwind direction of the human settlements. o Material storage areas shall also be located downwind of the habitation area. o Hot mix plant shall be fitted with stack of adequate height (30 m) or as may be prescribed by SPCB to ensure enough dispersion of exit	• Near all drainage crossing , nalas and river crossings etc.	• During Construction stage	• Included in engineering cost	Contractor	PIU/ MPRRDA

SL. No.	Project Action/Environmental Attributes	Mitigation Measures	Location	Time Frame	Cost	Responsible for Implementing	Responsible for Monitoring
		gases. Consent to establish and operate shall be obtained from State Pollution Control Board and comply with all consent conditions. o Diesel Generating (DG) sets shall also be fitted with stack of adequate height (as per regulation height of the stack of open to air DG set shall be about 0.5 m for 5 KVA and about 0.7 m for 10 KVA DG sets, above top of sound proofing enclosure of the Dg set). . Low sulphur diesel shall be used in DG sets and other construction machineries. Construction vehicles and machineries shall be periodically maintained. o The requisite PPE (helmet, mask, boot, hand gloves, earplugs) shall be provided to the construction workers. o Workers' exposure to noise will be restricted to less than 8 hours a day. Workers duty shall be regulated accordingly.					
16.	Biological environment - Tree planting	o Compensatory Afforestation shall be made on 1:3.ratio basis as per the plannings. o Additional trees shall be planted wherever feasible.	Throughout the project section of the road (Highlight Tree cutting locations & proposed	during the design and Construction stage	Part of engineering work cost included	DFO and MPRRDA	PIU and MPRRDA

SL. No.	Project Action/Environmental Attributes	Mitigation Measures	Location	Time Frame	Cost	Responsible for Implementing	Responsible for Monitoring
			likely plantation location)				
17.	Ground Water and Surface Water Quality and Availability	o Requisite permission shall be obtained for abstraction of groundwater from State Ground Water Board/Central Ground Water Authority if applicable. o The contractor shall arrange for water required during construction in such a way that the water availability and supply to nearby communities remains unaffected. o Water intensive activities shall not be undertaken during summer period to the extent feasible. o Provision shall be made to link side drains with the nearby ponds for facilitating water harvesting if feasible o Where ponds are not available, the water harvesting pits shall be constructed as per the requirement and rainfall intensity. o Preventive measures like slop stabilisation, etc shall be taken for prevention of siltation in water bodies.	Throughout the project section of the road (The contractor shall include the cost for the measures as part of the construction cost)	construction stage	construction cost	Contractor,	PIC/PIU
19.	Occupational Health and Safety	o Verification of implementation of provision made at planning stage. o Each worker is provided with requisite PPE o Directional sight board shall be					

SL. No.	Project Action/Environmental Attributes	Mitigation Measures	Location	Time Frame	Cost	Responsible for Implementing	Responsible for Monitoring
		installed on all sharp curves and bends o At a main road, intersection or crossing "STOP" sign and 'T-intersection' warning sign shall be installed on the village road. o					
Operation Stage							
19.	Air and Noise Quality	o Awareness sign board shall be provided for slow driving near the habitat areas to minimize dust generation due vehicle movement.. Speed limitation and honking restrictions may be enforced near sensitive locations.	Throughout the project section at the location determined by contractor and approved by PIU	Operation stage stage	construction cost	Contractor,	PIC/PIU
	Site restoration	o All construction camp/temporary office/material storage areas are to be restored to its original conditions. o The borrow areas rehabilitation will be ensured as per the agreed plan with the landowner. o Obtained clearance from PIU before handling over the site to SRRDA. o PIC to undertake survivability assessment and report to PIU the status of compensatory tree plantation at a stage of completion of construction with recommendation for improving the	(The contractor shall include the cost for the measures as part of the construction cost)				

SL. No.	Project Action/Environmental Attributes	Mitigation Measures	Location	Time Frame	Cost	Responsible for Implementing	Responsible for Monitoring
		survivability of the tree if required					
20.	Hydrology and Drainage	o Regular removal/cleaning of deposited silt shall be done from drainage channels and outlet points before the monsoon season. o Rejuvenation of the drainage system by removing encroachments/ congestions shall be regularly conducted	Throughout the project section at the location determined by contractor and approved by PIU	Operation stage stage	construction cost	Contractor,	PIC/PIU
21.	Occupational Health and Safety	o Directional sight board shall be installed on all sharp curves and bends o At a main road, intersection or crossing “STOP” sign and ‘T-intersection’ warning sign shall be installed on the village road.	Throughout the project section at the location determined by contractor and approved by PIU	Operation stage stage	construction cost	Contractor,	PIC/PIU

Note :

1. Road specific measures may vary depending on its location and environmental setting around. The exact extent of activities and related measures requires will depend on final alignment selection. Table 1 provides the list of common utilities, ponds, or community structures falling within 2-4 M of the road and may require shifting. Efforts shall be made to adopt the mitigative measures listed under respective section above including measures of aligning road on one end to save the the structures/trees as much as possible. The PIU will update this EMP before attaching it with the DPR and either list or refer to the section of DPR for highlighting the exact location with chainage of action areas (regarding shifting of common utilities, community structures, location of CD structures, embankment height in the flood prone areas, slope stabilization measures with locations near ponds or water bodies, tree cutting locations)
2. The information to be updated in the standard EMP before attaching it with DPR is highlighted under location column of the standard EMP.

Table 1: Madhya Pradesh: Environmental Features Within 0-4 m from Road Edge That May Require Shifting /Protection Measures

S.No	Block	Road Name	Hand Pump	Electric Poles	Trans-former	Telephone poles	Trees	Temple	School	Water Tank	Ponds /Well	River	Forest	Water logging	Flood prone
Ratlam District															
1.	Ratlam	Mundri to Sarwani Jagir	-	-	-	-	25	-	-	-	-	-	-	-	-
2.	Ratlam	R. S. Road to Nandlai	-	-	-	-	20	2	-	-	-	-	-	-	-
3.	Ratlam	Dosaigaon to Borana	-	2	-	-	25	1	-	-	1 well	-	-	-	-
4.	Ratlam	Dhatrawada to Kankarwa	-	-	1DP	-	32	-	-	-	-	-	-	-	-
Indore District															
5.	Sanwer	Indore Ujjain Road to Brahmankhedi	3	10	-	-	15	1	1	-	-	-	-	-	-
6.	Sanwer	Indore Ujjain Road to Siloda Bujurg	-	-	-	-	2	-	-	-	-	-	-	-	-
7.	Mhow	A. B. Road to Shahda	-	-	-	-	-	-	1	-	-	-	-	-	-
8.	Mhow	Choraldam Road to Buralia	-	-	-	-	-	-	-	-	-	-	-	-	-
Tikamgarh District															
9.	Tikamgarh	Tikamgarh Jatara Road tp Laxmanpura	-	-	-	-	5	-	-	-	-	-	-	-	-
10.	Tikamgarh	Baldevgarh Kakarwaha Road to Atariya	-	1	-	-	5	-	-	-	-	-	-	-	-
11.	Baldevgarh	Patha Patori Road to Midawali	-	-	-	-	13	-	-	-	-	-	-	-	-
Damoh District															
12.	Tendukheda	Samnapur to Jamun	-	-	-	-	54	1 hospital	2	-	1 Well	-	-	-	-
13.	Damoh	MDR(ATP) to Rampura	-	-	-	-	-	-	-	-	-	-	-	-	-
14.	Tendukheda	L118 to Oriya Mal	1	-	-	-	6	1	-	-	-	-	-	-	-
Jabalpur District															
15.	Sihora	Sihora Silondi Road to Chhanagawa	2	-	-	-	34	1	1	-	1 Pond	-	-	-	-
16.	Jabalpur	NH-7 to Dhadra	-	-	-	-	1	-	-	-	-	-	-	-	-
17.	Jabalpur	T05 to Pipariya	3	-	-	-	24	-	1	-	-	-	-	-	-

S.No	Block	Road Name	Hand Pump	Electric Poles	Trans-former	Telephone poles	Trees	Temple	School	Water Tank	Ponds /Well	River	Forest	Water logging	Flood prone
Mandsaur District															
18.	Sitamou	Sitamou Basai to Larni	1	-	-	-	1	-	-	-	-	-	-	-	-
19.	Mandsaur	Mandsaur Bypass Road to Aghoriya	-	-	1	-	6	-	-	-	-	-	-	-	-
20.	Mandsaur	Dalauda Digon Road to Pinda	-	-	-	-	1	-	-	-	-	-	-	-	-
Sehore District															
21.	Ichhawar	Gajikhedi Road to Ramgarh	3	-	-	-	37	1	1	Panchayat Bhawan	1 well	-	-	-	-
22.	Sehore	T08 (Jharkheda Ghati-Sehorew MDR) to Toonakhurd	2	-	1	-	39	-	1	1 Anganwadi Centre	1 Well 1 Pond	-	-	-	-
23.	Sehore	Heerapur Road (T11) to Alampura	3	-	1	-	3	-	1	-	-	-	-	-	-
Neemuch District															
24.	Jawad	Neemuch Singoli Road to Gothada	1	2	1 DP	-	-	-	-	-	-	-	-	-	-
25.	Jawad	Neemuch Singoli Road to Panoli	-	1	-	-	1	-	-	-	-	-	-	-	-
Bhopal District															
26.	Berasiya	T11-Arjunkhedi Road to Khejra Ghat	1	-	-	-	13	1	-	-	1 Well	-	-	-	-
27.	Berasiya	Rampura Balachhoun Road to Goria Sankheda	1	-	-	-	26	-	-	-	-	-	-	-	-
28.	Berasiya	Bhopal Berasiya Road to Pardi	1	-	-	-	26	-	-	-	-	-	-	-	-

Appendix 5.2: Environmental Monitoring Plan

I. ENVIRONMENTAL MONITORING DURING DESIGN AND PRE-CONSTRUCTION STAGE

Monitoring Responsibility: PIU with Support from PIC
Monitoring Frequency: Once prior to start of construction
Road Name with Block and District Name:……..
Road Length: ……
Report No.: …….

SL. No.	Environmental Attributes	Mitigation Measures	Location	Additional Monitoring Indicator if applicable	Compliance status	Corrective action proposed in case of delay
1.	Climate Change Consideration and Vulnerability screening	o Compliance to climate change vulnerability check point given under EARF and adoption of necessary mitigative measures as may be required o Efforts shall be made to plant additional trees for increasing the carbon sink. The tree may be planted with help of PRI (Panchati Raj Institution)	All through the alignment	No. of Additional Tree plantation Proposed		
2.	Finalization of alignment	o The road will be part of district core network and will comply with PMGSY guidelines o Subproject shall not disturb any cultural heritage designated by the government or by the international agencies, such as UNESCO, and shall avoid any monuments of cultural or historical importance. o Subproject will not pass through any designated wild life sanctuaries, national park, notified Eco sensitive areas or area of international significance such as protective wet land designated under Wetland Convention, and reserve forest. o Subproject to comply with local and National legislative requirements such as forest clearance for diversion of forestland and ADB's Safeguard Policy Statement 2009. o Alignment finalization considering availability of right of way and in consultation with local people. o ROW may be reduced in built up area or constricted areas to minimize land acquisition as per PMGSY Guidelines.	All through the alignment of each rural road	Compliance to Conditions of Forest Clearance if applicable		

SL. No.	Environmental Attributes	Mitigation Measures	Location	Additional Monitoring Indicator if applicable	Compliance status	Corrective action proposed in case of delay
		o Adjust alignment to the extent feasible to avoid tree cutting, shifting of utilities or community structure. o The road shall follow natural topography to avoid excessive cut and fill.				
3.	Land acquisition	o Avoid or minimize land acquisition. o Land acquisition, compensation packages, resettlement and rehabilitation, poverty alleviation programs for affected people and all other related issues are addressed through Social Impacts and Resettlement & Rehabilitation report.	All through the alignment of each rural road			
4.	Biological environment - Tree planting	o All efforts shall be taken to avoid tree cutting wherever possible. o Requisite permission from forest department shall be obtained for cutting of roadside trees. o Provision of Compensatory Afforestation shall be made on 1:3.ratio basis. o Permission shall be taken for diversion of any forest land if involved. Provision shall be made for additional compensatory tree plantation.	Throughout the project section of the road			
5.	Planning for land clearing	o The road land width shall be clearly demarcated on the ground. o The utility and community structure shifting shall be planned in consultations and concurrence of the community. o Tree felling shall be limited to those, which could not be saved even by design measures. The tree shall be cut with a prior permission of Forest department. o The vegetable cover shall be removed and disposed in consultation with community. o All public utilities shifting shall be planned with prior concurrence of respective agencies/authority and to the adjacent location approved by them	All through the Rural roads excepting in stretches of habitations	Tree cutting permission from Forests or Revenue department as applicable Permission of concerned utility Authorities No. and proposed location of compensatory trees plantation, Concurrence from community for utility, community		

SL. No.	Environmental Attributes	Mitigation Measures	Location	Additional Monitoring Indicator if applicable	Compliance status	Corrective action proposed in case of delay
				structure, and vegetation cover removal		
6.	Shifting on Common Properties Resources	o All efforts are made to minimize shifting of common utilities and community structures. o The community structures/utilities which can not be saved will be shifted to adjacent area with the concurrence and in consultation with community.	As determined by contractor under approval of PIC /PIU			
7.	Cut and Fill and Embankment Construction design and planning	o The alignment design shall consider options to minimize excessive cuts and fills. o The cut and fill quantities shall be used for embankment to minimize barrow earth requirement. o The design shall be as per relevant IRC provisions for cut and fill, slope protection and drainage. o Adequate provision shall be made for cross-drainage structure for maintaining natural drainage pattern in the subproject area and preventing soil erosion. o Side drain for channelizing water to nearby natural drain in water stagnation /logging prone area. o The top soil of the cut and fill area shall be used for embankment slope protection o Embankment will be designed above High Flood Level wherever, area is prone to flood.	All through the alignment of each rural road			
8.	Hydrology and Drainage	o Provision of adequate cross-drainage structure shall be made to ensure smooth passage of water and maintaining natural drainage pattern of the area. The discharge capacity of the CD structure shall be designed accordingly. o Provision of adequate side drainage shall be made in water stagnant/logging areas. o The construction work near water body shall be planned preferably in dry season so that water quality of the water channel is not affected due to siltation and rain water runoff. o Elaborate drainage system shall be provided to drain the storm water from the roadway and embankment to ensure minimum disturbance to natural drainage of surface and	Near all drainage crossing , nalas and river crossings etc.			

SL. No.	Environmental Attributes	Mitigation Measures	Location	Additional Monitoring Indicator if applicable	Compliance status	Corrective action proposed in case of delay
		subsurface water of the area. o Provision of additional cross-drainage structure shall be made in the areas where nearby land is sloping towards road alignment on both the sides. o Provision of concrete road construction in habitat area with drainage of both side of the road shall be made as per the design provision and with adequate slope to prevent any water logging. o Road level shall be fixed above HFL. Embankment slope stabilization measures shall be planned. Stabilization measures may include vegetative treatment, stone pitching, retaining wall where feasible, low cost options such as bamboo / eucalyptus tree pilling .				
9.	Establishment of Construction Camp, temporary office and storage area	o Construction camp sites shall be located away from any local human settlements (minimum 0.5 km away) and preferably located on lands, which are not productive barren/waste lands presently. o Similarly temporary office and storage areas shall be located away from human settlement areas (minimum 500 m). o The construction camps, office and storage areas shall have provision of adequate water supply, sanitation and all requisite infrastructure facilities. o The construction camps shall be located at a minimum 0.5 km from forest land/areas to deter the construction labor in trespassing. Similarly, temporary office and storage areas shall be located at a minimum 0.5 km from forest land/areas. o The construction camps, office and storage areas shall have provision of septic tank/soak pit of adequate capacity so that it can function properly for the entire duration of its use. o All construction camps shall have provision of rationing facilities particularly for kerosene/LPG so that dependence on firewood for cooking is avoided completely to the extent possible. o The construction camps, office and storage areas shall have provision of health care facilities for adults, pregnant women	As determined by contractor under approval of PIC/PIU/ (ref- Labelled: WASTE OIL; and hazardous sign be displayed at oil handling areas and sold off to SPCB/ MoEF authorized re-refiners).	Location of Construction camp with planning of requisite facilities and making provision of such facilities prior to start of construction. Availability of consent to establish from pollution control board for setting up the camp.		

SL. No.	Environmental Attributes	Mitigation Measures	Location	Additional Monitoring Indicator if applicable	Compliance status	Corrective action proposed in case of delay
		and children. o Personal Protective Equipments (PPEs) like helmet, boots, earplugs for workers, first aid and fire fighting equipments shall be available at construction sites before start of construction. An emergency plan shall be prepared to fight with any emergency like fire. o Provision shall be made for domestic solid waste disposal in a control manner. The recyclable waste shall be sold off and non-saleable and biodegradable waste shall be disposed through secured land filling. o Provision of paved area for unloading and storage of fuel oil, lubricant oil, away from storm water drainage.				
10.	Traffic Movement	o The contractor will prepare appropriate traffic diversion scheme approved by respective PIU. This shall be implemented prior to start of construction to avoid any inconvenience to the present road users. This shall be implemented in other stretches of the road as per the progress of the construction work. o The diversion plan should ensure smooth flow of traffic, minimize accidents to road users during construction works. o Adequate signboards shall be placed much ahead of diversion site to caution the road users. The road signs should be bold and retro reflective in nature for good visibility in day and night both.	As proposed under DPR and determined by contractor and approved by PIC/PIU/			
11.	Occupational Health and Safety	o Speed breakers (Rumble strips) as per IRC: 99-1988 shall be provided at sharp corves design and bends where the curve design speed is less than 40 km per hour in plain and rolling terrain. o Speed breakers shall also be provided at a threshold of habitation (as per NRRDA guidelines) at regular intervals (150-200 m) through habitation. o The speed breakers shall be provided and directional sign boards installed at sites where reverse horizontal curves are closely spaced and speed reduction is required. o Provision shall be made for Hazard markers at each end of	Throughout the project section at the location determined by contractor and approved by PIU			

SL. No.	Environmental Attributes	Mitigation Measures	Location	Additional Monitoring Indicator if applicable	Compliance status	Corrective action proposed in case of delay
		all box culverts, river crossing causeways and similar CD structures o Shoulder side slopes shall not be steeper than 2h:1V unless stone pitching of the slopes is provided. o Cement concrete pavement and V-shaped drain shall be constructed to the full width of the available roadway within densely populated habitation and as per feasibility. o Provision shall be made for Directional sight board shall be installed on all sharp curves and bends o At a main road, intersection or crossing "STOP" sign and 'T-intersection' warning sign shall be installed on the village road. o It is proposed to approach railways for adequate safety at unmanned railway crossing where applicable. Adequate clearly visible sign shall be provided on both side of the railway crossing				
2.	Grievance Redress	o Obtaining information from Village level Grievance redress committee, PIU as applicable	Each Sample road once.			

Note: Each report must enclose Photograph to the maximum possible action points, even if work is in progress.

II. ENVIRONMENTAL MONITORING DURING CONSTRUCTION STAGE

Monitoring Responsibility : PIU with Support from PIC
Monitoring Frequency : (First Report after third month of start of construction or 25% construction . Second report after ninth month of construction or 75% construction).
Project Details:…….
Road Stretch Name : …….
Monitoring Report Quarter No.: ……..

SL. No.	Environmental Attributes	Mitigation Measures	Location	Additional Monitoring Indicator if applicable	Compliance status	Corrective action proposed in case of delay
1.	Sourcing and transportation of construction material (aggregates , earth)	**Borrow Earth:** o The borrow earth shall be obtained from identified locations and with prior permission for landowner and clear understanding for its rehabilitation. The Indian Road Congress (IRC):10-1961 guideline should be used for selection of borrow pits and amount that can be borrowed. o Borrowing earth from agricultural land shall be minimized to the extent possible. Further, no earth shall be borrowed from already low-lying areas. o A 15 cm topsoil will be stripped off from the borrow pit and this will be stored in stockpiles in a designated area for height not exceeding 2m and side slopes not steeper than 1:2 (Vertical: Horizontal). o Borrowing of earth will not be done continuously through out the stretch. o Ridges of not less than 8m widths will be left at intervals not exceeding 300m. o Small drains will be cut through the ridges, if necessary, to facilitate drainage. o The slope of the edges will be maintained not steeper than 1:4 (vertical: Horizontal). o The depth of borrow pits will not be more than 30 cm after stripping the 15 cm topsoil aside. o Fly ash will also be used in road embankment as per IRC guidelines wherever thermal power plant is located within 100 km of the road alignment.	At Borrow sites and quarries (if required) location.	Compliance to IRC guidelines and stated criteria, Permission from land owners, Rehabilitation of borrow areas Availability of valid consent of quarries		

SL. No.	Environmental Attributes	Mitigation Measures	Location	Additional Monitoring Indicator if applicable	Compliance status	Corrective action proposed in case of delay
		o The borrow area shall be rehabilitated as per the understanding arrived with the land-owner. The re-habilitation plan may include the following: ▪ Borrow pits shall be backfilled with rejected construction wastes and will be given a vegetative cover. If this is not possible, then excavation sloped will be smoothed and depression will be filled in such a way that it looks more or less like the original ground surface. ▪ Borrow areas might be used for aquaculture in case landowner wants such development. **Aggregate :** o The stone aggregate shall be sourced from existing licensed quarries o Copies of consent/ approval / rehabilitation plan for use of existing source will be submitted to PIU. o Topsoil to be stockpiled and protected for use at the rehabilitation stage **Transportation of Construction Material** o Existing tracks / roads are to be used for hauling of materials to the extent possible. o Prior to construction of roads, topsoil shall be preserved or at least shall be used for any other useful purposes like using in turfing of embankment rather than allowing its loss by construction activities. o The vehicles deployed for material transportation shall be spillage proof to avoid or minimize the spillage of the material during transportation. In any case, the transportation links are to be inspected at least twice daily to clear accidental spillage, if any.				
2.	Loss of Productive Soil, erosion and land use change	o It shall be ensured that the land taken on lease for access road, construction camp and temporary office of the storage facilities is restored back to its original land use before handing it over back to land owner.	Thought out the road section			

SL. No.	Environmental Attributes	Mitigation Measures	Location	Additional Monitoring Indicator if applicable	Compliance status	Corrective action proposed in case of delay
		o The top soil from the productive land (borrow areas, road widening areas etc.) shall be preserved and reused for plantation purposes. o It shall also be used as top cover of embankment slope for growing vegetation to protect soil erosion. o Cut and fill shall be planned as per IRC provisions and rural road manual. o All steep cuts shall be flattened and benched. o Shrubs shall be planted in loose soil area. o IRC: 56 -1974 recommended practice for treatment of embankment slopes for erosion control shall be taken into consideration. o Soil erosion shall be visually checked on slopes and embankment areas. In case soil erosion is found, suitable measures shall be taken to control the soil erosion				
3.	Compaction and Contamination of Soil	o To prevent soil compaction in the adjoining productive lands beyond the ROW, the movement of construction vehicles, machinery and equipment shall be restricted to the designated haulage route. o The productive land shall be reclaimed after construction activity. o Septic tank or mobile toilets fitted with anaerobic treatment facility shall be provided at construction camp/temporary office/storage areas. o Domestic solid waste at construction camp shall be segregated into biodegradable and non-biodegradable waste. o The non-biodegradable and recyclable waste shall be sold off. o Fuel and lubricants shall be stored at the predefined storage location. o The storage area shall be paved with gentle slope to a corner and connected with a chamber to collect any spills of the oils. o All efforts shall be made to minimize the waste generation. Unavoidable waste shall be stored at the designated place	• Throughout the project section of the road s			

SL. No.	Environmental Attributes	Mitigation Measures	Location	Additional Monitoring Indicator if applicable	Compliance status	Corrective action proposed in case of delay
		prior to disposal. o To avoid soil contamination at the wash-down and re-fuelling areas, “oil interceptors” shall be provided. Oil and grease spill and oil soaked materials are to be collected and stored in labelled containers (Labelled: WASTE OIL; and hazardous sign be displayed) and sold off to SPCB/ MoEF authorized re-refiners.				
4.	Construction Debris and waste	o All excavated materials from roadway, shoulders, verges, drains, cross-drainage will be used for backfilling embankments, filling pits, and landscaping. o Unusable debris material should be suitably disposed off at pre-designated disposal locations, with approval of the concerned authority. o The bituminous wastes shall be disposed in secure manner at designated landfill sites only in an environmentally accepted manner. o For removal of debris, wastes and its disposal MOSRTH guidelines should be followed. Unproductive/wastelands shall be selected with the consent of villagers and Panchayat for the same. The dumping site should be of adequate capacity. It should be located at least 500 m away from the residential areas. Dumping sites should be away from water bodies to prevent any contamination of these bodies.	• Throughout the project section of the road			
5.	Air and Noise Quality	o Vehicles delivering loose and fine materials like sand and aggregates shall be covered. o Dust suppression measures like water sprinkling, shall be applied in all dust prone locations such as unpaved haulage roads, earthworks, stockpiles and asphalt mixing areas. o Mixing plants and asphalt (hot mix) plants shall be located at least 0.5 km away and in downwind direction of the human settlements. o Material storage areas shall also be located downwind of the habitation area. o Hot mix plant shall be fitted with stack of adequate height	• Near all drainage crossing , nalas and river crossings etc.			

SL. No.	Environmental Attributes	Mitigation Measures	Location	Additional Monitoring Indicator if applicable	Compliance status	Corrective action proposed in case of delay
		(30 m) or as may be prescribed by SPCB to ensure enough dispersion of exit gases. Consent to establish and operate shall be obtained from State Pollution Control Board and comply with all consent conditions. o Diesel Generating (DG) sets shall also be fitted with stack of adequate height (as per regulation height of the stack of open to air DG set shall be about 0.5 m for 5 KVA and about 0.7 m for 10 KVA DG sets, above top of sound proofing enclosure of the Dg set). . Low sulphur diesel shall be used in DG sets and other construction machineries. Construction vehicles and machineries shall be periodically maintained. o The requisite PPE (helmet, mask, boot, hand gloves, earplugs) shall be provided to the construction workers. o Workers' exposure to noise will be restricted to less than 8 hours a day. Workers duty shall be regulated accordingly.				
6.	Biological environment - Tree planting	o Compensatory Afforestation shall be made on 1:3.ratio basis as per the plannings. o Additional trees shall be planted wherever feasible.	Throughout the project section of the road			
7.	Ground Water and Surface Water Quality and Availability	o Requisite permission shall be obtained for abstraction of groundwater from State Ground Water Board/Central Ground Water Authority if applicable. o The contractor shall arrange for water required during construction in such a way that the water availability and supply to nearby communities remains unaffected. o Water intensive activities shall not be undertaken during summer period to the extent feasible. o Provision shall be made to link side drains with the nearby ponds for facilitating water harvesting if feasible o Where ponds are not available, the water harvesting pits shall be constructed as per the requirement and rainfall intensity. o Preventive measures like slop stabilisation, etc shall be taken for prevention of siltation in water bodies.	Throughout the project section of the road			

SL. No.	Environmental Attributes	Mitigation Measures	Location	Additional Monitoring Indicator if applicable	Compliance status	Corrective action proposed in case of delay
8.	Occupational Health and Safety	o Verification of implementation of provision made at planning stage. o Each worker is provided with requisite PPE o Directional sight board shall be installed on all sharp curves and bends o At a main road, intersection or crossing “STOP” sign and ‘T-intersection’ warning sign shall be installed on the village road.	Throughout the project section at the location determined by contractor and approved by PIU			
9.	Grievance Redress	o Obtaining information from Village level Grievance redress committee, PIU as applicable	Each Sample road once.			

Note: Each report must enclose Photograph to the maximum possible action points, even if work is in progress.

III. ENVIRONMENTAL MONITORING DURING OPERATION STAGE

Monitoring Responsibility: PIU with Support from PIC
Monitoring Frequency: (On completion of construction and after one month of first and second year of maintenance period)
Project Details:…….
Road Stretch Name: ……
Monitoring Report No.: ……..

SL. No.	Environmental Attributes	Mitigation Measures	Location	Additional Monitoring Indicator if applicable	Compliance status	Corrective action proposed in case of delay
1.	Air and Noise Quality	o Awareness signboard shall be provided for slow driving near the habitat areas to minimize dust generation due vehicle movement. Speed limitation and honking restrictions may be enforced near sensitive locations.	Throughout the project section at the location determined by contractor and approved by PIU			
2.	Site restoration	o All construction camp/temporary office/material storage areas are to be restored to its original conditions. o The borrow areas rehabilitation will be ensured as per the agreed plan with the landowner. o Obtained clearance from PIU before handling over the site to SRRDA. o PIC to undertake survivability assessment and report to PIU the status of compensatory tree plantation at a stage of completion of construction with recommendation for improving the survivability of the tree if required	Throughout the road stretch	Survivability report, land owner concurrence of land reversal		
	Hydrology and Drainage	o Regular removal/cleaning of deposited silt shall be done from drainage channels and outlet points before the monsoon season. o Rejuvenation of the drainage system by removing encroachments/ congestions shall be regularly conducted	Throughout the project section at the location determined by contractor and approved by PIU			

SL. No.	Environmental Attributes	Mitigation Measures	Location	Additional Monitoring Indicator if applicable	Compliance status	Corrective action proposed in case of delay
3.	Occupational Health and Safety	o Directional sight board shall be installed on all sharp curves and bends o At a main road, intersection or crossing “STOP” sign and ‘T-intersection’ warning sign shall be installed on the village road.	Throughout the project section at the location determined by contractor and approved by PIU			
4.	Grievance Redress	o Obtaining information from Village level Grievance redress committee, PIU as applicable	Each Sample road once.			

NOTE: Each report must enclose Photograph to the maximum possible action points, even if work is in progress.

Appendix 6.1: Public Consultation in Madhya Pradesh

MPRRDA Officials:

Name	Designation
Aniruddh D Kapaley & H. P. Shivhare	Chief General Managers
Mr A. K. Nagaria	General Manager (Tech)
In-charge PIU	Respective District/Blocks

Villagers

District	Block	Road Name	Name of Villagers
Ratlam	Ratlam	Mundri to Sarwani Jagir	Kanhaiyalal Patidar, Yadavlal Patidar
Indore	Sanwer	Indore Ujjain Road to Brahman Khedi	Bishnu Patel, Bhim Patel, Mohanlal, Bhim, Liladhar Patel
Tikamgarh	Tikamgarh	Tikamgarh Jatara Road to Laxmanpura	Ms Sudha Acharkar, Kamla Bai, Babulal, Ram Vilas, Moti Bai
Damoh	Tendukheda	Samnapur to Jamun	Sheela Rani (Sarpanch), Dhanu BAi, Ravishankar, Anaar Bai, Shashi Bai
Damoh	Damoh	MDR(ATP) to Rampura	Ms Janaki Rani Yadav (Sarpanch), Parshuram Yadav (Panchayat Secretary), Delan Singh Thakur, Mohan Yadav, Vaijayanti Bai
Damoh	Tendukheda	L118 To Oriya Mal	Manoj, Liladhar, Ram Pyari, Munni Bai, Shyamlal Patel (Sarpanch)
Bhopal	Berasiya	T08-Bhopal Berasiya Road to Pardi	Munni Bai (Anganwadi worker), Dalpat Singh, Lalit Vishwakarma, Kumal Singh Bishnoi (Sarpanch)
Jabalpur	Sehora	Sihora Silondi Road to Chhanagawa	Rajesh, Bhuramal, Umesh Singh Lodhi, Delan Singh
Ratlam	Ratlam	Dosaigoan to Borana	Ms Bhagwantaa (Sarpanch), Madan Lal, Jagdish, Radheshyam, Chhagan Lal, Ms Ramkanya (Anganwadi worker)
Ratlam	Ratlam	R.S. Road to Nandlai	Bangdi Ram (AP), Ashok, Mohan Lal Jain
Mandsaur	Sitamou	Sitamou Basai to Lami	Karan Singh, Ratan Singh, Mohan Lal, Smt Heera Bai (Sarpanch) Radheshyam Solanki (Panchayat Secretary), Mohanlal Solanki (Panchayat member)
Sehore	Ichhawar	Gaji Khedi Road to Ramgarh	Munnalal, Ram Lal, Harikishan, Devi Singh, Ram Kunwar
Sehore	Sehore	T11-Heerapur Road to Alampura	Amit, Ritesh Parmar, Bharat Parmar, Ankit Parmar, Ms Ritu Mewra (Sarpanch), Satish Parmar (Panchayat Secretary), Prahlad Parmar
Jabalpur	Jabalpur	NH-7 to Dhadra	Ms Ram Bai, Jayanti Bai, Jeera Bai, Ms Usha Mishra (Sarpanch), Chhotan Singh, Mahendra Singh
Neemuch	Jawad	Neemuch Singoli Road to Gothada	Prahlad Meena, Dheeraj Painter, Kasturi Bai, Ms Shyam Kala (Sarpanch), Rafique Mohammad Rangrej (Panchayat Secretary)
Indore	Sanwer	Indore Ujjian Road to Siloda Bujurg	Puran Singh Jat (Sarpanch), Madan Lal Malviya, Azam Khan, Rashid Sheikh, Ms Sayeeda Bi Pathan
Mandsaur	Mandsaur	Mandsaur Bypass Road to Aghoriya	Ms Pabitra Bai (Sarpanch), Chandra Prakash Baishnav, Lila Bai, Gita Bai, Balram
Jabalpur	Jabalpur	T05 to Pipariya	Gulab Singh Tekam, Manoj Agarwal, Ramesh Patel, Hira Patel, Hukum Dube
Neemuch	Jawad	Neemuch Singoli Road to Panoli	Ms Kanku Bai (Sarpanch), Balram Patidar, Shyamlal, Sunil Patidar, Sindri Bai
Indore	Mhow	A. B. Road to Shahda	Ms Geeta (Sarpanch), Ms Tabassum, Kallu Khan, Ismail, Ms Parveen Bano
Tikamgarh	Tikamgarh	Baldevgarh Kakarwaha Road to Atariya	Ashok Napit (Sarpanch), Prahlad Patel, Ballu Adivasi, Sarwar Ahirwar, Yashpal Dangi, Vasant Kuswaha, Sarju Singh, Aman Kuswaha
Tikamgarh	Baldevgarh	Patha-Pathori Road to	Mukesh, Gajraj Singh, Kamlesh, Bhagwan Das Lodhi,

District	Block	Road Name	Name of Villagers
		Midawali	Bablu Lodhi, Ms Komal Singh, Munnilal Lodhi
Indore	Mhow	Choraldam Road to Buralia	Dhara Singh (Sarpanch), Indu Singh, Naresh Singh, Ms Sabita, Ms Sushila, Mukesh
Mandsaur	Mandsaur	Dalauda Digon road to Pinda	Krishna Patidar, Omprakash Patil (Sarpanch), Rekha Patidar, Durga Bai, Manju Bai, Kumari Usha Patidar, Mangilal Patidar
Bhopal	Berasiya	T11 (Arjunkhedi) to Khejra Ghat	Mahendra Singh, Khub Singh, Rahguram Singh, Rahup Khan, Amol Singh, Ms Ram PyariBai, Ms Kusum Bai
Sehore	Sehore	T08 (Jherkheda Ghati Sehore MDR) to Toona Khurd	Dindayal Malviya, Mangi Lal Sharma, Niraj Vishwakarma, Ms Vidya Malviya (Sarpanch), Dinesh Vishwakarma
Ratlam	Jaora	Dhatrawada to Kankarwa	Narayan (Sarpanch), Tulsiram Suryavanshi, Ms Shivkanya, Ms Anita, Ram Lal Malviya, Ms Hemlata, Kaushalya Bai
Bhopal	Berasiya	Rampura Balachoun Road to Goria Sankheda	Shivraj, Bhupendra, Mangilal, Shivraj, Kesar Bai, Rekha Bai, Dariya Bai