



**ROADS AND BUILDINGS DEPARTMENT  
(PANCHAYAT)**

Government of Gujarat

**ENVIRONMENTAL AND SOCIAL IMPACT  
ASSESSMENT (ESIA)  
FOR  
GUJARAT RURAL ROADS (MMGSY) PROJECT**

**Under AIIB Loan Assistance**

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**LEA Associates South Asia Pvt. Ltd., India**

## Table of Content

<b>1</b>	<b>INTRODUCTION.....</b>	<b>1</b>
1.1	BACKGROUND.....	1
1.2	MUKHYA MANTRI GRAM SADAK YOJANA .....	1
1.3	SOCIO-CULTURAL AND ECONOMIC ENVIRONMENT: GUJARAT.....	3
1.3.1	Population Profile .....	5
1.3.2	Social Characteristics .....	5
1.3.3	Distribution of Scheduled Caste and Scheduled Tribe Population.....	5
1.3.4	Notified Tribes in Gujarat .....	5
1.3.5	Primitive Tribal Groups .....	6
1.3.6	Agriculture Base .....	6
1.3.7	Land use Pattern in Gujarat .....	6
1.3.8	Land holding status .....	7
1.4	ENVIRONMENTAL & SOCIAL IMPACT ASSESSMENT (ESIA).....	7
1.4.1	Objectives of ESIA .....	7
1.4.2	ESIA Approach.....	8
1.5	STRUCTURE OF ESIA REPORT .....	9
<b>2</b>	<b>SELECTION AND PROFILE OF SAMPLE ROADS.....</b>	<b>11</b>
2.1	LOCATION AND DESCRIPTION OF THE PROJECT ROADS .....	11
2.2	EXISTING ROAD CONDITION AND NEED FOR THE IMPROVEMENT.....	13
2.3	PROPOSED DESIGN INTERVENTIONS .....	13
<b>3</b>	<b>LEGAL AND POLICY FRAMEWORK .....</b>	<b>15</b>
3.1	AIIB SAFEGUARD POLICY .....	15
3.2	NATIONAL AND STATE RULES AND REGULATIONS.....	15
<b>4</b>	<b>DESCRIPTION OF THE ENVIRONMENT.....</b>	<b>19</b>
4.1	PHYSICAL ENVIRONMENT .....	19
4.1.1	Physiography .....	19
4.1.2	Rainfall and Climate .....	19
4.1.3	Soil .....	20
4.1.4	Geomorphology .....	20
4.1.5	Surface Water Quality.....	21
4.1.6	Groundwater Quality.....	22
4.1.7	Ambient Air Quality .....	23
4.1.8	Ambient Noise Quality.....	23
4.1.9	Physical Cultural Heritage.....	23
4.2	ECOLOGICAL/ BIOLOGICAL ENVIRONMENT.....	24
4.2.1	Forest cover .....	24
4.2.2	Flora and Fauna .....	24
4.2.3	Ecological sensitive areas in the project districts .....	25
4.3	SOCIAL ENVIRONMENT .....	25
4.3.1	Socio-Economic Profile of Sample Project-Roads / Locations Chosen .....	25
4.3.2	Distribution of Scheduled Caste / Tribe Population .....	26
4.3.3	Social Characteristics:.....	26
<b>5</b>	<b>PUBLIC CONSULTATION.....</b>	<b>28</b>
5.1	PURPOSE OF PUBLIC CONSULTATION.....	28
5.2	FREE, PRIOR AND INFORMED CONSULTATION IN FIFTH SCHEDULE AREA .....	28
5.3	DETAILS OF CONSULTATIONS CARRIED OUT .....	29
5.4	INFORMAL DISCUSSIONS WITH LOCAL COMMUNITY .....	36

5.5	VISIT TO HOT-MIX PLANT .....	36
5.6	CONSULTATIONS AND ON-SITE OBSERVATIONS: SUMMARY OF OUTCOMES .....	37
<b>6</b>	<b>ANALYSIS OF POTENTIAL ENVIRONMENTAL &amp; SOCIAL IMPACT AND MITIGATION MEASURES .....</b>	<b>39</b>
6.1	ASSESSMENT OF ENVIRONMENTAL AND SOCIAL IMPACTS .....	39
6.1.1	Impact on Land and Structures .....	39
6.1.2	Land Securing and Modalities: Different Scenarios .....	39
6.1.3	Design Considerations to Avoid Environmental Impacts .....	40
6.2	PRE – CONSTRUCTION IMPACTS AND MITIGATION MEASURES .....	41
6.3	ANTICIPATED IMPACTS DURING CONSTRUCTION PHASE AND MITIGATION MEASURES .....	43
6.4	POST – CONSTRUCTION IMPACTS AND MITIGATION MEASURES.....	45
<b>7</b>	<b>GRIEVANCE REDRESS MECHANISM.....</b>	<b>47</b>
<b>8</b>	<b>ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP).....</b>	<b>49</b>
8.1	ESMP TABLE.....	49
8.2	SUMMARY OF SITE AND ACTIVITY SPECIFIC PLAN AS PER ESMP .....	49
8.3	RESPONSIBILITIES FOR ESMP IMPLEMENTATION .....	55
<b>9</b>	<b>CAPACITY BUILDING AND TRAINING.....</b>	<b>57</b>
<b>10</b>	<b>MONITORING AND REPORTING .....</b>	<b>58</b>
10.1	ENVIRONMENTAL STANDARDS.....	59
10.2	ENVIRONMENTAL MONITORING LOCATIONS .....	60
10.3	MONITORING AND POST AUDITING .....	60
<b>11</b>	<b>IMPLEMENTATION COST .....</b>	<b>61</b>

## List of Table

Table 1-1:	District wise Population Profile - Urban, Rural, SC& ST and Total Population .....	4
Table 1-2:	Population of Major Tribes: Gujarat, 2011 .....	5
Table 1-3:	Land Use Pattern in Gujarat .....	6
Table 1-4:	Distribution Pattern of Operational Landholdings in Gujarat.....	7
Table 2-1:	Sample Project-Roads and Locations chosen for Impact Assessment .....	11
Table 2-2:	Type of Roads Proposed under the MMGSY .....	13
Table 3-1:	AIIB Safeguard Policy .....	15
Table 3-2:	Environmental and Social Regulatory Compliance.....	17
Table 4-1:	Annual Average Climate information for the Project Districts.....	20
Table 4-2:	Groundwater Quality - Jamnagar, Surendranagar and Morbi .....	22
Table 4-3:	Groundwater Quality - Gandhinagar .....	23
Table 4-4:	Forest Cover – District Wise .....	24
Table 4-5:	District wise Ecological Sensitive areas: .....	25
Table 4-6:	Profile of Roads/Regions Chosen for Detailed Study .....	26
Table 4-7:	Distribution of Scheduled / Tribe Population .....	26
Table 4-8:	Population Characteristics.....	26
Table 5-1:	Consultation Details: Bopa Village, Chhota Udepur.....	29
Table 5-2:	Consultation Details: Ukhalvaant Village, Chhota Udepur .....	30
Table 5-3:	Focus Group Discussion Details: Muldhar Village, Chhota Udepur .....	31
Table 5-4:	Consultation Details: Nana Dahisara Village, Morbi .....	31
Table 5-5:	Consultation Details: Uvarsad Village, Gandhinagar.....	33
Table 5-6:	Consultation Details: Rupal Village, Gandhinagar .....	34

Table 5-7: Consultation Details: Unava Village, Gandhinagar.....	35
Table 6-1: Scenarios of Land Securing, Modalities and Proposed Entitlements .....	39
Table 8-1: Site- and Activity-Specific Plans/Programs as per ESMP.....	49
Table 8-2: Environmental and Social Management Plan .....	50
Table 8-3: Institutional Responsibilities .....	55
Table 9-1: Environmental and Social Training Modules for MMGSY .....	57
Table 10-1: Environmental Monitoring Plan .....	58
Table 10-2: Ambient Air Quality Standards (National) .....	59
Table 10-3: Ambient Noise Quality Standards (National).....	59
Table 10-4: National Standard of Water .....	59
Table 11-1: ESMP Budget .....	61

## List of Figure

Figure 1-1: District-wise Number of Works under MMGSY .....	2
Figure 1-2: District-wise Length of the Roads (Km) under MMGSY .....	3
Figure 1-3: District-wise Total Investment (INR Million) under MMGSY .....	3
Figure 2-1: Environmental and Social Sensitivity Map.....	11
Figure 4-1: Physiography Map of Gujarat .....	19
Figure 4-2: Geology Map of Gujarat .....	21
Figure 4-3: Water Quality of River Sabarmati.....	21
Figure 4-4: Water Quality of River Mahi .....	22
Figure 5-1: Consultation in Fifth Schedule Area: Framework.....	28
Figure 5-2: Hot-mix Plant located at Nasvadi near Dhaboi in Chhota Udepur .....	37
Figure 7-1: Grievance Redress Mechanism .....	48
Figure 8-1: ESMP Implementation Mechanism.....	55

## Abbreviations

AAQM	:	Ambient Air Quality Monitoring
AIIB	:	Asian Infrastructure Investment Bank
BT	:	Black Top
CPF	:	Community Participation Framework
CPCB	:	Central Pollution Control Board
CRZ	:	Coastal Regulatory Zone
DFO	:	District Forest Officer
ECoP	:	Environmental Code of Practice
ESMP	:	Environmental and Social Management Plan
ESIA	:	Environmental and Social Impact Assessment
ESMP	:	Environmental and Social Management Plan
ESMF	:	Environmental and Social Management Framework
GoG	:	Government of Gujarat
GoI	:	Government of India
GPCB	:	Gujarat Pollution Control Board
GRC	:	Grievance Redress Committee
IMD	:	Indian Meteorological Department
MDR	:	Major District Road
MGNREGA	:	Mahatma Gandhi National Rural Employment Guarantee Act
MMGSY	:	Mukhya Mantri Gram Sadak Yojana
MoEF&CC	:	Ministry of Environment Forest and Climate Change
LA	:	Land Acquisition
NOC	:	No Objection Certificate
NPF	:	Notified Protected Forest
ODR	:	Other District Road
PMGSY	:	Pradhan Mantri Gram Sadak Yojana
PMC	:	Project Management Consultant
RCC	:	Reinforced Cement Concrete
R & BD	:	Roads and Buildings Department
SEIAA	:	State Environment Impact Assessment Authority
SEAC	:	State Expert Appraisal Committee
SMF	:	Social Management Framework
SC/ST	:	Scheduled Caste / Scheduled Tribe
VR	:	Village Road

# 1 INTRODUCTION

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## 1.1 Background

1. Government of Gujarat (GoG) through Roads and Buildings Department (R&BD) is extending its rural road network to the villages and habitations through a programme named *Gujarat Rural Roads* (Mukhya Mantri Gram Sadak Yojana (MMGSY)) *Project*. Under MMGSY<sup>1</sup>, habitations having a population count of less than 500, which were not previously covered under Pradhan Mantri Gram Sadak Yojana (PMGSY<sup>2</sup>), are getting connected. In such improved rural accessibility development endeavour R&BD, GoG is partnering with Asian Infrastructure Investment Bank (AIIB) to take the MMGSY forward. Accordingly, GoG has planned for an estimated total investment of INR 10,000<sup>3</sup> crores in three years (FY2016-17 to FY 2019-20) and has apportioned a budget for INR 2,500 crores for the year 2016-17. The proposed improvement under MMGSY includes:

- Construction and resurfacing of non-plan roads;
- Up-gradation of existing, earthen, Metal and Asphalt roads;
- Widening of MDR/ODR (Major District Roads/ Other District Roads);
- Construction of Missing structures; and
- Up gradation of existing causeways.

## 1.2 Mukhya Mantri Gram Sadak Yojana

2. Government of Gujarat (GoG) through Roads and Buildings Department (R&BD) is extending its rural road network to the villages and habitations through this new flagship programme - Mukhya Mantri Gram Sadak Yojana (MMGSY). Under MMGSY, those habitations will be connected which are having less than 500 population and which were not previously covered under Pradhan Mantri Gram Sadak Yojana (PMGSY). Accordingly, GoG has planned for an estimated total investment of INR 10,000 crores in three years and has apportioned a budget for INR 2500 crores for the year 2016-17.

3. MMGSY<sup>4</sup> aims at improving the rural road connectivity (by providing all weather connectivity) to 1,060 villages in all the 33 districts in Gujarat state benefitting about 8 million people. The primary beneficiaries are the people living in the rural areas who are the users of the rural roads. The project is expected to provide all-weather road access, economic benefits and social services to the rural population, of which about 17 percent are categorised under below poverty line

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<sup>1</sup>MMGSY: MukhyaMantri Gram Sadak Yojana or Chief Minister's Rural Roads Programme is a state government initiative for rural road construction

<sup>2</sup>PMGSY: Pradhan Mantri Gram Sadak Yojana – the central government initiative for rural road construction provides good all-weather road connectivity to unconnected habitations, and was officially started under Ministry of Rural Development (MoRD) on 25th December 2000. National Rural Roads Development Agency (NRRDA) under the MoRD is the Nodal Agency for implementation of PMGSY

<sup>3</sup>Allocation by GoG for the project: FY 2016-17 INR 2,500 Crore and INR 3,750 Crore each for FY 2017-18 and FY 2018-19

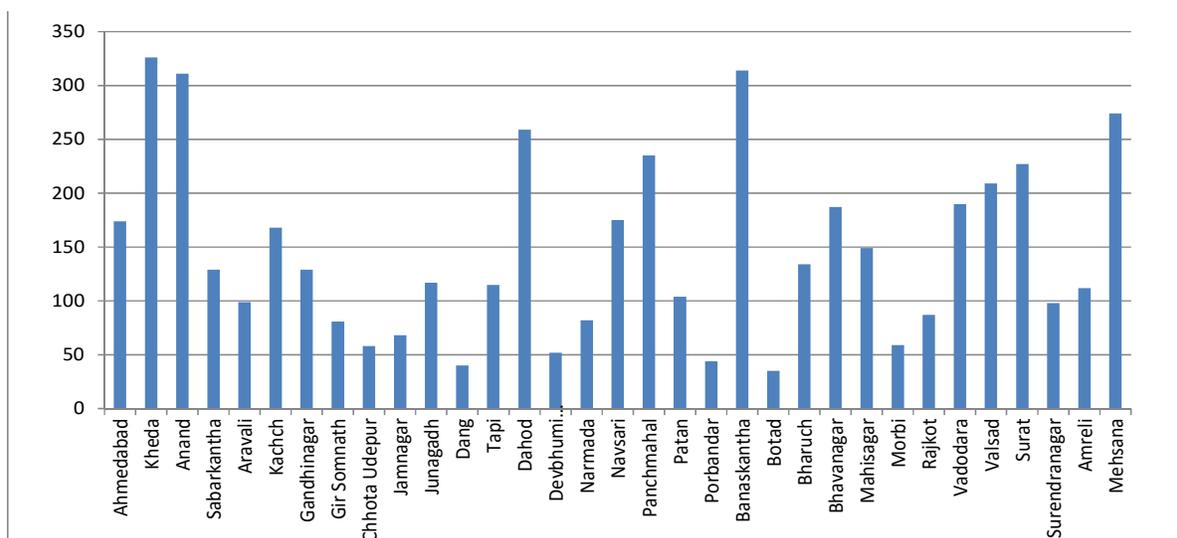
<sup>4</sup> AIIB's Project Summary Information

and about 46 percent beneficiaries are female. The Scheme apparently benefits the service providers such as public transport operators, educational institutions, medical institutions, local markets and traders.

4. Gujarat has a total number of 17,843 villages and 16,402 hamlets aggregating to 34,245 settlements, of which 26,802 (78%) villages / hamlets have been already connected under PMGSY. Of the remaining 7,443 settlements, 3,757 were found eligible under the norms of PMGSY and of the rest 3686, about 71% has been already connected through asphalt roads and about 29% (1060 number of settlements) has been decided to be taken up under MMGSY. Within the total number of settlements chosen to connect under MMGSY, 4% are located in fifth schedule areas. Some of the noticeable features of MMGSY include:

- Construction and maintenance of non-plan roads;
- First connectivity to villages and hamlets;
- Construction of missing links and missing structures;
- Approaches to schools and colleges;
- Upgradation to black top surface;
- Resurfacing of villages / other district roads;
- Upgradation of existing causeway /deep to high level bridge; and
- Widening of village / other district roads.

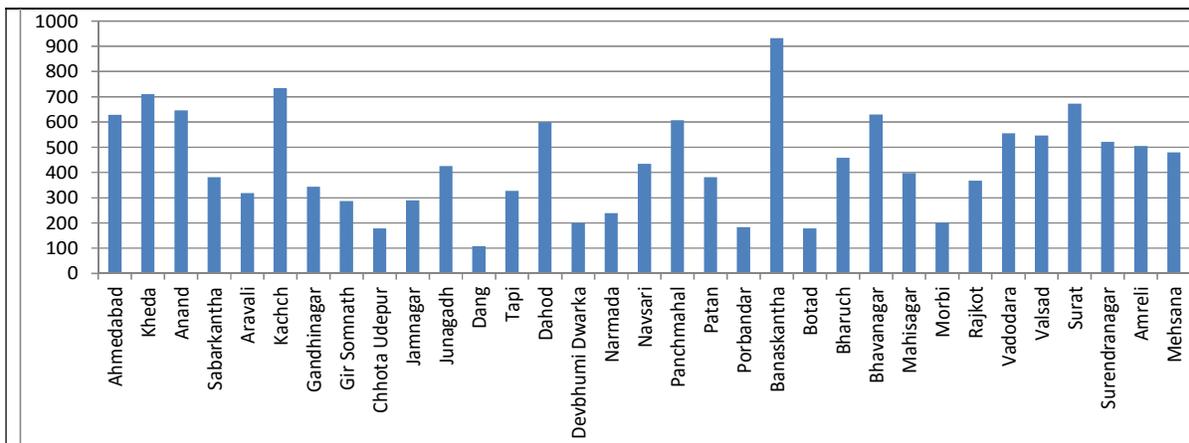
5. In 33 districts of Gujarat, a total number of 4841 works have been planned / scheduled under MMGSY for the year 2016-17. The maximum number of works is in Kheda district (326 total works), and Botad district receives the lowest with 35 number of works; the works in Botad largely comprises minor works of culverts / cross-drainage structures.



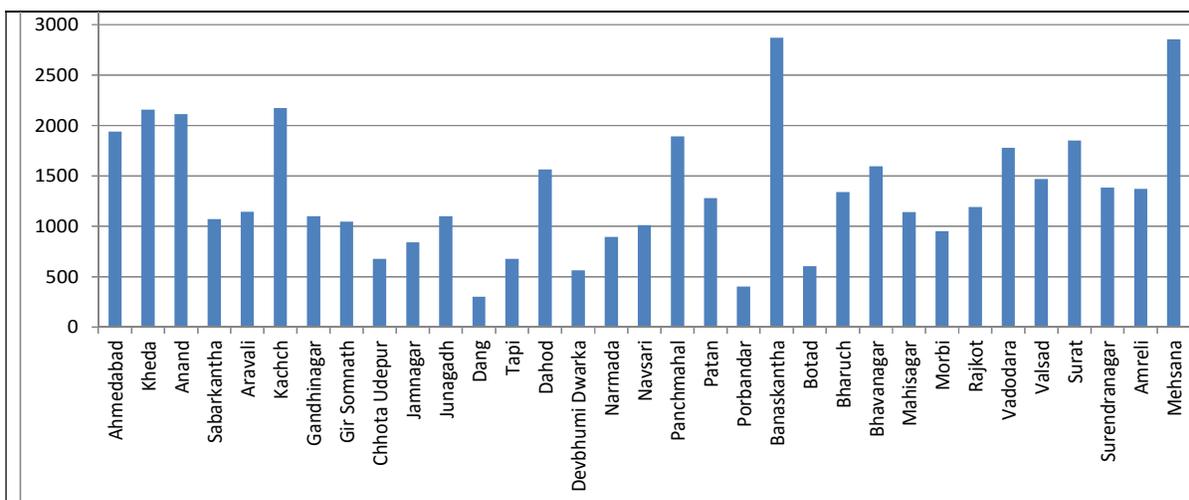
**Figure 1-1: District-wise Number of Works under MMGSY**

6. The total length of 4841 number of works computes to around 14,460 km. In terms of total length of roads, Banaskantha district has longest network of roads (932.93km) among the 33 districts. As Banaskantha district has the longest network, the total amount of works in Banaskantha district

amounts to INR 2,873 million. The total investment under MMGSY across Gujarat sums up to INR 44,371 million.



**Figure 1-2: District-wise Length of the Roads (Km) under MMGSY**



**Figure 1-3: District-wise Total Investment (INR Million) under MMGSY**

### 1.3 Socio-Cultural and Economic Environment: Gujarat

7. Gujarat is the 7<sup>th</sup> largest State of India in terms of area and the 9<sup>th</sup> largest State in terms of Population in India. The population of Gujarat State is 60.43 Million (as per Census 2011) and covers an area of 1,96,024 sq.km (District-wise population profile is given in Table 1-1). The state is bordered by Rajasthan to the North, Madhya Pradesh to the East and Maharashtra to the South. Gujarat was separated from the Bombay state in 1960. The State has divided in to 33 districts with a coastal line of 1600km. Gujarat is one of the most industrialized State of India and thus attracts people from India and abroad both in terms of investment and jobs.

**Table 1-1: District wise Population Profile - Urban, Rural, SC& ST and Total Popula**

Sl. No.	District	2011		2011		2011		2011
		Total Population (number)	Total Population (%)	Rural Population (number)	Rural Population (%)	Urban Population (number)	Urban Population (%)	
1	Ahmadabad	70,45,313	11.66%	10,17,161	1.68%	60,28,152	9.97%	7,47,806
2	Amreli	15,14,190	2.51%	11,27,555	1.87%	3,86,635	0.64%	1,32,915
3	Anand	20,92,745	3.46%	14,57,758	2.41%	6,34,987	1.05%	1,04,465
4	Aravalli	10,39,918	1.72%	9,13,356	1.51%	1,26,562	0.21%	62,223
5	Banaskantha	31,20,506	5.16%	27,05,591	4.48%	4,14,915	0.69%	3,27,460
6	Bharuch	15,51,019	2.57%	10,26,060	1.70%	5,24,959	0.87%	62,235
7	Bhavnagar	23,93,272	3.96%	13,85,518	2.29%	10,07,754	1.67%	1,25,441
8	Botad	6,56,005	1.09%	4,46,463	0.74%	2,09,542	0.35%	43,270
9	Chhota Udepur	10,71,831	1.77%	9,99,416	1.65%	72,415	0.12%	25,279
10	Devbhoomi Dwarka	7,52,484	1.25%	5,10,689	0.84%	2,41,795	0.40%	50,937
11	Dahod	21,27,086	3.52%	19,35,461	3.20%	1,91,625	0.32%	41,444
12	Gandhinagar	13,91,753	2.30%	7,91,126	1.31%	6,00,627	0.99%	1,08,608
13	GirSomnath	12,17,477	2.01%	8,84,468	1.46%	3,33,009	0.55%	1,13,822
14	Jamnagar	14,07,635	2.33%	6,78,365	1.12%	7,29,270	1.21%	1,22,958
15	Junagadh	15,25,605	2.52%	9,52,202	1.58%	5,73,403	0.95%	1,51,971
16	Kachchh	20,92,371	3.46%	13,63,836	2.26%	7,28,535	1.21%	2,58,859
17	Kheda	20,53,769	3.40%	15,79,728	2.61%	4,74,041	0.78%	98,686
18	Mahesana	20,35,064	3.37%	15,20,734	2.52%	5,14,330	0.85%	1,62,288
19	Mahisagar	9,94,624	1.65%	8,88,637	1.47%	1,05,987	0.18%	50,862
20	Morbi	9,60,329	1.59%	6,01,909	1.00%	3,58,420	0.59%	65,698
21	Narmada	5,90,297	0.98%	5,28,425	0.87%	61,872	0.10%	8,733
22	Navsari	13,29,672	2.20%	9,20,535	1.52%	4,09,137	0.68%	35,464
23	PanchMahals	16,42,268	2.72%	13,63,860	2.26%	2,78,408	0.46%	66,529
24	Patan	13,43,734	2.22%	10,62,653	1.76%	2,81,081	0.47%	1,23,408
25	Porbandar	5,85,449	0.97%	2,99,775	0.50%	2,85,674	0.47%	51,830
26	Rajkot	30,15,229	4.99%	11,27,575	1.87%	18,87,654	3.12%	2,35,749
27	Sabarkantha	13,88,671	2.30%	11,51,513	1.91%	2,37,158	0.39%	1,25,462
28	Surat	60,81,322	10.06%	12,32,109	2.04%	48,49,213	8.02%	1,58,115
29	Surendranagar	15,85,268	2.62%	11,20,376	1.85%	4,64,892	0.77%	1,68,183
30	Tapi	8,07,022	1.34%	7,27,535	1.20%	79,487	0.13%	8,168
31	The Dangs	2,28,291	0.38%	2,03,604	0.34%	24,687	0.04%	992
32	Vadodara	30,93,795	5.12%	11,00,439	1.82%	19,93,356	3.30%	1,96,350
33	Valsad	17,05,678	2.82%	10,70,177	1.77%	6,35,501	1.05%	38,237
	<b>Total</b>	<b>6,04,39,692</b>	<b>100.00%</b>	<b>3,46,94,609</b>	<b>57.40%</b>	<b>2,57,45,083</b>	<b>42.60%</b>	<b>40,74,447</b>

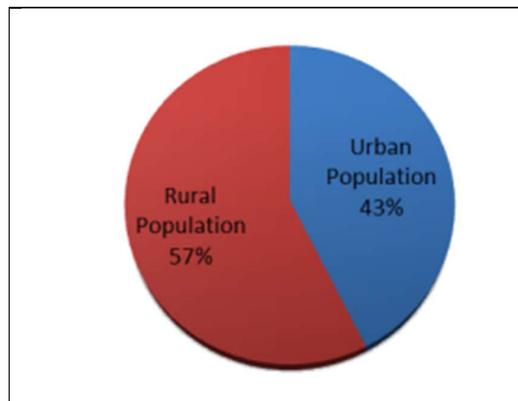
Source: Census 2011



### 1.3.1 Population Profile

8. As per 2011 census, total population of Gujarat state is 60.43 Million with male population of 31.49 Million (52%) and female population of 28.94 Million (48%). During 2001-2011, average growth rate of Gujarat population stood at 1.8% and the decadal growth rate was 19.3%.

9. Rural population of Gujarat accounts for 57% of the total population. As per 2011 Census, total number of household in the State is 12.24 Million, with average household size of 4.9.



### 1.3.2 Social Characteristics

10. Population density is 308 per sq.km, as per 2011 Census. The sex ratio as per census 2011 i.e., number of females per 1000 males is reported at 919. The effective literacy rate in the State (excluding children in the age group 0-6 years) has increased from 69 percent (2001) to 78 percent in 2011.

### 1.3.3 Distribution of Scheduled Caste and Scheduled Tribe Population

11. The population of Scheduled Castes and Scheduled Tribes in the state have been reported as per Census 2011 at 40.75 lakh (6.74%) and 89.17 lakh (14.74%) respectively. Among the tribe population 47.89 percent are Bhil followed by Dubla and Rathwa (7.2 percent each).

**Table 1-2: Population of Major Tribes: Gujarat, 2011**

Name of the Tribe	Population	Percentage to Total
<b>Bhil</b>	42,70,037	47.89%
<b>Dubla</b>	6,43,120	7.21%
<b>Rathwa</b>	6,42,348	7.20%
<b>Dhodia</b>	6,35,695	7.13%
<b>Naikda</b>	4,59,908	5.16%
<b>Gamit</b>	3,78,445	4.24%
<b>Kokna</b>	3,61,587	4.05%
<b>Varli</b>	3,28,194	3.68%
<b>Chaudri</b>	3,02,958	3.40%
<b>Dhanka</b>	2,80,949	3.15%
<b>Generic Tribes</b>	2,10,697	2.36%
<b>Patelia</b>	1,14,414	1.28%
<b>Koli</b>	67,119	0.75%
<b>Others*</b>	2,21,703	2.49%
<b>Total</b>	<b>89,17,174</b>	<b>100</b>

\* Others include Barda, Bavacha, Bharwad, Charan, Chodara, Gond, Kathodi, Kumbi, Padhar, Pardhi (in Kutch District) Pardhi-Advichincher, Pomla, Rabari, Siddi, and Vitolia.

Source: <http://www.censusindia.gov.in/DigitalLibrary/MFTableSeries.aspx>

### 1.3.4 Notified Tribes in Gujarat

12. There are 24 notified tribes in Gujarat as per the notification no. AJS/2003 /20 GOI/ 23/ CH/ Secretariat, Government of Gujarat, dated 05/09/2003. It is reported that, out of 24 notified tribe

community in the state of Gujarat, the tribes such as *Bhil, Dhanka, Dubla, Gamit, Koli Dhor, Nayak, Patelia, Rathwa* and *Varli* live in Chhota Udepur, Jetpur Pavi, Dabhoi, Sankheda, Kadana and Santrampur Talukas. The distribution of and the socio-economic features of major schedule tribes is presented in **Annexure 1-1**.

### 1.3.5 Primitive Tribal Groups

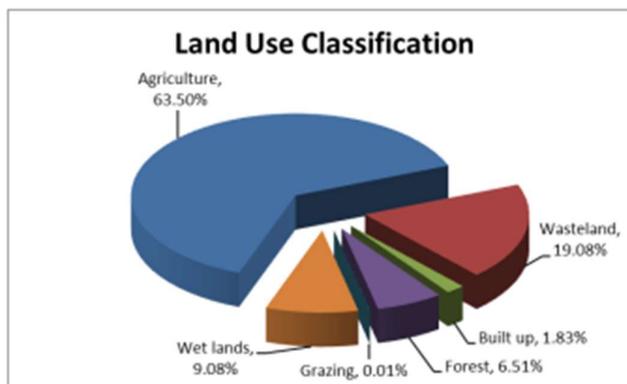
13. Government of India has identified 75 tribal communities as Primitive Tribal Groups (PTG), spread over 15 states/union territories. The PTGs are characterised by smallness in size and diminishing in number, backwardness and isolation, use of pre-agricultural technology and very low literacy. Government of Gujarat<sup>5</sup> has four PTGs, such as *Kolgha, Kathodi, Kotwalia, Padhar*.

### 1.3.6 Agriculture Base

14. The prominent economy of the State is arising from the Agriculture sector. In India, Gujarat is the dominant producer of cotton, tobacco, sugarcane, milk products etc. Other major crops produced in the State are wheat, rice, jowar, bajra, maize, castor and ground nut. Cotton is an important crop of the state which covers 2.8 Million ha area under cultivation and produced 10 million bales during 2014-15, which is approximately one-third production within the country. State has recognition for highest area, production and productivity of castor in India. State produced 84% of total castor production of the country; within an area of 0.7 Million ha and 1.3 Million tonnes of production. Gujarat accounts for about 30% of country's total groundnut production; 2.4 Million tonne production from an area of 1.4 Million ha.

### 1.3.7 Land use Pattern in Gujarat

15. Under all the land use categories Agriculture (net sown) area has dominance; its share is 63.5% with an area covering 1,24,476 sq.km, followed by barren or wastelands (19%) covering an area of 37,394 sq.km.



**Table 1-3: Land Use Pattern in Gujarat**

Land use/Land cover	Area (Sq.km)	Percentage (%)
<b>Agriculture</b>	1,24,476	63.50
<b>Barren/Uncultivable/Wastelands</b>	37,394	19.08
<b>Built up</b>	3,589	1.83
<b>Forest</b>	12,752	6.51
<b>Grass/Grazing</b>	19	0.01
<b>Wet lands/Water bodies</b>	17,794	9.08
<b>Total</b>	<b>1,96,024</b>	<b>100.00</b>

Source: <http://bhuvan.nrsc.gov.in/gis/thematic/index.php>

<sup>5</sup> Source: [http://guj-tribaldevelopment.gov.in/downloads/ptg\\_development\\_plan\\_website.pdf](http://guj-tribaldevelopment.gov.in/downloads/ptg_development_plan_website.pdf), accessed on date 25.02.2012

### 1.3.8 Land holding status

16. Total geographical area of the state is about 19.6 Million ha. Half of the total geographical area, i.e., about 10 Million ha is net cultivable area. Total gross cropped area is about 12.2 Million ha in the state. Total gross irrigated area is 5.6 Million ha accounting for 46% of total crop area<sup>6</sup>.

17. Total operational land holders in the state are about 5 Million, on average, with a per-capita land holding of 2 ha (Table 1-4).

**Table 1-4: Distribution Pattern of Operational Landholdings in Gujarat**

Category		Population	Percentage (%)
Marginal	0-1 ha	1815634	37.16
Small	1-2 ha	1429021	29.25
Semi-medium	2-4ha	1079533	22.10
Medium	4-10 Ha	512651	10.49
Large	10 ha & Above	48771	1.00
Total		4885610	100.00

Source: Agriculture Census, 2010-11

### 1.4 Purpose of the Environmental & Social Impact Assessment (ESIA)

18. The project has been assigned category “B” in accordance to AIIB’s Environmental and Social Framework (ESF) and Environmental and Social Standards (ESS). The anticipated impacts are limited, temporary in nature and reversible. As required by AIIB’s ESF, for category ‘B’ projects, an Environmental and Social Management Framework (ESMF) including Environmental and Social Management Plan (ESMP) has been developed. Accordingly, detailed assessments of the environmental and social impacts have been carried out following a suitable methodology. The need for preparing an Environmental and Social Impact Assessment was elucidated in the ESMF. This ESIA captures the environmental and social impacts due to the project, with reference to construction related environmental impacts, infringements with natural habitats and places of cultural heritage also in the context of ‘chance-find’, and impacts on tribal population (indigenous peoples). The findings of the ESIA will guide effective development of the specific ESMP and facilitate implementation of safeguard measures in an appropriate manner. The specific objectives of ESIA is given under:

#### 1.4.1 Objectives of ESIA

19. As per the requirement of the AIIB’s ESF, the ESIA has been performed for the MMGSY with the following objectives

- To collect the baseline data on physical, biological and socio-economic conditions of the project area using primary as well as secondary sources.
- To carryout environmental and social assessment, including the supporting administrative and legal frameworks applicable for the MMGSY project; assessing impacts on tribal population.
- To identify mitigation measures for the potential environmental impacts
- To prepare the specific Environmental and Social Management Plan (ESMP).

<sup>6</sup> Department of Agriculture and Co-operation, Govt. of Gujarat, 2015

- To propose institutional responsibilities and methods of monitoring the mitigation measures and monitoring procedures.
- To prepare budgetary cost estimation for implementation of ESMP

#### **1.4.2 ESIA Approach**

20. MMGSY roads spread across the 33 districts of the state of Gujarat. To appreciate the environmental and social impacts, a sample set of project-roads were chosen based on (i) environmental sensitivity, (ii) social sensitivity, and geo-spatial distribution of MMGSY projects (details are discussed in Chapter-2). A detailed study has been carried out in these sample set of roads / locations, fulfilling the objectives of ESIA; the major aspects of the methodology followed is given under:

##### ***Task 1 Field Reconnaissance Survey and Review of Earlier Studies***

21. The approach to the entire study was formulated based on a detailed field reconnaissance survey and thorough understanding of the project roads. The reconnaissance survey was carried out for the project roads to understand the salient environmental and social features of the project area, sensitive areas with regard to the proposed project interventions/activities, and general understanding of the proposed project. Based on the above environmental and social profiles of the project area, primary and secondary data requirements for carrying out further activities are identified.

##### ***Task 2 Review and Assessment of Applicable Environmental and Social Regulations***

22. Various rules/regulations and guidelines were reviewed to assess the sampling and analysis requirements for the project and the procedural requirements for conducting an ESIA. This primarily comprised appraising all relevant documents and studies available for the project area.

##### ***Task 3 Delineation of Study Area for Assessment***

23. The above tasks identified the survey and analysis requirements for assessing the impacts of the proposed project activities/ interventions. Based on which, the study area that is critical for assessing the project impacts were identified and delineated. While the influence area varies for each of the environmental and social component, the study area under consideration was a 20 m wide corridor (10m either side of the centre line of the road). The project influence area also considered those areas that are directly or indirectly influenced by the project activities during construction or operation of the proposed road work.

##### ***Task 4 Assessment of Base Line Environmental Conditions***

24. This task comprised of field surveys for assessing the baseline environmental and social conditions and collecting secondary information regarding physical, biological and socio-economic conditions of the study area. In addition, existing environmental and social quality of the study area was assessed based on the various surveys including walk through surveys, public consultations, FGD's and discussions with line department officials.

### ***Task 5 Prediction of Environmental and Social Impacts***

25. The task identified the likely impacts that would arise through changes in the physical, biological or socio-economic environment in the context of ‘chance find’. The assessment considered both positive and negative impacts due to the project and due to the pre-construction, construction and operation of the project roads.

### ***Task 6 Environment and Social Management Plan (ESMP)***

26. The major components of the Environmental and Social Management Plan (ESMP) included preparation of mitigation plan for all the negative impacts identified in the earlier tasks to avoid, minimize or mitigate the impacts.

## **1.5 Structure of ESIA Report**

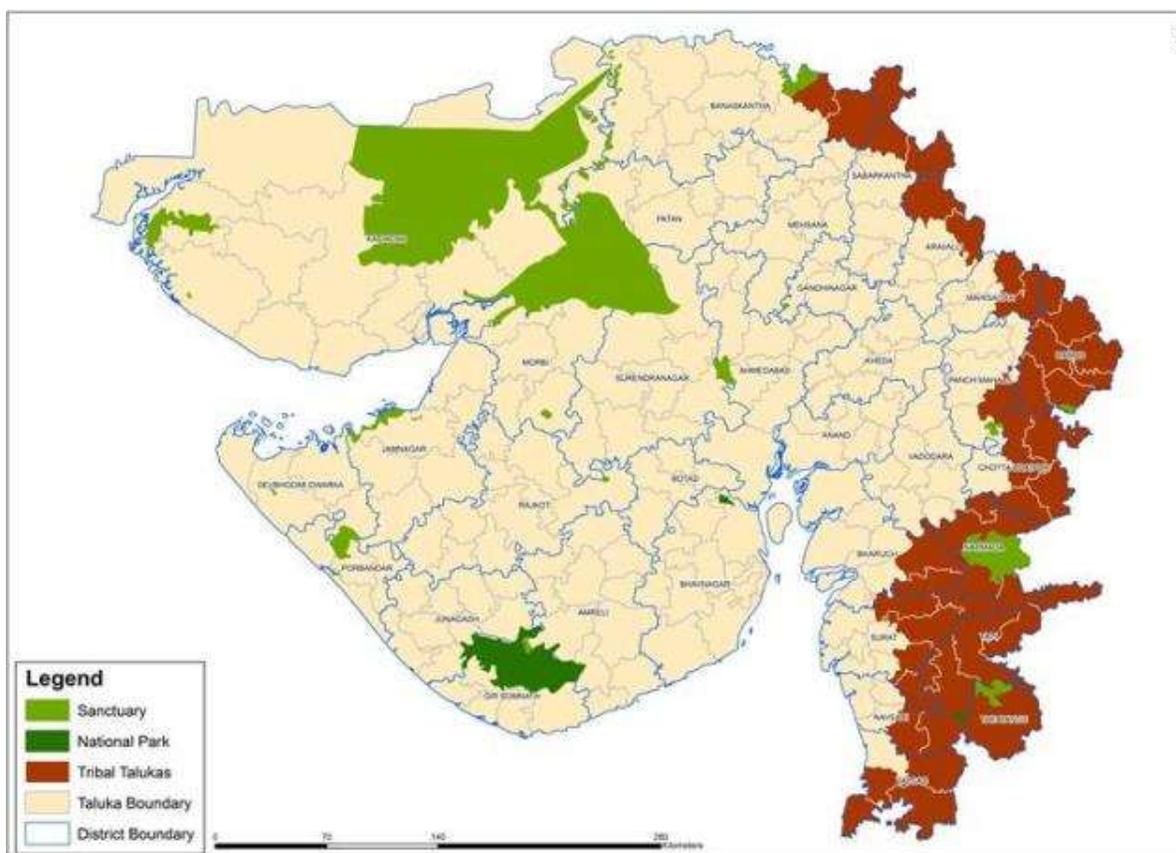
<b>Chapter No.</b>	<b>Title</b>	<b>Coverage</b>
1.	Introduction	This chapter provides project background, brief description and objectives of the project and the approach adopted in carrying out ESIA. Socio-cultural and economic environment is also documented in this chapter.
2.	Selection and Profile of Sample Roads	Profile of project-roads chosen for intensive ESIA is given in this Chapter, and specifically includes various upgradation measures with justifications, suggested for the Plan and Non-Plan Roads covered under the MMGSY with respective cross sections.
3.	Legal Policy Framework	This chapter details the relevant environmental rules and regulations that are applicable for MMGSY, which are developed by the Government of India (GoI) and Government of Gujarat (GoG). It also highlights the applicable AIIB’s ESF which have to be adopted during the project preparation and implementation.
4.	Description of the Environment	This chapter presents the baseline environmental and social status of the project area under three sub headings viz..(i) physical, (ii) biological and (iii) social environment. The physical environment shall comprise the information belonging to the meteorology, topography, water resources etc. The biological environment shall include the project area flora and fauna, environmental sensitive areas (if any). The Social environment shall cover the demography profile of the project area including the population, literacy, workforce, occupation etc.,
5.	Public Consultation and Information Disclosure	This chapter details the public consultation approach and methodology adopted for the MMGSY. This chapter also summarises the consultation outcome and the necessary requirements/ changes that are to be included in the road design for the benefit of the community. This chapter also details the procedure adopted by the AIIB in disclosure of safeguard documents.
6.	Grievance Redress Mechanism	This chapter details the roles and responsibilities of the GRC in addressing the grievances arising during implementation of the subproject.
7.	Analysis of Potential Environmental and Social Impact and Mitigation Measure	This chapter details the positive and negative environmental and social impacts that are likely to arise during the proposed MMGSY implementation. The activity / intervention based impacts like air pollution, noise pollution, water pollution, health and safety issues are assessed for which suitable mitigation measures are suggested.
8.	Environmental and Social Management Plan (ESMP)	This contains a Environmental and Social Management Plan and appropriate environmental Clauses that are to be included in the Bid Document for effective implementation of the ESMP.
9.	Capacity Building and Training	This chapter details the training modules suggested for the Implementing and executing agencies in safeguarding the Environmental and Social measures suggested in the ESMP.
10.	Monitoring and Reporting	This chapter is prepared to have necessary monitoring and reporting formats to record the effective implementation of the ESMP at various stages of the project (viz., pre-construction, construction and operation).
11.	Implementation Cost	This chapter shall discuss on the budget provisions that are arranged to mitigate/ manage various impacts detailed under the ESMP. The management measures

		shall include control of dust, environmental monitoring, labour health and safety etc.,
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## 2 SELECTION AND PROFILE OF SAMPLE ROADS

### 2.1 Location and Description of the Project Roads

27. As indicated in the section 1.4.2 ESIA Approach, the MMGSY roads are sampled based on the environmental and social sensitivity. The following map depicts the environmental and social sensitive areas in the state of Gujarat. To conduct the ESIA, sample roads from the sensitive areas have been chosen in consultation with the R&BD (Panchayat).



**Figure 2-1: Environmental and Social Sensitivity Map**

28. The list of project-roads and locations chosen for detailed ESIA, along with a brief description of the specific features of respective locations, is given in Table 2-1. Altogether 43 roads were chosen from 8 Talukas of 5 Districts.

**Table 2-1: Sample Project-Roads and Locations chosen for Impact Assessment**

Sl. No.	District	Taluka	Name of Road	Length (in Km)	Specific Features
1.	Gandhinagar	Gandhinagar South	Alampur Dashela	2.00	Representative location with flat terrain, general slope, proximity to urban locale
2.			Palaj Rampura	1.70	
3.			Lekavada to Omkar (International) School Joining to Alampur Dashela Road	3.00	

Sl. No.	District	Taluka	Name of Road	Length (in Km)	Specific Features			
4.	Gandhinagar North		Uvarsad to Sargasan	2.00				
5.			Uvarsad - Ranjitpura	1.50				
6.			Uvarsad - Tarapur	3.00				
7.			Uvarsad - Kolavada	4.00				
8.			Uvarsad - ONGC to Karsanpura Road	1.50				
9.			Vasan - Rupal	5.70				
10.			Rupal - Golthara	3.50				
11.			Unava - Mubarkpur	4.00				
12.			Unava - Pidharda	3.00				
13.			Unava (Gogaji Farm) - Sharda Farmasi – Pethapur Mahudi joining road	5.00				
14.			Jamnagar	Jodiya		CH 06 (Coastal Highway No. 06) to Limbuda	3.00	Near to Coastal Area, on Coastal Highway (CH-06)
15.						Limbuda to Vavdi Road	3.20	Near to Coastal Area
16.						Hadiyana to Vavdi; & Vavdi to Nesda	7.60	Near to Coastal Area, on the way to Coastal Highway (CH-06)
17.	Morbi	Maliya	Kuntasi Bokdi	4.00	Very near to Coastal Area, In the Vicinity of Navalakhi Port			
18.			Nana Dahirsara to Virpada	2.20				
19.			Bhavpar Bagasari	3.00				
20.	Surendrenagar	Dhrnagadhra	Soladi Baisagarh	CD Works	In the vicinity of the Wild Ass Sanctuary. Frequent Movement of Wild Ass (Early Morning, Night Time) cannot be ruled out.			
21.			Dhrangadhra Rajpar Kankavati	CD Works				
22.			Dhrangadhra Rajpar Kankavati	0.30				
23.		Wadhwan		Virndragadh Sajjanpur	3.20	Proximate to Wild Ass Sanctuary. Frequent Movement of Wild Ass throughout the day in the region, surrounding area		
24.				Dudhrej Khodu Velavdar	14.00			
25.				Mulchand Dudhrej	3.00			
26.				Surendranagar Mulchand Rajpar	2.50			
27.	Chhota-Udepur	Chhota-Udepur	Bodgam Approach	4.00	Fifth Schedule Area			
28.			Jhoz Virpur Lagami Kumbhali	9.50				
29.			Singalji Mithibor	5.50				
30.			Khadakvada Simalkuva Mota Rampura	7.00				
31.			Vachlibhit Bandichabhit	3.50				
32.			Tejgadh Palsandha Kikavada	5.50				
33.			Jhojh Gamanfaliya	2.50				
34.			Alsipur Dolariya	2.50				
35.			Bopa Approach Road	2.50				
36.			Lagamithi Ukhalvaant Kachel	7.00				
37.			Kumbhani to (Upto) Ghghadev	7.00				
38.		Bodeli		Ferkuva Approach	1.00	In the vicinity of Jambughoda Wildlife Sanctuary		
39.				Dholivaav Approach	1.20			
40.				Kukana Nani Tejavaav	2.50			
41.				Bamroli Kathola Kavra	2.50			
42.				Muldhar Timbi	2.00			
43.	Ladhod Modasar			CD Works				

Source: LASA, 2017

## 2.2 Existing Road Condition and Need for the Improvement

29. Existing road condition is taken into consideration to identify problems which is hampering, or is anticipated to hamper in the future, smooth and safe traffic. To assess the existing road condition, the Geometric Structure/Road Width, Pavement Condition, Encroachments and Cross Drainage Condition/ Causeways/ Minor bridges etc., are studied. Few snap-shots of the project roads are given below.

	
<b>Snap shot - 1:</b> Deteriorated Condition of Bituminous road (Dudhrej-Khodu-Velavdar Road)	<b>Snap shot - 2:</b> Cement concrete surface of Causeway is deteriorated (CH 06 - Limbuda Road)
	
<b>Snap shot – 3:</b> Existing condition of the Kuntasi - Bodki Road	<b>Snap shot – 4:</b> Damaged carriage way (Mulchand - Dudhrej and Surendranagar Mulchand Rajpar Road)

## 2.3 Proposed Design Interventions

30. The typical cross sections that are being suggested for the Plan Roads<sup>7</sup> and Non – Plan Roads<sup>8</sup> under MMGSY are given in the **Annexure 2-1**. The following **Table 2-2** depicts the type of roads proposed under the MMSGY.

**Table 2-2: Type of Roads Proposed under the MMGSY**

Sl.no	Type of road	Existing	Proposed
<b>a)</b>	<b>Non Plan Roads</b>		
1.	Connectivity to villages and Hamlets	Earthen surface	BT road
2.	Construction of roads in Tribal Areas	Earthen surface	BT road
3.	Approach to School/Colleges	Earthen surface	RCC road
4.	Resurfacing or Maintenance of Existing Roads	Asphalt	Asphalt

<sup>7</sup>Plan Roads are the roads that provide the first connectivity

<sup>8</sup>Non Plan Roads: Second and Third connectivity roads to villages (any road below first connectivity, the roads covered by PMGSY and other schemes)

<b>Sl.no</b>	<b>Type of road</b>	<b>Existing</b>	<b>Proposed</b>
<b>b)</b>	<b>Plan Roads</b>		
1.	Upgradation	Metal	BT road
2.	Upgradation of Causeway/deep	Causeway/deep	Slab drain or Bridge
3.	Widening of roads	Asphalt	Asphalt

Source: Project Management Consultants (PMC), MMGSY

## 3 LEGAL AND POLICY FRAMEWORK

### 3.1 AIIB Safeguard Policy

31. AIIB recognizes that environmental and social sustainability is a fundamental aspect of achieving development outcomes consistent with its mandate to support infrastructure development and interconnectivity. The Environmental and Social Framework of AIIB (2016), includes an Environmental and Social Policy (ESP) and Environmental and Social Standards (ESS). The Environmental and Social Policy specifies that AIIB conduct environmental and social due diligence as an integral element of its appraisal of the project, and in a manner, that is:

- Appropriate to the nature and scale of the Project; and
- Proportional to the level of the Project's potential environmental and social risks and impacts

32. Table 3-1 represents the AIIB safeguard policy with respect to the project stages.

**Table 3-1: AIIB Safeguard Policy**

S. No.	Project Stage	AIIB ESF 2016
1.	Project Screening and Categorization	<ul style="list-style-type: none"> <li>• Screening of each proposed project at the concept stage using potential environmental and social risks and impacts. Projects categorized as A, B, C and FI based on potential environmental and social risks and impacts.</li> </ul>
2.	Conduct Environmental and Social Assessment	<ul style="list-style-type: none"> <li>• Client to undertake an Environmental and Social Assessment of potential physical, biological, socio-economic and cultural risks and impacts from proposed project. The type of instrument and level of detail is determined based on project screening and environmental and social categorization. Client to prepare Environmental and Social Management Plan (ESMP) as appropriate</li> </ul>
3.	Assessment of Alternatives	<ul style="list-style-type: none"> <li>• Assessment of alternatives under Environmental and Social Standard 1: Environmental and Social Assessment and Management. Examination to avoid or minimize environmental impacts.</li> </ul>
4.	Prepare Environmental and Social Management Plan (ESMP) with budget, schedule and institutional arrangements.	<ul style="list-style-type: none"> <li>• Development and implementation of an Environmental and Social Management Plan (ESMP), which includes an Environmental Monitoring Plan.</li> <li>• ESMP to include budget, schedule and institutional arrangements.</li> </ul>
5.	Public Consultation and Use of Project-Level Grievance Redress Mechanisms	<ul style="list-style-type: none"> <li>• Client conducts meaningful consultation with Project-affected people to facilitate their informed participation in the consultations. Client continues consultation with stakeholders throughout the Project implementation as appropriate on environmental and social performance.</li> <li>• Client to establish a Project-level Grievance Redress Mechanism.</li> </ul>
6.	Information Disclosure	<ul style="list-style-type: none"> <li>• Public disclosure of environmental and social documents, including ESMP, on AIIB website as per policy provisions. Regular disclosure of updated environmental and social information, in the same manner, along with information on any material changes in the Project.</li> </ul>

Source: AIIB

### 3.2 National and State Rules and Regulations

33. Implementation of the MMSGY project will be governed by the National (GoI) and State of Gujarat environmental acts, rules, regulations and standards. These regulations impose restrictions

on activities to minimize/mitigate likely impacts on the environment. It is the responsibility of the R&BD, Panchayat, Project Management Consultant (PMC) and Contractor to ensure that the implementation of the project is consistent with the legal framework, whether national, state or municipal/local. Compliance is required in all stages of the project implementation, including design, construction, operation and maintenance (Defect Liability Period (DLP)).

34. The Acts and policies related to Scheduled Tribes at the state level and national level have been reviewed and their relevance to the project has been analysed.

35. Article 366 (25) of the Constitution of India refers to Scheduled Tribes as those communities, who are scheduled in accordance with Article 342 of the Constitution. As laid down in the provisions of Article 342, communities shall be declared as such by the President through an initial public notification or through a subsequent amending Act of Parliament. The essential characteristics, for a community to be identified as Scheduled Tribes are; (i) Indications of primitive traits; (ii) Distinctive culture; (iii) Shyness of contact with the community at large; (iv) Geographical isolation; and (v) Backwardness.

36. The Fifth Schedule under Article 244(1) of Constitution defines “Scheduled Areas” as such areas as the President may by order declare to be Scheduled Areas after consultation with the Governor of that State. The criteria for declaring any area as a “Scheduled Area” under the Fifth Schedule are; (a) preponderance of tribal population, (b) compactness and reasonable size of the area, (c) a viable administrative entity such as a district, block or Taluka, and (d) economic backwardness of the area as compared to the neighbouring areas. In Gujarat, 43 talukas in 12 districts have been declared as “Scheduled Area” under the Presidential Order CO. 109 dated 31/12/1977.

37. A comprehensive tribal development programme was initiated by the Government of Gujarat, termed as **Vanbandhu KalyanYojana** or Chief Minister’s ten-point programme. The programme was launched in 2007 and aims at ensuring high quality social and civil infrastructure and sustainable employment such that the income of every tribal family doubles in five years. The programme also envisions mainstreaming of primitive tribal groups (PTGs), quality education and access to quality health services, own house for each tribal family, safe drinking water, basic facility such as roads, bus-stand and energy network, development of tribal towns, opportunity for irrigated farming and skill development and civic amenities for migrant tribal families. The programme covers 43 Integrated Tribal Development Plan (ITDP) Talukas. The ten-point programmes set forth to fulfil the vision of:

- Employment opportunities for 5 lakh families;
- Quality of education and higher education;
- Economic development;
- Health;
- Housing;
- Safe drinking water;
- Irrigation;
- Universal electrification;

- All-weather road connectivity; and
- Urban development

38. Based on the assessment performed for the sample MMGSY roads the applicable environmental and social legislations/ rules and regulations are shown in the Table 3-2 **Table 3-2.**

**Table 3-2: Environmental and Social Regulatory Compliance**

Applicability of Acts/Guidelines	Compliance Criteria
The Environment Protection Act, 1986 - under EIA notification, 2006 (and its subsequent amendments in 2009) provides for categorization of projects into category A and B, based on extent of impacts.	The MMGSY project is not covered in the ambit of the EIA notification as they are not covered either under Category A or Category B of the notification. As a result, the categorization, and the subsequent environmental assessment and clearance requirements, either from the State Government (GoG) or the Central Government (GoI) are <b>not triggered</b> .
AIIB's Environmental and Social Framework (ESF)	<b>Applicable</b> , based on the anticipated environmental and social impacts, the MMGSY project has been categorized as Category 'B' projects and demands for the preparation of the Environmental and Social Impact Assessment (ESIA) with suitable Environmental and Social Management Plan (ESMP) to mitigate/ manage the likely impacts at all stages (pre-construction, construction and post construction) of the project implementation.
The Wildlife Conservation Act, 1972, amended in 2003 and 2006, provides for protection and management of Protected Areas.	<b>Applicable</b> , for the MMGSY roads located in the sanctuary/ national park influence zone. As per the act, NoC from the concern Wildlife warden/ forest department is required for carrying out the upgradation works/ road construction works.
The Forest Conservation Act, 1980 and its subsequent amendments necessitate obtaining clearance from the MoEF & CC for diversion of forest land for non-forest purposes.	<b>Applicable</b> , for the rural roads which requires land for widening purposes. As per the assessment carried out for the sample roads, the requirement for the forest clearance is not envisaged. However, it may be applicable for some rural roads, which may badly require land for road development.
Water (Prevention and control of pollution) Act, 1974 and;  Air (prevention and control of pollution) Act, 1981	<b>Applicable</b> , Consent to Establishment (CTE) and Consent to Operate (CTO) has to be obtained by the Contractor from the GPCB for setting up of diesel generators and batching plant (if any), prior to the commencement of construction works. Apart from this, the CTE and CTO are also required for stone crushers and quarry sites if they are exclusively set up for this project, otherwise it has to be ensured that the construction materials are procured from approved/ licensed quarry sites and stone crushers.
Coastal Regulation Zone (CRZ) notification, 2011	The sample MMGSY roads falling under the coastal districts (Morbi, Surendranagar) do not come under the influence of the CRZ. However, as per the CRZ notification, 2011, the Gulf of Khambat and Gulf of Kutchhh are termed as Critical Vulnerable Coastal Areas (CVCA) and hence, the MMGSY roads, that are falling under the coastal districts has to be verified with the Coastal Zone Management Authority (CZMA) prior to implementation.
Wetland Rules, 2010	<b>Applicable</b> , for the MMGSY roads falling under the influence of Nal Sarovar Bird Sanctuary, which is declared as a Ramsar site on 24 <sup>th</sup> September 2012. The proposed upgradation works shall require NoC from the concern Wildlife warden/ forest department for carrying out the widening works.
The Ancient Monuments and Archaeological Sites and Remains Act, 1958, and the rules, 1959 provide guidance for carrying out activities, including conservation, construction and reuse in and around the protected monuments.	The sample MMGSY roads do not have ASI monuments / state protected monuments. However, it is suggested to comply with the provisions of the Act, as the other MMGSY roads are scattered across the state of Gujarat and hence there are chances for ASI identified sites/ chance-find.
Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement (Gujarat Amendment) Act, 2013	<b>Applicable</b> to project-roads located in all Talukas other than those which are notified Scheduled Areas. However, there is no acquisition of private land observed alongside the project-roads
The Fifth Schedule under Article 244(1) of Constitution	<b>Applicable</b> for all project-roads located in Chhota Udepur and Bodeli Taluka, since these are notified Schedule Areas
Provisions of the Panchayats (Extension to the Scheduled Areas) Act, 1996	Applicable for all project-roads located in Chhota Udepur and Bodeli Taluka, since these are notified Schedule Areas
The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006	<b>Applicable</b> for all project-roads located in Chhota Udepur and Bodeli Taluka, since these are notified Schedule Areas. However, there is no forest land with traditional rights impacted along the two Talukas forming part of the Scheduled Areas. Impacts on forest resources are not observed.

Applicability of Acts/Guidelines	Compliance Criteria
AIIB Environmental and Social Management Framework	<b>Applicable</b> for all project-roads
The Right to Information Act, 2005	<b>Applicable</b> for all project-roads

Source: MoEF, CPCB, GoI & GoG, and based on the Site Observations of MMGSY Roads

39. The above table indicates that the proposed MMGSY roads does not need to go through a full-scale Environmental Impact Assessment (EIA) process; as the scale of impacts and categorization of the project components will not require Environmental Clearance (EC) from Competent Authorities. Therefore, any further approvals or clearances from the GoI or GoG are not envisaged. However, other project related NoC's like consent under air and water act from the GPCB shall be mandatory. Other clearances like CRZ, forest, wildlife shall be subjected to the project road requirements.

40. The AIIB's ESF, stipulate addressing environmental and social concerns, if any, of a proposed activity in the initial stages of project preparation. For this, the AIIB's ESF categorizes the proposed components into categories (A, B, C and FI) to determine the level of environmental and social assessment required to address the potential impacts. This project has been categorized as 'B'. For the Category B project, the Environmental and Social Standard 1 (Environmental and Social Assessment and Management) is triggered, which has necessitated the preparation of the Environmental and Social Assessments. Thus, the ESMF and the ESIA/ESMP are being developed. The Environmental and Social Standard 2 (Involuntary Resettlement) is not triggered as the project does not involve and land acquisition or resettlement. The social issues pertaining the project are being addressed through a Social Management & Participatory Framework delineated in the ESMF. The ESIA also collates social baseline data to help implementation of Participatory Framework. The Environmental and Social Standard 3 (Indigenous People) is triggered since about 4% of the rural roads will be built in tribal areas. Accordingly, this ESIA (including ESMP) has been prepared to address the potential impacts, in line with the recommended ESIA content and structure for Category 'B' projects.

## 4 DESCRIPTION OF THE ENVIRONMENT

41. The environmental and social profile of the sample road project districts has been detailed in this chapter. This chapter has been separated into three main sections viz., (i) Physical Environment, (ii) Ecological / Biological Environment, and (iii) Social Environment.

### 4.1 Physical Environment

#### 4.1.1 Physiography

42. Gandhinagar and Chotta Udepur come under the Gujarat Main Land, comprising vast alluvial plain with a hilly terrain in the East. This region is rich in minerals like Quartzites, phyllites, schists, calcgneisses, granites, etc. The Surendranagar, Morbi and Jamnagar are covered under the Peninsular Gujarat. The geological characteristic is indicative of cone and crater type of origin of a number of hills. The hills are more elevated in the south and west, while in the north and east they are low. The coastal areas of Surendranagar and Morbi are rich in minerals like bauxite, gypsum, agate, limestones etc.

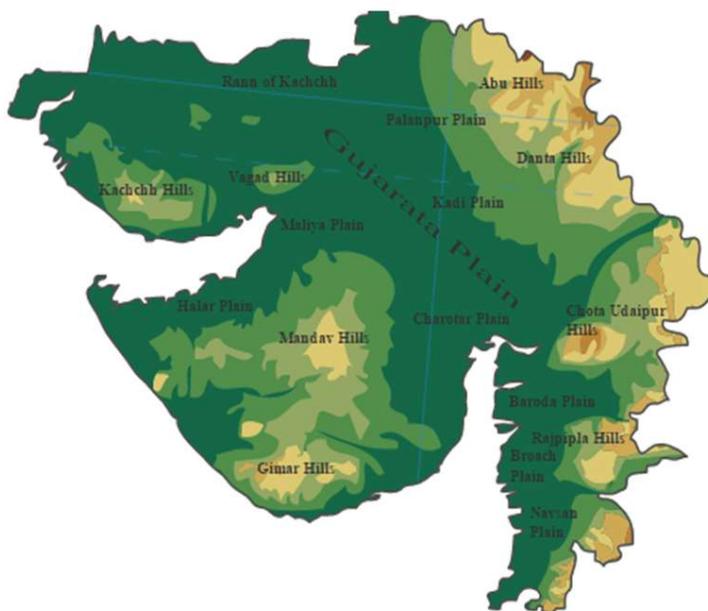


Figure 4-1: Physiography Map of Gujarat

#### 4.1.2 Rainfall and Climate

43. Temperature varies considerably from season to season. The summer season is generally hot and winter season is cool. Mean maximum temperature ranges between 19.6°C during January to about 41.9°C during May and the mean minimum temperatures varies between 9°C during January and 27°C during June. The relative humidity varies between 43.5% during March and 77% during August. The average wind speed recorded at Gandhinagar is 6.94 km/hr, where as in Morbi it is 222.3km.hr. The potential evapotranspiration calculated using Penman's Method varies between 3.4 mm/d during December and 9.2 mm/d during May. Among the project districts, Chotta Udepur was recorded with highest rainfall of 1083mm and the least rainfall of 487.4mm was recorded at Jamnagar. The climatological data recorded for the five districts are given in the **Table 4-1**.

**Table 4-1: Annual Average Climate information for the Project Districts**

Sl.no	Districts	Max Temperature (°C)	Min Temperature (°C)	Humidity (%)	Wind speed (Km)	Rainfall (mm)
1.	Gandhinagar	34.2	20.5	50.5	6.94	803.4
2.	Surendranagar	41.9	23.6	60.1	20.3	587.3
3.	Morbi	33.6	19.6	55.9	222.3	521.0
4.	Jamnagar	32.2	19.9	63.7	176.3	487.4
5.	Chhota Udepur	34.7	20.7	59.7	155.4	1083.0

Source: IMD

### 4.1.3 Soil

44. The soil found in the project districts can broadly be grouped into five types, i.e., Shallow Black soils, Residual Sandy soils, Coastal Alluvial soils, Desert soils and Black cotton soil.

- (i) The Shallow black soils have developed from basaltic rocks and rocks of Jurassic period. The depth of soil ranges from a few cm to 30 cm. broadly, these soils are poor in fertility.
- (ii) The Residual Sandy soils have developed in-situ from the parent material originated from red sandstone and shale and are found over the areas underlain by Sandstone. All these residual soils are shallow in depth. They are reddish brown in colour with fine weak granular structure to poorly developed one. These soils are sandy to loamy sand in texture dominated by coarse sand. These are non-calcareous, neutral to alkaline in reaction with poor base saturation. They are affected due to salt accumulation. From fertility point of view, they are poorly supplied with plant nutrients and, as such, support the crops with short duration and less water requirement.
- (iii) The hilly soil occur in the hilly areas (Chotta Udepur) of the district. The soil profile is not well developed because of the steep slope and erosion. They have developed from the parent materials existing in the respective areas. They are shallow in depth composed of un-decomposed rock fragments and are poor in fertility.
- (iv) The Coastal Alluvial soils are found all along the southern coast. These soils are sandy clay loam to clay in texture. The soil reaction varies with situation ranging from neutral to highly alkaline. These soils are normally medium in fertility. At places, these soils are saline in nature. The two Rann (deserts) of Kutch namely little Rann (coastal areas of Surendranagar) and great Rann have the soil formed as a result of the geological processes of Pleistocene age. The alluvial deposits due to the river system flowing through the area have subsequently been overlain by the aeolian deposits. These soils are fairly deep, light grey in colour. The texture is sandy to sandy loam with silty clay loam in some areas. The salt content is very high with the sodium chloride as the dominant salt. The profile study reveals the presence of sufficient amount of gypsum throughout the profile.
- (v) The Black cotton soils have their origin in trap. They vary from 60 cm to as high as a few meters. Black soils are formed due to decomposition of trap parent material transported through flow of rivers. The soils are dark brown to very dark grayish brown in colour, containing 40-70% clay, are poor in drainage and neutral to alkaline reaction.

### 4.1.4 Geomorphology

45. Based on the available secondary information, the project districts shall be categorised into three zones (i) Gujarat Main land (Gandhinagar and Chotta Udepur), (ii) Saurashtra-Kathiawar Peninsula (Jamnagar, Surendranagar and Morbi) and Kutch Peninsula (little rann of Kutch) (Coastal areas of Surendranagar and Morbi).

- (i) Gujarat Main land: The well-known agriculturally rich alluvial basin of Gujarat. The eastern part of the south Gujarat bordering the alluvial tract has typical Deccan trap scenery up to Narmada valley. The hills are formed by circumdenudation leaving wide plateau at top, and a step like feature because of the horizontal lava-flows and their differential weathering. It is occupied by quartzites, phyllites and schists. The main drainage is south-westerly or westerly comprising of rivers like Tapi, Narmada, Mahi, Sabarmati etc., draining into Gulf of Cambay. The project districts Gandhinagar and Chotta Udepur are covered under Gujarat Main land.
- (ii) Saurashtra-Kathiawar Peninsula: The Saurashtra is bounded by Gujarat plains in the East and NE, by gulf of Kutch and Little Rann on the north, and on the SE by the Gulf of Cambay. The terrain generally slopes gently towards the peninsular margin to merge into the coastal plains and the great alluvial tract stretches to NE and east. The sedimentary rocks along the coast form almost a low flat country. The project districts Jamnagar, Surendranagar and Morbi are covered under Saurashtra-Kathiawar Peninsula.

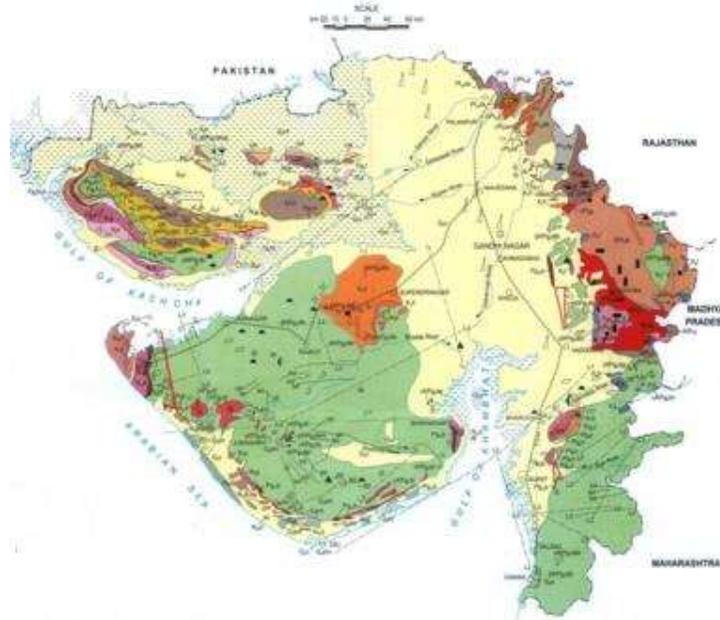


Figure 4-2: Geology Map of Gujarat

- (iii) Kutch Peninsula (Little Rann of Kutch (LRK)): A subdivision of biotic province of kutch desert has been modified by the fluvial, aeolian and marine processes under two major wet and dry phases. The eastern most portion of the Little Rann area is free from sea water intrusion. The Coastal areas of Surendranagar and Morbi are covered under Kutch Peninsula.

### 4.1.5 Surface Water Quality

46. The Sabarmati river basin and the Mahi river basin are the predominant river basins of Gujarat. The project districts covered under the sample roads falls under the Sabarmati and Mahi river basins. In order to study the surface water quality of the project districts, the water quality information obtained from the Central Pollution Control Board, New Delhi has been discussed

- (i) **Sabarmati River Water Quality:** The water quality meets the desired water quality criteria (CPHEEO standards) with respect to DO, pH, Conductivity, Faecal coliform and Total coliform at all locations. However, the BOD concentration is higher than the prescribed water quality criteria at Gandhi Nagar Chiloda Bridge (7 mg/l) and River Shedhi at Kheda (26 mg/l).

STATION CODE	LOCATIONS	STATE	TEMPERATURE °C			D.O. (mg/l)			pH			CONDUCTIVITY (µmhos/cm)			B.O.D. (mg/l)			NITRATE-N+ NITRITE-N (mg/l)			FECAL COLIFORM (MPN/100ml)			TOTAL COLIFORM (MPN/100ml)		
			Min	Max	Mean	Min	Max	Mean	Min	Max	Mean	Min	Max	Mean	Min	Max	Mean	Min	Max	Mean	Min	Max	Mean			
<b>WATER QUALITY CRITERIA</b>																										
1407	SABARMATI AT GANDHI NAGAR CHILODA BRIDGE, JAMNAGAR	GUJARAT	25	28	27	7.2	8.5	8.1	8.1	8.1	8.1	356	345	401	3.0	7.0	5.0				140	1500	820	390	4300	2345
1482	SABARMATI AT RAJCOY DAM, TAPLE, 128 KM. SOUTH DANG	GUJARAT	26	30	28	7.3	8.7	8.4	8.1	8.1	8.1	340	568	402	1.0	7.0	3.5	0.2E	0.3E	0.47	23	64	38	120	210	355
<b>WATER QUALITY OF TRIBUTARY STREAM SHEDI- 2012</b>																										
1222	SHEDI AT BHETA	GUJARAT	26	31	28	1.2	8.8	4.2	7.1	8.1	8.1	688	3500	1985	0.7	36	13	0.0E	0.42	0.17	1	90	46	12	170	91

Figure 4-3: Water Quality of River Sabarmati

(ii) **Mahi River Water Quality:** The water quality of River Mahi is meeting the desired criteria with respect to Total Coliform and Faecal Coliform. pH is observed in the range of 7.4-8.6 and is not meeting the criteria at Mahi at Sevalia (8.6). The Conductivity lies in the range of 192 -1276 µmhos/cm. The DO lies in the range of 4.4-20.0 mg/l. The BOD is observed in the range of 0.3 - 6 mg/l and is not meeting the criteria at Sevalia (6.0mg/l). The water quality of tributary streams Shivna, Jammer, Malei and Chillar is meeting the desired criteria with respect to pH, DO, Conductivity, Total Coliform and Faecal Coliform. BOD observed higher than the desired criteria in River Malei at Jaora (4.2 mg/l) and River Sivna at Ramghat (3.2 mg/l).

STATION CODE	LOCATIONS	STATE	TEMPERATURE °C			D.O. (mg/l)			pH			CONDUCTIVITY (µmhos/cm)			B.O.D. (mg/l)			NITRATE-N+ NITRITE-N (mg/l)			FECAL COLIFORM (MPN/100ml)			TOTAL COLIFORM (MPN/100ml)		
			Min	Max	Mean	Min	Max	Mean	Min	Max	Mean	Min	Max	Mean	Min	Max	Mean	Min	Max	Mean	Min	Max	Mean	Min	Max	Mean
WATER QUALITY CRITERIA																										
1232	MAHI ST. EOP WITH E. CHAP. JODHER SAGUNDA-JAMRAH (R. JOD.)	GUJARAT	23	32	27	4.4	6.7	5.2	7.8	8.6	8.0	280	960	557	0.5	2.7	1.5	0.14	1.18	0.60	3	7	4	4	20	10
1264	MAHI AT MALPUR	GUJARAT	26	28	26	7.8	7.8	7.8	8.5	8.5	8.5	1276	1276	1276	1.8	1.8	1.8	0.18	0.18	0.18	21	21	21	40	40	
4	MAHI AT SEVALIA	GUJARAT	25	28	27	6.8	20.0	8.8	7.8	8.6	8.2	192	472	356	0.3	6.0	2.5	0.00	0.14	0.08	1	4	2	4	30	
1233	MAHI AT BAONAHAD	GUJARAT	24	24	24	9.0	8.0	8.0	7.5	7.6	7.8	400	400	400	1.6	1.6	1.6	0.89	0.89	0.89	1	1	1	110	110	
WATER QUALITY OF TRIBUTARY STREAMS SHIVNA, JAMMER, MALEI & CHILLAR - 2012																										
2302	RIVER SHIVNA AT RAMGHAT, RAMOLLIAR	GUJARAT	26	30	28	6.7	7.8	7.3	7.8	8.2	7.7	430	843	563	1.6	3.2	2.5	0.00	2.40	1.07						
2303	RIVER JAMMER AT DHOLOWAL, MALBAR	GUJARAT	24	32	27	7.0	7.8	7.5	7.6	8.3	7.8	364	440	463	1.0	1.8	1.3	0.00	1.01	0.71						
2304	RIVER MALEI AT JORA	GUJARAT	25	28	27	6.8	7.6	7.3	7.2	8.4	7.8	580	1100	456	1.0	4.2	2.1	0.14	1.42	0.84						
2305	RIVER CHILLAR AT SHALPUR	GUJARAT	23	32	27	6.8	7.8	7.3	7.4	8.2	7.8	225	551	437	1.0	3.0	2.0	0.14	1.91	1.26						

Figure 4-4: Water Quality of River Mahi

Source: CPCB

### 4.1.6 Groundwater Quality

47. The groundwater quality varies with respect to hydrogeological factors. The water quality information obtained from the CGWB has been taken for discussing the groundwater quality of the project districts. Ground water Quality is monitored through Ground Water Monitoring stations. The groundwater quality in Jamnagar, Surendranagar and Morbi shows a high concentration of Total Hardness (ranges from 160 – 3850 mg/l), TDS (ranges from 223 – 9333mg/l), pH (7.51 to 8.28) and Chloride (ranges from 18 – 4508mg/l). It is evident from the observation that, the groundwater has been contaminated by the sea water intrusion. Other key parameters like fluoride, potassium, nitrogen is within the limits.

Table 4-2: Groundwater Quality - Jamnagar, Surendranagar and Morbi

Sl.no	Water Quality Parameters	Unit	Range
1.	pH		7.51-8.28
2.	EC	(µS/Cm) at 25°C	333-13930
3.	Total Hardness	(mg/l)	160-3850
4.	Total Dissolved Solids	(mg/l)	223-9333
5.	HCO <sub>3</sub>	(mg/l)	159-1098
6.	Cl	(mg/l)	18-4508
7.	SO <sub>4</sub>	(mg/l)	4-1043
8.	NO <sub>3</sub>	(mg/l)	4-310
9.	Ca	(mg/l)	32-620
10.	Mg	(mg/l)	2-644
11.	Na	(mg/l)	14-1526
12.	K	(mg/l)	0.6-110
13.	F	(mg/l)	0-5.75

Source: CGWB

48. The groundwater quality recorded at Gandhinagar has been depicted in the table. In general the water quality deteriorates from east to western parts of the district i.e. in the ground water flow direction. The TDS varies from about 500 mg/l to more than 2700 mg/l. However, in major part of the district the ground water quality is potable with less than 2000 TDS. Higher TDS is observed in western part around Chhatral.

**Table 4-3: Groundwater Quality - Gandhinagar**

Sl.no	Water Quality Parameters	Unit	Observations
1.	pH		8.10
2.	EC	( $\mu\text{S}/\text{Cm}$ ) at 25°C	280
3.	TDS	mg/l	1075
4.	HCO <sub>3</sub>	mg/l	659
5.	Cl	mg/l	149
6.	NO <sub>3</sub>	mg/l	95
7.	SO <sub>4</sub>	mg/l	91
8.	F	mg/l	2.65
9.	Ca	mg/l	96
10.	Mg	mg/l	46
11.	Fe	mg/l	1.90
12.	TH	mg/l	550
13.	Na	mg/l	188
14.	K	mg/l	21.0

Source: CGWB

49. The groundwater quality recorded at Chhota Udepur reveals that the water is potable. The other physico-chemical parameters are:

- The ground water is in general alkaline in nature.
- Electrical Conductivity (EC) and chloride concentration increases towards northwest direction. Groundwater quality in Basaltic formation is generally fresh and electrical conductivity is mostly less than 1000  $\mu\text{S}/\text{cm}$  and chloride concentration is less than 250 mg/l.
- Quality in alluvium and Bagh beds are poor as compared to basaltic rocks and EC is observed to be in the range of 2000 to 5000  $\mu\text{S}/\text{cm}$  in northwest portion of the district

#### 4.1.7 Ambient Air Quality

50. The ambient air quality in the project area is excellent due to minimal source of air emissions. The only source of impact on the quality of the ambient air is the rare vehicular traffic on the roads, which causes some dust emissions whose effect, is quite localized. The main pollutants from vehicle exhaust are lead, particulate matter, carbon monoxide, sulfur dioxide, and nitrogen oxides. These emissions temporarily affect the air quality in the immediate vicinity of the roads.

#### 4.1.8 Ambient Noise Quality

51. There were no permanent sources of noise recorded in the area except a comparatively rare and random traffic noise.

#### 4.1.9 Physical Cultural Heritage

52. During survey no site of physical cultural heritage could be seen along the route of the project road. But in case there is a chance find during excavation for road construction, there are laws and procedures to handle the find(s) as indicated in the Chapter -3 (Legal Policy Framework).

## 4.2 Ecological/ Biological Environment

### 4.2.1 Forest cover

53. District wise forest cover is given in the Table 4-4. MNP Jamnagar has high Un-Classified forest cover followed by the Chhota Udepur which has high reserve forest and protected forest cover. During the site assessment none of the project roads are located in the vicinity of the forest area.

**Table 4-4: Forest Cover – District Wise**

No.	District	Division	Circle	Reserved Forest	Protected Forests	Un-classed Forests	Total Forest Area
1.	Gandhinagar	Gandhinagar	Gandhinagar	20.39	0.00	0.00	20.39
			GEER Foundation	0.00	4.28	0.00	4.28
2.	Jamnagar	Junagadh	Junagadh	242.20	0.00	144.38	386.58
		MNP Jamnagar	MNP Jamnagar	29.93	6.61	896.15	931.69
3.	Surendranagar	Surendranagar	Junagadh	124.54	0	245.99	370.33
			Ahmedabad	0.00	2.01	0.00	2.01
			NGWL Gandhinagar	132.91	4.45	29.42	166.78
4.	Chhota Udepur	Vadodara	Vadodara	674.55	5.70	38.54	718.79

Source: Forest Department of Gujarat

### 4.2.2 Flora and Fauna

54. There are more than 500 species of mammals, more than 2000 species of birds a wide range of insects, fishes, amphibians, reptiles, etc. - this aspect, indeed, makes Gujarat rich in terms of flora and fauna. The influence of the fauna has been observed in the project districts as well. Some of the important mammal and bird species that are common in the project district are

Floral species – commonly found in the project districts	<ul style="list-style-type: none"> <li>• black bucks</li> <li>• nilgai</li> <li>• chitals</li> <li>• wild boar</li> <li>• four horned antelope</li> <li>• hyenas</li> <li>• rusty spotted cats, etc.</li> </ul> <p>A large number of other animals and insects like snakes, lizards, crocodiles, scorpions, bees, silkworm, Lac insect, etc., are also observed.</p>
Important Faunal species observed in the project districts	<ul style="list-style-type: none"> <li>• peacock</li> <li>• parrots</li> <li>• pheasants</li> <li>• geese ducks</li> <li>• cranes, etc.</li> </ul>

55. The common Flora species found in the project districts are Teak, Boswellia Serrata, Anogeissus latifolia, Diospyros, etc. Owing to the arid climate, the flora also possesses a wide range of xerophytic vegetation including Acacia Arabica, Acacia leucophloea, Capparis ophylla and Zizyphus mauratiana, etc.

### 4.2.3 Ecological sensitive areas in the project districts

56. The ecological sensitive areas in the project districts are given Table 4-5. The table details the information regarding the sanctuaries/ parks established year, total area and the major species available in the sanctuary / parks

**Table 4-5: District wise Ecological Sensitive areas:**

District	Name and Location	Month & Year of Establishment	Area in Sq.Kms.	Major Species
Jamnagar	Marine National Park Gulf of Kachchh,	August, 1980	162.89	Sponges, Corals, Jelly fish, Sea horse, Octopus, Oyster, Pearl oyster, Starfish, Lobster, Dolphin, Dugon, Waterfowls.
	Marine Sanctuary, Gulf of Kachchh	August, 1980	295.03	Sponges, Corals, Jellyfish, Sea horse, Octopus, Oyster, Pearloyster, Starfish, Lobster, Dolphin, Dugong, waterfowls
	Khijadia Bird Sanctuary	May, 1981	6.05	Indian Skimmer, Ibises, Painted stork, Cormorants, etc. App. 220 spp. of birds, Herpetofauna
	Gaga Wild Life Sanctuary, Gaga	Nov, 1988	3.33	Great Indian Bustard, Wolf, Jackal, Birds, Herpetofauna
Kachch	Wild Ass Sanctuary, Little Rann of Kachchh	1973	4953.7	Wild Ass, Chinkara, Blue bull, Houbara bustard, Wolf, Waterfowls, Herpetofauna
	Narayan Sarovar Sanctuary	April, 1981	444.23	Chinkara, Caracal, Desert Cat, Hyena, Desert Fox, Jackal, Birds, Herpetofauna
	Kutch Desert Sanctuary Great Rann of Kachchh	February, 1986	7506.22	Chinkara, Hyena, Fox, Flamingo, Pelicans & other waterfowls, Herpetofauna
	Kutch Bustard Sanctuary Near Naliya	July, 1992	2.03	Great Indian Bustard, Lesser Florican, Houbara bustard, Chinkara, Blue bull, Herpetofauna
Surrendranagar	Nal Sarovar Birds Sanctuary, Dist:Amdavad & Surendranagar	April, 1969	120.82	Flamingos, Pelicans, Coot, ducks, waders, storks, Herons and other spp. of waterfowls, Herpetofauna
Morbi	Wild Ass Sanctuary, Little Rann of Kachchh	1973	4953.7	Wild Ass, Chinkara, Blue bull, Houbara bustard, Wolf, Waterfowls, Herpetofauna
Chhota Udepur/ Panchmahal	Jambuhoda Sanctuary, Jambughoda Dist: Panchmahal	May, 1990	130.38	Sloth bear, Leopard, Jungle cat, Hyena, Wolf, Four Horned Antelope, Herpetofauna

Source: Forest Department of Gujarat

## 4.3 Social Environment

### 4.3.1 Socio-Economic Profile of Sample Project-Roads / Locations Chosen

57. The socio-economic characteristic of the districts in the project region through which the study carried out for the Rural Roads under MMGSY has been discussed with respect to the following parameters: Demographic characteristics including population distribution and density of population; Economic Base including workforce; vulnerable groups, and Level of Urbanization.

58. Five districts covered and studied for the purpose of Social Baseline which is situated in Central-East, South and Saurashtra regions of Gujarat such as Jamnagar, Morbi, Surendranagar, Chhota-udepur and Gandhinagar Districts.

#### 4.3.1.1 Population Distribution:

59. Project-roads were chosen from five districts. District wise demographic characteristics in the study area are presented in Table 4-6.

**Table 4-6: Profile of Roads/Regions Chosen for Detailed Study**

Characteristics	Jamnagar	Morbi	Surendranagar	Chhota Udepur	Gandhinagar
Total Population	1407635	960329	1585268	1071831	1391753
Area (Sq.km)	14125	4872	10489	3087	2163
Population Density	100	207	151	347	643
Avg. HH size	430941	187494	343213	200614	289990
Tot Urban Pop	729270	358420	464892	72415	600627
Tot Rural Pop	678365	601909	1120376	999416	791126
% of Rural Population	48	63	71	93	57
Number of Works	68	59	98	58	129
Total Length (km)	288.55	200.77	520.57	178.05	342.60
Total Investment (Million Rs.)	84.16	95.12	138.39	67.59	109.90

Source: (i) Census of India, 2011, (ii) R&BD, Government of Gujarat

#### 4.3.2 Distribution of Scheduled Caste / Tribe Population

60. The percentage of SC population of the State is 6.74 and the district of study area ranging from 2 to 12 percent. The percentage distribution of SC population of five Districts has reported as high percentage compared to the State. The percentage of ST population in Chhota Udepur district has a higher percentage (80%) compared to the State percentage (14.74%), other Districts for ST population are negligible (around 1%).

**Table 4-7: Distribution of Scheduled / Tribe Population**

SC & ST population	Jamnagar	Morbi	Surendranagar	Chhota Udepur	Gandhinagar
Total Population	1407635	960329	1585268	1071831	1391753
SC Population	122958	65698	168183	25279	108608
% of SC to the total Population	9	7	11	2	8
ST Population	14500	5159	21151	856862	18204
% of ST to the total Population	1.21	1.01	1.23	80	1

Source: Census of India, 2011

#### 4.3.3 Social Characteristics:

61. As per the Census estimates (2011), 78% of the population are literate in the State, where as the average literacy rate is lower (72%) in the Study Districts. Amongst all the five Districts, Chhota Udepur district registered the highest sex ratio of 949 in 2011 followed by Morbi (897). The average WPR in Study area is 41% in 2011. Chhota Udepur district has the highest WPR (51%) followed by Surendranagar (41%). The lowest WPR is recorded in Morbi and Gandhinagar (38%).

**Table 4-8: Population Characteristics**

Characteristics	Jamnagar	Morbi	Surendranagar	Chhota Udepur	Gandhinagar
Total Population in Million (without age 6)	1.24	0.83	1.36	0.90	1.22
Literacy Rate (%)	77	77	72	56	84

Sex Ratio	888	897	894	949	847
Work Force Participation Rate (%)	39	38	41	51	38

Source: Census of India, 2011

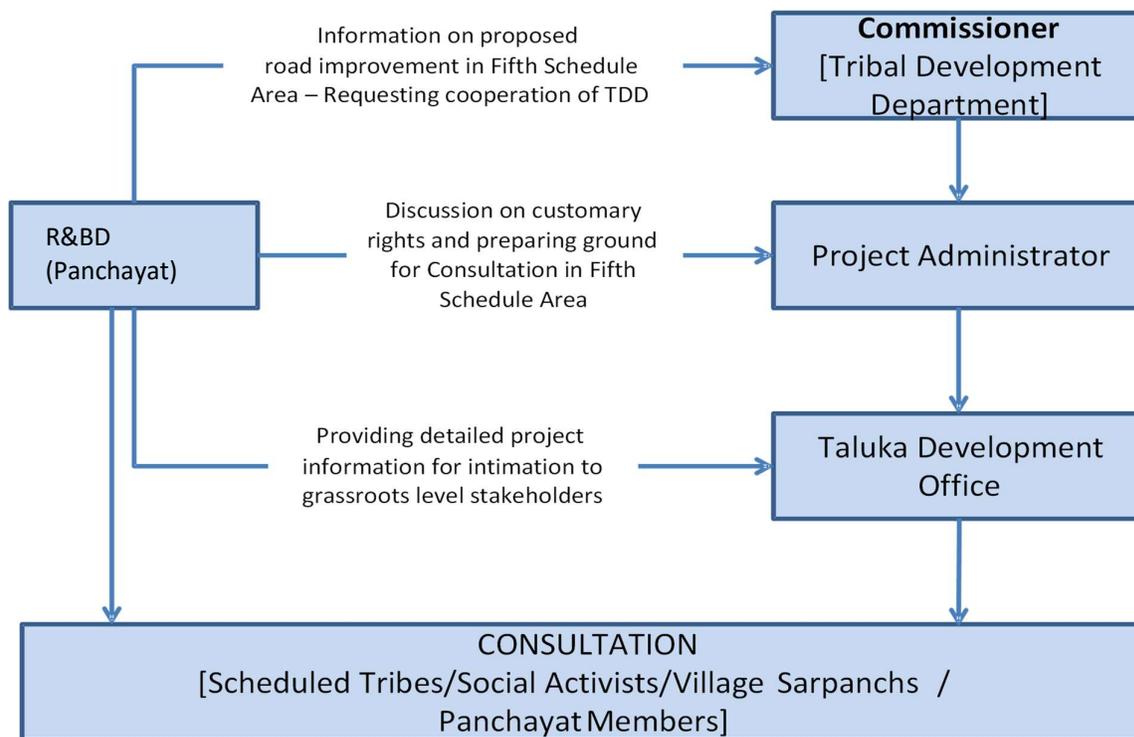
# 5 PUBLIC CONSULTATION

## 5.1 Purpose of Public Consultation

62. Consultation with community is an integral part of the project planning and design. As part of the ESIA, prior-informed consultations were carried out. Simultaneously, Focus Group Discussions (FDGs) and informal discussions with the local community were also carried out during the site-visits scheduled along the sample project-roads. All these participatory assessment approach would certainly instigate a sense of community ownership and facilitate community support for the project. The views and suggestions of the community have been documented so as to enable us in developing / updating the Environmental and Social Management Framework as well as Tribal Population Planning Framework documents.

## 5.2 Free, Prior and Informed Consultation in Fifth Schedule Area

63. Chhota Udepur taluka which is chosen for ESIA is a notified Fifth Schedule Area. Accordingly, free-prior-informed-consultation approach has been adopted for conducting consultations. R&BD has communicated about MMGSY and the proposed project-road development features to the Commissioner, Tribal Development Department, GoG and Project Administrator of respective Taluka. The framework adopted for consultation is presented in Figure 5-1.



**Figure 5-1: Consultation in Fifth Schedule Area: Framework**

### 5.3 Details of Consultations Carried Out

64. Community consultations were carried out in locations identified based on the sample criteria mentioned in Chapter 1. Description of consultations carried out in respective regions of Gujarat is given subsequently. Corresponding photographs (of Consultations, FGDs and informal discussions), Format in which the opinion and perception hand-written by the community, Attendance Sheet, etc., are given in **Annexure 5-1**.

**Table 5-1: Consultation Details: Bopa Village, Chhota Udepur**

Road Name and Details	Participants	
<b>Name of Road:</b>	Village Community	39
Bopa Approach Road	Gram Panchayat Representative	1
<b>Date:</b> 23 <sup>rd</sup> May 2017	Roads and Building Department	2
<b>Venue:</b> Bopa Village, Chhota Udepur	ESMF Consultant	3
Meeting Chaired by Mr. Ramesh Rathwa, Sarpanch- Bopa, Hadwad, Chokdi and Bhensa villages	Contractor	1
	<b>TOTAL</b>	<b>46</b>

#### Consultation Summary

ESMF Consultant has explained to the Community about the scope and purpose of consultation, the MMGSY initiative of GoG with support from AIIB, etc. Gram Panchayat Sarpanch also facilitated the briefing based on the communication had from R&BD (a formal letter was issued to Sarpanch and Project Administrator of ITDP Taluka, Tribal Development Department). Participants were encouraged to draw a sketch of the specific road in the Flip Chart provided by the ESMF Consultant and mark the road-features along with major views and suggestions. Adequate land-width was available to carry out the proposed road development works.

Majority of the villagers who participated in the consultation were farmers and belong to Rathwa tribe. People were very positive about the road works being carried out. They believed the road helped them in accessing their farm-lands, movement of farm-vehicles and transport of farm produce. Improvement of nearby road (Boya to Harwar), which has a link from the Bopa Approach Road, also needs to be taken up on priority basis, which will effectively reduce the distance to district centre by about 7 km. The Community also requested for increasing the frequency of bus-services through the main-road or for insisting the bus-operators to commute through the project-road.

The Bopa Approach road previously was in bad condition and was not navigable during rainy season and now the road level has been improved. There are trenches on both sides which cause a safety hazard, and are getting filled once after the black-topping works are concluded

Key Issues/ Perception of Community	Responses from R&BD Staff/ ESMF Consultant
The road was in very bad condition before the civil works and was totally unusable during rainy season. Now, the level of the road has been improved appreciatively, at the same time trenches were also formed on either side of the road due to which commuters, especially cyclists and bikers face some difficulty.	These trenches are formed due to the heightened road level and will be corrected right after the completion of resurfacing works. Where ever, there is limited space for extending shoulder, protection walls will be constructed.
Villagers suggested giving priority to another link-route as well, connecting the present project-road	The demand for such roads shall be made to the elected representative (member of parliament or

and to Harwar Village, which will reduce the travel distance by around 7 km, to the district centre. At present the proposed link-route is cart-track having sufficient land-width and the villagers are willing to share additional land, if further land is required.

The Bopa Approach Road starts from an MDR (which is connected to Dhaboi town). At the start-point, there is a requirement of Bus-Shelter.

A hand-pump or some drinking-water facility (in the form of a storage tank) is required to be provided at the start-point of the road.

member of legislative assembly). The reference letter from MP/MLA will be considered during the prioritization scoring new MMGSY roads at the state level.

Bus-Shelter will be included in the design and the same can be accommodated within the RoW. The land-width available at the start-point is sufficient to accommodate a Bus-Shelter.

Gram Panchayat will be making necessary arrangements for providing a drinking-water storage facility at the start-point or within the Bus-Shelter which will be constructed as part of the project road.

**Table 5-2: Consultation Details: Ukhalvaant Village, Chhota Udepur**

Road Name and Details	Participants	
<b>Name of Roads:</b>	Village Community	26
(i) Lagamithi Ukhalvaant Kachel; (ii) Kumbhani to Ghoghadev; and (iii) Unkalwant Approach Road	Gram Panchayat Representative	1
<b>Date:</b> 23 <sup>rd</sup> May 2017	Roads and Building Department	3
<b>Venue:</b> Ukhalvaant Village, Chhota Udepur	ESMF Consultant	3
Meeting Chaired by <b>Mr. Rupsingh Tersing</b>	Contractor	1
<b>Rathwa, Sarpanch- Ukhalvaant Village</b>	TOTAL	<b>34</b>

#### Consultation Summary

Details regarding the works being carried out in the proposed roads were presented to the Community. The project-roads were previously cart-tracks and now through MMGSY, it undergoes for earth work, metal, drainage, bitumen and cross-drainage works. ESMF Consultant has requested the community to provide a sketch of the road and mark the key features as part of the consultation. One of the participants, a School Teacher belonging to Ukhalvaant Village and serving the Primary School located in the village, came forward and sketched the features of project-road and also suggestive remarks in a Flip Chart.

R&BD has initiated the civil works during lean agriculture season (during the month of March – June). The villagers follow rain-fed cultivation pattern and hence their agriculture is not affected during the road construction. Diversion of route is given wherever the cross-drainage works are in progress and this diversion is through private agricultural field. A *verbal agreement* (voluntary consent) is in place for using the land for construction purposes.

Villagers were very happy for the road and opined that this became the most proximate road so far connecting their hamlet. The community also suggested that, while giving full connectivity to their hamlets, steps should also be taken to provide an approach road (from the present project-road) to the Primary School. Apart from this, a Primary Health Centre with required medical staff should be provided near to their hamlet in view of the improved connectivity.

The community also suggested protecting the trees alongside the project-road, especially the one namely, *Mahudo* (belonging to *Sapota Family*) because of its importance in the socio-cultural wellbeing of the tribal community.

Key Issues/ Perception of Community	Responses from R&BD Staff/ ESMF Consultant
The existing Pipe Culvert at Sinteria Kotar section of the project-road should be replaced with higher-order Culverts. This is in view of the intensity of water influx during rainy season.	Pipe Culvert provided at this road section is sufficient enough to contain the water influx. A catchment-pit will be constructed, if required, after a detailed study.

Approach road to Primary School located in the village should be constructed and should be taken up along with this project-road.

Primary Health Centre along with staff is required in the village.

About 500 m away from the project-road, there is a Causeway exists, in place of which a Bridge is required for all-weather access to District Centre. During rainy season, the village almost gets isolated, for a week at least.

New road (missing link) should be constructed between Kanchol to Zamran, so that it can be connected with existing bituminous road (Zamran-Baroj).

As much as possible, trees alongside the roads should be protected, since many of the trees, especially those which are fruit-bearing, are linked to their livelihood.

Project-roads are chosen by way of following systematic prioritization criteria, wherein demand from the Elected Representatives were given due weightage. Approach road to Primary School will be taken up based on future prioritization plan of Government of Gujarat.

Gram Panchayat shall request to the Tribal Development Department for establishing a Health Centre, appraising about the new and improved connectivity to the tribal hamlets.

This is again only can be taken up following the prioritization criteria followed in the selection of sub-projects under MMGSY. The community is requested to discuss the issue within Gram Sabha and subsequently the Gram Sabha resolution be taken up to the Elected Representatives.

This is also beyond the purview of the existing project-road works. Village community is requested to follow the steps enunciated by the GoG for MMGSY.

No trees were cut / felled for the present road works. Conscious efforts were taken to protect the trees.

**Table 5-3: Focus Group Discussion Details: Muldhar Village, Chhota Udepur**

Road Name and Details	Participants	
<b>Name of Roads:</b> Muldhar to Timbi Road	Village Community	13
	Gram Panchayat Representative	1
<b>Date:</b> 23 <sup>rd</sup> May 2017	Roads and Building Department	2
<b>Venue:</b> Muldhar Village, Chhota Udepur	ESMF Consultant	3
Meeting Chaired by Mr. <b>Sanjaybhai Rathwa,</b> <b>Sarpanch, Muldhar Village</b>	Contractor	0
	<b>TOTAL</b>	<b>19</b>

#### Consultation Summary

A large section of the project-road passes through settlement area. The treatment of the road was resurfacing and strengthening. The available land width was adequate to accommodate the proposed treatment. Along the settlement area, the shoulders were constricted to available land width. Majority of occupants are farmers and also engage in cattle rearing. Community welcomed the road improvement works being carried out under MMGSY. The community is relatively well-off and is genuinely benefited from better connectivity to market centres, medical facilities and educational institutions.

Although the project-road is well received by the community, there was a demand for upgrading a Causeway built across the adjacent River (Meria) to a Bridge which is opined to ease the commuting to District Centre. ESMF Consultant / R&BD Staff has requested the community to take up the demand at Elected Representative level and subsequently communicating to R&BD for inclusion in MMGSY.

**Table 5-4: Consultation Details: Nana Dahisara Village, Morbi**

Road Name and Details	Participants
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<b>Name of Roads:</b>	Village Community	34
(i) Nana Dahisara Virpada (ii) Kuntasi Bokadi, and (iii) Bhavpar Baksara	Gram Panchayat Representative	2
<b>Date:</b> 23 <sup>rd</sup> May 2017	Roads and Building Department	1
<b>Venue: Shree Ramji Mandir (Temple), Nana Dahisara</b>	ESMF Consultant	3
Meeting Chaired by <b>Sarpanch of Nana Dahisar</b>	Contractor	1
	<b>TOTAL</b>	<b>41</b>

### Consultation Summary

The provision given under the MMGSY with respect to design, social and environmental safeguard requirements has been detailed by the ESMF Consultants to the community. Following the brief introduction, the purpose of having the consultation has been detailed to the community to have effective interaction to get their feedback regarding the project. The community has high regards for the proposed MMGSY projects. Provision of Grievance Redress Committee and its composition details were also narrated in brief among the villagers, stakeholders encouraging them to forward their grievances related to road works, or any other issues come up in the road development initiatives.

However, few concerns are raised by the community, which were responded / clarified by the Executive Engineer R&B (Panchayat) Morbi and ESMF Consultants. The concerns are related to:

- **Drain Provisions:** It has been informed that the sub project roads have flooding issues, often overtopping in rainy days causing blockage of movements. Hence there is a felt-need to provide a culvert (Pipe or Box) for passage of drain water from D/s to U/s.
- **Road Safety:** The vegetation in the form of bushes grown on both sides of the road causing poor visibility; especially during the night time, early morning (during winter) to the road users often causing collision – cases of accidents with Nilgai (Blue Bull; locally known as **Rozda**) happens during night. They have suggested removing the vegetation at the time of implementing the project. It has been informed by the Sarpanch and his representative to provide road safety measures like road safety railings, crash barrier at sharp curves and reflectors for road users at night.
- **Impact on the Agriculture land:** The community has overwhelmingly welcomed the project; they have informed that, they are ready to give the land for the road-development, if further widening is required since it will help in improving riding quality and transportation facility.

#### Key Issues/ Perception of Community

Proper drainage – cross drainage structure/s should be provided to avoid the problem of overtopping on the road and to overcome water logging situation during rainy days and monsoon season.

Visibility of the road is impaired due to the presence of the vegetation in the form of bushes grown on both sides of the project road.

Request to add following in design / provisions.

1. Bus Shelter / Bus Stand
2. Street Lights along MMGSY Roads
3. Speed Breaker at Sharp Curves

#### Responses from R&BD Staff/ ESMF Consultant

After studying reoccurrence interval, cross drainage structure will be provided. Moreover, side-drains shall be provided, where ever water logging related problem exists.

It is assured that the bushes and shrubs will be removed to improve visibility of the commuters It is also suggested that – Provision of traffic-calming measures will be provided along with cautionary signboards, wherever necessary. Also road-side reflectors will be provided ensuring safety of commuters during night time.

Provision of safety measures such as Speed Breakers, Street Lights will be included in the road design. In case of accident prone areas / spots, curve improvement will be carried out within the available land-width. Provision for Bus Shelters will also be included, wherever feasible.

**Table 5-5: Consultation Details: Uvarsad Village, Gandhinagar**

Road Name and Details	Participants	
<b>Name of Roads:</b>	Village Community	23
(i) Uvarsad – Ranjitpura, (ii) Uvarsad – Tarapur,		2
(iii) Uvarsad – Kolavada, (iv) Uvarsad - ONGC to	Gram Panchayat Representative	
Karsanpura Road (v) Uvarsad – Sargasan		
<b>Date: 14<sup>th</sup> May 2017</b>	Roads and Building Department	3
<b>Venue: BrahmaniMaa Community Hall,</b>	ESMF Consultant	5
<b>Uvarsad</b>		
Meeting Chaired by <b>Sarpanch of Uvarsad Village</b>	Contractor	1
	<b>TOTAL</b>	<b>34</b>

#### Consultation Summary

The provision given under the MMGSY with respect to design, social and environmental safeguard requirements has been detailed by the ESMF Consultants to the community. Following the brief introduction, the purpose of having the consultation has been detailed to the community to have effective interaction to get their positive and negative feedback of the project. After paying attention, the local community has shown their support for the proposed MMGSY projects. Community opined that the link-road, Uvarsad – Sargasan, saves about 3km of travel to major district centre, which facilitates saving in fuel. Moreover, the road helps in promoting of education, business and employment, apart from giving good accessibility to their farm-lands and brick kiln.

Provision of Grievance Redress Committee and its composition details were discussed in detail with the villagers, encouraging them to forward their grievances related to road works, or any other issues come up in the road development initiatives.

However, few concerns are raised by the community, which were responded / clarified by R&BD Staff and ESMF Consultants. The concerns are related to:

- **Road Safety:** The wild vegetation grown on both sides of the road causing poor visibility to the road users and they have suggested to remove the vegetation at the time of implementing the project. It has been informed by the Sarpanch to provide road safety measures like road safety railings at sharp curves and reflectors for road users at night.
- **Road Design:** Few of the participants raised issues with respect to the proposed design, because one of the project roads, “**Uvarsad – Sargasan Road**” has heavy vehicle movements due to the presence of the Brick kiln industries (for carrying bricks).
- **Drain Provisions:** It has been informed that there are some roads which have flooding issues, however, the roads wherein the community expressed their concern has not been taken up under MMGSY.
- **Impact on the Agriculture land:** The community has overwhelmingly welcomed the project, they have informed that, they are ready to give the land for the road-development, if further widening is required since it will help in improving brick kiln trade.

#### Key Issues/ Perception of Community

Visibility of the road is impaired due to the presence of the wild vegetation grown on both sides of the road

Road total thickness should be checked for the heavy vehicle movement of Trucks carrying brick loads.

#### Responses from R&BD Staff/ ESMF Consultant

It is assured that the vegetation shall be removed to provide good road visibility for the users

It is clarified that the proposed design has sufficient crust thickness to handle the heavy vehicle movement, which was designed based on traffic study.

Proper drains should be provided to avoid the problem of water logging during monsoon. Side-drains will be provided, where ever the water logging related concerns shared by community.

**Table 5-6: Consultation Details: Rupal Village, Gandhinagar**

Road Name and Details	Participants	
<b>Name of Roads:</b>	Village Community	23
(i) Vasan to Rupal, (ii) Rupal to Golthara	Gram Panchayat Representative	2
<b>Date: 14<sup>th</sup> May 2017</b>	Roads and Building Department	3
<b>Venue: Gram Panchayat Meeting Room, Rupal</b>	ESMF Consultant	5
Meeting Chaired by <b>Sarpanch of Rupal Village</b>	Contractor	2
	<b>TOTAL</b>	<b>35</b>

#### Consultation Summary

The provision given under the MMSGY with respect to design, social and environmental safeguard requirements has been detailed by the ESMF Consultants to the community. Following the brief introduction, the purpose of having the consultation has been detailed to the community to have effective interaction to get their positive and negative feedback of the project.

Participants were supportive for the proposed road improvement and opined that road development will bring many benefits to the villages located alongside the road. The roads which were taken up under Gujarat Rural Roads (MMGSY) Project have adequate width and there are no encroachments of any sorts.

There is a famous Temple (*Vardayini Matha* Temple, Rupal) located within the village celebrates a unique Festival celebrated during October – November every year, in which about 1.5 million people participate from various places of Gujarat. During the Festival, a Symbolic Chariot is taken out from the middle of the village and reaches to the main Temple. The villagers takeout this Chariot through the village roads and stops at 27 different spots in the village; at each spot the devotees pour pure-ghee on the chariot.

During the consultation, the villagers opined that the movement of Chariot through the village roads will become very smooth once the road-construction is over and rendered all help towards the completion of civil works.

With respect to encroachments, villagers were of the opinion that encroachment of any form should not be encouraged and the previous Chief Minister of Gujarat himself has shown great courage in removing many religious structures alongside major roads in Gujarat. The same system should be followed in rural roads also so as to ensure safe and comfortable travel. On requirement of private land at any of the roads under MMGSY, either the project procedures or the routine procedures of the Government of Gujarat shall be followed.

Provision of Grievance Redress Committee and its composition details were discussed in detail with the villagers, encouraging them to forward their grievances related to road works, or any other issues come up in the road development initiatives.

Many of the participants have given their views and suggestions in writing, which is appended in local language, and the same also have been translated into the above Minutes of Meeting. Consultation Photographs are placed as under:

Key Issues/ Perception of Community	Responses from R&BD Staff/ ESMF Consultant
There is adequate land width already available, and hence wider roads should be planned and constructed.	As per the MMGSY mandates, the width of the carriage way (black top) is 3.75m and 0.5m shoulder on either sides. Decision for additional widening, if required will be taken by the Government.
If, in the case of any individual household encroaches into the government land, the Gram Panchayat should issue notice to respective	Village roads are for the benefits of local community and hence it is suggested to have such encroachments be cleared with overall community

individual stating the ownership of land rests with Panchayat / R&BD.

Villagers asked about the selection criteria followed for choosing a particular road for improvement.

There should be provisions for pedestrians, may be in the form of raised foot-paths on side of the roads. Also the road-side trenches cause a problem for commuters, especially Cyclists.

In Rupal – Golthara road, there is sharp curve which causes safety issues for vehicles as well as pedestrians. The fencing of a private farm-land and the shrugs grown into the road should be removed.

There should be some provision to monitor the works of the Contractor. Villagers should know about the composition of mixture and whether the same is practiced as per the original design or not.

Rupal – Golthara road has problem of water logging during monsoon season, for which culverts or drains should be provided.

participation. As majority of the villagers favour for road, those individual encroachers get motivated to remove or relocate from their encroachments.

R&BD-GoG has primarily considered factors as population size of connecting habitations, connectivity to growth centres and demand from community. In the case of widening of roads and through routes, the importance of roads, the places of social, economic and religious importance has been considered along with the expected growth of traffic.

The present configuration does not include raised foot-paths; instead there is provision of shoulders on either side. The leveling of shoulders will be carried out to have smooth travel for cyclists and pedestrians.

Curve improvement will be carried out within the available land-width. Shrugs will be removed to improve the visibility for commuters. Since the fencing is located beyond the RoW, the same need not be removed, however appropriate safety signboards will be provided, if required. Also road-side reflectors will be provided on the fence ensuring safety of commuters during night time.

Adequate transparency will be ensured regarding work contracts. Quality Monitoring of works and Quality Audit are provisioned as part of MMGSY. Monitoring of road works involving respective local community will be encouraged. Specific information, if required could be obtained from R&BD Office, as per the provisions of Right to Information Act.

This has been taken up in the road-design by way of provided side drain.

**Table 5-7: Consultation Details: Unava Village, Gandhinagar**

Road Name and Details	Participants	
<b>Name of Roads:</b>	Village Community	17
(i) UnavaMubarkpur, (ii) UnavaPidharda, (iii) Unava (Gogaji Farm) to Sharda Farmasi Up to Pethapur Mahudi	Gram Panchayat Representative	3
<b>Date:</b> 14 <sup>th</sup> May 2017	Roads and Building Department	3
<b>Venue:</b> Gram Panchayat Meeting Room, Unava	ESMF Consultant	5
Meeting Chaired by <b>Representative of Ms. Patel</b>	Contractor	2
<b>SangitabenPiyushabhai / Piyushbhai Patel, Sarpanch (President), Unava Gram Panchayat</b>	<b>TOTAL</b>	<b>30</b>

**Consultation Summary**

The participants are mostly farmers and traders. Participating in the discussion, the R&BD staff and the ESMF Consultant gave detailed information of the Government of Gujarat’s initiatives for the development

of rural areas in the state of Gujarat. Information has been given regarding the ongoing Gujarat Rural Roads (MMGSY) Project, supported by Asian Infrastructure Development Bank (AIIB), and implemented by Gujarat Rural Road Development Agency under Roads and Buildings Department.

Sarpanch opined that whichever land required for the proposed road project, Gram Panchayat takes initiative to provide encroachment-free road stretches to Contractor for smooth construction works. The villagers in Unava are generous and are ready to cooperate with Gram Panchayat for any sort of development works within the Village.

Provision of Grievance Redress Committee and its composition details were discussed in detail with the villagers, encouraging them to forward their grievances related to road works, or any other issues come up in the road development initiatives.

Key Issues/ Perception of Community	Responses from R&BD Staff/ ESMF Consultant
<p>Villagers enquired about the duration of road-construction. It is general perception that the Contractors delay the civil works causing difficulty to the local community.</p>	<p>MMGSY follows a specific work schedule to which the Contractors need to adhere. Moreover, there is strict monitoring from R&amp;BD regarding quality of construction and compliance to work schedules.</p>
<p>Villagers required clarity regarding the timing of road construction. In fact, the road work started before monsoon; at that point of time, only gravelling was done and the second set of work began after few months. Are there any specific reasons for such delayed work?</p>	<p>Gravelling is done before monsoon and kept for settling of the same during rain, which is a natural compaction method. If monsoon is insufficient, the Contractor use own source of water for compaction.</p>
<p>In Unava to Mubarakpura road, water logging is a major issue and requires improving the height of road.</p>	<p>This issue has been already considered while preparing Detailed Project Reports. In few locations, road height will be increased and in some other locations, provision of side-drains is given.</p>
<p>Road side shrubs hamper the visibility of road users, thereby causing safety issues – this more severe in between Railway Culvert to Mubarakpura section. Road construction should be exactly as per the agreed contract, in the sense that the quality of work should not be diluted.</p>	<p>Road side vegetation will be removed during road construction. Additionally, safety signboards will be provided ensuring road safety.</p>
	<p>There is unique Quality Monitoring Mechanism adopted for implementation of Gujarat Rural Roads (MMGSY) Project, in which regular monitoring and supervision is envisaged. In addition to this, there is a provision of third-party quality monitoring / auditing to be carried out by a Third Party or Project Management Consultant.</p>

#### 5.4 Informal Discussions with Local Community

65. Informal discussions with local community were conducted at various project-road locations in Suredranagar, Jamnagar, Morbi and Gandhinagar districts. These discussions helped in gathering relevant information related to (i) general perception of the project, (ii) response of the community towards removal of encroachments / infringements on government land, (iii) relocation of community properties / religious structures, etc.

#### 5.5 Visit to Hot-mix Plant

66. A Hot-mix Plant situated at Nasvadi near Dhaboi which serves the project-roads in Chhota Udepur and Bodeli, have been visited. The Plant is operating in lease-land for the last 4 years (since 2013), and formal agreement with the private land owner is in place. The respective Contractor has obtained necessary Consent to Establish (CTE) and Consent to Operate (CTO) from the Pollution Control Board and the same is periodically getting renewed. The accommodation facilities provided for the labourers are observed to be in acceptable conditions.



**Figure 5-2: Hot-mix Plant located at Nasvadi near Dhaboi in Chhota Udepur**

## **5.6 Consultations and On-site Observations: Summary of Outcomes**

67. The consultations held with the community, and also the on-site observation of the project-roads in various districts of the state, reveals that the population is overwhelmingly in favour of construction of the roads. This is primarily due to the fact that the approach roads connects the villages to the mainstream of the state's economy and thus proves to be a major input in improvement of their day to day affairs. The community gains both socially and economically due to improvements in accessibility. It may be noted that apart from the significant positive benefits perceived by the community there are some adverse impacts as well. The advantages of the project as perceived by the stakeholders are (i) faster and easy access to local and regional market centres, enabling faster movement of people and goods; (ii) faster and consistent access to educational institutions and medical facilities, which will in turn facilitate sustainable development outcome; (iii) significant reduction in travel time; etc.

68. The key adverse impacts perceived are temporary disturbance due to rehabilitation of existing roads and impact of construction activities (dust, noise etc.) near the village. A Comprehensive Environmental Code of Practice (ECoP) requires to be developed for adoption during construction activities. The ECoP should include components of public consultations and a framework for community engagement ensuring that the users are aware of the project activities and gives an opportunity to share their views in final design (alignment) and execution of the works.

69. The new link roads being constructed to connect the settlement with the main district roads or to establish connections between villages, are perceived to be key attribute of the project. Currently, these are in the form of earthen roads, with well-defined alignments and the land is owned by the government. Field reconnaissance indicated that in some cases, the width of the link roads is narrowed down due to encroachment (expansion of agricultural fields). These encroachments are typically narrow strips of lands, in the ROW of the proposed roads. Consultations with the community revealed that the land owners are ready to cooperate with the construction activities and withdraw from the encroached land voluntarily. This phenomenon has also been widely prevalent during similar road construction projects (such as implementation of the PMGSY) in the state. There are small structures (such as temples, mosques, etc.) in the edge of the alignments. Generally, a

process of Public Consultation involving the user communities under the aegis of the Local Self-Government (Panchayats) will be fruitful in addressing the issue of clearing the alignment for road construction. A detailed Community Participatory Framework (CPF) should be in place to address these issues.

# 6 ANALYSIS OF POTENTIAL ENVIRONMENTAL & SOCIAL IMPACT AND MITIGATION MEASURES

## 6.1 Assessment of Environmental and Social Impacts

70. The assessment for environmental and social impacts due to the implementation of the MMGSY project has been carried out (refer **Annexure 6-1**) for the potential impacts envisaged during the various stages of the project planning and implementation.

- **Location impacts:** Impacts associated with site selection, including impacts on environment and resettlement or livelihood related impacts on communities and impacts to the wildlife
- **Design impacts:** Impacts arising from project design, including fixing of alignment/ curve improvements, safety measures etc.
- **Construction impacts:** Impacts resulting from construction activities including site clearance, earthworks, civil works, etc.
- **O&M impact:** Impacts associated with the operation and maintenance of the roads.

### 6.1.1 Impact on Land and Structures

71. Project-roads include new link-routes that are constructed to connect the settlement with the main district roads or to establish connections between villages. The envisaged BT link roads are perceived to be key attribute of the project. Currently, these are in the form of earthen roads, with well-defined alignments and the land is owned by the government. Field reconnaissance indicated that in some cases, the width of the link roads has been narrowed down due to encroachment (expansion of agricultural fields). These encroachments are typically narrow strips of lands, in the ROW of the proposed roads. Consultations with the community revealed that the land owners are ready to cooperate with the construction activities and withdraw from the encroached land voluntarily. This phenomenon has also been widely prevalent during similar road construction projects (such as implementation of the PMGSY) in the state. There are possibilities of small structures (such as temples, mosques, etc.) in the edge of the alignments. Generally, a process of Public Consultation involving the user communities under the aegis of the Local Self- Government (Panchayats) has been envisaged to address the issue of clearing the alignment for road construction.

### 6.1.2 Land Securing and Modalities: Different Scenarios

72. The various circumstances under which the road improvements may require securing of additional land have been identified during this impact assessment. The different scenarios and modalities in this respect, are presented in Table 6-1

**Table 6-1: Scenarios of Land Securing, Modalities and Proposed Entitlements**

Sl. No.	Scenarios	Modalities	Proposed Entitlements
1.	Road improvement takes place along existing alignment	▪ Additional land not required	▪ To the extent possible, the proposed development works shall be carried out within the available land width.
2.	New link road having approach roads, where the	▪ Formulating community consensus through Gram	▪ In the event of partial losses to structures or temporary impact on

Sl. No.	Scenarios	Modalities	Proposed Entitlements
	<p>government land <b>has minor encroachments or infringements</b> throughout the proposed road alignment</p> <p>Common Property Resources located within RoW [Community facilities such as community ponds, hand pumps, water tanks, places or structures for religious importance, crematorium or funeral grounds of cultural significance, etc.]</p>	<p>Panchayat resolution, where community agrees for a signed resolution to make available land for the proposed road construction / upgradation/ improvement works.</p> <ul style="list-style-type: none"> <li>The Implementing agency serves <b>advance notice to encroachers /infringers to remove encroachments</b> within a stipulated period of 3 months and the encroacher removes the encroachment by accepting the ownership of the government on the same piece of land</li> </ul>	<p>livelihood due to the proposed road development initiative, the affected people shall be informed by serving advance notice of one-to-three months, depending upon the severity of damage. Affected structure shall be compensated on the basis of R&amp;BD - Schedule of Rate (SoR).</p> <ul style="list-style-type: none"> <li>In the case of affected Trees or Crops, owners shall be compensated as per standard rates; the compensation for Timber Trees shall be assessed by Forest Department, Gujarat, and in the event of removal of the standing crops, the compensation shall be assessed by Agriculture, Co-operation &amp; Farmer Welfare Department, GoG</li> <li>Common Property Resources having any unavoidable impact shall be adequately mitigated / relocated by the Gram Panchayat in consultation with the local community.</li> </ul>
3.	<b>Additional land owned by private individuals, and is required for (i) road, and (ii) RoW, which is unforeseen</b>	<ul style="list-style-type: none"> <li>Direct acquisition of a patch of land having title-hold shall <b>follow the standard procedures of Right to Fair Compensation</b> and Transparency in Land Acquisition Rehabilitation and Resettlement Act, 2013</li> </ul>	<ul style="list-style-type: none"> <li>The titleholders who are losing land or whose livelihood is affected due to such securing of land, shall be dovetailed to various rural development programs such as Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) or shall be given priority to any existing rural housing schemes of Central or State Government.</li> </ul>
4.	<b>Additional land owned by other Department of Government of Gujarat, and is required for (i) road, and (ii) RoW</b>	<ul style="list-style-type: none"> <li><b>Transfer of required</b> patches of land which is under the ownership of other Departments/ Government Functionaries of GoG, <b>by way of following existing standard procedures at Departmental level of R&amp;BD, Panchayat</b></li> </ul>	

### 6.1.3 Design Considerations to Avoid Environmental Impacts

73. Based on the assessment, the following are design considerations to avoid environmental and social impacts

- Incorporation of adequate drainage provisions
- Straight lines and simple geometry in the proposed design
- Provision for CC roads in the settlement areas
- Provision for adequate signage's and safety measures
- Provision for avenue tree plantation

74. No land acquisition is anticipated in the Project as most of the project is about rehabilitation of existing roads and building new roads in defined alignments wherein the land already belongs to the Roads and Buildings Department. A conscious effort towards avoidance of land acquisition and

minimization of adverse social impacts has to be taken up as an integral part of the entire project preparation and design in Gujarat Rural Roads (MMGSY) Project. However, in cases where new link roads are to be constructed, there could be possibility of encroachments or infringement with existing structures. Wherever unavoidable, efforts to minimize impacts through design interventions have to be worked out for sub- projects. As a guideline, the following steps shall be followed:

- **Improvements to be planned within available RoW / land width:** following the requirements mentioned in the selection of roads in this document, the cross-section of the road shall be designed to accommodate within the available RoW / land width.
- **Adoption of Corridor of Impact approach:** The corridor of impact (CoI) is termed as the width required for the actual construction of the road, including carriageway, shoulder and embankments. The objective of social inputs to project design shall be to ensure that the corridor of impact is reduced, within acceptable design principles and standards, to minimize adverse social impacts.
- **Participatory Approach:** Building community consensus to secure land for ensuring construction of the link roads. Local self-governments as well as the community will be involved in developing a consensus to resolve issues of encroachments or infringement, if any.

## 6.2 Pre – Construction Impacts and Mitigation Measures

75. Necessary consents, permits and NoC's shall be obtained during detailed design and prior to the start of work. Failure to obtain necessary consents, permits, NOCs, etc. can result in design revisions and/or stoppage of works. The following will be conducted during detailed design phase:

- Obtain all necessary consents, permits, clearance, NOCs, etc. prior to start of civil works.
- Acknowledge in writing and provide report on compliance all obtained consents, permits, clearance, NOCs, etc.
- Include in detailed design drawings and documents all conditions and provisions if necessary.

76. **Erosion Control:** Most of the impacts will occur due to excavation and earth movements during construction phase. Prior to commencement of civil works, the Contractor will be required to:

- Develop an erosion control measures to minimize soil loss and reduce sedimentation to protect water quality.
- Minimize the potential for erosion by balancing cuts and fills to the extent feasible.
- Identify and avoid areas with unstable slopes and local factors that can cause slope instability
- Minimize the amount of land disturbed as much as possible. Use existing roads, disturbed areas, and borrow pits and quarries when possible. Minimize vegetation removal.

77. **Utilities:** Interruption of services (water supply, toilets, bathing areas, etc.) will be scheduled and intermittently related to localized construction activities. To mitigate impacts, R&BD (Panchayat) and PMC will:

- Identify and include locations and operators of these utilities in the detailed design documents to prevent unnecessary disruption of services during the construction phase.
- Require Contractor to prepare a contingency plan to include actions to be done in case of unintentional interruption of services.

- Require Contractor to obtain from the R&BD (Panchayat) and PMC the list of affected utilities and operators;
- If relocations are necessary, Contractor along with R&BD (Panchayat) will coordinate with the providers to relocate the utility

78. **Social and Cultural Resources:** There is a risk that any work involving ground disturbance can uncover and damage archaeological and historical remains. Although no such sites have been identified. For this project, excavation will occur in and around the existing RoWs and specified government land so no risk is foreseen to these structures. Nevertheless, the R&BD (Panchayat) and PMC will:

- Consult Archaeological Survey of India and/or State Department of Archaeology to obtain an expert assessment of the archaeological potential of the site.
- Consider alternatives if the site is found to be of medium or high risk.
- Include state and local archaeological, cultural and historical authorities, and interest groups in consultation forums as project stakeholders so that their expertise can be made available.
- Develop a protocol for use by the Contractors in conducting any excavation work, to ensure that any chance finds are recognized and measures are taken to ensure they are protected and conserved.

79. **Sites for Construction Work Camps and Areas for Stockpile, Storage and Disposal:** The priority is to locate the construction camp; storage and area of stockpile are adjacent/ near to the project sites. The Contractor will be required to meet the following criteria for the sites:

- Will not promote instability and result in destruction of property, vegetation, irrigation, and drinking water supply systems, etc.
- Residential areas will not be considered so as to protect the human environment (i.e., to curb accident risks, health risks due to air and water pollution and dust, and noise, and to prevent social conflicts, shortages of amenities, and crime).
- Disposal will not be allowed in to nearby water course or any nearby sensitive areas which may pollute surface water or can inconvenience the community.
- The construction camp, storage of fuel and lubricants should be avoided at the river bank. Any construction camp site will be finalized in consultation with R&BD (Panchayat) and PMC.

80. **Sources of Construction Materials:** Significant amounts of gravel, sand, and cement will be required for the construction of proposed rural roads. Extraction of materials can disrupt natural land contours and vegetation resulting in accelerated erosion, disturbance in natural drainage patterns, ponding and water logging, and water pollution. The Contractor will be required to:

- Use quarry sites and sources permitted by Government.
- Verify suitability of all material sources and obtain approval from R&BD (Panchayat) and PMC.
- If additional quarries are required after construction has started, obtain written approval from R&BD (Panchayat) and PMC.
- Submit to R&BD (Panchayat) and PMC on a monthly basis documentation of sources of materials.

81. **Access:** Hauling of construction materials and operation of equipment on-site can cause traffic problems and conflicts in ROWs. Construction traffic will access most work areas from the existing roads therefore potential impacts will be of short-duration, localized and can be mitigated. The Contractor will need to adopt the following mitigation measures:

- Plan transportation routes so that heavy vehicles do not use narrow local roads, except in the immediate vicinity of delivery sites.
- Schedule transport and hauling activities during non-peak hours.
- Locate entry and exit points in areas where there is low potential for traffic congestion.
- Keep the site free from all unnecessary obstructions.
- Drive vehicles in a considerate manner.
- Provide free access to households and businesses/shops along the ROWs during the construction phase

### 6.3 Anticipated Impacts during Construction Phase and Mitigation Measures

82. **Erosion Hazards:** As per the assessment conducted for the sample MMGSY roads, the risks involved due to erosion in the project areas are relatively low and limited during the construction phase and are not expected to have any negative impact on the drainage and hydrology of the project areas. Runoff will produce a highly variable discharge in terms of volume and quality, and in most instances will have no discernible environmental impact. The Contractor will be required to

- Save topsoil removed during excavation and use to reclaim disturbed areas, as soon as it is possible to do so.
- Use dust abatement such as water spraying to minimize windblown erosion.
- Maintain vegetative cover within unused land to prevent erosion and periodically monitor the area to assess erosion.
- Clean and maintain drainage ditches and culverts regularly.
- Conduct routine site inspections to assess the effectiveness of and the maintenance requirements for erosion and sediment control systems

83. **Impacts on Water Quality:** Excavated materials may end up in drainages and water bodies adjacent to the project sites, particularly during monsoon season. Other risks of water pollution may be caused by: (i) poorly managed construction sediments, wastes and hazardous substances; and (ii) poor sanitation practices of construction workers. The Contractor will be required to:

- Schedule civil works during non-monsoon season, to the maximum extent possible.
- Ensure drainages and water bodies within the construction zones are kept free of obstructions.
- Keep loose soil material and stockpiles out of drains, flow-lines and watercourses.
- Re-use/utilize, to maximum extent possible, excavated materials.
- Dispose any residuals at identified disposal site.
- Dispose waste oil and lubricants generated as per provisions of Hazardous Waste (Management and Handling) Rules, 1989.
- Refuel equipment within the designated refuelling containment area away from drainages, nallahs, or any water body.
- Inspect all vehicles daily for fluid leaks before leaving the vehicle staging area, and repair any leaks before the vehicle resumes operation

84. **Impacts on Air Quality:** There is a potential for increased dust particularly during summer/dry season due to stockpiling of excavated materials. Emissions from vehicles transporting workers, construction materials and debris/materials to be disposed may cause increase in air pollutants within the construction zone. These are inherent impacts which are site-specific, low magnitude, short in duration and can be easily mitigated. The Contractor will be required to:

- Conduct regular water spraying on earth piles, trenches and sand piles.

- Conduct regular visual inspection along alignments and construction zones to ensure no excessive dust emissions.
- Maintain construction vehicles and obtain “Pollution Under Control (PUC)” certificate from Gujarat Pollution Control Board (GPCB).
- Obtain Consent For Establishment and Consent For Operation for hot mix plants, crushers, diesel generators, etc., if to be used in the project

85. **Noise and Vibration Impacts:** Noise and vibration-emitting construction activities include earthworks, rock crushing, concrete mixing, movement and operation of construction vehicles and equipment, and loading and unloading of coarse aggregates. The significance of noise and vibration impacts will be high in areas where noise-sensitive institutions such as health care and educational facilities are situated. These impacts will be temporary, short-term, intermittent, and expected to be in the range of 80 to 100 dB (A). The Contractor will be required to ensure the following:

- Plan activities in consultation with the R&BD (Panchayat) and PMC so that activities with the greatest potential to generate noise are conducted during periods of the day which will result in least disturbance.
- Minimize noise from construction equipment by using vehicle silencers and by fitting jackhammers with noise-reducing mufflers.
- Avoid loud random noise from sirens, air compression, etc.
- Train the drivers to ensure that they do not honk unless it is necessary to warn other road users or animals of the vehicle’s approach.
- If specific noise complaints are received during construction, the contractor may be required to implement one or more of the following noise mitigation measures:
  - Locate stationary construction equipment as far as possible from nearby noise-sensitive areas.
  - Turn off idling equipment.
  - Reschedule construction operations to avoid periods of noise annoyance identified in the complaint.
  - Notify nearby residents whenever extremely noisy work are planned
  - Follow Noise Pollution (Regulation and Control) Rules, 2000, day time ambient noise levels should not exceed 65 dB(A) in commercial areas, 55 dB(A) in residential areas and 50 dB(A) in silence zone.
  - Ensure vehicles comply with Government of India noise regulations for vehicles.

86. **Impacts on Flora and Fauna:** As per the proposed road configuration/ design, tree-cutting is not envisaged. However, this has to be verified during detailed design phase. The sample MMGSY roads chosen in the Dhranagadhra Taluka (Surendranagar District), are in the vicinity of the Wild Ass Sanctuary. As per the consultation had with the locals, the movement of wild animals (Wild Ass, Nilgai etc.,) is noted in the project area. Hence the Contractor will be required to:

- Conduct site induction and environmental awareness.
- Limit activities within the work area.
- Replant trees in the area using minimum ratio of 2 new trees for every 1 tree cut, if any.
- Replacement species must be approved by District Forest Department.

87. **Impact due to Waste Generation:** Construction activities will produce excavated soils, construction materials, and solid wastes (such as removed concrete, wood, trees and plants, packaging materials, empty containers, oils, lubricants, and other similar items). These impacts are negative but short-term and reversible by mitigation measures. The Contractor will need to adopt the following mitigation measures

- Manage solid waste according to the following hierarchy: reuse, recycling and disposal (at designated/approved disposal areas).
- Coordinate with Local Municipal Authority for beneficial uses of excavated soils/silts/sediments or immediately dispose to designated areas.
- Recover used oil and lubricants and reuse; or remove from the sites.
- Avoid stockpiling and remove immediately all excavated soils, excess construction materials, and solid waste (removed concrete, wood, trees and plants, packaging materials, empty containers, oils, lubricants, and other similar items).
- Prohibit disposal of any material or wastes (including human waste) into drainage, nallah, or watercourse.

88. **Impacts on Occupational Health and Safety:** Workers need to be mindful of occupational hazards which can arise from construction works. Exposure to work-related chemical, physical, biological and social hazard is typically intermittent and of short duration, but is likely to reoccur. Potential impacts are negative and long-term but reversible by mitigation measures. Overall, the contractor should comply with IFC EHS Guidelines on Occupational Health and Safety<sup>9</sup>.

89. **Impacts on Land and Structures:** While there is no acquisition of land envisaged as part of the project during implementation, the minimum level of impacts observed largely are of temporary and reversible in nature. Temporary diversion through private land is observed in the project-roads chosen for study. Although, these temporary uses of land are on the basis of verbal agreement between the Contractor and the Private Land owner on the behest of Local Governing Bodies, the same shall be done through formal agreements. In some cases the community structures/ religious structures which are likely to be affected shall be relocated by the Local Governing Bodies.

90. **Impacts on Socio-Economic Activities:** Manpower will be required during the 6 - 8 months construction phase. This can help generate contractual employment and increase in local revenue. Thus potential impact is positive and short-term. As per the onsite assessment, land acquisition and closure of roads are not envisaged for the sample MMGSY roads; therefore no negative impact is expected. However, the contractor will need to adopt the following mitigation measures:

- Leave space for access between mounds of soil.
- Provide walkways and metal sheets where required to maintain access to shops/businesses along trenches.
- Consult businesses and institutions regarding operating hours and factoring this in to work schedules.
- Provide sign boards for pedestrians to inform nature and duration of construction works and contact numbers for concerns/complaints.
- Employ at least 50% of the labor force, or to the maximum extent, local persons within the 2-km immediate area if manpower is available

#### 6.4 Post – Construction Impacts and Mitigation Measures

91. Site clean-up is necessary after construction activities. The Contractor will be required to:

- Backfill any excavation and trenches, preferably with excess excavation material generated during the construction phase.

<sup>9</sup> This document can be downloaded from <http://www1.ifc.org/wps/wcm/connect/9aef2880488559a983acd36a6515bb18/2%2BOccupational%2BHealth%2Band%2BSafety.pdf?MOD=AJPERES>.

- Use removed topsoil to reclaim disturbed areas.
- Re-establish the original grade and drainage pattern to the extent practicable.
- Restore access roads, staging areas, and temporary work areas.
- Remove all tools, equipment, barricades, signs, surplus materials, debris, and rubbish. Demolish buildings/structures not required for O&M. Dispose in designated disposal sites.
- Request in writing from R&BD (Panchayat) and PMC that construction zones have been restored
- Encroachment of any type may be on the shoulder or within the RoW, shall be discouraged. A systematic awareness among road-side community shall be carried out, in association with the Local Governing Bodies.

## 7 GRIEVANCE REDRESS MECHANISM

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92. R&BD's Complaints Handling Procedure ensures that any citizen can lodge complaints with (i) any officer not below the rank of executive engineer at the district level in charge of the work, and (ii) any officer in charge of the redress systems in the state level. Complaints related to (i) project services (new proposal/alteration in the scope of project, ongoing /completed project services in the areas of quality, procurement, environmental and social safeguards implementation, and inaction/delayed action) and (ii) personnel ( unethical behavior, fraud, corruption, service matter).

93. Complaints Handling Procedures assigns SE, PIU as the Chief Complaint Handling Officer with set roles and responsibilities. He is mainly responsible for complaints not related to personnel. Complaints related to personnel require to be dealt with as per the existing system. Training to the engineering personnel associated with MMGSY needs to be given for clear understanding of the procedures involved and to treat the complaints as an opportunity for improvement.

94. ESIA proposes for the formulation of a Grievance Redress Committee (GRC), to dedicatedly look into respective grievances under MMGSY. The affected person/aggrieved party can give their grievance verbally or in written to the GRC. Grievances of affected person will first be brought to the attention of the R&BD (Panchayat) through the Environmental and Social officer of PMC. The process of the GRC is detailed in the following sections

95. **Grievance Redress Committee:** The MMGSY project proposes to establish a Grievance Redress Committee (GRC) to hear the complaints of Project Affected Persons (PAP's) and resolve the same. The process will promote settlement of disputes and reduce litigation. GRC will be set up at the block level with Block Development Officer as head. The following persons will be the members of GRC:

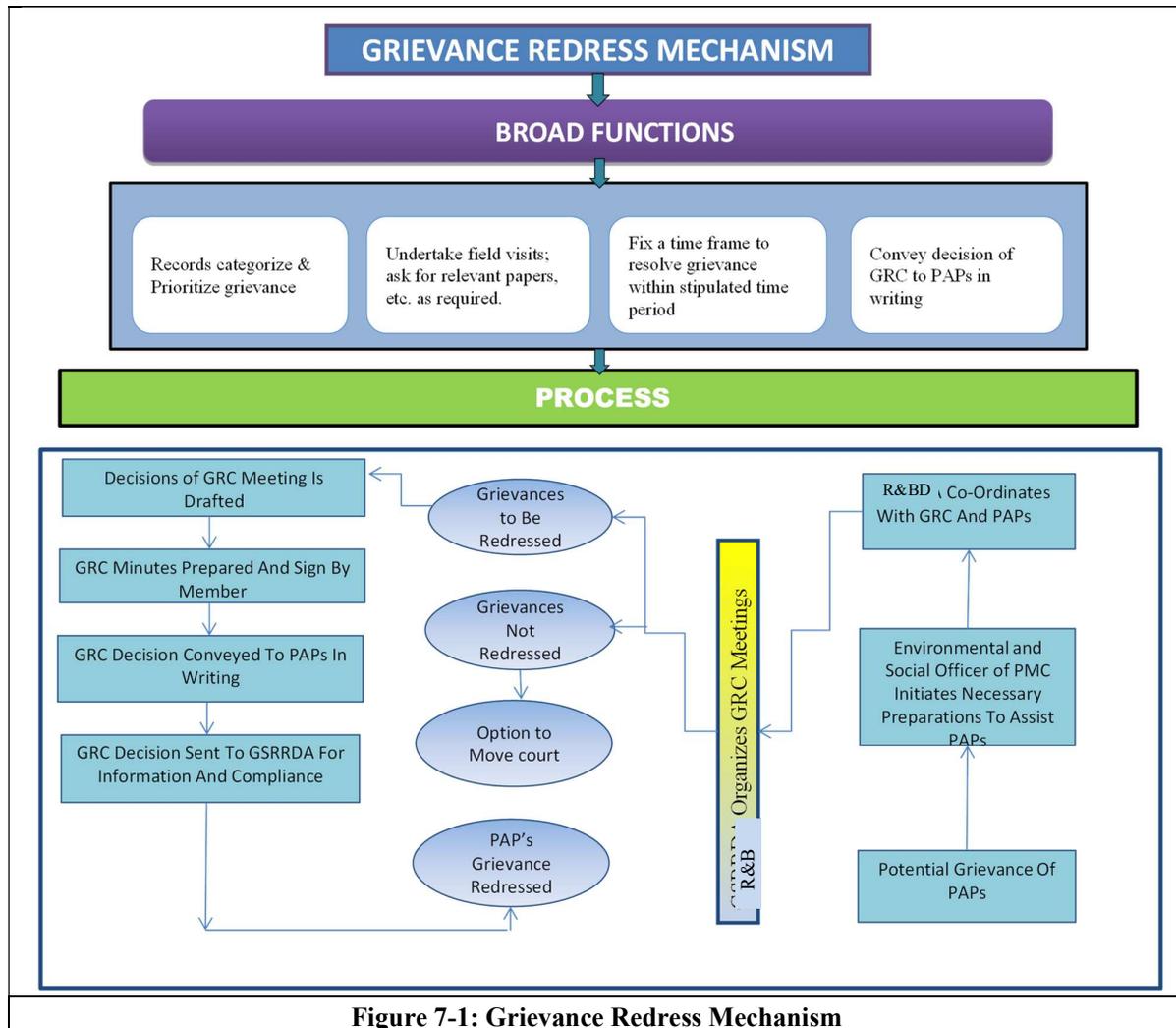
- The Taluka Development Officer of respective Taluka (Block), Department of Panchayats, Rural Housing and Rural Development, GoG; [Project Administrator, Tribal Development Department will be responsible for grievances in Fifth Schedule Area, along with other members of the GRC]
- The Deputy Executive Engineer, R&BD, Panchayat; and
- Representative from Social Sector/Local NGO (not involved with implementation) /Person conversant with similar issues and he/she should be widely respected and having problem solving skills.

96. The broad functions of GRC shall be the following:

- Record the grievances of Complainants / PAPs, if any, categorize and prioritize them and provide solution to their grievances related to any of the provisions set forth in SMF.
- The GRC may undertake site visit, ask for relevant information from R&BD, Panchayat / R&BD, Panchayat and other government and non-government agencies, etc., in order to resolve the grievances.
- Fix a time frame for resolving the grievances within the stipulated time period of 30 days.

- Inform Complainants / PAPs through R&BD, Panchayat about the status of their case and their decision to PAPs for compliance.

97. The Environmental and Social Officer of PMC shall provide all necessary help to complainants in presenting in his/her case before the GRC. The GRC shall respond to the grievance within 15 days. The GRC will normally meet once in a month and if the situation so demands, it shall meet more frequently. A specific grievance shall be resolved within a time period of 30 days. The decision of the GRC shall not be binding to PAPs. This means the decision of the GRC does not insist PAPs taking recourse to court of law, if he/she so desires.



**Figure 7-1: Grievance Redress Mechanism**

# 8 ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP)

## 8.1 ESMP Table

98. The Environmental and Social Management Plan (ESMP) is prepared based on the assessment made for the sample MMGSY project roads. The ESMP is prepared to cover all the project related activities that are to be implemented during the project pre construction, construction and post construction stages.

## 8.2 Summary of Site and Activity Specific Plan as per ESMP

99. Table 8-1 summarizes site and activity-specific plans to be prepared as per ESMP Table (Table 8-2).

**Table 8-1: Site- and Activity-Specific Plans/Programs as per ESMP**

To be Prepared During	Specific Plan/Program	Purpose	Responsible for Preparation	Responsible for Implementation
Detailed Design Phase	Environmental monitoring program as per detailed design	Indicate sampling locations, methodology and parameters	R&BD, panchayat & PMC	Contractor
Detailed Design Phase	Erosion control Plan/ measures	Mitigate impacts due to erosion	R&BD, panchayat & PMC	Contractor
Detailed Design Phase	List and maps showing utilities to be shifted	Utilities shifting	R&BD, panchayat & PMC during preliminary stage Contractor as per detailed design	Contractor
Detailed Design Phase	Contingency plan	Mitigate impacts due to interruption of services during utilities shifting	R&BD, panchayat & PMC	Contractor
Detailed Design Phase	Chance find protocol	Address archaeological or historical finds	R&BD, panchayat & PMC	Contractor
Detailed Design Phase	List of pre-approved sites	Location/s for work camps, areas for stockpile, storage and disposal	R&BD, panchayat & PMC	Contractor
Detailed Design Phase	Waste management plan (measures)	Mitigate impacts due to waste generation	R&BD, panchayat & PMC	Contractor
Detailed Design Phase	H&S plan	Occupational health and safety	R&BD, panchayat & PMC	Contractor
Detailed Design Phase	Spill prevention and containment plan	Mitigate impacts of accidental spills of oil, lubricants, fuels, concrete, and other hazardous materials	R&BD, panchayat & PMC	Contractor
Post Construction Phase	Restoration of the construction camp site/ area	Restoring the area to the usable condition	Contractor	Contractor

**Table 8-2: Environmental and Social Management Plan**

Project Stage/Activity	Potential Negative Impacts	Mitigation Measures	Location	Responsible Agency	
				Implementation	Monitoring
<b>A. Location</b>					
Location of construction camps and contractor facilities	<ul style="list-style-type: none"> <li>Inappropriate location such as close proximity to eco-sensitive zones, biodiversity hotspots and human settlements</li> <li>Environmentally unsound use of community resources such as forestry products by workers</li> </ul>	<ul style="list-style-type: none"> <li>Location of construction camps at least 500m away from community areas/religious structures, and away from drinking water sources</li> <li>The construction camps shall be located at least 1000m (1km) away from eco-sensitive zones (the boundaries of the Community reserve, Biodiversity hotspots) and 500m away from the settlements.</li> <li>The camps must be located such that the drainage from and through the camps shall not affect any domestic or public water supply.</li> </ul>	Construction camp sites	Contractor	R&BD, Panchayat/PMC
Location of quarry sites	<ul style="list-style-type: none"> <li>Location in unstable areas or in sensitive areas legally and otherwise</li> </ul>	<ul style="list-style-type: none"> <li>Only stable areas and existing or new government approved sites may be considered</li> <li>Consent from GPCB (Consent to establish (CTE) and Consent to operate (CTO)) is required for stone crushers and quarry sites if setting up a new unit for this project,</li> <li>In case sourced from third party then it shall be ensured that the construction materials are procured from approved/ licensed quarry sites and stone crushers</li> </ul>	Quarry area site	Contractor	R&BD, Panchayat/PMC
Location of borrow pits	<ul style="list-style-type: none"> <li>Location in unstable areas or on agricultural land</li> </ul>	<ul style="list-style-type: none"> <li>Location in area with stable soil and preferably away from agricultural land</li> <li>The R&amp;BD, Panchayat shall inspect every borrow area location prior to issuing approval for use of such sites.</li> </ul>	Borrow area site	Contractor	R&BD, Panchayat/PMC
Crushers, Hot-mix Plants & Batching Plants	<ul style="list-style-type: none"> <li>Delays in processing clearances, causing delays in initiation of construction</li> </ul>	<ul style="list-style-type: none"> <li>Processing of clearances/permits on a timely basis and keeping in mind the time requirements for these clearances</li> <li>The contractor shall follow all stipulated conditions for pollution control as suggested by the GPCB in the consent/ NoC for establishing and operating the Hot-mix and Batching Plant.</li> </ul>	All camps or plant location	Contractor	R&BD, Panchayat/PMC
<b>B. Planning/Project Design</b>					
Pavement	<ul style="list-style-type: none"> <li>Water leakage/seepage through pavement and damage of road caused</li> <li>By poor quality design</li> </ul>	<ul style="list-style-type: none"> <li>Quality designs vis-a-vis layer thicknesses and material content</li> </ul>	For the Rural Roads proposed with Blacktop	R&BD, Panchayat	R&BD
Determination of ROW width	<ul style="list-style-type: none"> <li>Unnecessary widening leading to unnecessary geometric cuts, soil erosion, and destruction of plant and water resources</li> </ul>	<ul style="list-style-type: none"> <li>Cross sections for the project road shall be worked out to minimize resettlement impacts, and the proposed designs shall be accommodated within the RoW that is available clear of any encroachments and encumbrances.</li> </ul>	For the locations with encroachment issues	R&BD, Panchayat	R&BD

Project Stage/Activity	Potential Negative Impacts	Mitigation Measures	Location	Responsible Agency	
				Implementation	Monitoring
Drainage structures	<ul style="list-style-type: none"> <li>Poor drainage caused by poorly designed/ specified drainage structures, e.g., unlined drains</li> <li>Damage to cross-drainage structures because of inadequacy to support water flows, leading to damage to road</li> </ul>	<ul style="list-style-type: none"> <li>Drains lined with cement mortar only</li> <li>Drainage structures designed in accordance with anticipated levels of water flows</li> </ul>	Culverts and Causeway /minor bridge locations	R&BD, Panchayat	R&BD (Design wing)
Geometric cuts	<ul style="list-style-type: none"> <li>Excessive excavation leading to unnecessarily large volumes of earthworks, and generation of excessive dust and</li> <li>Sediments deposited in nearby water bodies</li> </ul>	<ul style="list-style-type: none"> <li>Designs to be based on scientific basis</li> </ul>	Locations having Sharp curves where geometric adjustment is required	R&BD, Panchayat	R&BD
Alignment/ road passing through sensitive areas (sanctuaries , Forests areas)	<ul style="list-style-type: none"> <li>Potential impact to the ecosystem (Both biotic and abiotic) and migratory birds.</li> </ul>	<ul style="list-style-type: none"> <li>Noise generating construction activities shall be temporarily suspended during the migratory season (October till January). Hence the impact on the presence of forest area shall be managed with no harmful impacts to the avifauna.</li> <li>Proper care should be taken for disposal of construction based waste and leachate generated from it.</li> </ul>	Rural roads bordering the sanctuary / national park	R&BD, Panchayat	Forest and Environment Department, GoG
<b>C. Construction</b>					
Establishment and shifting of construction camps	<ul style="list-style-type: none"> <li>Deforestation and poaching by laborers</li> <li>Improper waste disposal</li> <li>Disturbance to aesthetic beauty</li> <li>Disturbance to nearby settlements</li> <li>Unfriendly use of community resources such as non-timber forestry products by construction workers</li> <li>Leaving dirty and waste material after shifting from one camp site to another</li> </ul>	<ul style="list-style-type: none"> <li>Provision of cooking fuel to contractors' staff</li> <li>References to the illegality of cutting trees, hunting and fishing, and other prohibited activities in community areas to be included in contract documents</li> <li>Provision of proper waste disposal facilities and health &amp; safety facilities</li> <li>Prior information to nearby communities of camp establishment</li> <li>Ensure clean area left behind when shifting camp</li> </ul>	At construction camp location as identified by the Contractor.	Contractor	R&BD, Panchayat
Stockpiling of construction materials	<ul style="list-style-type: none"> <li>Obstruction of drainage, disturbance/ safety hazard to road users, etc.</li> <li>Dust generation from stock pile area</li> </ul>	<ul style="list-style-type: none"> <li>Due consideration shall be given for material storage and construction sites such that it doesn't cause Obstruction of drainage, disturbance/ safety hazard to road users, etc</li> <li>Stockpiles shall be covered to protect from dust and erosion</li> </ul>	At construction camp location as identified by the Contractor.	Contractor	R&BD, Panchayat
Removal of vegetation and uprooting of trees	<ul style="list-style-type: none"> <li>Negative changes in micro-level wildlife habitat/environment</li> <li>Soil erosion</li> <li>Scarring of landscape</li> </ul>	<ul style="list-style-type: none"> <li>Design shall be prepared to minimise the loss of avenue trees.</li> <li>If impacts on trees become unavoidable, compensatory tree plantation shall be carried out</li> </ul>	Along the project road	Contractor	R&BD, Panchayat
Cutting of hill slope and earth removal from borrow areas	<ul style="list-style-type: none"> <li>Soil erosion and landslides</li> <li>Scarring of landscape because of improper disposal of debris</li> <li>Dust pollution</li> </ul>	<ul style="list-style-type: none"> <li>Confine cutting activities to dry season</li> <li>Use standard method</li> <li>Disposal of debris at proper sites or reuse material for construction</li> </ul>	Hilly terrain (tribal belt) and borrow areas	Contractor	R&BD, Panchayat

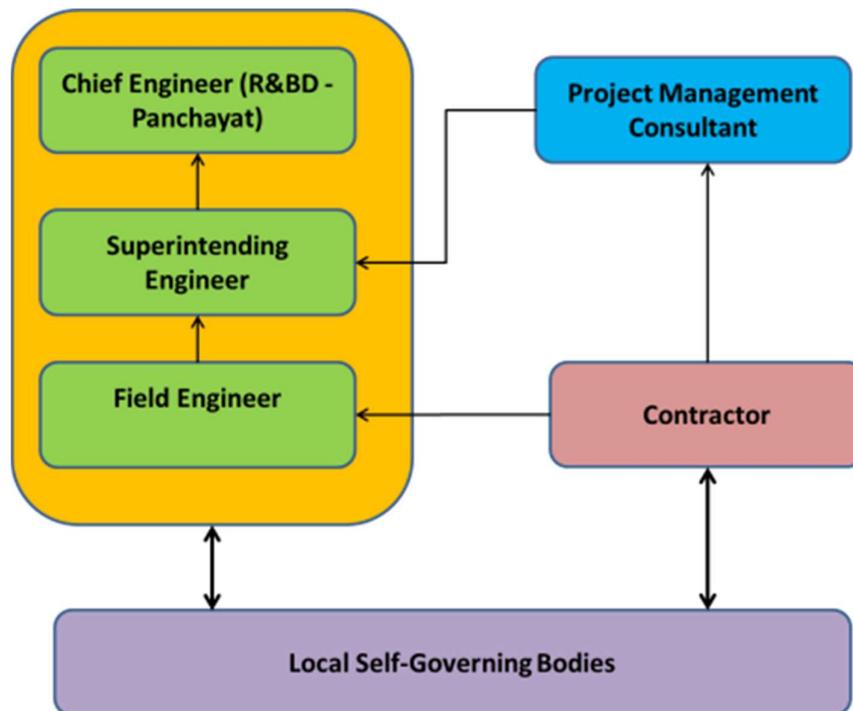
Project Stage/Activity	Potential Negative Impacts	Mitigation Measures	Location	Responsible Agency	
				Implementation	Monitoring
	<ul style="list-style-type: none"> <li>Disruption of local drainage</li> <li>Siltation in nearby water bodies and consequent negative effects on aquatic ecology</li> <li>Noise and disturbance to nearby communities</li> </ul>	<ul style="list-style-type: none"> <li>Proper restoration of borrow areas</li> <li>Provision of appropriate drainage structures/facilities</li> <li>Confine construction activities to daytime</li> </ul>			
Quarrying / Borrow pits Operations	<ul style="list-style-type: none"> <li>Landslides (rock slides/falls)</li> <li>Scarring of landscape</li> <li>Disturbance to wildlife and nearby communities from blasting</li> </ul>	<ul style="list-style-type: none"> <li>Adequate safety precautions shall be ensured during transportation of quarry material from quarries to the construction site.</li> <li>Vehicles transporting the material shall be covered to prevent spillage.</li> <li>Operations to be undertaken by the Contractor as per the direction and satisfaction of the R&amp;BD, Panchayat/PMC</li> <li>All borrow areas shall be restored to the original condition, immediately upon completion of the use of such a source</li> </ul>	Quarry sites	Contractor	R&BD, Panchayat
Crushing of stone and transport of stone/materials	<ul style="list-style-type: none"> <li>Dust pollution affecting construction laborers and local vegetation</li> <li>Air pollution from machinery and vehicle exhausts</li> <li>Noise pollution and disturbance to nearby wildlife and communities</li> </ul>	<ul style="list-style-type: none"> <li>Water sprinkling of stone crushing site</li> <li>Proper covers for vehicles transporting stone and materials</li> <li>Regular maintenance of machinery and vehicles</li> <li>Confine stone crushing and transportation activities to daytime</li> </ul>	Quarry area/ At the location where the crushing unit is located by the contractor	Contractor	R&BD, Panchayat
Road surfacing activities	<ul style="list-style-type: none"> <li>Air pollution from smoke and gaseous emissions affecting health of workers</li> </ul>	<ul style="list-style-type: none"> <li>Provide masks to workers exposed to dust and smoke</li> <li>Manage movement of vehicles during road surfacing work</li> </ul>	For the rural roads undergoing resurfacing	Contractor	R&BD, Panchayat
Construction of line and cross drainage structures and bridges	<ul style="list-style-type: none"> <li>Disruption of local stream/river courses and aquatic hydrology</li> <li>Increased sediments in rivers or streams</li> </ul>	<ul style="list-style-type: none"> <li>Provision of appropriate drainage facilities and river/stream diversion structures</li> </ul>	The irrigation culvert location/ causeways/ minor bridges	Contractor	R&BD, Panchayat
Operation of machinery and equipment and general activities of laborers	<ul style="list-style-type: none"> <li>Spillage/ leakage of chemicals and oil and contamination of soil and water resources</li> <li>Injury to workers/others</li> <li>Respiratory problems from dust and machinery emissions</li> <li>Hearing problems due to high level of noise</li> </ul>	<ul style="list-style-type: none"> <li>Proper storage and handling of chemicals and oil</li> <li>Provision of workers with construction hats, face masks, earplugs, gloves, etc.</li> <li>Provision of well-equipped first aid kits and health facilities at construction camp and work sites</li> </ul>	Construction site/ labour camps	Contractor	R&BD, Panchayat
Water sourcing for domestic usage or construction work	<ul style="list-style-type: none"> <li>Misuse of community water resources</li> </ul>	<ul style="list-style-type: none"> <li>Independent arrangements to be made for water requirements so that supplies to nearby communities remains unaffected</li> </ul>	Surface and groundwater locations	Contractor	R&BD, Panchayat

Project Stage/Activity	Potential Negative Impacts	Mitigation Measures	Location	Responsible Agency	
				Implementation	Monitoring
Material Handling at Site	<ul style="list-style-type: none"> <li>Exposure of workers to dust and heat</li> <li>Worker's safety in handling and storage of material</li> </ul>	<ul style="list-style-type: none"> <li>All workers employed on mixing asphaltic material, cement, lime mortars, concrete etc., shall be provided with protective footwear and protective goggles.</li> <li>Workers, who are engaged in welding works, shall be provided with welder's protective eye-shields.</li> <li>Workers engaged in stone breaking activities shall be provided with protective goggles and clothing and shall be seated at sufficiently safe intervals.</li> </ul>	Construction site/ labour camps	Contractor	R&BD, Panchayat
<b>Disposal of Construction Waste / Debris / Cut Material</b>	<ul style="list-style-type: none"> <li>Location impacts (including change in topography, landscaping etc.,)</li> </ul>	<ul style="list-style-type: none"> <li>The waste generated shall be reused in the construction activities to the maximum extent possible. Cut and fill material shall be balanced so as not to have requirement for disposal. Remaining material if any shall be disposed off safely at the disposal sites</li> <li>Safe disposal of the extraneous material shall be ensured in the pre-identified disposal locations. In no case, any construction waste shall be disposed around the sub-project locations indiscriminately.</li> <li>Cut material generated because of cutting of slopes shall be utilized for construction of retaining walls, embankments and as filling material.</li> </ul>	Construction site	Contractor	R&BD, Panchayat
<b>Safety Measures During Construction</b>	<ul style="list-style-type: none"> <li>Accident impacts</li> </ul>	<ul style="list-style-type: none"> <li>Personal Protective Equipment (PPE's) for workers on the project and adequate safety measures for workers during handling of materials at site shall be taken up</li> <li>The contractor has to comply with all regulations regarding occupational health and safety</li> </ul>	Construction site	Contractor	R&BD, Panchayat
<b>Chance finds of archaeological Property / remains</b>	<ul style="list-style-type: none"> <li>Damage to archaeological Property / remains in the performance of project activities</li> </ul>	<ul style="list-style-type: none"> <li>The Contractor shall immediately upon discovery of a chance find of archaeological Property / remains stop the work and inform R&amp;BD, Panchayat/PMC of such discovery and carry out the R&amp;BD, Panchayat/PMC instructions for dealing with the same, awaiting which all work will be stopped</li> <li>The R&amp;BD, Panchayat/PMC shall seek direction from the Archaeologist at the Department of Archaeology before instructing the Contractor to recommence work on the site.</li> </ul>	Along the project roads	Contractor	R&BD, Panchayat
<b>D. Operation</b>					
<b>Maintenance of Drainage</b>	<ul style="list-style-type: none"> <li>Clogging of drains and silt fence near water bodies</li> <li>Damage of drainage structures and</li> </ul>	<ul style="list-style-type: none"> <li>R&amp;BD, Panchayat shall ensure that all drains (side drains and all cross drainages) are periodically cleared especially before monsoon season to facilitate the quick passage of rainwater.</li> </ul>	Culvert/ causeways/ minor bridge locations	R&BD, Panchayat	R&BD, Panchayat

Project Stage/Activity	Potential Negative Impacts	Mitigation Measures	Location	Responsible Agency	
				Implementation	Monitoring
	<ul style="list-style-type: none"> <li>consequent disruptions to traffic, failure to enable proper drainage, and increased sedimentation</li> </ul>	<ul style="list-style-type: none"> <li>R&amp;BD, Panchayat shall ensure that all the sediment traps/ silt fence set up at the water bodies are cleared once in every three months.</li> </ul>			
<b>Road Safety and Maintenance of Assets</b>	<ul style="list-style-type: none"> <li>Encroachment within RoW limits</li> <li>Removal and /or obstruction to road safety and other signage within RoW</li> </ul>	<ul style="list-style-type: none"> <li>No advertisement/hoardings shall be allowed within the Right of Way limits of the project road.</li> <li>Regular maintenance and cleaning of signage boards</li> <li>Regular pruning of trees etc obstructing vision of signage on road</li> </ul>	Settlements/ junctions	R&BD, Panchayat	R&BD, Panchayat
General functioning of Road	<ul style="list-style-type: none"> <li>Damage to riding surface and structure of road—formation of potholes, water seepage, and poor drainage</li> <li>Excessive landslides, erosion caused by improper maintenance of bioengineering works, wall construction</li> </ul>	<ul style="list-style-type: none"> <li>Periodic inspection and maintenance of roads at regular interval</li> </ul>	All parts of project road	R&BD, Panchayat	R&BD, Panchayat

### 8.3 Responsibilities for ESMP Implementation

100. The Environmental and Social Management Plan (ESMP) process does not stop once a project (planning and design) got approval for implementation. During implementation of project R&BD Panchayat, Project Management Consultant (PMC), Contractor and the local self-governing bodies will be responsible for ensuring that the environmental and social commitments made to regulatory agencies, lending agencies and other stakeholders during the ESIA process are met. To execute ESMP is a cumulative responsibility of all four parties involved, indicative responsibility mechanism has been presented in **Table 8-3**, as developed for upgradation projects.



**Figure 8-1: ESMP Implementation Mechanism**

**Table 8-3: Institutional Responsibilities**

System	Designation	Responsibilities
Coordinating/ Facilitating Agency	Chief Engineer R&BD, Panchayat	<ul style="list-style-type: none"> <li>• Overview of the project implementation</li> <li>• Ensure timely budget for the ESMP</li> <li>• Coordination with different state level committee, to obtain Regulatory Clearances</li> <li>• Participate in state level meetings</li> <li>• Monthly review of the progress</li> </ul>
	Superintending Engineer (SE) - R&BD, Panchayat	<ul style="list-style-type: none"> <li>• Overall responsible for ESMP implementation</li> <li>• Reporting to various stakeholders (AIIB, Regulatory bodies) on status of ESMP implementation</li> <li>• Coordination with R&amp;BD, Panchayat Staff (Field Engineers)</li> <li>• Responsible for obtaining Regulatory Clearances</li> <li>• Review of the progress made by Contractor</li> <li>• Ensure that BOQ items mentioned in ESMP are executed as per Contract provisions</li> </ul>
	Field Engineers (R&BD, Panchayat)	<ul style="list-style-type: none"> <li>• Assisting SE in overall implementation of ESMP</li> <li>• Review of periodic reports on ESMP implementation and advising SE in taking corrective measure.</li> </ul>

System	Designation	Responsibilities
		<ul style="list-style-type: none"> <li>• Conducting periodic field inspection of ESMP implementation</li> <li>• Assisting SE to reporting various stakeholders (AIIB, Regulatory bodies) on status of ESMP implementation</li> </ul>
<b>Implementing/ Monitoring Agency</b>	Environmental and Social Officer (Project Management Consultants (PMC))	<ul style="list-style-type: none"> <li>• Responsible for supervision of effective implementation of ESMP measures by the Contractor</li> <li>• Review progress reports and periodic reporting to R&amp;BD, Panchayat about the status of ESMP implementation</li> <li>• Work in close coordination with Field Engineers (R&amp;BD, Panchayat) and Contractor</li> <li>• Preparing Environmental and Social training program and conducting the same for Field Engineers and Engineers of Contractor</li> </ul>
<b>Contractor</b>	Engineer – in charge (Contractor)	<ul style="list-style-type: none"> <li>• Responsible for ensuring the implementation of ESMP as per provision in the Contract/ Bid Document.</li> <li>• Discuss the various environmental/ social issues and environmental/ social mitigation, enhancement and monitoring actions with all concerned directly or indirectly</li> <li>• Assist the Contractor to ensure social and environmentally sound and safe construction practices are adopted</li> <li>• Conduct periodic environmental and safety training for engineers, supervisors and workers along with sensitization on social issues that may be arise during the construction stage of the project</li> <li>• Assist the R&amp;BD, Panchayat on various environmental monitoring and control activities including pollution monitoring; and</li> <li>• Prepare and submit monthly reports to R&amp;BD, Panchayat on the status of implementation safeguard measures</li> </ul>
<b>Panchayat</b>	Local Self-Governing Bodies	<ul style="list-style-type: none"> <li>• Responsible for mobilising local community and ensuring community support for the Gujarat Rural Roads (MMGSY) Project</li> <li>• Coordinate with R&amp;BD, Panchayat / PMC for identification of project affected persons and, if necessary arrange for dovetailing them with rural development schemes</li> <li>• In consultation with Field Engineer and Contractor organize Public Consultation before commencement of works</li> <li>• Field surveillance with Contractor to check appropriateness of alignment</li> <li>• Engage with Stakeholders and organize community level meetings for conflict resolution</li> <li>• Facilitating relocation of community resources as and when necessary</li> </ul>

## 9 CAPACITY BUILDING AND TRAINING

101. The Environmental and Social officer of the PMC will provide the basic training required for environmental and social awareness. Specific modules customized for the available skill set will be devised after assessing the capabilities of the members of the Training Programme and the requirements of the project. The entire training would cover basic principles of environmental and social assessment and management; mitigation plans, implementation techniques, monitoring methods and tools. The proposed training program along with the frequency of sessions is presented in **Table 9-1**.

**Table 9-1: Environmental and Social Training Modules for MMGSY**

S.No.	Training Program	Duration	Target Group	Responsibility
1.	Sensitization Workshop on <ul style="list-style-type: none"> <li>Introduction to Environment and Society:</li> <li>Basic Concept of surrounding Environment and Society</li> <li>Environmental and Social Regulations and Statutory requirements as per Govt. of India and AIIB</li> </ul>	¼ Working Day	R&BD, Panchayat (including Field Engineers) and Contractors	Environmental and Social officer of the PMC
2.	Environmental and Social management, environmental provisions, implementation arrangements, methodology of assessment, good engineering practices to be integrated into contract/ bid documents	¼ Working Day	R&BD, Panchayat (including field engineers) and Contractors	Environmental and Social officer of the PMC
3.	Roles and Responsibilities of officials / contractors / consultants towards protection of environment	¼ Working Day	R&BD, Panchayat (including field engineers) and Contractors	Environmental and Social officer of the PMC
4.	Monitoring and reporting system to the target audience such as Engineers and staff of implementing agencies (R&BD, Panchayat)	¼ Working Day	R&BD, Panchayat (including field engineers) and Contractors	Environmental and Social officer of the PMC
5.	Orientation of contractors at the time of issuing work orders on the implementation of SMF	¼ Working Day	R&BD, Panchayat (including field engineers) and Contractors	Environmental and Social officer of the PMC
6.	Overview of Land Securing and Entitlement Provisions <ul style="list-style-type: none"> <li>Direct Acquisition</li> <li>Gift Deed / MoU</li> <li>Relocation of Common Property Resources</li> <li>Avoidance of encroachments during the post-construction scenario</li> </ul>	¼ Working Day	R&BD, Panchayat and Revenue Official	Environmental and Social officer of the PMC

# 10 MONITORING AND REPORTING

102. For each of the environmental components, the monitoring plan specifies the parameters to be monitored; location of the monitoring sites and duration of monitoring. The monitoring plan also specifies the applicable standards, implementation and supervising responsibilities. The monitoring plan for the various environmental condition indicators of the project in pre-construction and construction stages are presented in Table 10.1. Monitoring plan does not include the requirement of arising out of regulation provision such as obtaining NOC/ consent for plant site operation.

**Table 10-1: Environmental Monitoring Plan**

Attribute	Project Stage	Parameter	Special Guidance	Standards	Frequency	Duration	Location	Implementation
<b>Air</b>	Pre-Construction and Construction	SO <sub>2</sub> , NO <sub>x</sub> , PM <sub>2.5</sub> and PM <sub>10</sub>	High volume sampler to be located 50m from the plant in the Downwind direction. Use method specified by CPCB for analysis	Air (prevention and Control of Pollution) Rules, CPCB, 2009	Two seasons per year (except monsoon)	24 hours Sampling	Along the road Hot mix/ batching plant and at sensitive locations	Contractor / R&BD, Panchayat & PMC
<b>Water</b>	Pre-Construction and Construction	pH, BOD, TDS, Oil and Grease, Detergents and Total Coliforms	Grab sample collected from source and Analyse as per Standard Methods for Examination of Water and Wastewater	Indian Standards for Inland Surface Waters (IS: 2296, 1982)	Once a seasons per year	Grab Sampling	Along the road Surface water sources	Contractor / R&BD, Panchayat & PMC
<b>Noise</b>	Pre-Construction and Construction	Noise levels on dB (A) scale	Equivalent noise levels using an integrated noise level meter kept at a distance of 15 from edge of pavement Equivalent noise levels using an integrated noise level meter kept at a distance of 15 from edge of	MoEF Noise Rules, 2000	To be conducted along with the Air Quality monitoring	Leq in dB(A) of day time and night time	Along the road Hot mix / batching plant and at sensitive locations	Contractor / R&BD, Panchayat & PMC

			pavement					
<b>Borrow area &amp; Quarry area</b>	Pre-Construction and Construction	As per CPCB Guidelines	Visual Observation	-	Once in a month	-	Borrow area location	Contractor

## 10.1 Environmental Standards

103. The following tables represents the Central Pollution Control Board (CPCB) stipulated Environmental monitoring standards for air, Noise and Water respectively

**Table 10-2: Ambient Air Quality Standards (National)**

S. No	Pollutant	Time Weighted Average	Concentration in Ambient Air		
			Industrial, Residential, Rural and Other Area	Ecologically Sensitive Area (notified by Central Government)	Methods of Measurement
1.	Sulphur Dioxide (SO <sub>2</sub> ), µg/m <sup>3</sup>	Annual* 24 hours**	50 80	20 10	<ul style="list-style-type: none"> <li>Improved West and Gaeke</li> <li>Ultraviolet fluorescence</li> </ul>
2.	Nitrogen Dioxide (NO <sub>2</sub> ), µg/m <sup>3</sup>	Annual* 24 hours**	40 80	30 80	<ul style="list-style-type: none"> <li>Modified Jacob &amp; Hochhieser (Na-Arsenite)</li> <li>Chemiluminescence</li> </ul>
3.	PM <sub>10</sub> µg/m <sup>3</sup>	Annual* 24 hours**	60 100	60 100	<ul style="list-style-type: none"> <li>Gravimetric</li> <li>TOEM</li> <li>Beta attenuation</li> </ul>
4.	PM <sub>25</sub> µg/m <sup>3</sup>	Annual* 24 hours**	40 60	40 60	<ul style="list-style-type: none"> <li>Gravimetric</li> <li>TOEM</li> <li>Beta attenuation</li> </ul>

\*Annual arithmetic mean of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals

\*\*24 hourly or (8 hourly or 01 hourly monitored values, as applicable, shall be complied with 98% of the time in a year. 2% of the time, they may exceed the limits but not on two consecutive days of monitoring.

**Table 10-3: Ambient Noise Quality Standards (National)**

Area Code	Category of Zones	Limits of Leq in dB(A) Day*	Limits of Leq in dB(A) Night*
A	Industrial	75	70
B	Commercial	65	55
C	Residential	55	45
D	Silence Zone **	50	40

\* Daytime shall mean from 6.00am to 10.00 pm and Night shall mean from 10.00 pm to 6.00 am

\*\*Silence zone is defined as area up to 100 meters around premises of hospitals, educational institutions and courts. Use of vehicles horns, loud speakers and bursting of cracking are banned in these zones.

**Table 10-4: National Standard of Water**

Sl. No	Parameters	IS:2296 (Class C)	Method to be Adopted
1.	pH	6.5-8.5	pH meter
2.	BOD (3 days 27°C)	3.0	DO-Azide modification of Wrinkler's method
3.	Dissolved oxygen	4	Azide Modification of Wrinkler's method
4.	Total Dissolved Solids	1500	Gravimetric Analysis
5.	Oil and Grease	0.1	Partition – Gravimetric method
6.	Detergents	1.0	Spectrophotometer
7.	Total Coliform (MPN/100 ml)	5000	Multiple Tube Fermentation Technique

## 10.2 Environmental Monitoring Locations

104. In addition of the critical locations selected during design stage, the environmental monitoring will also be done at the construction camp site and any other plant site during construction stage. Based on the site assessment carried out for the sample MMGSY project roads, the list of locations for carrying out monitoring is presented as Annexure 10-1.

## 10.3 Monitoring and Post Auditing

105. Construction monitoring, including field inspections and surveys, should be carried out by an environmental expert (to be hired by GSRRDA on regular or contractual basis) to ensure that environmental protection requirements are being met. The monitoring and reporting is to be in line with the reporting system developed for the project and is presented as Annexure 10-2.

106. Post construction monitoring is used to identify environmental changes resulting from the implementation of the project. In the context of ESIA, post construction monitoring programs are carried out to achieve the following results:

- To ensure that the facility is meeting all environmental regulatory requirements, and that commitments made in the ESIA document and/or the conditions of approval are being met;
- To test impact hypotheses, and to verify the predictions and assessment of environmental effects, thus contributing to better assessments in the future;
- To evaluate the performance effectiveness of mitigation;
- To compare actual and predicted changes to the environment, so that immediate actions can be taken to mitigate unanticipated impacts;
- To strengthen confidence by both government and the public in the ESIA process, the decisions made the road design etc.

# 11 IMPLEMENTATION COST

107. As part of good construction practices in the project, there have been several measures as safety, signage, dust suppression, procurement of personal protective equipment, provision of drains, etc. and the costs for which will be included in the design costs. Therefore, these items of costs have not been included in the ESMP budget. Only those items not covered under budgets for construction are considered in the ESMP budget.

108. The costs of water sprinkling for dust suppression and providing personal protective equipment to construction workers shall borne by contractor as part of conditions of the contract. In addition the sources of funds for mitigation measures during construction stage including monitoring during construction stage are also to be borne by the Contractor. These are deemed to be included as part of the contract price amount quoted by the Contractor for the works. The costs of components for monitoring in operation stage and the capacity building costs are to be funded by the R&BD, Panchayat. The ESMP cost is given in the Table below.

**Table 11-1: ESMP Budget**

Sl. No.	Category	Quality	Units	Rate	Amount (in Rs)
1.	<b>Environmental Baseline Monitoring</b>				
	<i>Pre-construction</i>				
	Air Quality	One samples at the time of pre-construction	19	5,000	95,000.00
	Noise Monitoring		18	2,000	36,000.00
	Water Quality		7	5,000	35,000.00
	<i>Construction</i>				
	Air Quality	2 samples per year (during Construction Period)	38	5,000	190,000.00
	Noise Monitoring		36	2,000	72,000.00
	Water Quality		13	5,000	65,000.00
2.	Compensatory Afforestation	As per forest department estimation	-	-	-
3.	Compensation for Agriculture Crops, Trees, etc.,	Rs 10,000/- acre for 200 acres	10	10,000	100,000.00
4.	Compensation for Structures (private, community property resources, etc.,)	As per the R&BD - SoR(for an average of 100 structures)	2	20,000	40,000.00
5.	Capacity Building and Training	Quarterly Training Program	LS	200,000	200,000.00
6.	Third Party Monitoring	Quarterly monitoring	LS	200,000	200,000.00
	<b>TOTAL</b>				<b>1,033,000.00</b>

# ANNEXURES

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### Annexure 1-1: Socio-Economic characteristics of Scheduled Tribes in Gujarat<sup>10</sup>

Scheduled Tribes	Habitation (District / Talukas)	Language	Religion	Occupation	Literacy level	Economic Structure	Social Structure	Other Characteristics
<b>Rathwa, Rathwa Kolis</b>	<ul style="list-style-type: none"> <li>Predominantly in Vadodara District (80.16 percent) comprising eastern border talukas (Chotta Udaipur, Jetpur Pavi, Sankeda and Naswadi)</li> <li>Panchmahal district (19.8 percent)</li> </ul>	Dialect of Gujarati known as Rathwi.	Hindu	Agriculture is the major occupation of the community.	Male – 50.2 percent, Female – 22.8 percent	95.7 percent of the community engaged in agricultural activities.	Marriage with in the tribal community (endogamous) and marriages with other clans such as Hamania, Baria, Mahania, Kothari Baka and Fadia community. Follow their own folk religion, which is influenced by the Hindu religion	Entire population lives in rural areas. Settlements are dispersed and are found in fields or hill. Originally they belong to Chota Udaipur taluka, also known as Rath Pradesh, hence their original habitants of Rathas are called Rathwas .
<b>Barda Adibashi or Khandeshi Bhil</b>	Districts of Vadodara Sabarkantha, Surat, Mehsana, Ahmedabad, Navasari, Valsad, and Bharuch	Gujarati	Hindu	Majority of them are agricultural labourers. Few of them have small pieces of land and grow millets and pulses.	Literacy levels are very low	35 percent of community is engaged in agriculture but only 13 percent are land owners. Hunting fishing pasture and other allied activities provide employment to 26.1 percent workers. Other 21.5 percent are working as service labourers.	Barda tribal marries within the tribal community and they strictly follow this custom. Barda performs a number of folk dances and songs.	They belong to Bhil group as they have migrated from Barda hilly region known as Bard. The Bardas were known for “hunter gatherers”.
<b>Bhil Barda, Bhil Dungri Garasia and Bhil Vasava</b>	Panchmahal, Vadodara and Sabarkantha districts.	Speak Bhili language, even though most can now speak Gujarati	80 percent of them are Hindu, 20 percent are Christians.	Agriculture	Male – 56.9 percent Female – 31.3 percent	Predominantly agriculture activity (89.4%), Women also participate in work. Only 50 percent of the cultivators have their own land, while 39.4 percent are landless labourers, 2.2 percent are engaged in industry and other 2.8 percent are working as service labourers	Traditionally marriages took place within the community.	Bhils are one of the largest tribal communities in India, mostly found in MP Gujarat, and Maharashtra. Main habitations are in hilly areas. They earn their livelihood from forest products and hunting.
<b>Dhanka Valvi, Tadvī, Tetaria</b>	Vadodara, Bharuch and Surat districts	Gujarati	90 percent Hindus.	Agricultural and also working in construction and industrial activities	Male – 66.7 percent Female – 38.1 percent	60 percent of people depend on agricultural activities and also make bamboo products like baskets and handicrafts.	Dhanka only marry within their community. They worship Gods such as Baghdeo, Dungandeo, Nagdeo, Maladimate, Kinglag and their main festivals are Navratra, Diwali, Holi and Janmaslimi etc.	Dhanka claimed to be offspring of Chauhan Rajput. They cultivated small millets known as Dhan and they were called Dhanka.

<sup>10</sup> Source: 1. Tribes in Gujarat, Tribal Research and Training Institute Gujarat Vidyapeeth, Ahmedabad  
2. Tribal Atlas of Gujarat, A project submitted by Ministry of Tribal Affairs Government of India New Delhi  
3. Web: [http://en.wikipedia.org/wiki/Category:Tribal\\_communities\\_of\\_Gujarat](http://en.wikipedia.org/wiki/Category:Tribal_communities_of_Gujarat)  
4. Web: [http://censusindia.gov.in/Tables\\_Published/SCST/dh\\_st\\_gujarat.pdf](http://censusindia.gov.in/Tables_Published/SCST/dh_st_gujarat.pdf)

Scheduled Tribes	Habitation (District / Talukas)	Language	Religion	Occupation	Literacy level	Economic Structure	Social Structure	Other Characteristics
<b>Bavacha, Bamcha</b>	Mehsana, Vadodra, Kheda, Panchmahal and Surat districts	Bavchi dialect, but most can also speak Gujarati	Hindu	They mainly work as labourers in building, roads and construction areas.		2.7 percent are land owners. Service sector employs 25 percent and manufacturing & industries about 20 percent and 2.3 percent as construction labourers.	They worship deities such Jogani, Devali Mata, Amba Mata, Kalka Mata, Ganesh, Hanuman, Ram and Krishna. Main festivals are Holi, Diwali, and Navaratra. Believe in ghosts and witches. Marriages are generally common as Hindu marriages. Dowry system prevails in the system.	Bavacha means Bahadur (brave). During Maratha period, Bavacha were soldiers of Shivaji Maharaj.
<b>Gamit, Gamta, Gavit Mavchi, Padvi</b>	The Dangs, Bharuch, valsad, Vadodara and Surat districts	Gujarati	Hindu	Majority of Gamit community are farm labourers.	Male 61.7 percent, Female 44.2 percent.	They are well connected to the regional markets as they produce cash crops, sugarcane and are associated with milk cooperative and factories. 32.32 percent are landless labourers and 55.9 percent are land owners.	The traditional marriages amongst the community is changing, dowry system is prevalent, Ghar Jamai system is quiet prevalent	The Gamit community migrated from Khandesh. The culture, religion and customs are very much similar to the Bhils of South Gujarat. Their dialect is known as Gamit Gujarati script is used for writing.
<b>Naikda, Nayaka, Cholivala, Kapadia, Nayaka, Mota, Nayaka, Nana, Nayaka</b>	Vadodara, Panchmahal, Valsad and Surat districts	Speak Naiki, a dialect which is a mixture of Marathi and Gujarat	Hindu	Depend agricultural activity ( 85 percent)	Male – 45.6 percent, Female – 25.2 percent	Majority of the Naika community are agriculture labourers (85 percent). 29.6 percent of them own land. And also work in industries as labourer.	Marriages are arranged through talks. They worship family deities and Hirondev, Marryandev, Vanzari mata, Bhavani. Panch system operates in their habitations, to settle the marital and other problems and tackle the erring members by imposing penalty.	Naik means a leader or organizer. Earlier Naika were referred as a nomadic group but no such Naika can be encountered around.
<b>Pardhi</b>	Kutch and Vadodara district		Hindu	Mostly working as landless labourers, and are also engaged in hunting, fishing and service sector activities.		54 percent working as landless labourers, about 15 percent engaged in hunting, fishing and also works as drivers, Riksha pullers etc. 10.7 percent are working in transport and communication	They have caste Panchayat to decide community issues. They worship deities as Gauria Deo, Mahadeo, Shabedeo, Shitala Mata, Bhaisasur, and Kankalimata. They are known for folk dances and also believe in superstitions and ghosts and bitches. Common marriages known as “Bihav”, generally arranged by parents.	Pardhi is a mixed group made of Rajput and Rawari . Their origin is dated to the period of Mahabharata, and Mahadeo. They use to hunt wild bear.
<b>Pardi Advichincher</b>	Ahemdabad, Panchmahal, Valsad, Sabarakantha and Surat district		Hindu	They are dependent on agriculture, hunting and fishing. Women make palm leaves, mat		28.3 percent are agricultural labourers, 7.2 percent are construction workers, and 7.2 percent engaged in other services	They celebrate Holi, Diwali and Dussehra. They have their community Panchayat to decide their disputes. They worship deities as, Mahadeo, Hanuman and Kalimata.	They are nomads in their characteristics. Almost 75 percent of the population lives in Panchmahal district.

Scheduled Tribes	Habitation ( District / Talukas)	Language	Religion	Occupation	Literacy level	Economic Structure	Social Structure	Other Characteristics
				broom and other HH articles.				
<b>Kathodi, Katkari, Dhor Kathodi, Dhor Katkari, Son Kathodi, Son Katkari</b>	Valsad, Sabarakantha, Bharuch and Surat district		Hindu	Agriculture and forestry is the main occupation of the community.		71 percent are engaged in agriculture, 22 percent engaged in forestry, fishing and hunting.	Marriages of the community are common Hindu type performed by priest. They worship Hanumanji, lord Rama, Krishna etc. the main deities are Durgadev, Vaghdev, gamdev, Maicmata, Kansari Devi etc.	The term kathodi in Kathkari have been derived from the Khair. These people reside predominantly in hills and forests and they are habituated of unsettled life living in outskirts and periphery of villages.
<b>Kokna, Kokni, Kukna</b>	The Dangs, Valsad, Vadodara and Surat district		Hindu	Agriculture is the major occupation along with forestry and few engaged in service sectors.	Male 62. 6 percent, female 40.3 percent.	Largely depend on agriculture activity say 87. 13 percent. Rest of the community depends on selling of forest products and other service activities such as tailoring, and carpentry	They worship the deities of wider pantheon and they have faith in supernatural powers. They celebrate Hindu festival such as Shivratri, dussehra, Navaratri, and Diwali. They have Panch system constituted comprising five elderly and respected members of the community headed by the Patel. They decide cases related to division of property, family quarrels, petty theft, divorces, marital issues and breach of caste norms. Group endogamy and clan exogamy are the marriage rules. Widow marriage is also common.	One of the important tribal groups. The etymology of the term Konkna is from by virtue of their wearing armllet, i.e. Kankan.
<b>Koli Dhor, Tokre Koli, Kolcha, Kolgha</b>	Jamnagar, Panchmahal, Vadodara and Surat district		Hindu	Mainly agriculture		95 percent are farmers. Of this 58 percent are cultivators having their own land and remaining 37 percent are landless labourers. 11.8 percent are engaged in service sector	They have community Panchayat system. They worship Hindu Gods like Mahadeo, Hanumanji.	It's a sub community of koli, who were engaged in animal husbandry.
<b>Patelia</b>	Panchmahal district	Bhilli	Hindu	Mainly agriculture	Male 78.5 percent, female 45.9 percent.	Predominantly community is engaged in agricultural activities, with 80.6 percent owning the land. Some of the community members are also engaged in white collar jobs.	Law and order in their society is maintained by forming a "Patelia Sabha" which takes care of the traditional norms. Marriage in adults is decided by negotiations and performed by Brahmin priest. Community is great worshipper of lord Krishna. Food habits: they are generally vegetarians and are strictly avoiding alcohol.	Patelia are scheduled tribes of Madhya Pradesh who have migrated to Gujarat from neighboring areas. They are out spring from mixture of Bhils and Rajput. They are divided into sub groups such as Bhagat and Nagal Patelias.

## ANNEXURE 2-1: Typical Cross Sections Proposed for MMGSY

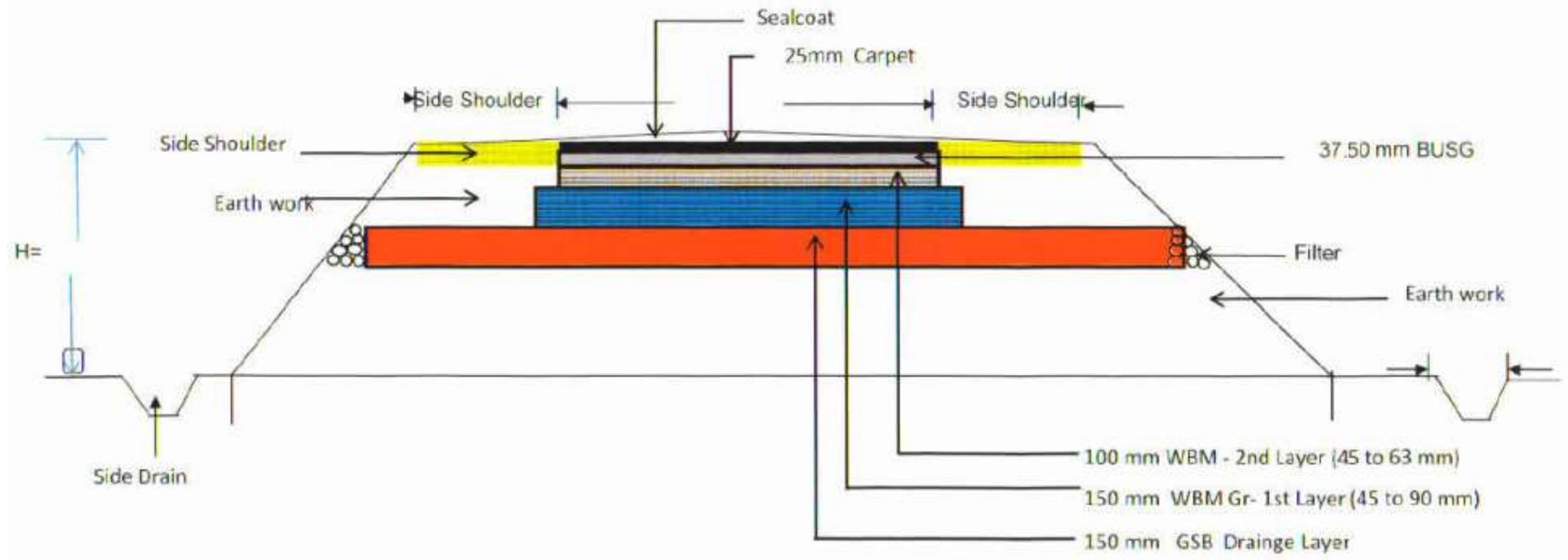


Figure 1: Typical Cross section – Plate 1

Type of road	Existing	Proposed	Cross section
<b>Non Plan Roads</b>			
Connectivity to villages and Hamlets	Earthen surface	BT road	Plate 1
Construction of roads in tribal Areas	Earthen surface	BT road	Plate 1
Construction	Earthen	BT road	Plate 1

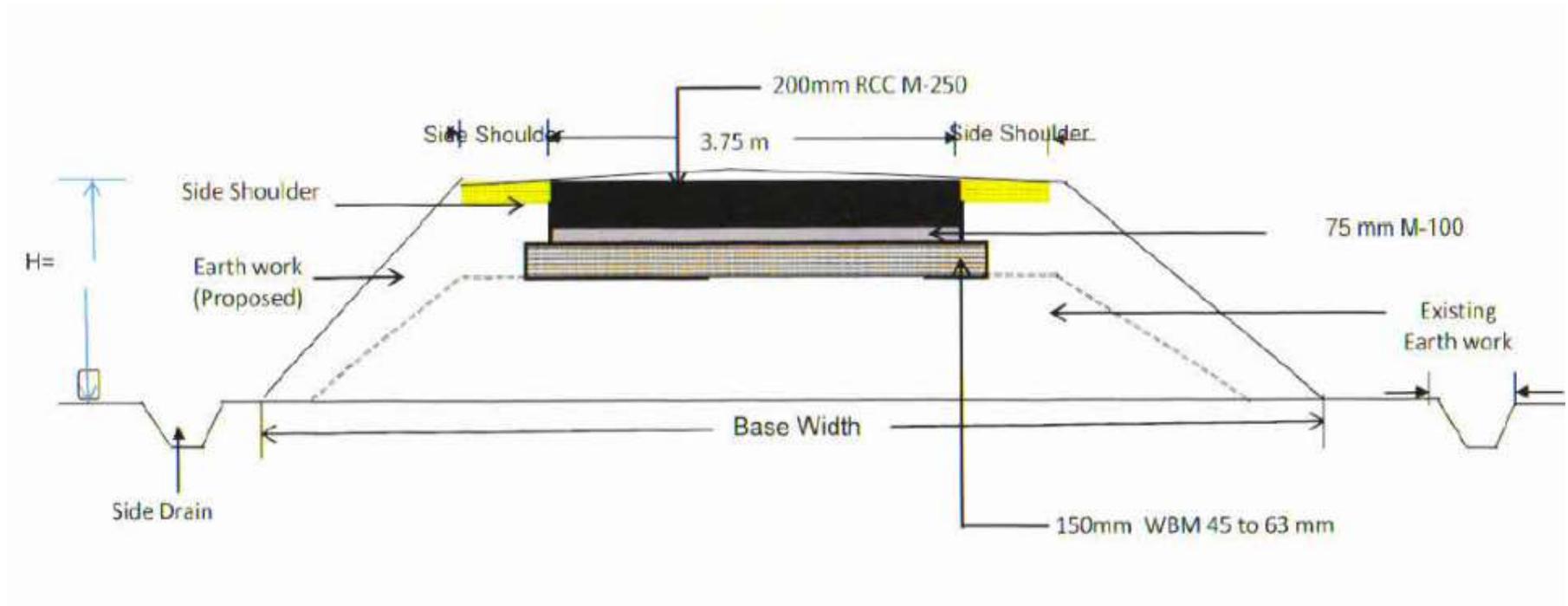


Figure 2: Typical Cross section – Plate 1A

Type of road	Existing	Proposed	Cross section
<b>Non Plan Roads</b>			
Approach to School/Colleges	Earthen surface	RCC road	Plate 1A

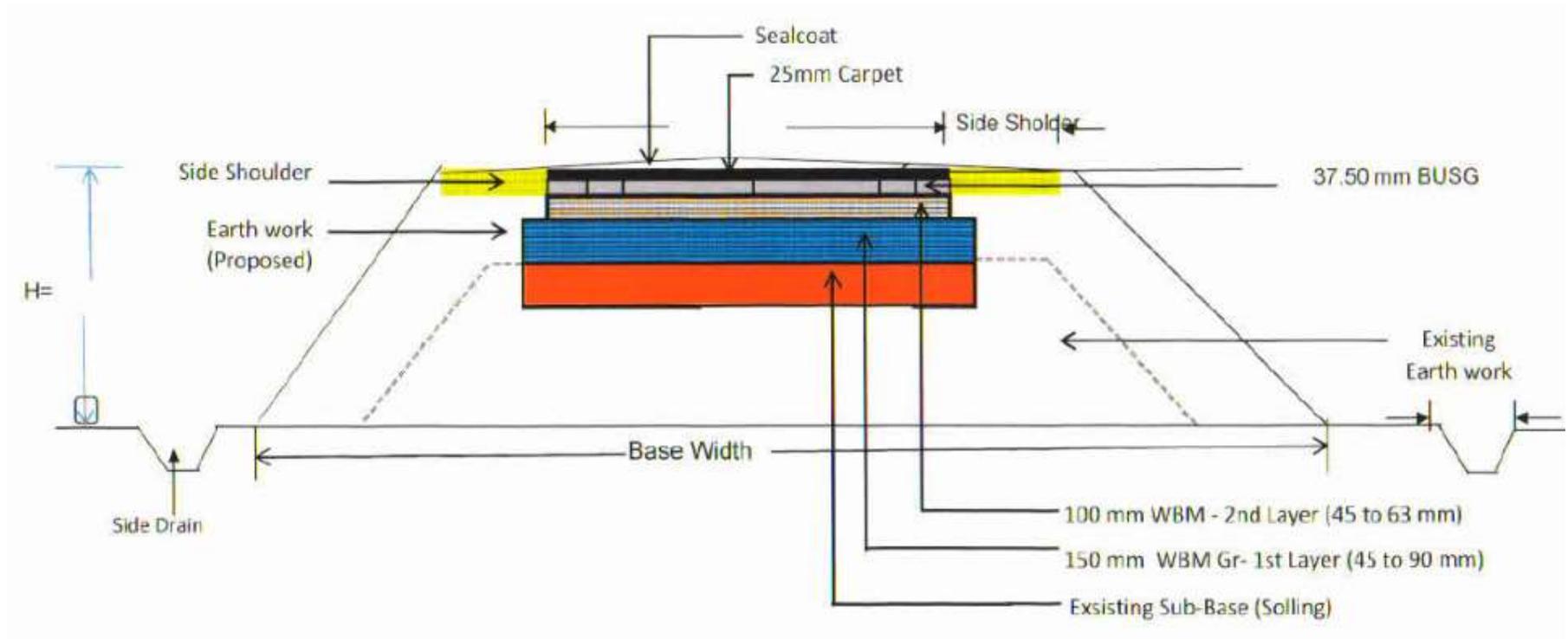


Figure 3: Typical Cross section – Plate 2

Type of road	Existing	Proposed	Cross section
<b>Plan Roads</b>			
Upgradation	Metal	BT road	Plate 2

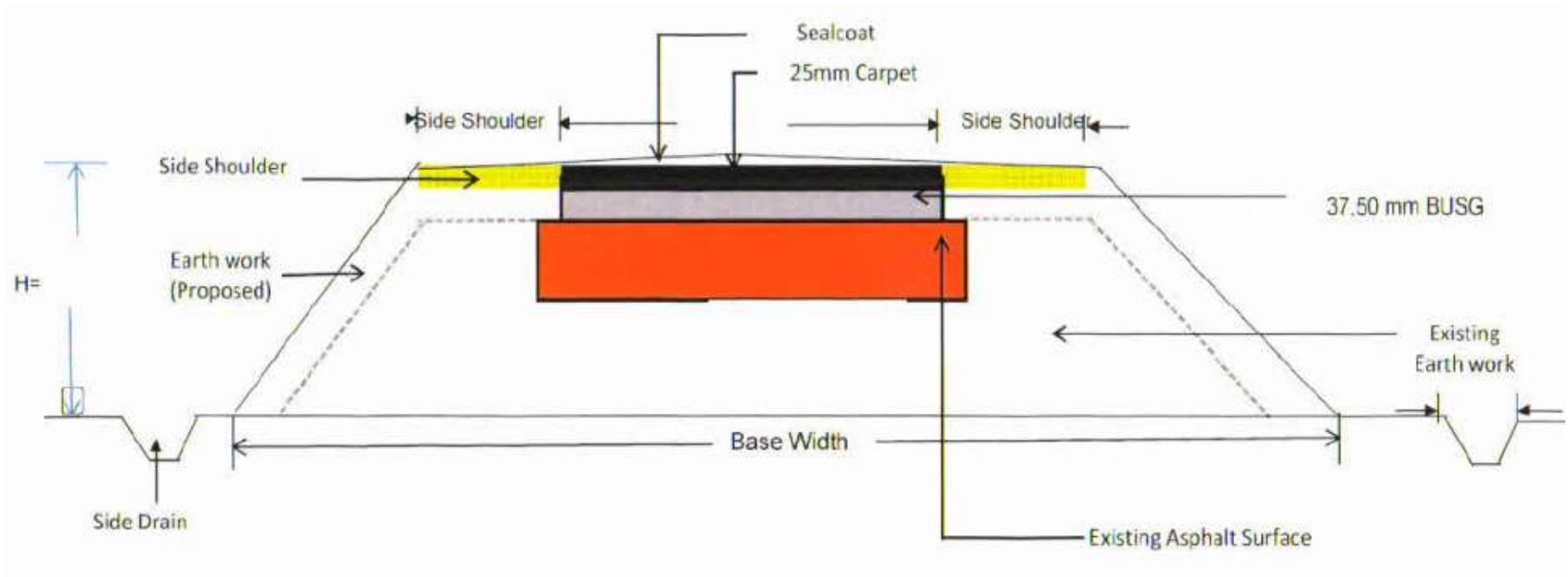


Figure 4: Typical Cross section – Plate 3

Type of road	Existing	Proposed	Cross section
<b>Non Plan Roads</b>			
Resurfacing or Maintenance of Existing Roads	Asphalt	Asphalt	Plate 3

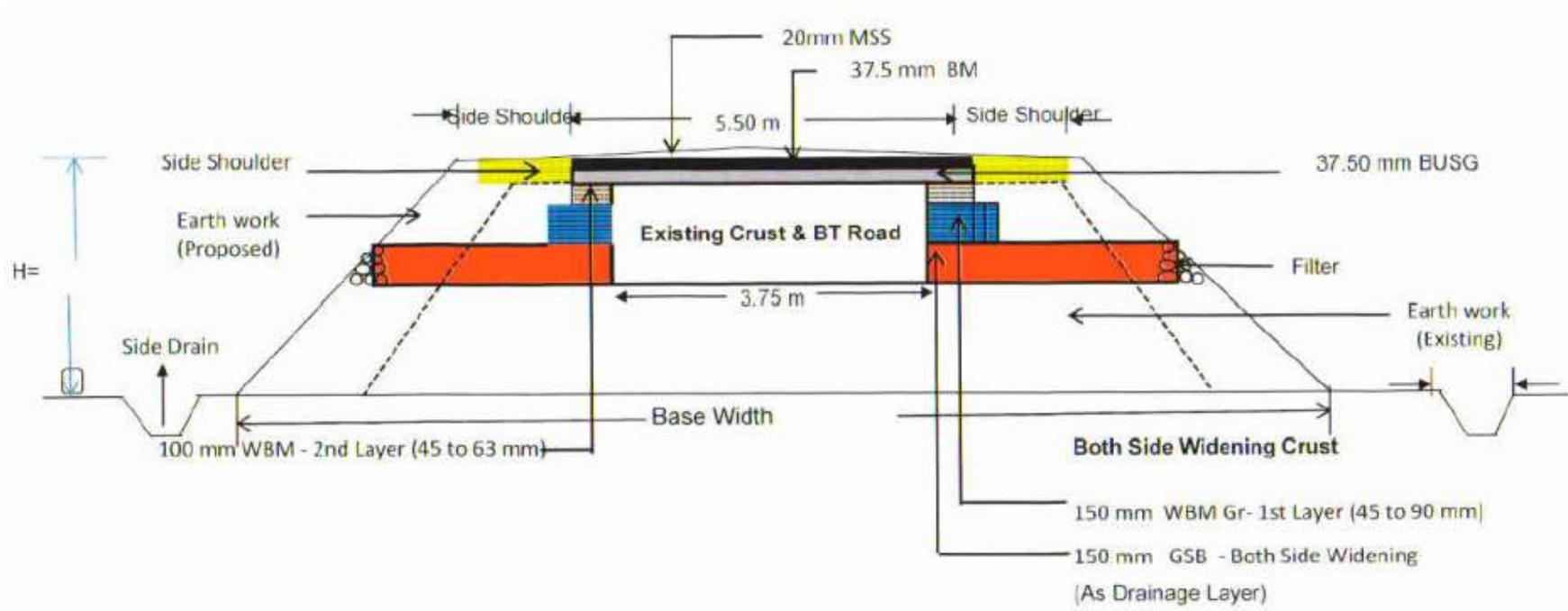


Figure 5: Typical Cross section – Plate 4

Type of road	Existing	Proposed	Cross section
<b>Plan Roads</b>			
Widening of roads	Asphalt	Asphalt	Plate 4

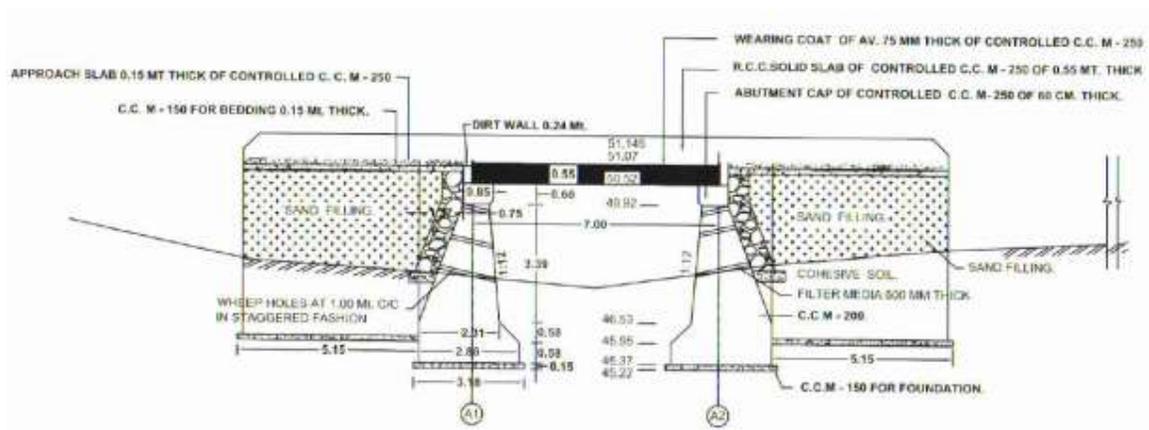


Figure 6: Typical Cross section – Plate 5 (Existing Causeway Elevated by Slab)

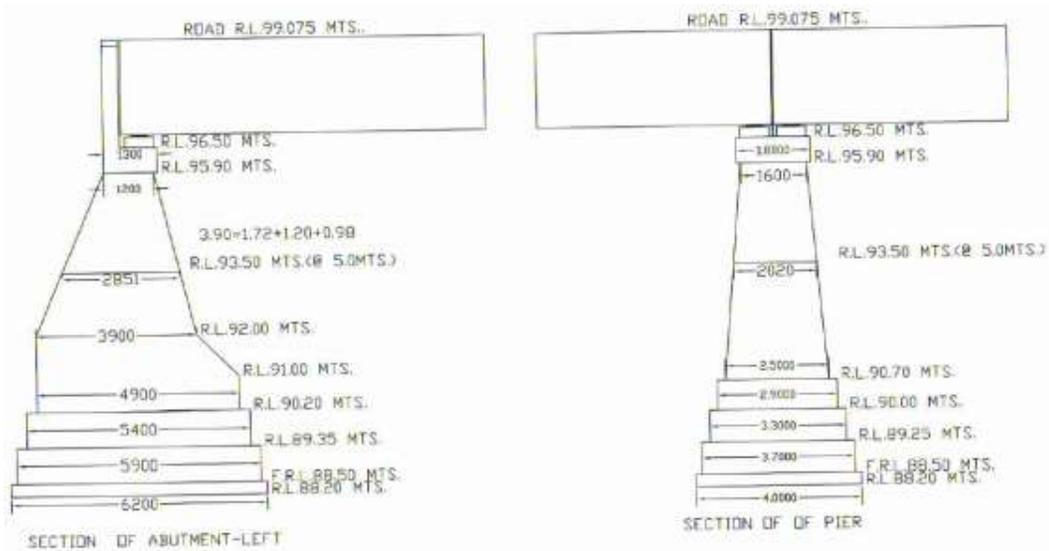


Figure 7: Typical Cross section – Plate 6 (Mass Concrete Pier and Abutments)

Type of road	Existing	Proposed	Cross section
<b>Plan Roads</b>			
Upgradation of Causeway/deep	Causeway/deep	Slab drain or Bridge	Plate 5 and Plate 6

## **ANNEXURE 5-1: Details of Consultations, FGDs, Informal Discussions with Local Community and Visits to Project Roads**

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## Annexure 5-1a: Details of Community Consultation –UVARSAD VILLAGE

### Prior Intimation Letter to Gram Panchayats Requesting to Arrange Community Consultation

Chief Executive Officer  
2<sup>nd</sup> floor, Nirman Bhavan,  
Sector – 10 A,  
Gandhinagar – 382010  
079 23256877 - 78  
Date: 08-05-2017

To,  
The Village Sarpanch / Gram Panchayat  
Village : Uvarasad  
Tehsil : Gandhinagar  
District : Gandhinagar  
Name of the road : 1)

**Subject:** Community consultation for Asian Infrastructure Investment Bank (AIIB) funded Mukhya Mantri Gram Sadak Yojana (MMGSY) – Project to improve rural roads connective under Gujarat Road Rural Development Authority (GSRRDA) - Roads and Building Department (Panchyat), Government of Gujarat.

Refer to the above mentioned subject, it is to state that Government of Gujarat (GOG) through Roads and Building department (R & BD) extending its rural road network to the villages and habitation, hamlets through its new flagship program Mukhya Mantri Gram Sadak Yojana (MMGSY). Under MMGSY, those habitations will be connected which are having less than 500 population and which were not previously covered under Pradhan Mantri Gram Sadak Yojana (PMGSY). MMGSY aims at improving the rural road connectivity (by providing all weather connectivity) to 1,060 villages in all the 33 districts in Gujarat state benefitting about 8 million people. The primary beneficiaries are the people living in the rural areas who are the users of the rural roads.

In this respect, Public Consultations are being carried out across Gujarat in order to capture the views and suggestions from the community regarding the proposed sub-project interventions taken up in respective vicinity under MMGSY.

M/S LEA Associates South Asia Pvt. Ltd. (LASA) is carrying out a consultation on behalf of GSRRDA in your village Uvarasad. Hence, we request support and coordination from Gram Panchyat for facilitating the Consultation, scheduled on Sunday, 14<sup>th</sup> May, 2017 at 8 :00 hrs. Gram Panchyat Hall (Venue).  
or) at Bramhani Hall.

સિદ્ધિ ગુજરાત રાજ્ય



Chief Executive Officer  
Gujarat Road Rural Development Authority (GSRRDA)  
Roads and Building Department (Panchyat)  
Government of Gujarat

### Consultation Photographs: UVARSAD VILLAGE



### Consultation with the Road Users



### Opinion Expressed and Impact Perception of the Community: UVARSAD VILLAGE

Gujarat State Rural Road Development Agency (GSRRDA)

Community Consultation

#### Opinion Expressed and Impact Perception of the Community

ઉવારસાદ ગામના મુખ્ય નાજી બામ. અસર યાજના કુલ ૪  
સેક્ટર બનાવવામાં છે. તેમાંથી ભય મુલ્ય કાઢવા પડે,  
(૧) વાંકીનાર સડુરમાં ભયા આજી. બાજીના પિરનારમાં તેવા  
માટે સંગત. કુલ પડે. તેના કારણે સમુ. પડે. ભયા કિલ્લ  
ના બનાવવા પડે.  
(૨) ગામનારો કારકારમાં પડે. ભયા માટે કારકાર સમાજમાં  
કારકાર, સમુ, સંગતમાં પડે માટે કારકાર પડે.  
(૩) સડુરના ભયામાં સડુર સડુર ભયા માટે  
ભયા પડે.  
(૪) ભયા તેના ભયામાં સમુ. ભયા માટે  
કારકાર પડે.  
(૫) કારકાર ભયામાં કારકાર કારકાર કારકાર  
માટે ભયા સમુ. પડે.

### Attendance Sheet of Participants: UVARSAD VILLAGE

Gujarat State Rural Road Development Agency (GSRRDA)

Community Consultation

**MMGSY GSRRDA R & BD (PANCHYAT) GOVT. OF GUJARAT  
ATTENDANCE SHEET FOR COMMUNITY CONSULTATION**

Name of the Village Uvarsad

Date:

Sr. No	Name	Sex M / F	Age	Occupation	Signature
1	નિવેશ જીવજી સિંહ	M	૪૬	વેદી	નિવેશ સિ
2	વેદી રામચંદ્ર વેદી	M	૪૩	વેદી	P.P. Patel
3	સુરેશ ભીલજી ભીલજી	M	૫૩	વેદી	Suresh
4	વેદી મહેશભાઈ વેદી	M	૪૦	વેદી	M.P. Patel
5	મહેશભાઈ વેદી	M	૫૧	વેદી	M.P. Patel
6	Pradeep Surti	M	25	વેદી	Surti
7	વેદી અમર	M	૫૬	વેદી	વેદી અમર
8	વેદી મહેશભાઈ વેદી	M	૩૬	વેદી	વેદી
9	સુરેશ ભીલજી ભીલજી	M	૩૦	વેદી	સુરેશ ભીલજી
10	મહેશભાઈ વેદી	M	૫૭	વેદી	વેદી

Gujarat State Rural Road Development Agency (GSRRDA)

Community Consultation

Sr. No	Name	Sex M / F	Age	Occupation	Signature
11	શ્રી રાજીવભાઈ વસંતભાઈ પટેલ		૭૦	વેતન	
12	અમલભાઈ કાશીભાઈ પટેલ		૬૭	વેતન	R. Patel
13	અશોકભાઈ અશોકભાઈ પટેલ		૫૩	વેતન	Ashok
14	અમરભાઈ અશોકભાઈ ઠાકર		૩૨	વેતન	A. S. Thakkar
15	દામોદર પ્રદીપ અમરભાઈ	M	૨૬	ગણતંત્ર	M. P. Patel
16	દામોદર દેવદાસભાઈ રાજભાઈ		૪૪	વેતન	D. Raj
17	દામોદર અમરભાઈ ઠાકર		૩૨	વેતન	D. Thakkar
18	દેવદાસભાઈ અમરભાઈ		૪૨	વેતન	D. Das
19	Rohit Patel		૩૨	વેતન	Rohit
20	S.V. Thakkar	m	૫૫	વેતન	S. V. Thakkar
21	R.D. Thakkar		૫૭	વેતન	R. D. Thakkar
22	R. R. Patel A.A.E		૫૩	A.A.E R.R. Patel	R. R. Patel

Gujarat State Rural Road Development Agency (GSRRDA)

Community Consultation

Sr. No	Name	Sex M/F	Age	Occupation	Signature
23	MR. S. H. PRAJAPATI	M	38	AS (R&B) Gandhinagar	
24	ગુણગુણ સુધી	M	35	ગુણગુણ	
25	Zhanika Shroff	M	33	ગુણગુણ	
26	Shubham & Madan		44	વેપારી	
27	Vinod or Thakur		58	વેપારી	
28	વેપારી ગુણગુણ		42	વેપારી	
29	વેપારી ગુણગુણ			વેપારી	
30	Ankur Modi	M	40	Consultant, Env. Eng. (LASA)	
31	P. ARUNA	F	41	Consultant, civil	
32	Hitesh Patel	M	29	Engineer	
33	K. Purnanathan	M	58	Env. Spl.	
34	DR. K. N. JAYAN	M	44	Social Specialist	

## Annexure 5-1b: Details of Community Consultation –Rupal, Gandhinagar

### Prior Intimation Letter to Gram Panchayats Requesting to Arrange Community Consultation

Chief Executive Officer  
2<sup>nd</sup> floor, Nirman Bhavan,  
Sector – 10 A,  
Gandhinagar – 382010  
079 23256877 - 78  
Date: 08-05-2017

To,  
The Village Sarpanch / Gram Panchayat *Mr. Jasvanti Bai Trikamlal Parmar*  
Village : *Rupal*  
Tehsil : *Gandhinagar*  
District : *Gandhinagar*  
Name of the road :

**Subject:** Community consultation for Asian Infrastructure Investment Bank (AIIB) funded Mukhya Mantri Gram Sadak Yojana (MMGSY) – Project to improve rural roads connective under Gujarat Road Rural Development Authority (GSRRDA) - Roads and Building Department (Panchyat), Government of Gujarat.

Refer to the above mentioned subject, it is to state that Government of Gujarat (GOG) through Roads and Building department (R & BD) extending its rural road network to the villages and habitation, hamlets through its new flagship program Mukhya Mantri Gram Sadak Yojana (MMGSY). Under MMGSY, those habitations will be connected which are having less than 500 population and which were not previously covered under Pradhan Mantri Gram Sadak Yojana (PMGSY). MMGSY aims at improving the rural road connectivity (by providing all weather connectivity) to 1,060 villages in all the 33 districts in Gujarat state benefitting about 8 million people. The primary beneficiaries are the people living in the rural areas who are the users of the rural roads.

In this respect, Public Consultations are being carried out across Gujarat in order to capture the views and suggestions from the community regarding the proposed sub-project interventions taken up in respective vicinity under MMGSY.

M/S LEA Associates South Asia Pvt. Ltd. (LASA) is carrying out a consultation on behalf of GSRRDA in your village *Rupal*. Hence, we request support and coordination from Gram Panchyat for facilitating the Consultation, scheduled on Sunday, 14<sup>th</sup> May, 2017 at 10:00 hrs. *Panchyat Office, Rupal.*

*Copy Received*  
*[Signature]*



*[Signature]*  
Chief Executive Officer  
Gujarat Road Rural Development Authority (GSRRDA)  
Roads and Building Department (Panchyat)  
Government of Gujarat

### Consultation Photographs: RUPAL VILLAGE



**Opinion Expressed and Impact Perception of the Community: RUPAL VILLAGE**

Gujarat State Rural Road Development Agency (GSRRDA)

Community Consultation

**Opinion Expressed and Impact Perception of the Community**

પરિલે રમ્બેરા (ભાઈ) બાઈલેલાઈ  
 છું - રૂપાલ, તા.બુ. ગાંધીનગર  
 મો - ૯૮૨૪૫ ૪૨૭૦૫  
 તા. ૨૪/૫/૨૦૧૭

વિષય - મુખ્યમંત્રી ગ્રામ સડક કાર્યક્રમનો રૂપાલ ગાંધીપરા  
 બધા બજારો સડકો માટે પાડેલી લેવલ નાખવી શખવા બાબતે

- ૧) રૂપાલ ગાંધીપરા આબુસંધાનમાં મુખ્યમંત્રી રૂપાલ વાડાનાથી  
 મોટર ખુલવી શકાય છે. તો તે લેવલને ઘટાડવાને સંબંધિત કરવાનો  
 સંવેદનથી બચાવવો.
- ૨) રૂપાલ ગાંધીપરા આબુસંધાનમાં રૂપાલ ગાંધીપરા જતા સડકો  
 રસ્તા કે બેંચીસતા પડતા હોય તેવી જગ્યાએ પાંચે પાંચે  
 નિમ્નલેવલ માટે ગરજાવા મુદ્દા.
- ૩) રૂપાલ ગાંધીપરા આબુસંધાનમાં રૂપાલ બેંચીસ માતાના  
 જીવન પડતા હોવાથી વરસાદમાં સડકો દોડાઈ ન જાય તે  
 પાંચે પાંચે લેવલ નાખવું.
- ૪) બધા બજારો સડકો પર વાહોને રોકવાને સંબંધિત કરવાનો મુદ્દા.  
 રમ્બેરા  
 પરિલે રમ્બેરા (ભાઈ) બાઈલેલાઈ

### Attendance Sheet of Participants: RUPAL VILLAGE

Gujarat State Rural Road Development Agency (GSRRDA)

Community Consultation

#### MMGSY GSRRDA R & BD (PANCHYAT) GOVT. OF GUJARAT ATTENDANCE SHEET FOR COMMUNITY CONSULTATION

Name of the Village Rupal

Date: 14/05/2017

Sr. No	Name	Sex M / F	Age	Occupation	Signature
1	પરેશ રામ કામલ સિંહ	♂	૪૦	વેતન	[Signature]
2	પરેશ મણીભાઈ રામભાઈ	♂	૦૨	વેતન	[Signature]
3	પરેશ દિનેશ પાણીભાઈ	♂	૪૬	ગણતંત્ર	[Signature]
4	પરેશ વિજયભાઈ	♂	૪૮	વેતન	[Signature]
5	પરેશ વિજયભાઈ	♂	૪૬	વેતન	[Signature]
6	પરેશ પ્રભુભાઈ	♂	૬૨	વેતન	[Signature]
7	પરેશ રામભાઈ	♂	૬૨	વેતન	[Signature]
8	પરેશ મણીભાઈ	♂	૪૭	વેતન	[Signature]
9	પરેશ મણીભાઈ	♂	૪૦		[Signature]
10	પરેશ રામભાઈ	♂	૪૦	વેતન	[Signature]

Page 5 of 11

Consultancy Services for Environmental and Social Impact Assessment and Management Framework for MMGSY



Gujarat State Rural Road Development Agency (GSRRDA)

Community Consultation

Sr. No	Name	Sex M / F	Age	Occupation	Signature
11	પરેશ મણીભાઈ	♂	૪૭	વેતન	[Signature]
12	પરેશ મણીભાઈ	♂	૪૭	વેતન	[Signature]
13	પરેશ મણીભાઈ	♂	૪૬	વેતન	[Signature]
14	પરેશ મણીભાઈ	♂	૪૫	વેતન	[Signature]
15	પરેશ મણીભાઈ	♂	૭૫	વેતન	[Signature]
16	પરેશ મણીભાઈ	♂	૩૨	વેતન	[Signature]
17	પરેશ મણીભાઈ			વેતન	[Signature]
18	પરેશ મણીભાઈ			વેતન	[Signature]
19	Patel Durshan	Male		Job	[Signature]
20	પરેશ મણીભાઈ	♂	૪૦	વેતન	[Signature]
21	DR. K.N. JAYAN	M	AA	Social Scientist	[Signature]
22	[Signature]	M	60	[Signature]	[Signature]

Page 6 of 11

Consultancy Services for Environmental and Social Impact Assessment and Management Framework for MMGSY



Rupal

Gujarat State Rural Road Development Agency (GSRRDA)

Community Consultation

Sr. No	Name	Sex M/F	Age	Occupation	Signature
23	વજીરુલ સમીર	Male	25	વહીવટી	[Signature]
24	ચંદુ ભુવન	Male	35	વહીવટી	V.B. Patel
25	ગણેશ વેદન	Male	40	વહીવટી	Ganesh V. Patel
26	S. Patel				S.S. Patel
27	R.R. Patel	Male	20	AAE. A&B Agency Gandhinagar	[Signature]
28	વિદ્યા ગણેશ	F	72	મન	[Signature]
29	MR. S.H. PRADIPATI	Male	38	A.E. (R&B) Gandhinagar	[Signature]
30	Rahul Kumar Mitra	Male	24	Student	[Signature]
31	Nikhil Kumar Parmar		24	"	[Signature]
32	ANKUR NODI	M	40	Consultant, Env. Engg (A&B)	[Signature]
33	P. ARUNA	F	41	social worker	[Signature]
34	Hitesh Patel	M	29	Engineer	[Signature]

*Rupal*

Gujarat State Rural Road Development Agency (GSRRDA)

Community Consultation

Sr. No	Name	Sex M / F	Age	Occupation	Signature
35	<i>K. Purna Nandan</i>	<i>M</i>	<i>58</i>	<i>Env SA. LACA</i>	<i>[Signature]</i>
36					
37					
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## Annexure 5-1c: Details of Community Consultation –Unava, Gandhinagar

### Prior Intimation Letter to Gram Panchayats Requesting to Arrange Community Consultation

જા. નો. ૨૦૧. (જી. ડી. (જી) - ૨૦૧૭  
મુખ્ય ઈન્જનેર (પંચાયત) અને અધિક સચીવ શ્રી  
માર્ગ અને મકાન વિભાગ  
ગુજરાત ગ્રામ્ય માર્ગ વિકાસ એજન્સી  
નિર્માણભવન, ૨ જી માળ,  
સેક્ટર - ૧૦,  
ગાંધીનગર - ૩૮૨૦૧૦  
૦૮-૦૩-૨૦૧૭

પ્રતિ

ગ્રામ પંચાયત / સરપંચ શ્રી સુપ્રસલાહ પટેલ  
ગ્રામ : બીનાયા શ્રી સુપ્રસલાહ પટેલ  
તાલુકો : ગાંધીનગર  
જિલ્લો : ગાંધીનગર

વિષય : માર્ગ અને મકાન વિભાગ નાં પંચાયત વિભાગ હસ્તગત, ગુજરાત ગ્રામ્ય માર્ગ વિકાસ ઓફીસીટી (GSRRDA) દ્વારા હાથ ધરાયેલ મુખ્ય મંત્રી ગ્રામ સડક યોજના (MMGSY) અંતર્ગત લોક પરામર્શ (Public Consultation) કરવા સહકાર બાબત.

ઉપર્યુક્ત વિષય અને સંદર્ભ પત્ર અન્વયે, જણાવવાનું કે; માર્ગ અને મકાન વિભાગ, ગુજરાત સરકાર નાં પંચાયત વિભાગ હસ્તગત, ગુજરાત રાજ્ય ગ્રામ્ય માર્ગ વિકાસ ઓફીસીટી (GSRRDA) દ્વારા, મુખ્ય મંત્રી ગ્રામ સડક યોજના (MMGSY), એશીયન ઈન્ફ્રાસ્ટ્રક્ચર ઈન્વેસ્ટમેન્ટ બેન્ક (AIB) નાં, સહયોગથી હાથ ધરાયેલ છે. આ યોજના અંતર્ગત, ૫૦૦ કે તેનાથી ઓછી વસ્તી ધરાવતા અને આ અગાઉ પ્રધાનમંત્રી ગ્રામ સડક યોજના માં સમાવિષ્ટ ન હોય તેવા ગામડાં અને વસાહતો (હમ્લેન્સ) ને જોડવા માં આવશે. જે માટે એશીયન ઈન્ફ્રાસ્ટ્રક્ચર ઈન્વેસ્ટમેન્ટ બેન્ક (AIB) ની નીતિ અને જોગવાઈઓ ને અનુસરીને, લોક પરામર્શ કરવું જરૂરી છે.

આ લોક પરામર્શની કામગીરી ગુજરાત માં કરવામાં આવી રહી છે અને સમુદાય નાં મંતવ્યો અને સૂચનો એકત્ર કરવામાં આવી રહ્યા છે, કે જેથી કરીને તેનો યોજના માર્ગ ની કામગીરી માં સમાવેશ કરી શકાય. GSRRDA પ્રતિનીધી - M/S LASA દ્વારા આ લોક પરામર્શ ની કામગીરી કરવામાં આવનાર છે. જે સખબ, માર્ગ અને મકાન વિભાગ અને ઉક્ત એજન્સીનાં પ્રતિનિધિઓ, આપશ્રી નાં વિસ્તાર નો સંપર્ક કરે, તો આ કામગીરી સલભ યોગ્ય સહકાર આપવા વિનંતી છે. આ લોક પરામર્શ તા. ૧૪ મે, ૨૦૧૭, રવિવાર નાં રોજ, ૧૨:૦૦ કલાકે ગાંધીનગર મુકામે યોજવાનું નિયત કરેલ છે.  
બીનાયા

સરપંચ  
બીનાયા

જા. નો. ૨૦૧. (જી. ડી. (જી) - ૨૦૧૭  
મુખ્ય ઈન્જનેર (પંચાયત) અને અધિક સચીવ  
માર્ગ અને મકાન વિભાગ  
ગુજરાત સરકાર

C. E. (Pan.) & A. S.  
R. & B. Dept.  
Sachivalaya, Gandhinagar.

### Consultation Photographs: UNAVA VILLAGE





### Opinion Expressed and Impact Perception of the Community: UNAVA VILLAGE

Gujarat State Rural Road Development Agency (GSRRDA)

Community Consultation

**Opinion Expressed and Impact Perception of the Community**  
 ૨૦૧૪/૦૫/૧૭

મો. સાદલેશી,  
 નવભાવન અને જિલ્લા સ્તરેથી

ઉનાવાળા મુંજાપટ્ટુર વાવણી લે બાબતમાં  
 આમ જાણે પ્રમાણે સંબંધિત છે

૧) આવી કામ થા ફૂર વામ.  
 ૨) સારા રેલ્વે ગરવાવાળા મુંજાપટ્ટુર ના આજુ  
 બાજુ બહોટ કામી જાણી  
 ૩) સમગ્રજણ ગરવાવાળા મુંજી સીલો રોડ વાવણી  
 જોઈ અને ઉનાવાળાને જ સારું જોઈએ.  
 ૪) આવી કામ થાવું હિંમો રોડ વાવણી લો કામર  
 રોડ વાવણી જાણી- જાણીર વાવણી આવા  
 આવાજી સુધી જાવું.  
 ૫) રેલ્વે પ્રમાણે રોડ વાવણી વાવણી લો  
 કામર માટે પસંદખાણે વાવણી વાવણી થા  
 અને વાવણી આવાજીર વાવણી  
 આવા રાજુજી માટે આ  
 સામેજીરે વિગતે વાવણી માટે રોડ  
 કામ રાજુ સાવાળા કાવણી.  
 આજી આવાજીર વાવણી  
 જાણીર મ. પરી  
 ઉનાવાળા - ૧૫/૧૪

### Attendance Sheet of Participants: UNAVA VILLAGE

Gujarat State Rural Road Development Agency (GSRRDA)

Community Consultation

**MMGSY GSRRDA R & BD (PANCHYAT) GOVT. OF GUJARAT  
ATTENDANCE SHEET FOR COMMUNITY CONSULTATION**

Name of the Village Unava

Date: 14.05.2017

Sr. No	Name	Sex M / F	Age	Occupation	Signature
1	પરેલ દામજીભાઈ ઝાલાભાઈ		50	વેલ	[Signature]
2	પરેલ ભાઈભાઈ ઝાલાભાઈ	♂	54	વેલ	[Signature]
3	ગુલેશ દેસાઈ રામભાઈ	♂	50	વેલ	[Signature]
4	પરેલ ભાઈભાઈ ઝાલાભાઈ	♂	50	વેલ	[Signature]
5	પરેલ રામભાઈ ઝાલાભાઈ	♂	50	વેલ	[Signature]
6	પરેલ રામભાઈ ઝાલાભાઈ	♂	45	વેલ	[Signature]
7	પરેલ રામભાઈ ઝાલાભાઈ	♂	45	વેલ	[Signature]
8	પરેલ રામભાઈ ઝાલાભાઈ	♂	45	વેલ	[Signature]
9	પરેલ રામભાઈ ઝાલાભાઈ	♂	45	વેલ	[Signature]
10	પરેલ રામભાઈ ઝાલાભાઈ	♂	45	વેલ	[Signature]

Page 5 of 11

Consultancy Services for Environmental and Social Impact Assessment and Management Framework for MMGSY



Village: Unava

Gujarat State Rural Road Development Agency (GSRRDA)

Community Consultation

Sr. No	Name	Sex M / F	Age	Occupation	Signature
11	પરેલ રામભાઈ ઝાલાભાઈ	♂	40	વેલ	[Signature]
12	પરેલ રામભાઈ ઝાલાભાઈ	♂	42	વેલ	[Signature]
13	પરેલ રામભાઈ ઝાલાભાઈ	♂	37	વેલ	[Signature]
14	પરેલ રામભાઈ ઝાલાભાઈ	♂	38	વેલ	[Signature]
15	પરેલ રામભાઈ ઝાલાભાઈ	♂	39	વેલ	[Signature]
16	પરેલ રામભાઈ ઝાલાભાઈ	♂	20	વેલ	[Signature]
17	પરેલ રામભાઈ ઝાલાભાઈ	♂	41	વેલ	[Signature]
18	પરેલ રામભાઈ ઝાલાભાઈ	♂	42	વેલ	[Signature]
19	પરેલ રામભાઈ ઝાલાભાઈ	♂	42	વેલ	[Signature]
20	પરેલ રામભાઈ ઝાલાભાઈ	♂	42	વેલ	[Signature]
21	પરેલ રામભાઈ ઝાલાભાઈ	♂	49	વેલ	[Signature]
22	પરેલ રામભાઈ ઝાલાભાઈ	♂	55	વેલ	[Signature]

Page 5 of 11

Consultancy Services for Environmental and Social Impact Assessment and Management Framework for MMGSY



Unava

Gujarat State Rural Road Development Agency (GSRRDA)

Community Consultation

Sr. No	Name	Sex M/F	Age	Occupation	Signature
23	Dakshini Dushmanta R	F	30	Talati Unava Muntri UNAVA.	
24	ચિત્રમણી.સામળી	M	42	નિવૃત્તી અધિકારી ગીચામી	
25	સુમિત્રા સુભાષીભાઈ	M	57	વૃક્ષ રક્ષક	
26	ANKUR MODI	M	40	Env. Engr, Consultant LASA	
27	S.H. PRADIPATI	M	38	A.E. Conductor	
28	Hitesh Patel	M	29	Engineer	
29	DR.K.N.JAYAN	M	44	Social specialist	
30	K.PURMANATHAN	M	58	Supr slt LASA	
31					
32					
33					
34					

## Site Observations- Alampur - Dashela, Palaj – Rampura and Lekavada to Omkar



**Alampur Dashela**



**Lekavada to Omkar School**



## Palaj Rampara Road

### Annexure 5-1d: Details of Community Consultation- Limbuda Village, Jamnagar

#### Coastal Highway 06 - Limbuda Road (Tehsil: Jodia, District: Jamnagar)

Visit Date: 23.05.2017



Cement concrete surface of culvert is deteriorated since surface is more than 7 years old.



Start point of the road, from Coastal Highway (CH) No. 06 towards Limbuda



Present bituminous surface deteriorated since surface is more than 7 years old.



Existing level of Culvert is low and problem of water overtopping prevails in rainy season.



End point of the corridor, Limbuda Village



Consultation with local Farmer



Consultation with localities

### Limbuda – Vavdi Road



Limbuda Village, Start Point of the Road towards Vavdi



Consultation with Sarpanch and Community Limbuda Village



Encroachment on shoulder of existing road - carriageway





Road passes through Vavadi, End point



Existing Condition of the road surface



Discussion with a Farmer at Vavdi



Vegetation on the edge of the carriageway



<u>Discussion Results</u>	
<u>Topics Discussed</u>	<u>Response/ Feedback</u>
Water overflowing in rainy season	Near by vicinity of Coastal area.
Need of the road	The Current Condition is not proper and thus they need better quality road.
No. of Students in school	Aprox. 200 Students. (All from the village or near by region)
Population @ 900-1000 major occupation - farming	

Conclusion

Both roads are @ work order stage and road construction may begin anytime after monsoon.

All villagers - Participated Community favours for road development activity, in favour of MNCIS sub project road through their village and they express that outcome will be a great benefit to the local community.

## Annexure 5-1e: Details of Community Consultation- Hadiyana Village, Jamnagar

Hadiyana – Vavdi – Nesda Road  
(Tehsil: Jodia, District: Jamnagar)

Visit Date: 23.05.2017



At Cross Road Junctions, Vavadi, Centre of Hadiyana - Vavadi - Nesda Road



On the way from Vavadi to Nesda, Vegetation in the form of bushes / plan species exists on the edge of the shoulder



End point of Hadiyana - Vavadi - Nesda Road at Nesda



<u>Discussion Results</u>	
<u>Topics Discussed</u>	<u>Response/ Feedback</u>
Population of Vandi Village + village school students →	Bus stop @ 1200 @ 300
Problems in Rainy Season Sea is 6km far	water logging and vehicle movements stops.
Bus facility :	2 buses / day.

Conclusion

Community is in favour of road development

## Annexure 5-1f: Details of Community Consultation- Kuntasi Village, Jamnagar

### Kuntasi - Bodki Road (Tehsil: Maliya, District: Morbi)

Visit Date: 23.05.2017



Start Point of Kuntasi Bodki, a Kuccha road



Current Condition of Kuccha road



ESMF Consultant recording the perception of the Community – Kuntasi Village



Consultation and Focus Group Discussion among Village People of Kuntasi



On the way to Bodaki, Condition of the existing surface (Earthen)



Clearing and Grubbing has been initiated

**Attendance Sheet of Participants: KUNTASI VILLAGE**



## MMGSY- FOCUS GROUP DISCUSSION (FGD)

**Project Information:** 23.05.17

**Type of Road** : Euthan Road C Kuntasi - Budhi (Co-4.000m)

**Existing RoW** : 3 mt.

**Settlements/ Villages** : Kuntasi

**Nearby SH/NH/ODR/MDR** : CH-06

**Environmental/ Social Sensitivity** : In the vicinity of Nawalakhi Port Coastal Area

**Primary Investigator(s)**

**Name of the Investigators:**

1. Pashpanathan
2. Ankur Modi

Participant Profile		
Name	Occupation	Signature
Dinesh bhai nanavati	Business	<i>[Signature]</i>
Nanubhai	Sasparach	CA. 21. 01 21
Hiren Mehta	Student	
Devdip Gajhi	"	
Nelilbhai Kuberbhai	Farmer/Agri	
Parthraj Singh	Business, Rd Const.	<i>[Signature]</i>
Ashok Nahar	Farmer/Agri.	<i>[Signature]</i>
Sargan Sakha	Farmer/Agri.	<i>[Signature]</i>
Sadhia Jayant	Student	
Sadhia Rakul	Student	<i>[Signature]</i>
Narantkhai Limbu	Co Sasparach	<i>[Signature]</i>
Changubhai Rajabhai		
Dineshbhai Jalgikhi	Farmer/Agri/Agri	

<u>Discussion Results</u>	
<u>Topics Discussed</u>	<u>Response/ Feedback</u>
Current Condition →	No road constructed.
During rainy season →	No water logging Problem present

Conclusion

Participated Community expressed overwhelming response towards said development activity i.e. Construction of Kuptasi Bodke road under MUDY Project.

## Annexure 5-1g: Details of Community Consultation –Nana Dahisara, Morbi

### Prior Intimation Letter to Gram Panchayats Requesting to Arrange Community Consultation

નો. ના.ક.સે. (જી.પં.વર્ગ) (જી) - ૨૦૧૭  
મુખ્ય ઈન્જનેર (પંચાયત) અને ઝોનિક અધીકારી,  
માર્ગ અને મકાન વિભાગ,  
ગુજરાત ગ્રામ્ય માર્ગ વિકાસ ઓર્ગેનાઈઝેશન  
નિમોડુલવલ, ૨ જી, મા.ન,  
સેક્ટર - ૧૦,  
મધોનગર - ૩૮૦૦૧૦  
તારીખ: ૦૬-૦૯-૨૦૧૭

પ્રતિ  
ગ્રામ પંચાયત / સુસંધ શ્રી  
ગ્રામ: ઠાપણા ઈંદિયેરા  
તાલુકો: ઠાપણા  
જિલ્લો: કોરબી

વિષય: માર્ગ અને મકાન વિભાગ-નાં પંચાયત વિભાગ, ગુજરાત, ગુજરાત ગ્રામ્ય માર્ગ વિકાસ ઓર્ગેનાઈઝેશન (GSRRDA) દ્વારા વાહુ પરિવેશ મુખ્ય મંત્રી ગ્રામ સહકાર યોજના (MMGSY) અંતર્ગત ડીક પરામર્શી (Public Consultation) કરવા સહકાર માંગના.

ઉપરોક્ત વિષય અને શીર્ષક પર અન્વયે, જણાવવાનું છે; માર્ગ અને મકાન વિભાગ, ગુજરાત સરકાર ના પંચાયત વિભાગ હસ્તગત, ગુજરાત રાજ્ય ગ્રામ્ય માર્ગ વિકાસ ઓર્ગેનાઈઝેશન (GSRRDA) દ્વારા, મુખ્ય મંત્રી ગ્રામ સહકાર યોજના (MMGSY), ઓર્ગેનાઈઝેશન ઈન્ફ્રાસ્ટ્રક્ચર ઈન્વેસ્ટમેન્ટ બેન્ક (AIB) ના, સહયોગથી હાથ પાડાયેલ છે. આ યોજના અંતર્ગત ૫૦૦ જે તેનાથી ખેડોળી વસ્તી, વસતી, અને આ જગ્યાને પ્રાથમિકી ગ્રામ સહકાર યોજના માં સમાવિષ્ટ ન હોય તેવા ગ્રામ્ય અને હસાકલો (હોમલેસ) ને જોડવા માં આવશે. જે માટે ઓર્ગેનાઈઝેશન ઈન્ફ્રાસ્ટ્રક્ચર ઈન્વેસ્ટમેન્ટ બેન્ક (AIB) ની નીતિ અને જોડવાઈઓ ને અનુસરીને, ડીક પરામર્શી કરવું જરૂરી છે.

આ ડીક પરામર્શીનું મુખ્યમંત્રી ગુજરાત માં કરવામાં આવી રહ્યું છે અને તમુકામ નાં મંગલો અને સુચનો બેંચ પરની આવે. સવા છે, જે જેની કરીને તેનો પેલ્લમ માર્ગ નો સમર્થન માં સમાવેશ કરી શકાય. GSRRDA પ્રતિનિધિ M/S LASA દ્વારા આ ડીક પરામર્શી ની સમગ્રી કરવામાં આવનાર છે. જે સબલ, માર્ગ અને મકાન વિભાગ અને ઉક્ત ઓર્ગેનાઈઝેશન પ્રતિનિધિઓ, આપણી નાં વિસ્તાર નો સંપર્ક કરે. તમે આ કામગીરી સવલ યોગ્ય સહકાર આપવા વિનવો છે. આ ડીક પરામર્શી ના. ૦૬/૦૯/૨૦૧૭, સમિતિ નાં નેચ, ૪૬૦૦ ક્વાર્ટર ઠાપણા પંચાયત, મુકામે યોજવાનું નિયત કરેલ છે.  
સહકાર, ઠાપણા

  
મુખ્ય ઈન્જનેર (પંચાયત) અને ઝોનિક અધીકારી,  
માર્ગ અને મકાન વિભાગ  
ગુજરાત સરકાર

C. E. (Pnn.) & A. S.  
R. & B. Dept.  
Sachivalaya, Gandhinagar.

### Consultation Photographs: Nana Dahisara Village



## Opinion Expressed and Impact Perception of the Community: NANA DAHISARA VILLAGE



Gujarat State Rural Road Development Agency (GSRRDA)

Community Consultation

### GSRRDA MMGSY (Under Financial Assistance from the AIBB) Community Consultation

Consultation No. : 02		Village : Nana Dahisara	
Nos. of Roads Involved, Name of the Road & Length in Km :		Date: 23/05/2017 (Sunday)	
1. Dahisara (Nana Dahisara) Vix Parsa Road		Time : 17:00 to 18:30 hrs.	
2. Kuntasi Bokdi Road. (4.0 Km) (2.20 Km)			
3. Bhanwar Bassara Road (3.0 Km)			
Meeting Location : Shri Ramji Mandi Panchayat : Nana Dahisara Nana Dahisara		Tehsil : Gandhinagar District : Gandhinagar	
Discussion led by : ESMF Consultant & R&BD (Panchayat) E-E			
Group description :			
Number of people : @ 38-40			
Positive impacts : 1) Reduce Travel time <sup>from</sup> one destination to another 2) Smooth riding quality 3) Help assist reducing chances of overtopping during rainy days (if culverts are provided)			
Adverse impacts : 1) Overspeeding of vehicle 2) Can increase chances of Man-Animal Collision			
Priorities : 1) Efficient and adequate drainage system for smooth passage of rain water 2) more culverts / c/d structures (Provision)			
Other comments : 1) Provision for Street lights on Panchayat roads 2) Provision for a Bus stand / Bus Shelter.			

Nana Dahisar

### Opinion Expressed and Impact Perception of the Community

\* 1 ગાંધીદેવર ગામમાં જવલની રાઈવર જળતા પડેલા ગામની ઉદાર આવેલ નદી નું પુલ નું કામ કરવા બાબત\*

→ વરસાદના સમયે જાણી માં ૪ થી ૧૦ ફુટ પાણી ભરાઈ આવે છે જેના કારણે કાવર-જવલમાં ગામ લોકોને મુશ્કેલી પડે છે. ગામ લોકોને પાણાના સેનિટાઈઝેશન કામ માં વિસ્મય પડે છે. વધુ ઉપરાંત કાંઈ આકર્ષક કારણો રાખી પડે સ્થાને વધુ સમય નડાવે છે.

\* ૨) ગામ માં મુખ્ય સ્ત્રોત ઉપર તેમજ અન્ય જોડોએમાં સ્ક્રીન લાઈટની સગવડ જરૂરી રૂપે લાભ લેવા બાબત વિનંતી.

૩) આરંભ સેક્ટર બિલ્ડિંગ - ગાંધીદેવર, અનુપમનગર - ગાંધીદેવર તેમજ વહાડર વાક - ગાંધીદેવર જેવી જોડોએમાં સી.સી. રોડ નું કામ લાઈટ રૂપે છે. તેના કારણે આમામાં ગામ લોકોને વધુ તકલીફ પડે છે. જોડોએમાં માફની ભરાઈ નથી છે. તેમજ વાકની વડે તે કામ પૂરું કરવા વિનંતી.

*A. B. Dahisar*

ural Road Development Agency (GSRRDA)

Community Consultation

Nana Dahisar

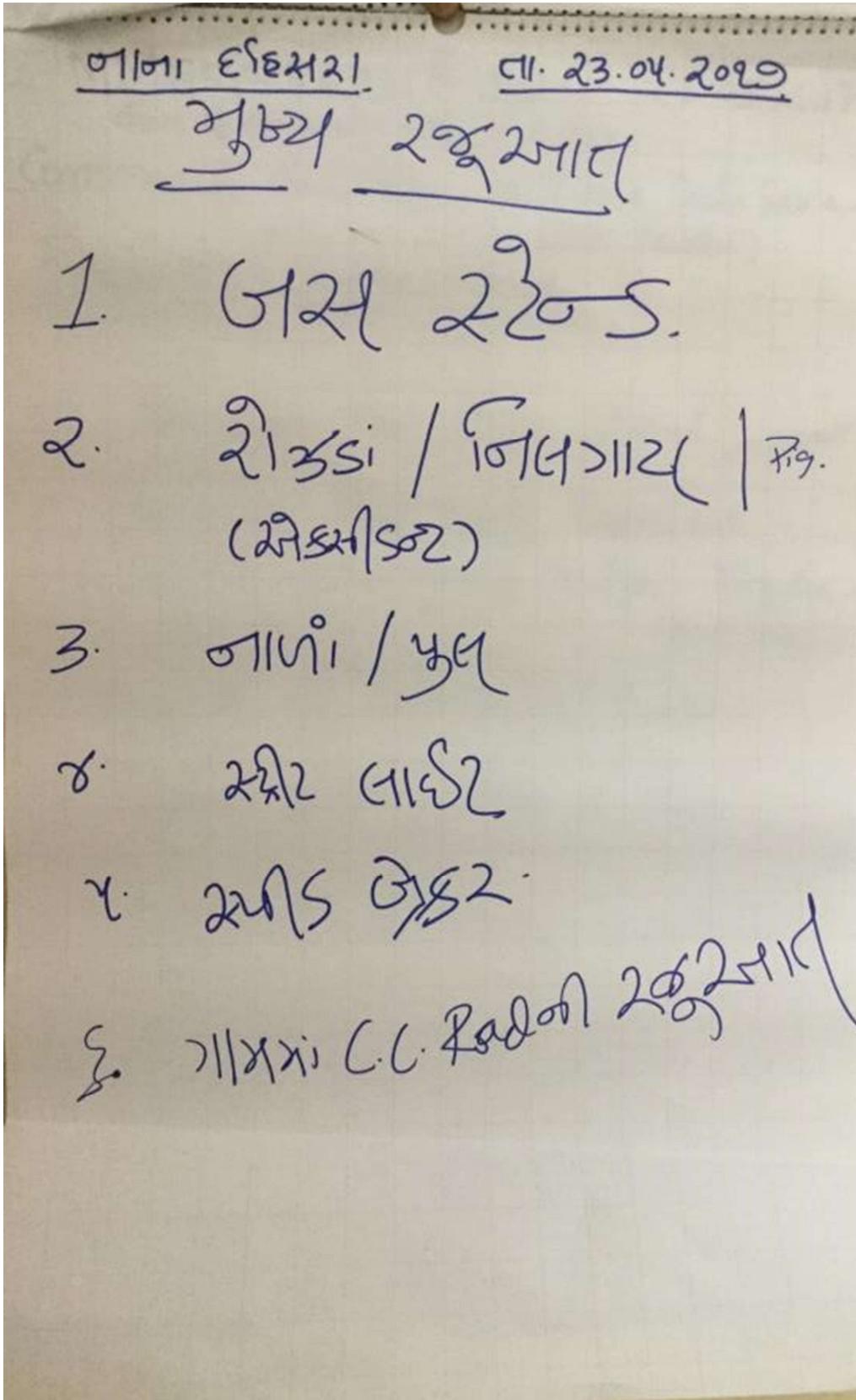
### Opinion Expressed and Suggested Negative Impacts by the Community

- 1) ગામની રાઈવે પેલે જાણા દરમિયાન ગામના પાણીને ઠાસ સ્ટેન્ડ ની સુરક્ષા હુમલોચ કરવા પડેલી.
- 2) સગાના ગામ ના નવાવની ઠાંસેલ બધા રવા ઓગ પાનગા હવા પિતેલી. નેજા કુતી સદી માંથ પાડવી તેમાં ભરી શકાય. નેજા ખેડુને તે પાડવી ને પિંચાઈ ના ઉપયોગ કરી શકે.
- 3) ઉનાળા દરમિયાન ગામ નિકીને ~~જા~~ પીવાના પાણી ની વધુ નક્કર પડી છે. તે ઉનાળા દરમિયાન ગામને સગાય સેવ પાડવી જાવી શકે તેની બચાવ કરવી.
- 4) અમારા ગામની જમીન વરમાલ આધારીત છે. અમારા જમીનના ગામ 'મોડપર' સુધી આપે <sup>જમીન</sup> ~~જમીન~~ ની કિંમતને ને પિંચાવવામાં આપે તે અમારા ગામની જમીન ના પિંચાવવી બચાવવા ધર શકે તે વહેલી નડી ગામને તે ઉનાળા ની સગાય પુરી પાડવી નેજા જમીન સુકે જમીન ને ભાગ મળે

અભિવ્યક્તિ

MMGSY - R&BD (Panchayat) 23.05.2017  
Govt. of Gujarat (AIIB Aided)  
Community Consultation at: Nana Dahi Sara  
(Dist: Morbi)  
Requests / Suggestions

1. Provisions For Bus Stand
2. Preventive Road Safety Measures  
(Sudden appearances of "Nilgai" - Rozda  
(local name))
3. Adequate c/d structures / Bridges
4. Street light / Solar on road
5. Speed Breaker (wherever required)
6. C.C. Road Surface within village



### Attendance Sheet of Participants: Nana Dahisara Village

Gujarat State Rural Road Development Agency (GSRRDA) Community Consultation

**MMGSY GSRRDA R & BD (PANCHYAT) GOVT. OF GUJARAT**  
**ATTENDANCE SHEET FOR COMMUNITY CONSULTATION**

Name of the Village <sup>ગામનું નામ</sup> **દાહિસરા (Nana Dahisara, Malu, Kabi)** Date: **23.05.2017**

Sr. No	Name	Sex M / F	Age	Occupation	Signature
1	રૂબેન સુભાષચંદ્રભાઈ ભાઈભાઈ	M	36		
2	મણિરૂબ સુભાષચંદ્રભાઈ ભાઈભાઈ	M	56		
3	મણિરૂબ સુભાષચંદ્રભાઈ ભાઈભાઈ	M	22		મણિરૂબ સુભાષચંદ્રભાઈ
4	મણિરૂબ સુભાષચંદ્રભાઈ ભાઈભાઈ	M			મણિરૂબ સુભાષચંદ્રભાઈ
5	સુભાષચંદ્રભાઈ ભાઈભાઈ	M			સુભાષચંદ્રભાઈ ભાઈભાઈ
6	સુભાષચંદ્રભાઈ ભાઈભાઈ	M			મણિરૂબ સુભાષચંદ્રભાઈ
7	સુભાષચંદ્રભાઈ ભાઈભાઈ	M			મણિરૂબ સુભાષચંદ્રભાઈ
8	મણિરૂબ સુભાષચંદ્રભાઈ ભાઈભાઈ	M			મણિરૂબ સુભાષચંદ્રભાઈ
9	સુભાષચંદ્રભાઈ ભાઈભાઈ	M			સુભાષચંદ્રભાઈ ભાઈભાઈ
10	સુભાષચંદ્રભાઈ ભાઈભાઈ	M			સુભાષચંદ્રભાઈ ભાઈભાઈ

Gujarat State Rural Road Development Agency (GSRRDA) Community Consultation

Sr. No	Name	Sex M / F	Age	Occupation	Signature
11	મણિરૂબ સુભાષચંદ્રભાઈ ભાઈભાઈ	M			મણિરૂબ સુભાષચંદ્રભાઈ
12	મણિરૂબ સુભાષચંદ્રભાઈ ભાઈભાઈ	M			મણિરૂબ સુભાષચંદ્રભાઈ
13	મણિરૂબ સુભાષચંદ્રભાઈ ભાઈભાઈ	M			મણિરૂબ સુભાષચંદ્રભાઈ
14	મણિરૂબ સુભાષચંદ્રભાઈ ભાઈભાઈ	M			મણિરૂબ સુભાષચંદ્રભાઈ
15	મણિરૂબ સુભાષચંદ્રભાઈ ભાઈભાઈ	M			મણિરૂબ સુભાષચંદ્રભાઈ
16	મણિરૂબ સુભાષચંદ્રભાઈ ભાઈભાઈ	M			મણિરૂબ સુભાષચંદ્રભાઈ
17	મણિરૂબ સુભાષચંદ્રભાઈ ભાઈભાઈ	M			મણિરૂબ સુભાષચંદ્રભાઈ
18	મણિરૂબ સુભાષચંદ્રભાઈ ભાઈભાઈ	M	26	Teacher	
19	મણિરૂબ સુભાષચંદ્રભાઈ ભાઈભાઈ	M			મણિરૂબ સુભાષચંદ્રભાઈ
20	મણિરૂબ સુભાષચંદ્રભાઈ ભાઈભાઈ	M			મણિરૂબ સુભાષચંદ્રભાઈ
21	મણિરૂબ સુભાષચંદ્રભાઈ ભાઈભાઈ	M			મણિરૂબ સુભાષચંદ્રભાઈ
22	મણિરૂબ સુભાષચંદ્રભાઈ ભાઈભાઈ	M			મણિરૂબ સુભાષચંદ્રભાઈ



Gujarat State Rural Road Development Agency (GSRRDA) Community Consultation

Sr. No	Name	Sex M/F	Age	Occupation	Signature
23	અનેશી ડાહ્યાભાઈ	M			અનેશી ડાહ્યાભાઈ
24	બાલકૃષ્ણ શાસ્ત્રીભાઈ	M			બાલકૃષ્ણ શાસ્ત્રીભાઈ
25	બાલકૃષ્ણ ભાઈભાઈ	M			બાલકૃષ્ણ ભાઈભાઈ
26	મણદેવ શાસ્ત્રીભાઈ	M			મણદેવ શાસ્ત્રીભાઈ
27	મણદેવ શાસ્ત્રી	M			મણદેવ શાસ્ત્રીભાઈ
28	કેશવજી મણદેવભાઈ	M			કેશવજી મણદેવભાઈ
29	મણદેવ શાસ્ત્રીભાઈ	M			મણદેવ શાસ્ત્રી
30	મણદેવ શાસ્ત્રીભાઈ	M			મણદેવ શાસ્ત્રીભાઈ
31	મણદેવ શાસ્ત્રીભાઈ	M			મણદેવ શાસ્ત્રીભાઈ
32	મણદેવ શાસ્ત્રીભાઈ	M			મણદેવ શાસ્ત્રીભાઈ
33	મણદેવ શાસ્ત્રીભાઈ	M			મણદેવ શાસ્ત્રીભાઈ
34	મણદેવ શાસ્ત્રીભાઈ	M			મણદેવ શાસ્ત્રીભાઈ

Gujarat State Rural Road Development Agency (GSRRDA) Community Consultation

Sr. No	Name	Sex M/F	Age	Occupation	Signature
35	મણદેવ શાસ્ત્રીભાઈ	M			મણદેવ શાસ્ત્રી
36	મણદેવ શાસ્ત્રીભાઈ	M			મણદેવ શાસ્ત્રીભાઈ
37	મણદેવ શાસ્ત્રીભાઈ	M			મણદેવ શાસ્ત્રીભાઈ
38	K.S. Bagul	M	50	Incharge F.E/ By E.E. R&B (Panchayat)	
39	Smit Thakkar	M	24	Trainee Engineer, Student (M.Tech) Transportation	
40	ANKUR MODI	M	40	Advisor - Safeguards ESMF Consultant, LAZA (NMGSSY-Gujarat)	
41	Pushpanthan	M	38	" "	
42					
43					
44					
45					
46					

### Site Observations- Bhavpar - Bagasri Road (Tehsil : Maliya, District : Morbi)

Visit Date: 23.05.2017



Road Construction Work Under Progress;  
Bituminous yet to lay



Existing Road condition



Completed section of road



Bituminous laying under progress

### Site Observations- Soladi - Baisagarh Road (Tehsil: Dhranagadhra, District: Surendranagar)

Visit Date: 24.05.2017



Consultation with Sarpanch at panchayat office





Encroachment of shoulder and side drain upto  
carriageway



Start point of road section



Few Sharp Curves existis, which  
recommended road safety measuers to be  
implimented / incorporated in design.



One BT Layer has just been laid providing  
smooth riding quality to the commuters

## Site Observations- Dhrangadhra – Rajpar – Kankavati Road (Tehsil: Dhranagadhra, District: Surendranagar)

Visit Date: 24.05.2017



Present surface of culvert is deteriorated and level of culvert is low and water overtopping occurs during rainy season



Considering the Dargah exists on the edge, CoI has been adjusted to accommodate the existing structure.



BT Layer has just been laid providing smooth riding quality to the commuters



Focus Group Discussion (FGD) near Temple, at Kankavati village

## Site Observations- Virendragadh – Sajjanpur Road (Tehsil: Dhrnagadhra, District: Surendranagar)

Visit Date: 24.05.2017



Start point of the Virendragadh Sajjanpur road, towards Sajjanpur



Quality of existing road surface



Vegetation in the form of plantation, bushes etc exists on both the sides, resulting in sudden appearance of animals on the road from nearby farms

**Site Observations- Dudhrej-Khodu-Velavdar Road (Tehsil : Wadhwan,  
District : Surendrnagar)**

**Visit Date: 24.05.2017**



Existing Deteriorated Condition of Bituminous road



Some section of the road is Cement concrete Road

## Site Observations- Mulchand - Dudhrej and Surendranagar Mulchand Rajpar Road (Tehsil: Wadhwan, District: Surendranagar)

Visit Date: 24.05.2017



Existing Deteriorated Condition of  
Earthen road



Existing Deteriorated Condition of Earthen  
road



Presence of school near the road section      Enough carriage way width now present  
Road passes through settlement, while condition of existing earthen road is deteriorated

## **Consultations at Fifth Schedule Areas**

## **Annexure 5-1h: Details of Community Consultation –BOPA VILLAGE**

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### **Prior Intimation Letter to Gram Panchayats Requesting to Arrange Community Consultation**

ગાં. ની. સે. ક્ર. ડી. (સં) (5) 2019  
 મુખ્ય ઈન્જિનિયર (પંચાયત) અને અધિક સચીવ શ્રી  
 માર્ગ અને મહાન વિભાગ  
 ગુજરાત ગ્રામ માર્ગ વિકાસ એજન્સી  
 નિર્માણમંડળ, ૨ લો માળ,  
 સેક્ટર - ૧૦,  
 ગાંધીનગર - ૩૮૨૦૧૦  
 તા. ૨૦/૦૫/૨૦૧૯

પ્રતિ  
 ગ્રામ પંચાયત / સરપંચ શ્રી  
 ગ્રામ : જામી  
 તાલુકો : કોરાડીયા ૨  
 જિલ્લો : કોરાડીયા ૨

વિષય : માર્ગ અને મહાન વિભાગ નાં પંચાયત વિભાગ હસ્તગત, ગુજરાત ગ્રામ માર્ગ વિકાસ ઓથોરિટી (GSRRDA) દ્વારા હાથ  
 પકડાયેલ ગુજરાત ગ્રામ માર્ગ ધોળના (મુખ્યમંડળી ગ્રામ સહ ધોળના - MMGSY) અંતર્ગત અગાઉ થી સુચિત લોક પરામર્શી  
 (Free, Prior, Informed Consultation FPIC) કયા સહાર માટે.

ઉપરોક્ત વિષય અન્વયે, જણાવવાનું કે, માર્ગ અને મહાન વિભાગ, ગુજરાત સરકાર નાં પંચાયત વિભાગ હસ્તગત, ગુજરાત  
 ગ્રામ માર્ગ વિકાસ ઓથોરિટી (GSRRDA) દ્વારા, ગુજરાત ગ્રામ માર્ગ ધોળના (મુખ્યમંડળી ગ્રામ સહ ધોળના  
 MMGSY), એથોરિટી ઈન્ફ્રાસ્ટ્રક્ચર ઈન્વેસ્ટમેન્ટ બેન્ક (AIB) નાં સાયબોગથી હાથ પકડાયેલ છે. આ ધોળના અંતર્ગત, ઓથોરિટી  
 વસ્તી પરાવતા અને આ અગાઉ પ્રયાનમંડળી ગ્રામ સહ ધોળના માં સમાવિષ્ટ ન હોય તેવા ગામડાં અને વસાહતો (રિમોન્સ) ને  
 જોડવા માં આવશે. જે માટે એથોરિટી ઈન્ફ્રાસ્ટ્રક્ચર ઈન્વેસ્ટમેન્ટ બેન્ક (AIB) ની નીતિ અને જોગવાઈઓ ને અનુસરીને, લોક  
 પરામર્શી તેમજ આદીવાસી / ૫ માં અનુસુચિત વિસ્તારો (Tribal Areas, 5<sup>th</sup> Schedule Areas) માં અગાઉ થી સુચિત  
 લોક પરામર્શી (Free, Prior, Informed Consultation FPIC) કરવું જરૂરી છે.

આ લોક પરામર્શીની કામગીરી ગુજરાત માં કરવામાં આવી રહી છે અને સમુદાય નાં મેમ્બરો અને સુચનો એકત્ર કરવામાં આવી  
 રહ્યા છે, કે જેથી કરીને તેનો ધોળના માર્ગ ની કામગીરી માં સમાવેશ કરી શકાય. GSRRDA - માર્ગ અને મહાન વિભાગ,  
 ગુજરાત સરકાર નાં પંચાયત વિભાગ વતી, તેમનાં પ્રતિનિધી - M/s LASA દ્વારા આ લોક પરામર્શ અને અગાઉ થી સુચિત  
 લોક પરામર્શી ની કામગીરી કરવામાં આવનાર છે. જે સમય, માર્ગ અને મહાન વિભાગ અને ઉડન એજન્સીનાં પ્રતિનિધિઓ,  
 આપશ્રી નાં વિસ્તાર નો સંપર્ક કરે, તો આ કામગીરી સખત ધોળ સહાર આપવા વિનંતી છે. આ લોક પરામર્શી આવતા  
 અહવાલિયા ની અંદર, તા. ૨૩ મે, ૨૦૧૭, પછી ધોળવાનું નિષ્પત્તિ કરેલ છે.

  
 મુખ્ય ઈન્જિનિયર (પંચાયત) અને અધિક સચીવ  
 માર્ગ અને મહાન વિભાગ  
 ગુજરાત સરકાર

C. E. (Pan.) & A. S.  
 R. & B. Dept.  
 Sachivalaya, Gandhinagar.

### Consultation Photographs: BOPA VILLAGE



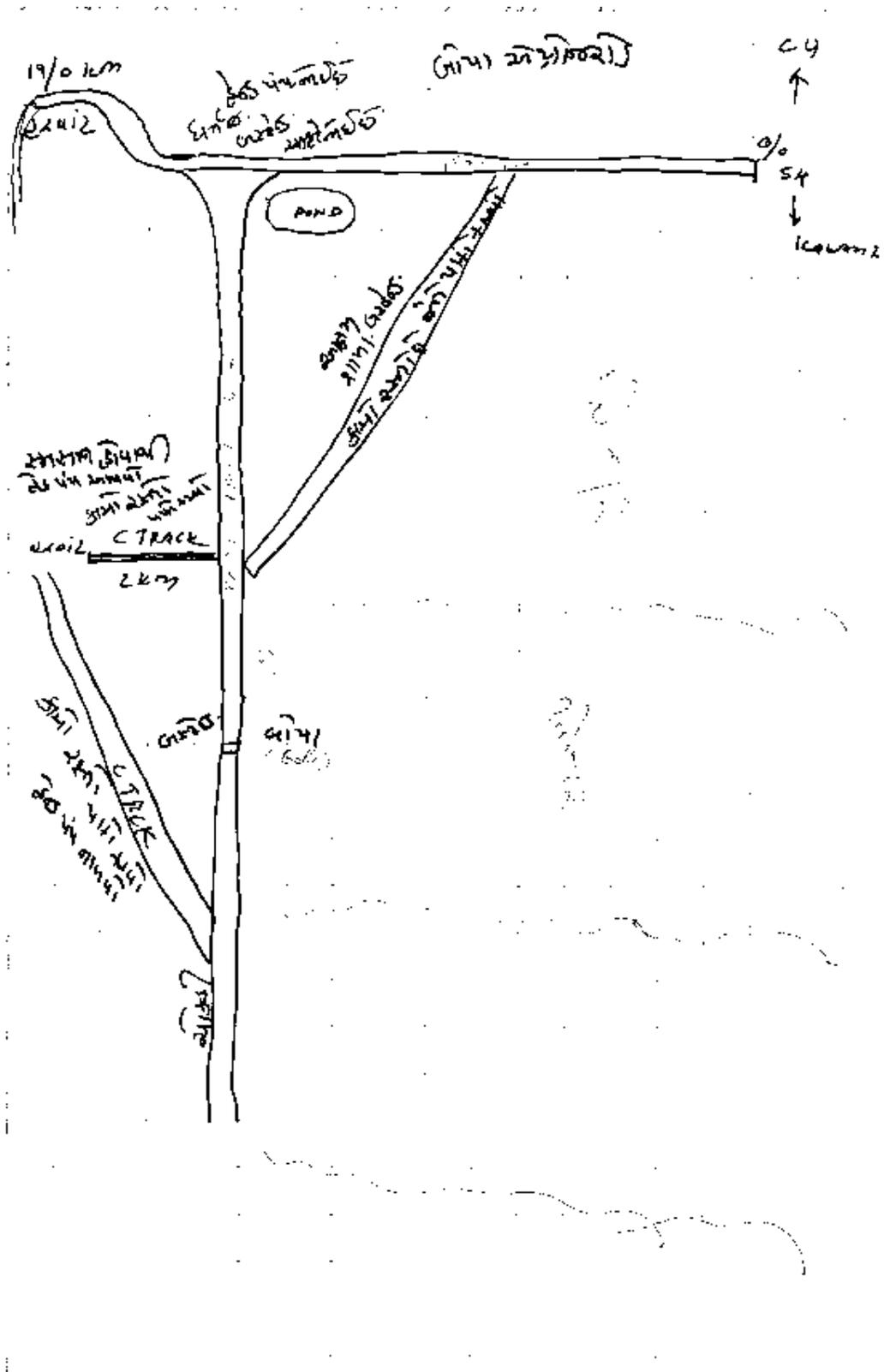
**Onsite Observations**

**Road Name:** Bopa Approach Road

**Status:** Resurfacing works of the road has been completed and shoulder-works are progressing



### Opinion Expressed and Impact Perception of the Community: BOPA VILLAGE



**Attendance sheet of Participants: BOPA VILLAGE**

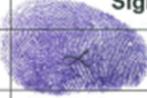
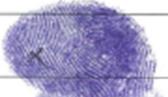
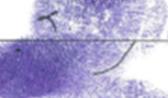
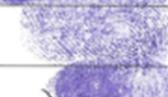
Gujarat State Rural Road Development Agency (GSSRDA)

Community Consultation

**MMGSY  
ATTENDANCE SHEET FOR PUBLIC CONSULTATION**

Name of the Village: Bhopa  
(Bhopa Approach Road)

Date: 23/05/2017

Sr. No	Name & Phone Number	Sex M / F Age /	Occupation	Signature
1	જીવનકાંત ડાહ્યાભાઈ	46.	બી.બી.	
2	નરસિંહભાઈ શાહુભાઈ	55	"	નરસિંહભાઈ
3	રાધિકા રમેશભાઈ સરપંચ		"	Ref
4	રાધિકા કિશોરભાઈ ડાહ્યાભાઈ	36	"	
5	રાધિકા કિશોરભાઈ સુભાષભાઈ	45	"	સુભાષભાઈ
6	રાધિકા ગણેશભાઈ અક્ષયભાઈ	50	"	
7	રાધિકા શંકરભાઈ સુભાષભાઈ	48	"	
8	રાધિકા રામચંદ્રભાઈ કુશલભાઈ	42	"	
9	" શાંતિકાંતભાઈ ભાસ્કરભાઈ	49.	"	
10	" ગણેશભાઈ જીતેશભાઈ	46	"	

Gujarat State Rural Road Development Agency (GSSRDA)

Community Consultation

**MMGSY  
ATTENDANCE SHEET FOR PUBLIC CONSULTATION**

Name of the Village: *Bhopu*

*Bhopu Approach Road*

Date: *22/06/2017*

Sr. No	Name & Phone Number	Sex M / F Age /	Occupation	Signature
1	<i>અરુણ ઠાકરભાઈ જાડજીભાઈ</i>	<i>♂ 35</i>	<i>બંધ</i>	<i>[Signature]</i>
2	<i>   ભીષ્મભાઈ બાલુભાઈ</i>	<i>30</i>	<i>  </i>	<i>[Signature]</i>
3	<i>   ભાઈભાઈ જીભાઈ</i>	<i>40</i>	<i>  </i>	<i>[Signature]</i>
4	<i>   બાલુભાઈ જીભાઈ</i>	<i>41</i>	<i>  </i>	<i>[Signature]</i>
5	<i>   અંજીભાઈ જીભાઈ</i>	<i>42</i>	<i>  </i>	<i>અરુણ અંજીભાઈ જીભાઈ</i>
6	<i>વનમણી રામસિંહભાઈ ભાભાઈ</i>	<i>50</i>	<i>  </i>	<i>[Signature]</i>
7	<i>   કાશીભાઈ જીભાઈ</i>	<i>51</i>	<i>  </i>	<i>[Signature]</i>
8	<i>   અંજીભાઈ કાશીભાઈ</i>	<i>18</i>	<i>  </i>	<i>અંજીભાઈ</i>
9	<i>અરુણ ભીરુભાઈ રામસિંહભાઈ</i>	<i>37</i>	<i>  </i>	<i>[Signature]</i>
10	<i>   અંજીભાઈ ભાભાઈ</i>	<i>40</i>	<i>  </i>	<i>[Signature]</i>

Gujarat State Rural Road Development Agency (GSSRDA)

Community Consultation

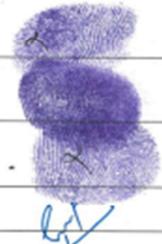
**MMGSY  
ATTENDANCE SHEET FOR PUBLIC CONSULTATION**

Name of the Village: Shohar

Shohar Approach Road

Date: 23/05/2017

Sr. No	Name & Phone Number	Sex M / F Age /	Occupation	Signature
1	ભાગ્ય શેઠજીભાઈ શુભભાઈ	૨૫	બી.બી.	શેઠજીભાઈ શુભભાઈ
2	રશ્મી સુભાષી રાજેશ	૧૪	"	રશ્મી રશ્મી રાજેશ
3	રશ્મી રશ્મી રાજેશ	૨૧	બી.બી.	રશ્મી રાજેશ
4	" અરુણ નિરુજભાઈ	૩૫	"	અરુણ નિરુજભાઈ
5	રશ્મી. રશ્મી રાજેશ	૩૦	"	રશ્મી રાજેશ
6	રશ્મી રશ્મી રાજેશ	૩૫	"	Juhel A. Patel
7	રશ્મી રાજેશ	૫૧	"	રશ્મી રાજેશ
8	રશ્મી રાજેશ	૫૧	"	
9	રશ્મી રાજેશ	૫૫	"	
10	રશ્મી રાજેશ	૫૦		
કુલ ૧૦		૫૨	DEE	



Gujarat State Rural Road Development Agency (GSSRDA)

Community Consultation

**MMGSY  
ATTENDANCE SHEET FOR PUBLIC CONSULTATION**

Name of the Village:

Date:

Sr. No	Name & Phone Number	Sex M / F Age /	Occupation	Signature
1	શ્રીમતી સુરેશ લાલ રામસોની	40 m	ખેતી	
2	શ્રી વિઠ્ઠલભાઈ રામાભાઈ	30 m	ખેતી	શ્રી વિઠ્ઠલ. રા. ૨૧૮૦૧
3	શ્રી નંદુભાઈ ભીમજીભાઈ	41 m	ખેતી	T
4	શ્રી રામસોનીભાઈ ભલજીભાઈ	45 m	ખેતી	X
5	શ્રી સુમલજી રમેશ ભાઈ	40 F	ખેતી	સુમલજી રમેશ ૨૧૧૨
6	શ્રી રામભાઈ ભલજીભાઈ	50 m	ખેતી	α
7	શ્રી રમેશભાઈ સુરેશભાઈ	30 m	ખેતી	X
8	શ્રી રમેશભાઈ ભુવેશભાઈ	53 m	ખેતી	T
9	શ્રી નંદુભાઈ ભલજીભાઈ	50 m	ખેતી	નંદુભાઈ ભલજીભાઈ
10	શ્રી ભગતભાઈ બાલજીભાઈ	24 m	ખેતી	ભગતભાઈ બાલજીભાઈ
11	શ્રી. આર. મીરલા 50.4344	53 m	Bus-Job	
	શ્રી. સુ. ૨૧૮૦૧ 50 મંત્રી	28 m	"	

Gujarat State Rural Road Development Agency (GSSRDA)

Community Consultation

**MMGSY**  
**ATTENDANCE SHEET FOR PUBLIC CONSULTATION**

Name of the Village: *Bhopra*

Date: *23/05/2017*

Sr. No	Name & Phone Number	Sex M / F Age /	Occupation	Signature
1	<i>DR. K. N. Jayan</i>	<i>M/44</i>	<i>Social specialist</i>	<i>[Signature]</i>
2	<i>Hitesh Patel</i>	<i>M/29</i>	<i>Engineer</i>	<i>[Signature]</i>
3	<i>P. ARUNA</i>	<i>P/41</i>	<i>Subyunct specialist</i>	<i>[Signature]</i>
4				
5				
6				
7				
8				
9				
10				

## Annexure 5-1i: Details of Community Consultation –Ukhalvaant Village

### Prior Intimation Letter to Gram Panchayats Requesting to Arrange Community Consultation

મું. પી. અને મહાન વિભાગ (સ) ૨૦૧૭  
મુખ્ય ઈન્જિનેર (પંચાયત) અને અધિક સચીવ શ્રી  
માર્ગ અને મહાન વિભાગ  
ગુજરાત ગ્રામ્ય માર્ગ વિકાસ એજન્સી  
નિર્માણવન, ૨ શ્લોક માળ,  
સેક્ટર-૧૦,  
ચાંપૈનવર-૩૮૨૦૧૦  
તા. ૧૯/૦૨/૨૦૧૭

પ્રતિ  
ગ્રામ પંચાયત / સરખંચ શ્રી રૂપકિંત્લાલ ત્રિસંગાણી ૨૧૬૫,  
ગ્રામ : દાદાદા/ભાતમુંડ (૬૫૦૬૨૩૧૪૫)  
તાલુકો : ઘાઘીયા  
જિલ્લો : ઘાઘીયા

વિષય : માર્ગ અને મહાન વિભાગ નાં પંચાયત વિભાગ હસ્તગત, ગુજરાત ગ્રામ્ય માર્ગ વિકાસ ઓથોરિટી (GSRDA) દ્વારા હાથ  
પરપેથ ગુજરાત ગ્રામ્ય માર્ગ પોજના (મુખ્યમંત્રી ગ્રામ સડક પોજના - MMGSY) અંતર્ગત અગાઉ થી સુચિત ઘોડક પરમર્શી  
(Free, Prior, Informed Consultation FPIC) કરવા સહકાર આપવો.

ઉપરોક્ત વિષય અન્વયે, જણાવવાનું કે: માર્ગ અને મહાન વિભાગ, ગુજરાત સરકાર નાં પંચાયત વિભાગ હસ્તગત, ગુજરાત  
ગ્રામ્ય માર્ગ વિકાસ ઓથોરિટી (GSRDA) દ્વારા, ગુજરાત ગ્રામ્ય માર્ગ પોજના (મુખ્યમંત્રી ગ્રામ સડક પોજના  
MMGSY), એશીયન ઈન્ફ્રાસ્ટ્રક્ચર ઈન્વેસ્ટમેન્ટ બેન્ક (AIIB) નાં સહયોગથી હાથ પરપેથ છે. આ પોજના અંતર્ગત, ઓછી  
વરતી ધરાવતા અને આ અગાઉ પ્રધાનમંત્રી ગ્રામ સડક પોજના માં સમાવિષ્ટ ન થોય તેવા ગામડાં અને વસાહતો (સેન્સિટિવ) ને  
જોડવા માં આવશે. જે માટે એશીયન ઈન્ફ્રાસ્ટ્રક્ચર ઈન્વેસ્ટમેન્ટ બેન્ક (AIIB) ની નીતિ અને જોખવાઈઓ ને અનુસરીને, ઘોડક  
પરમર્શી તેમજ આડીવાસી / ૫ માં અનુસુચિત વિસ્તારો (Tribal Areas, 5<sup>th</sup> Schedule Areas) માં અગાઉ થી સુચિત  
ઘોડક પરમર્શી (Free, Prior, Informed Consultation FPIC) કરવું જરૂરી છે.

આ ઘોડક પરમર્શીની કામગિરી ગુજરાત માં કરવામાં આવી રહી છે અને સમુદાય નાં મંતવ્યો અને સુચનો એકત્ર કરવામાં આવી  
રહ્યા છે, કે જેથી કસીને તેનો પોજના માર્ગ ની કામગિરી માં સમાવેશ કરી શકાય. GSRDA - માર્ગ અને મહાન વિભાગ,  
ગુજરાત સરકાર નાં પંચાયત વિભાગ વતી, તેમના પ્રતિનિધી - M/s LASA દ્વારા આ ઘોડક પરમર્શી અને અગાઉ થી સુચિત  
ઘોડક પરમર્શી ની કામગિરી કરવામાં આવનાર છે. જે સમય, માર્ગ અને મહાન વિભાગ અને ઈકન એજન્સીનાં પ્રતિનિધિઓ,  
આપણી નાં વિસ્તાર નો સંપર્ક કરે, તો આ કામગિરી સમય સહકાર આપવા વિનવતી છે. આ ઘોડક પરમર્શી આપના  
અકવાડિયા ની અંદર, તા. ૨૩ મે, ૨૦૧૭, પછી પોજનાનું નિષ્પત્તિ કરેલ છે.

૨૫/૦૨/૧૭

  
મુખ્ય ઈન્જિનેર (પંચાયત) અને અધિક સચીવ  
માર્ગ અને મહાન વિભાગ  
ગુજરાત સરકાર

C. E. (Pan.) & A. S.  
R. & B. Dept.  
Sachivalaya, Gandhinagar.

### Consultation Photographs: Ukhalvaant Village



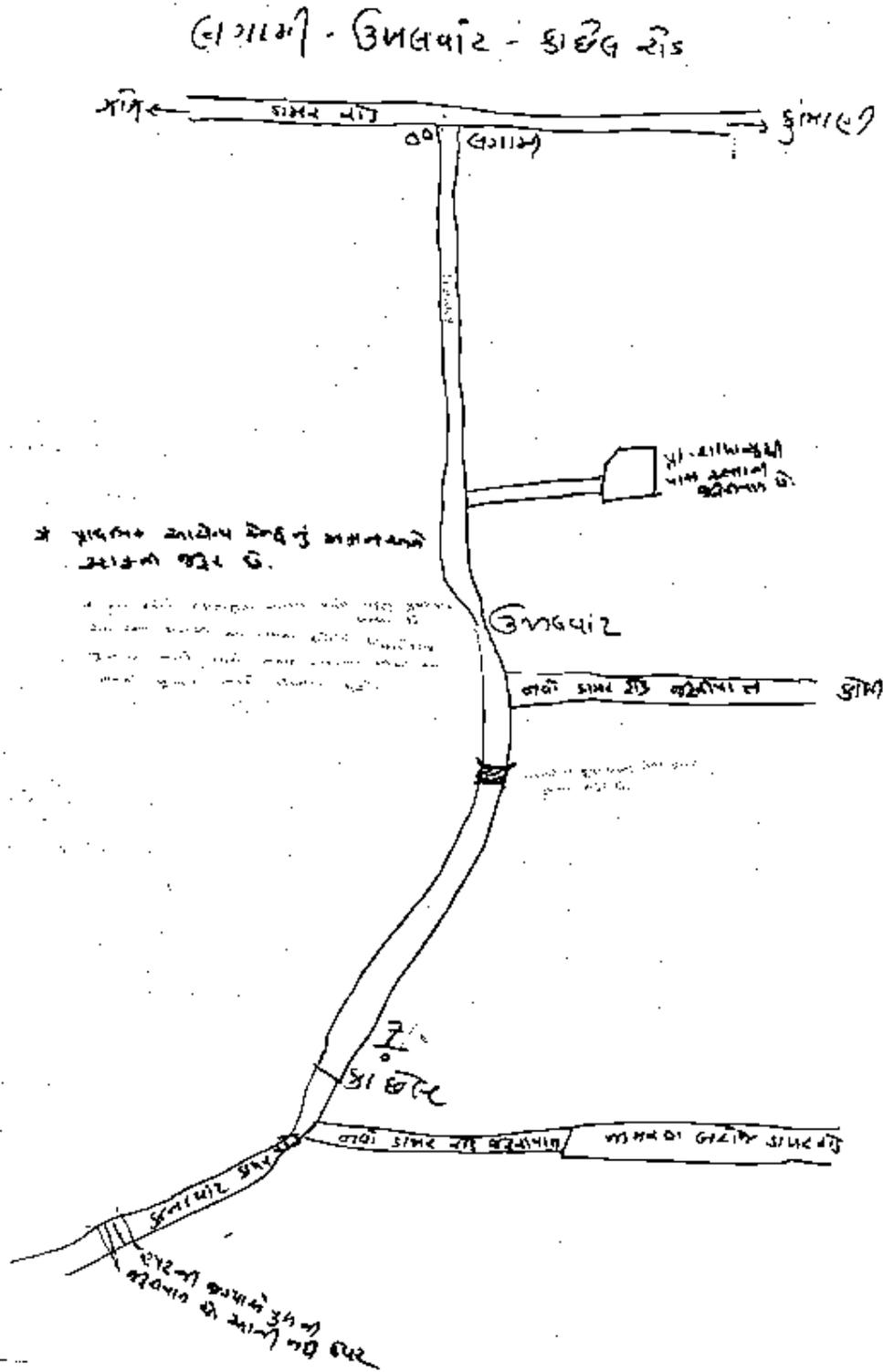
**On-site Observations**

**Road Name:** Lagami –Ukhalvaant- Kanchel Road

**Status:** Road is under construction



### Opinion expressed and Impact Perception of the Community: UKHALVAANT VILLAGE



**Attendance Sheet of Participants: UKHALWANT VILLAGE**

Gujarat State Rural Road Development Agency (GSSRDA)

Community Consultation

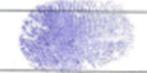
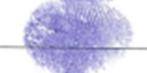
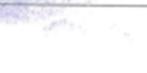
①

MMGSY

**ATTENDANCE SHEET FOR PUBLIC CONSULTATION**

Name of the Village: *Ukhalwant village*

Date: *23/05/2017*

Sr. No	Name & Phone Number	Sex M / F Age /	Occupation	Signature
1	<i>રામી દાસરામિંગા દાસરા</i>	<i>35</i>	<i>ખેતી</i>	
2	<i>રામી દાદિક મોદલ</i>	<i>20</i>	<i>ખેતી</i>	
3	<i>રામી મુકમ ઉદાલા</i>	<i>25</i>	<i>ખેતી</i>	
4	<i>રામી રામસિંગા દાસરામિંગા</i>	<i>25</i>	<i>ખેતી</i>	
5	<i>રામી ભુવસિંગા દેસા</i>	<i>25</i>	<i>ખેતી</i>	
6	<i>રામી ભેમલા કુદુ</i>	<i>30</i>	<i>ખેતી</i>	
7	<i>ભામુ કુલુ દાસરામિંગા</i>	<i>35</i>	<i>ખેતી</i>	
8	<i>ભામુ પાલસીયા જ્ઞાલસીયા</i>	<i>30</i>	<i>ખેતી</i>	
9	<i>ભામુ ભાલસીયા કોલસીયા</i>	<i>30</i>	<i>ખેતી</i>	
10	<i>રામી કલસી દાસરામિંગા</i>	<i>25</i>	<i>ખેતી</i>	

Gujarat State Rural Road Development Agency (GSSRDA)

Community Consultation

**MMGSY  
ATTENDANCE SHEET FOR PUBLIC CONSULTATION**

Name of the Village: Ukhalwad

Date: 23/05/2017

Sr. No	Name & Phone Number	Sex M / F Age /	Occupation	Signature
1	રવિ વા રવિ ગાંધી તરવણી	૪૨	સા રવણી	રવિ ગાંધી
2	નામક કુંડારીયા ભદ્ર	૩૦	ખેતી	
3	રામણ ભાઈભાઈ પિયળ	૩૦	ખેતી	રામણ ભાઈભાઈ પિયળ
4	રામણ દલમિયા પિયળ	૨૬	ખેતી	
5	રામણ ગુરમિયા પારખી	૨૦	ખેતી	
6	રામણ મહુડીયા કરમીયા	૨૬	ખેતી	
7	નામક પુલમિયા પિયળ	૩૦	ખેતી	
8	નામક લાલમિયા નાલમિયા	૩૦	ખેતી	
9	નામક કરમીયા માલિયા	૩૦	ખેતી	
10	નામક પિયળભાઈ મોગલા	૩૦	ખેતી	

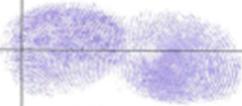
Gujarat State Rural Road Development Agency (GSSRDA)

Community Consultation

**MMGSY  
ATTENDANCE SHEET FOR PUBLIC CONSULTATION**

Name of the Village: Ukhalvamb

Date: 23/05/2017

Sr. No	Name & Phone Number	Sex M / F Age /	Occupation	Signature
1	સીદ્ધી જી. સી.	52	DEE Panch (R.B.)	
2	જી સીદ્ધીક સીદ્ધી સ.બ.	53	S.D. Panchayat R.B. Subdiv Chhotavada	
3	જી. સી. સી. સી. સ.બ.	28	Panchayat R.B. Chhotavada	
4	સીદ્ધી સીદ્ધીસીદ્ધી સ.	35		
5	સીદ્ધી સીદ્ધીસીદ્ધી સ.	45	બેની	સીદ્ધીસીદ્ધી સ.
6	સીદ્ધી સીદ્ધી સીદ્ધી સ.	20	બેની	R. D. Rethra
7	સીદ્ધી સીદ્ધી સીદ્ધી સ.	35	બેની	સીદ્ધીસીદ્ધી સ.
8	સીદ્ધી સીદ્ધીસીદ્ધી સ.	40	બેની	
9	સીદ્ધી સીદ્ધીસીદ્ધી સ.	35	બેની	
10	સીદ્ધી સીદ્ધીસીદ્ધી સ.	30	બેની	

Gujarat State Rural Road Development Agency (GSSRDA)

Community Consultation

**MMGSY  
ATTENDANCE SHEET FOR PUBLIC CONSULTATION**

Name of the Village: *Vkhalvat*

Date: *23/05/2012*

Sr. No	Name & Phone Number	Sex M / F Age /	Occupation	Signature
1	<i>Sachin . R. Dhetroi</i>	<i>33</i>	<i>Constriusion (Job)</i>	<i>Sachin 9825027109</i>
2				
3				
4				
5				
6				
7				
8				
9				
10				

Gujarat State Rural Road Development Agency (GSSRDA)

Community Consultation

**MMGSY**  
**ATTENDANCE SHEET FOR PUBLIC CONSULTATION**

Name of the Village: *Ukhalvan*

Date: *23/05/2022*

Sr. No	Name & Phone Number	Sex M / F Age /	Occupation	Signature
1	<i>DR. K. N. Jagan</i>	<i>M/44</i>	<i>General Specialist LEA Accountant.</i>	<i>[Signature]</i>
2	<i>Hitesh Patel</i>	<i>M/29</i>	<i>Engineer</i>	<i>[Signature]</i>
3	<i>P. ARUNA</i>	<i>F/41</i>	<i>Safeguard specialist</i>	<i>[Signature]</i>
4				
5				
6				
7				
8				
9				
10				



## Annexure 5-1j: Details of Community Consultation –Muldhar Village

### Prior Intimation Letter to Gram Panchayats Requesting to Arrange Community Consultation

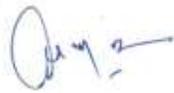
જા. ની. સ્ત્ર. ક્ર. ડી. (સં) (ક) ૨૦૧૭  
મુખ્ય ઈજનેર (પંચાયત) અને અધિક સચીવ શ્રી  
માર્ગ અને મકાન વિભાગ  
ગુજરાત ગ્રામ્ય માર્ગ વિકાસ એજન્સી  
નિર્માણભવન, ૨ જો માળ,  
સેક્ટર-૧૦,  
ગાંધીનગર-૩૮૨૦૧૦  
તા. ૨૯/૦૫/૨૦૧૭

પ્રતિ સંબંધિત ગ્રામીણ સંસ્થા  
ગ્રામ પંચાયત / સરપંચ શ્રી  
ગ્રામ : ઠાલદર  
તાલુકો : ભાંડેલી  
જિલ્લો : જોડા જિલ્લો

વિષય : માર્ગ અને મકાન વિભાગ નાં પંચાયત વિભાગ હસ્તગત, ગુજરાત ગ્રામ્ય માર્ગ વિકાસ ઓથોરીટી (GSRRDA) દ્વારા હાથ  
પરપેલ ગુજરાત ગ્રામ્ય માર્ગ યોજના (મુખ્યમંત્રી ગ્રામ સડક યોજના - MMGSY) અંતર્ગત અગાઉ થી સૂચિત લોક પરામર્શ  
(Free, Prior, Informed Consultation FPICon) કરવા સહકાર માંગત.

ઉપર્યુક્ત વિષય અન્વયે, જણાવવાનું કે; માર્ગ અને મકાન વિભાગ, ગુજરાત સરકાર નાં પંચાયત વિભાગ હસ્તગત, ગુજરાત  
રાજ્ય ગ્રામ્ય માર્ગ વિકાસ ઓથોરીટી (GSRRDA) દ્વારા, ગુજરાત ગ્રામ્ય માર્ગ યોજના (મુખ્યમંત્રી ગ્રામ સડક યોજના  
MMGSY), એશીયન ઈન્ફ્રાસ્ટ્રક્ચર ઈન્વેસ્ટમેન્ટ બેન્ક (AIB) નાં સહયોગથી હાથ પરપેલ છે. આ યોજના અંતર્ગત, ઓછી  
વસ્તી ધરાવતા અને આ અગાઉ પ્રધાનમંત્રી ગ્રામ સડક યોજના માં સમાવિષ્ટ ન હોય તેવા ગામડાં અને વસાહતો (સેમ્બેન્સ) ને  
જોડવા માં આવશે. જે માટે એશીયન ઈન્ફ્રાસ્ટ્રક્ચર ઈન્વેસ્ટમેન્ટ બેન્ક (AIB) ની નીતિ અને જોગવાઈઓ ને અનુસરીને, લોક  
પરામર્શ તેમજ આદીવાસી / ૫ માં અનુસુચિત વિસ્તારો (Tribal Areas, 5<sup>th</sup> Schedule Areas) માં અગાઉ થી સૂચિત  
લોક પરામર્શ (Free, Prior, Informed Consultation FPICon) કરવું જરૂરી છે.

આ લોક પરામર્શની કામગિરી ગુજરાત માં કરવામાં આવી રહી છે અને સમુદાય નાં મતઓ અને સૂચનો એકત્ર કરવામાં આવી  
રહ્યા છે, કે જેથી કરીને તેનો યોજના માર્ગ ની કામગિરી માં સમાવેશ કરી શકાય. GSRRDA - માર્ગ અને મકાન વિભાગ,  
ગુજરાત સરકાર નાં પંચાયત વિભાગ વતી, તેમનાં પ્રતિનીધી - M/s LASA દ્વારા આ લોક પરામર્શ અને અગાઉ થી સૂચિત  
લોક પરામર્શ ની કામગિરી કરવામાં આવનાર છે. જે સભ્ય, માર્ગ અને મકાન વિભાગ અને ઉક્ત એજન્સીનાં પ્રતિનિધિઓ,  
આપથી નાં વિસ્તાર નો સંપર્ક કરે, તો આ કામગિરી સમગ્ર યોગ્ય સહકાર આપવા વિનંતી છે. આ લોક પરામર્શ આવતા  
અઠવાડિયા ની અંદર, તા. ૨૩ મે, ૨૦૧૭, પછી યોજવાનું નિયત કરેલ છે.



  
મુખ્ય ઈજનેર (પંચાયત) અને અધિક સચીવ  
માર્ગ અને મકાન વિભાગ  
ગુજરાત સરકાર

નોં. નં. ૧૪૭૧/૬૦૧૫

C. E. (Pan.) & A. S.  
R. & B. Dept.  
Sachivalaya, Gandhinagar.

### Focus Group Discussion Photographs: MULDHAR VILLAGE



### On-Site Observations

Road Name: Muldhar-Timbi Road





Gujarat State Rural Road Development Agency (GSSRDA)

Community Consultation

**MMGSY  
ATTENDANCE SHEET FOR PUBLIC CONSULTATION**

Name of the Village: *Muldhara*

Date: *23/05/2017*

Sr. No	Name & Phone Number	Sex M / F Age /	Occupation	Signature
1	<i>DR. K. N. JAYAN</i>	<i>M / 44</i>	<i>social specialist</i>	<i>[Signature]</i>
2	<i>Hitesh Patel</i>	<i>M / 29</i>	<i>Engineer</i>	<i>[Signature]</i>
3	<i>P-ARUNA</i>	<i>F / 41</i>	<i>safeguard specialist</i>	<i>[Signature]</i>
4				
5				
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## Request letter from Project Authority (R&BD-Panchayat) to Tribal Department

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Chief Executive Officer  
GSRRDA  
2<sup>nd</sup> Floor, Nirman Bhavan,  
Sector - 10 A,  
Gandhinagar - 382010  
079 23256877 - 78  
Date : 19.05.2017

To,  
The Commissioner / Dy Commissioner  
Tribal Development Department  
Birs Munda Bhavan, Sector 10 / A,  
Gandhinagar t- 382 010

**Subject:** Free Prior Informed Consultation (FPICon) for Asian Infrastructure Investment Bank (AIIB) funded Gujarat Rural Roads Project - Mukhya Mantri Gram Sadak Yojana (MMGSY) to improve rural roads connective under Gujarat Road Rural Development Agency (GSRRDA) - Roads and Building Department (Panchyat), Government of Gujarat.

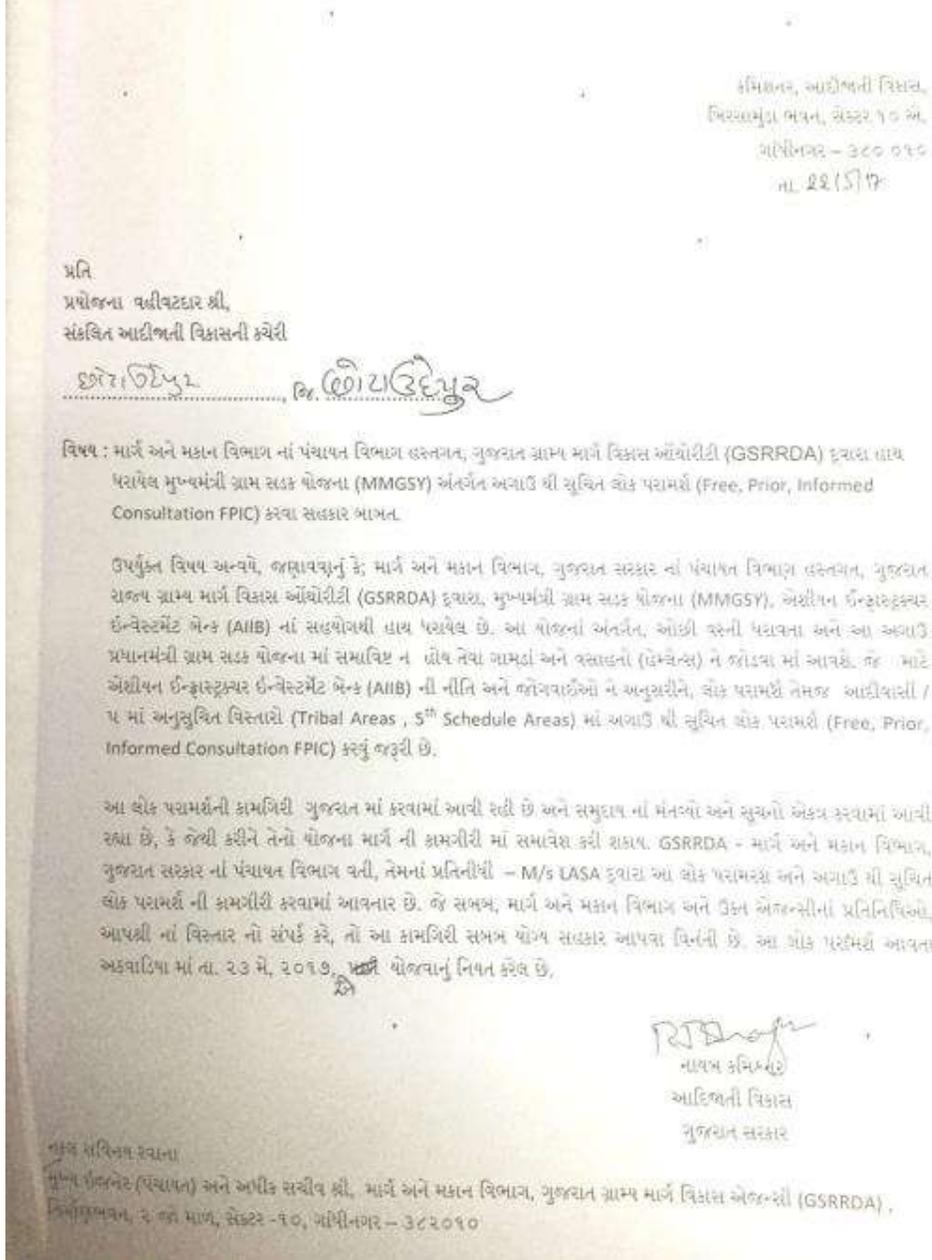
Refer to the above mentioned subject, it is to state that Government of Gujarat (GOG) through Roads and Building department (R&BD) extending its rural road network to the villages and habitation, hemlets through its new flagship program Mukhya Mantri Gram Sadak Yojana (MMGSY). Under MMGSY, those habitations will be connected which were not previously covered under Pradhan Mantri Gram Sadak Yojana (PMGSY). MMGSY aims at improving the rural road connectivity (by providing all weather connectivity) to 1,060 villages in all the 33 districts in Gujarat state benefitting about 8 million people. The primary beneficiaries are the people living in the rural areas who are the users of the rural roads.

Nos. of corridors - sub project roads passes through Tribal Districts and Tribal Tehsils , 5<sup>th</sup> Schedule areas. Free Prior Informed Consultation (FPICon) is required to be carried out on selected corridors / regions on sample basis in order to capture the views and suggestions from the community regarding the proposed sub project interventions taken up in respective vicinity under MMGSY. M/S LEA Associates South Asia Pvt. Ltd. (LASA) will be carrying out the FPICon on behalf of GSRRDA R & BD (Panchyat), Govt. of Gujarat. We request from Gram Panchyat and Officers - Coordinators at regional Tribal Development Offices for facilitation the Consultation including FPIC, scheduled during next week starting 23<sup>rd</sup> May.

Chief Executive Officer  
Gujarat Road Rural Development Agency (GSRRDA)  
Roads and Building Department (Panchyat),  
Government of Gujarat

C. E. (Pan.) & A. S.  
R. & B. Dept.  
Sachivalaya, Gandhinagar.

**From Office of Commissioner Tribal Department to Project Co-ordinator, Regional Tribal  
Development Office, Chota udepur**



### Annexure 6-1: Summary of the Environmental and Social Impact Assessment of the Project Roads

Sl. No.	District	Taluka	Name of Road	Environmental and Social Impacts											Remarks			
				Topography	Hydrology	Air	Noise	Impact on vegetation (Avenue Trees)	Animal Crossings	Ecological sensitive areas	Settlements	Community Properties	Accident zone/ Safety hazard	land / Encroachment		Public Utility		
1	Gandhinagar	Gandhinagar North	Uvarsad to Sargasan	Impact due to construction of the road on cart-track		Likely impact on Air Quality during construction (Including those associated with Hot Mix Plant and Crushers)	Likely impact during construction (Including those associated with Hot Mix Plant and Crushers)	Vegetation on either side, along few stretches	Occasional crossing of Nilgai ( <i>Rozda</i> - Local Name)		Road Passes through Settlement Areas. Adequate width is available along settlement area	Widening / Resurfacing / Strengthening within Town Section. Minor impact on religious structure which is located on the edge of shoulder	Unmanned Railway Crossing exists	Temporary impact on agricultural land due to improvisation of shoulders	No impact on utilities, as proposed treatment is resurfacing on existing road	Unmanned Railway Crossing, hence appropriate safety provision required. Community suggested removing the Bushes / Vegetation on both the sides of the road.		
2			Uvarsad - Ranjitpura	Trenches due to raised embankment														
3			Uvarsad - Tarapur															
4			Uvarsad - Kolavada															
5			Uvarsad - ONGC to Karsanpura Road															
6			Vasan - Rupal	Trenches due to raised embankment														
7			Rupal - Golthara															
8			Unava - Mubarkpur	Trenches due to raised embankment	Existing culverts to be heightened due to water influx during rainy season													
9			Unava - Pidharda															
10			Unava (Gogaji Farm) - Sharda Farmasi – Pethapur Mahudi joining road															
11	Gandhinagar South	Alampur - Dashela		Trenches due to raised embankment. Adjacent approaches to farm-land, community centre disturbed		Likely impact during construction (Including those associated with Hot Mix Plant and Crushers)		Vegetation on either side, along few stretches	Occasional crossing of Nilgai ( <i>Rozda</i> - Local Name)		No impact on settlements along the roads, as proposed treatment is resurfacing on existing road	No impact on Community Properties along the roads, as proposed treatment is resurfacing on existing road						
12			Palaj - Rampura		Construction related use of water from community pond											Water body: Require guidelines on use of community water bodies located along road side		
13			Lekavada to Omkar (International) School Joining to Alampur Dashela Road	Few sections impacted due to construction of the road on cart track				Impact on School				Road Passes through Settlement Area and Schools. Adequate width is available along settlement areas	Minor impact on water kundi (water storage facility - abandoned structure)	Project-road merges with a higher-order road	Temporary impact on agricultural land due to improvisation of road embankments		Noise : Scheduling of Civil Works Construction activities in-line with School Timings	

Sl. No.	District	Taluka	Name of Road	Environmental and Social Impacts											Remarks	
				Topography	Hydrology	Air	Noise	Impact on vegetation (Avenue Trees)	Animal Crossings	Ecological sensitive areas	Settlements	Community Properties	Accident zone/ Safety hazard	land / Encroachment		Public Utility
14	Jamnagar	Jodiya	CH 06 (Coastal Highway No. 06) to Limbuda	Raised road-embankment and consequent impact	Likely Impact, as the existing culverts to be heightened to overcome overtopping during rainy season	Likely impact on Air Quality due to Civil Works Construction Activity (Including those associated with Hot Mix Plant HMP and Crushers) during Construction. After Construction, Impact will be reduced gradually	Likely impact during construction (Including those associated with Hot Mix Plant and Crushers)			Road located near Coastal Area	No impact on settlements along the roads, as proposed treatment is resurfacing on existing road	No impact on Community properties	Guard Stone in Poor Condition. Road merging with Coastal Highway		Electric Poles on the edge of the shoulder	
15			Limbuda - Vavdi Road	Construction of the road on cart track and resultant impact on Topography			Impact on School	Vegetation on either side, along few stretches					Minor encroachment (few locations by extended farm-land) into the shoulder, Further, RCC / Brick Ramps from the residential properties encroaches the road			
16			Hadiyana - Vavdi; & Vavdi to Nesda	Few sections impacted due to construction of the road on cart track											Electrical Poles on the edge of the shoulder	
17	Morbi	Maliya	Kuntasi - Bokdi	Impact due to construction of the road on cart track		Likely impact on Air Quality due to Civil Works Construction Activity (Including those associated with Hot Mix Plant HMP and Crushers) during Construction. During the post construction stage the impact is reversible	Likely impact during construction (Including those associated with Hot Mix Plant and Crushers)	Vegetation on either side, along few stretches	Frequent crossing of Nilgai ( <i>Rozda</i> - Local Name)	Road located near Coastal Area. Navlakhi Port is about 10 km away. Mangrove vegetation exists in surrounding region	Road Passes through Settlement Areas. Width is insufficient along settlement areas, and treatment will be carried out within available width	Impact on a sewage pit located on edge of the shoulder			Sewage pit on edge of the shoulder	Project road location is near to coastal area.
18			Nana Dahirsara to Virpada	Likely impact on Topography, as trenches and approach roads to be levelled												Frequent crossing of wild animals and consequent accident reported. Safety provision to be included in the project design
19			Bhavpar Bagasari	Topography impacted as trenches and approach roads has been levelled	Construction related impact on water body / community pond	Accumulation of dust during construction							Blind Curve at about 300 - 400 m from start point. Non-use of PPE by construction labourers observed			Use of PPE among construction labourers shall be encouraged

Sl. No.	District	Taluka	Name of Road	Environmental and Social Impacts											Remarks			
				Topography	Hydrology	Air	Noise	Impact on vegetation (Avenue Trees)	Animal Crossings	Ecological sensitive areas	Settlements	Community Properties	Accident zone/ Safety hazard	land / Encroachment		Public Utility		
20	Surendrenagar	Dhrnagadhra	Soladi Baisagarh			Likely impact on Air Quality during Construction	Likely impact during construction (Including those associated with Hot Mix Plant and Crushers)		Surrounding area of Little Rann of Kutch and in the vicinity of Wild Ass Sanctuary. Frequent movement of Wild ASS observed	Site is in the surrounding of Little Raan of Kutch, and also in the vicinity of Wild Ass Sanctuary			Merging Traffic; Sub Project road merges with 4 lane SH 07	Temporary impact on agricultural land due to improvisation of shoulders		Frequent crossing of wild animals and consequent accident reported. Safety provision to be included in the project design		
21			Dhrangadhra Rajpar Kankavati		Likely Impact, as the existing culverts to be heightened to overcome overtopping during rainy season						No impact on settlements along the roads, as proposed treatment is resurfacing on existing road	Religious Structure obstructs visibility	Sharp curve exists at few locations, where there is a need to provide signboards					
22			Rajpar Kankavati (Town Sec. only CC Road)								Road Passes through Settlement Area. Width is insufficient in few sections. Treatment will be carried out within available width				Likely impact on Utilities during construction, especially electric poles and hand pumps			
23		Virndragadh Sajjanpur		Rain water flows over the top of road surface. Existing cross-drainage structures are insufficient				Vegetation along-side few sections							Frequent movement of Wild Ass (Habitat found only in this part of the World) Nearby Wild Ass Sanctuary			
24		Wadhwan		Dudhrej Khodu Velavdar				Educational institutions located adjacent to road										
25				Mulchand Dudhrej	Impact on Topography due to construction of the road on cart track													
26				Surendranagar Mulchand Rajpar														
27	Chotaudepur	Chotaudepur	Bodgam Approach	Likely impact on Topography due to raised embankments	Heavy water influx cannot be accommodated by the existing pipe-culverts; hill section	Hotmix plant: Consequent impact on Air, Soil quality (due to spillage of bitumen/asphalt)	Likely impact during construction (Including those associated with Hot Mix Plant and Crushers)	Fruit-bearing trees along-side roads and roots of some trees are on the edge of shoulder - excavation works observed to have minor impact on roots			No impact on settlements	Villagers needed Bus shelter. Raised road embankment has adversely affected the aesthetic/visibility of small shrine located adjacent to the shoulder	Safety hazard/merging traffic at start point of the road and raised embankment					
28			Jhoz Virpur Lagami Kumbhali															
29			Singalji Mithibor															
30			Khadakvada Simalkuva Mota Rampura															
31			Vachlibhit Bandichabhit															
32			Tejgadh Palsandha Kikavada															
33			Jhojh Gamanfaliya	Impact on Topography due to construction of the road on cart track	Pipe culvert insufficient to accommodate influx of rain water in hill section								No impact on settlements along the roads, shoulder widths are constricted to the available road width		Safety hazard/merging traffic at start point of the road	Temporary impact on Agriculture land, temporary diversion of traffic through agriculture land		Trees: Awareness creation among construction labourers for protecting Trees and Water bodies
34			Alsipur Dolariya															
35			Bopa Approach Road															
36			Lagamithi Ukhalvaant Kachel															
37			Kumbhani to (Upto) Ghghadev															
38			Ferkuva Approach															
39	Dholivaav Approach	Likely impact on Topography due to raised embankments									Settlement on either side, inadequate shoulder width observed.			Minor encroachments in the form of cattle ramps in the post	Hand pump is located on the edge of shoulder	Land/ Encroachment: Awareness creation		
40	Kukana Nani Tejavaav																	

Sl. No.	District	Taluka	Name of Road	Environmental and Social Impacts											Remarks
				Topography	Hydrology	Air	Noise	Impact on vegetation (Avenue Trees)	Animal Crossings	Ecological sensitive areas	Settlements	Community Properties	Accident zone/ Safety hazard	land / Encroachment	
41			Bamroli Kathola Kavra Road						Occasional movement of wild animals reported		Treatment carried out within available width			construction stage	among villagers discouraging encroachments in the post-construction stage
42			Muldhar Timbi												
43			Ladhod Modasar												

### Annexure 10-1: Environmental Monitoring Locations

Sl.no	District	Taluka	Name of Road	Air	Noise	Water	Remarks			
1.	Gandhinagar	GNR South	Alampur - Dashela	√	√		Settlement area			
2.			Palaj - Rampura	√	√	√	Pond located at the vicinity of project road			
3.			Lekavada to Omkar (International) School Joining to Alampur Dashela Road	√	√		High school located at the Project road			
4.	Gandhinagar	GNR North	Uvarsad to Sargasan	√	√		Project roads passes through settlement area			
5.			Uvarsad - Ranjitpura	√	√					
6.			Uvarsad - Tarapur	√	√					
7.			Uvarsad - Kolavada	√	√					
8.			Uvarsad - ONGC to Karsanpura Road	√	√					
9.			GNR North	Vasan - Rupal	√	√				
10.				Rupal - Golthara	√	√				
11.			GNR North	Unava - Mubarkpur	√	√				
12.				Unava - Pidharda	√	√				
13.				Unava (Gogaji Farm) - Sharda Farmasi – Pethapur Mahudi joining road	√	√				
14.			Jamnagar	Jodiya	CH 06 (Coastal Highway No. 06) to Limbuda	√		√		Road passes through settlements
15.					Limbuda - Vavdi Road	√		√		
16.					Hadiyana - Vavdi; & Vavdi to Nesda	√		√		
17.	Morbi	Maliya	Kuntasi - Bokdi	√	√					
18.			Nana Dahirsara to Virpada	√	√					
19.			Bhavpar Bagasari	√	√					
20.	Surendrenagar	Dhrnagadhra	Soladi Baisagarh	√	√					

21.			Dhrangadhra Rajpar Kankavati	√	√	√	Road passes through Sardar Sarovar Narmada Canal and settlement area
22.			Dhrangadhra Rajpar Kankavati	√	√	√	
23.			Virndragadh Sajjanpur	√	√	√	
24.		Wadhwan	Dudhrej Khodu Velavdar	√	√	√	
25.			Mulchand Dudhrej	√	√	√	
26.			Surendranagar Mulchand Rajpar	√	√		
27.	Chota- udepur	Chota- udepur	Bodgam Approach	√		√	Hand Pumps located at the project roads and settlement area
28.			Jhoz Virpur Lagami Kumbhali	√	√	√	
29.			Singalji Mithibor			√	
30.			Khadakvada Simalkuva Mota Rampura	√		√	
31.			Vachlibhit Bandichabhit			√	
32.			Tejgadh Palsandha Kikavada	√	√	√	
33.			Jhojh Gamanfaliya				
34.			Alsipur Dolariya				
35.			Bopa Approach Road	√		√	Pond located at the vicinity of project road
36.			Lagamithi Ukhalvaant Kachel	√	√		Primary School located at near to the project road at Ukhalvant village
37.			Kumbhani to (Upto) Ghghadev	√	√		Settlement area
38.	Chota- udepur	Bodeli	Ferkuva Approach	√	√		
39.			Dholivaav Approach	√	√		
40.			Kukana Nani Tejavaav	√	√		
41.			Bamroli Kathola Kavra Road	√	√		
42.			Muldhar Timbi	√	√		
43.			Ladhod Modasar	√	√		

## Annexure 10-2: Environmental Monitoring Formats

### Format EM1: Selection of disposal site locations

From \_\_\_\_\_ To \_\_\_\_\_

(Give chainage and nearest settlements from both ends)

Criteria on which information for each site is to be collected	Site 1	Site 2	Site 3	Site 4
Area covered (m <sup>2</sup> )				
Total Material that can be dumped within the site (m <sup>3</sup> )				
Depth to which disposal is feasible (m)				
Distance of nearest watercourse (m)				
Nearest Settlement (m)				
Date/s of Community Consultation/s				
Whether the community is agreeable to siting of dumping site (Y/N)				
Date of Permission from Village Council President(VCP)				
Proposed future use of the Site				

Selected Site (tick any one column only)

Certified that the above information is correct to the best of my knowledge and belief.

#### Contractor

Signed:

Date:

Name & Designation:

Recommendation on the suitability of the site

Decision Taken (tick one):

Approved/Not Approved

#### PMC

Signed:

Date:

Name and Designation of Deciding Authority

Enclosures

(Tick as appropriate)

- 1            Maps of each location
- 2            Photographs
- a            Each disposal location
- b            Each community consultation
- 3            Photocopies of permissions from VCPs

### Format EM2: Construction Camp and Storage Area

Construction Stage: Report - Date \_\_\_\_\_ Month \_\_\_\_\_ Year \_\_\_\_\_

(Site Layout of Construction camp and working drawings of dwelling units with allied facilities to be attached with format)  
Format to be submitted before target date (decided by GSRRDA) of establishing camps

Location of Camp (km \_\_\_\_\_ )

Sl. No	Item	Unit	Details	Remarks
<b>1</b>	<b>Detail of item camp</b>			
A	Size of Camp	mxm		
B	Area of Camp	sq.m		
C	Distance from Nearest Settlement			
D	Distance from Nearest Water Source	Type/Size/Capacity/Present Use/Ownership		
E	Date of camp being operational dd/mm/yy			
F	Present land use			
G	No other trees with girth > 0.3m.			
H	Details of Storage area(Availability of impervious surface)	mxm		
I	Availability of separate waste disposal from storage area	Cum		
<b>2</b>	<b>Details of top soil stacking</b>			
A	Quantity of top soil removed	Cum		
B	Detail of storage of topsoil	Describe stacking arrangement		
<b>3</b>	<b>Details of workforce</b>			
A	Total No of Labourers	nos		
B	Total no of Male Workers	nos		
C	No of Male Workers below 18 years of age	nos		
D	Total No of Female Workers	nos		
E	No of Female workers below 18 years of age	nos		
F	No of children	nos		
<b>4</b>	<b>Details of dwelling units</b>			
A	No of dwellings/huts	nos		
B	Minimum Size of Dwelling	mxm		
C	No of openings per dwelling	nos		
D	Minimum size of opening	mxm		
E	Walls	specifications		
F	Roofing	specifications		
G	Flooring	specifications		
H	Drinking Water Tank	specifications		
I	Capacity of Drinking water Tank	cum		
J	Size of Drinking Water Tank	mxmxm		
K	Total no of WC	nos		
L	No of Wcs for female workers	nos		
M	Minimum Size of WC	mxm		
N	Total No of Bathrooms for female workers	nos		
O	Size of septic tank for WC/Baths	mxmxm		
P	Capacity of Water Tank for WCs/ Bathrooms and general purpose			
Q	Fencing around camp	Y/N		
<b>5</b>	<b>Details of facilities</b>			
A	Availability of security guard 24 hrs a day	Yes/No		
B	Details of First Aid Facility	Yes/No		
C	Availability of Day Care Centre	Yes/No		
D	Availability of dust bins (capacity 60 ltr)	nos		

Certified that the furnished information is correct the quality of work is as per god practice and all relevant information as required is attached

**Contractor**

**PMC**

### Format EM3: Reporting for Borrow Areas

Construction Stage Report: Date \_\_\_\_ Month \_\_\_\_ Year \_\_\_\_ Site Layout of Borrow Area and Proposed Borrow Area Redevelopment Plan to be attached with format. Format to be submitted before target date as (decided by GSRDA) for establishing Borrow Areas Borrow Area No. BA \_\_\_\_\_  
Location of Borrow Area (Km \_\_\_\_)

Sl. No	Item	Unit	Details	Remarks by CSC, if any
<b>1</b>	<b>Details of Borrow Area</b>			
A	Date of Borrow Area becoming operational dd/mm/yy			
B	Current Landuse			
C	Distance from Nearest Settlement	Km		
D	No of settlements within 200m of Haul Road	No.		
E	No of settlements within 500m of Borrow Area	No.		
F	Total Capacity	cum		
G	No of Trees with girth more than 0.3 m	No.		
H	Length of Haul Road	km		
I	Width of Haul road	m		
J	Type of Haul Road	metal/dirt		
K	Size of Borrow Area	sqkm		
L	Area of Borrow Area	km x km		
M	Quantity Available	cum		
N	Distance of Nearest Water Source	Type/Size/Capacity/Present Use/Ownership		
O	Quantity of top soil removed	cum		
P	Detail of storage of topsoil			
Q	Daily/occasional use of the Borrow Area by the community, if any	-		
R	Probable reuse of Borrow pit-ask community	-		
S	Drainage channels/slope/characteristics of the area	-		
<b>2</b>	<b>Enhancement Elements</b>			
A	Quantity of top soil removed	sq.m		
B	Detail of storage of topsoil	sq.m		
C	Adjoining land use/Natural elements			
D	Near by catchment for storing water			
E	Erosion Control Programme			
F	Preventive measures for			
I	Leaching			
ii	Mosquito Breeding			
iii	Water run-off/contamination			
Iv	Any other environmental degradation			
<b>3</b>	<b>Details of workforce</b>			
A	Total No of Labourers	No.		
B	Total no of Male Workers	No.		
C	No of Male Workers below 18 years of age	No.		
D	Total No of Female Workers	No.		
E	No of Female workers below 18 years of age	No.		
<b>4</b>	<b>Details of redevelopment, Plan to be enclosed</b>			

Certified that the furnished information is correct the quality of work is as per good practice and all relevant information as required is attached

**Contractor**

**PMC**

**Format EM4: Tree Felling**

S.No	Links	Physical Target				Completion Target		
		Total	Target	Target Achieved	% of task completed	Target Date	Date of Completion if task completed	Reason for Delay if any
		Unit						
1		nos						
2		nos						
3		nos						
4		nos						

**Contractor**

**PMC**

### EM 5 Topsoil Conservation Monitoring

Contract \_\_\_\_\_

Report No. \_\_\_\_\_

Date \_\_\_\_\_

Location (Chainage)	Original Use of Topsoil removed	Measures for preventing spillage of topsoil on Haul Roads (Earthen/ Metalled)	Present Metho d of Storage	Anticipated period of Storage (Months)	Distanc e of nearest Water course (m)	Present Slope of Pile (V: H)	Whether silt fencing provided ?	Is any other covering / measure provided ? If yes, what is it?	Improvements required	Extent of Compliance as on date of report

Certified that the above is true.

Signed \_\_\_\_\_

**Contractor**

Verified

Signed \_\_\_\_\_

**PMC**

### EM 6 Redevelopment of Borrow Areas

Operation Stage: Report: Date \_\_\_\_ Month\_\_\_\_ Year\_\_\_\_

To be monitored by GSRRDA during operation period

Details of remarks to be appended wherever necessary.

Sl. No	Activity	Particulars	Drawbacks Identified			Improvements Required		
			Construction	Financial	Others (Ask Community)	Technical	Financial	Remarks/ Suggestions
1	Details of Borrow area and Surrounding Landuse							
2	End use of the borrow area							
3	Whether rehabilitation has been carried out in line with owners request							
4	Erosion Control Measures							
5	Number of trees planted							
6	Reuse of topsoil							
7	Preventive measures taken for -Mosquito Breeding -Water runoff/ contamination -Other Environmental Degradation							
8	Any problems faced by owner							
9	Any problems faced by the local community							
10	If it has been developed as a fish pond,							
a	Details of available catchment for storing water							
b	Economic Benefits/Utility							
11	If it has been developed as an orchard							
a	Details of suitability of soil and water.							
B	Type of Plantation							
c	Economic Benefits/Utility							
12	Any Other End use							
a	Particulars							
b	Economic Benefits/Utility							

Contractor

PMC

**EM 7 Checklist for Construction Safety**

Sl. No.	Safety Issues	Yes	No	Non compliance	Corrective Action	Penalty	Remarks
<b>Safety during Construction Stage</b>							
1	Appointment of qualified Construction safety officers						
2	Approval for Construction Safety Management Plan by the Engineer.						
3	Approval for Traffic Management/control Plan in accordance with IRC: SP: 55-2001						
4	Maintenance of the existing road stretches handed over to the Contractor.						
5	Provision of Temporary Traffic Barriers/Barricades/caution tapes in construction zones						
6	Provision of traffic sign boards						
7	Provision for flags and warning lights						
8	Provision of metal drum/empty bitumen drum delineator, painted in circumferential strips of alternate black and white 100mm wide 2 coats fitted with reflectors 3 Nos of 7.5cm diameter						
9	Providing plastic crash barrier						
10	Provision of adequate staging, form work and access (ladders with handrail) for works at a height of more than 3.0 m						
11	Provision of adequate shoring / bracing / barricading / lighting for all deep excavations of more than 3.0 m depth.						
12	Demarcations (fencing, guarding and watching) at construction sites						
13	Provision for sufficient lighting especially for night time work						
14	Arrangements for controlled access and entry to Construction zones						
15	Safety arrangements for Road users / Pedestrians						
16	Arrangements for detouring traffic to alternate facilities						
17	Regular Inspection of Work Zone Traffic Control Devices by authorized contractor personnel						
18	Construction Workers safety - Provision of personnel protective equipment						
19	A. Helmets						
	B. Safety Shoe						
	C. Dust masks						
	D. Hand Gloves						
	E. Safety Belts						
	F. Reflective Jackets						
	G. Earplugs for labour						
20	Workers employed on bituminous works, stone crushers, concrete batching plants etc. provided with						

Sl. No.	Safety Issues	Yes	No	Non compliance	Corrective Action	Penalty	Remarks
	protective goggles, gloves, gumboots etc.						
21	Workers engaged in welding work shall be provided with welder protective shields						
22	All vehicles are provided with reverse horns.						
23	All scaffolds, ladders and other safety devices shall be maintained in as safe and sound condition						
24	Regular health checkup for labour/ Contractor's personnel						
25	Ensuring the sanitary conditions and all waste disposal procedures & methods in the camps.						
26	The Contractor shall provide adequate circuit for traffic flow around construction areas, control speed of construction vehicles through road safety and training of drivers, provide adequate signage, barriers and flag persons for traffic control						
27	Provision for insurance coverage to the contractor's personnel						

**Contractor**

**PMC**

**Format EC1: Target Sheet for Pollution Monitoring**

Construction Stage: Report -                      Date\_\_\_\_\_                      Month\_\_\_\_\_                      Year\_\_\_\_\_

( Locations at which monitoring to be conducted as per EMP)

Sl. No	Chainage	Details of Location	Duration of Monitoring	Instruments Used	Completion Target		Reason for Delay if any
					Target Date	Date of Completion if task completed	
<b>Air Monitoring</b>							
1							
2							
3							
4							
5							
<b>Water Monitoring</b>							
1							
2							
3							
4							
5							
<b>Noise Monitoring</b>							
1							
2							
3							
4							
5							

Certified that the Pollution Monitoring has been conducted at all the locations specified in the EMP

**Contractor**

**PMC**