

Sl. No.	Categories of APs	No. of DPs	%
1	Male	2619	57.40
2	Female	1944	42.60
<b>Total</b>		<b>4563</b>	<b>100.0</b>

114. Social Categories of the DPs

115. The social stratification of the project area shows dominance of other backward caste (OBC) population with 514 (79.2%) households followed by schedule caste with 99 (15.25%) households and higher caste with 32 (4.93%). 4 households did not reveal their caste identity. The detail of social grouping in the project area is presented in the **Table 21**.

**Table 21: Social Categories of the DPs**

Sl. No.	Description of the Caste	No. of Households	%
1	Scheduled Caste	99	15.25
2	Scheduled Tribe	0	0.00
3	Other Backward Caste	514	79.20
4	Higher Caste	32	4.93
5	Other/No Response	4	0.62
<b>Total</b>		<b>649</b>	<b>100.00</b>

116. Religious Categories of the DPs

117. Majority of displaced person (90.45%) belong to Hindu religion followed by Muslim (10%). The religious categories of DPs are given below in **Table 22**.

**Table 22: Religious Categories of the DPs**

Sl. No.	Religious Categories	No. of Households	%
1	Hindu	587	90.45
2	Muslim	59	9.09
3	Others/No Response	3	0.46

<b>Total</b>	<b>649</b>	<b>100.00</b>
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118. Number of DPs considered as Separate family as per LA Act

119. There are various categories of DPs as summarized in the **Table 23** are treated as separate family under Right to Fair Compensation in Land Acquisition and Resettlement Act-2013.

**Table 23: Number of DPs considered as Separate family as per LA Act**

Sl. No.	Categories of DPs	No. of DPs	%
1	Unmarried Son > 30 years	157	74.41
2	Unmarried Daughter/Sister > 30 years	31	14.69
3	Divorcee/Widow	23	10.90
4	Minor Orphan	0	0.00
<b>Total</b>		<b>211</b>	<b>100.00</b>

120. Educational Status of DPs

121. The educational status of DPs reveals that around 45.26% DPs are illiterate. Among the literate DPs, 71% are upto matric, 20.5% are graduate and only 2.4 % (68) are above graduate. This data excludes the children below 0 to 6 years. The gender segregated details of educational status of DPs are presented in the **Table 24**.

**Table 24: Educational Status of DPs**

S. N.	Educational status	Male	%	Female	%	Total	%
1	Illiterate	592	45.91	698	41.75	1290	45.26
2	Literate	238	10.42	188	11.24	426	14.95
3	Up to middle	299	21.84	298	17.82	797	27.96
4	Below metric	171	7.48	120	7.18	291	10.21
5	Metric	332	14.53	168	10.05	500	17.54
6	Graduate	400	17.51	185	11.06	585	20.53
7	Above graduate	53	2.32	15	0.90	68	2.39
<b>Total</b>		<b>2285</b>	<b>100.00</b>	<b>1672</b>	<b>100.00</b>	<b>3957</b>	<b>100.0</b>

122. Occupational Status of DPs

Improvement/Upgradation, Widening and Strengthening of Mansi-Fungo Halt Section of Mansi- Saharsa-Hardi Chaughara Road (SH-95) in the State of Bihar on EPC Mode

123. The occupational pattern of DPs excluding children below 6 years, old/inactive, students, housewife reveals that to a maximum 34% DPs are earning from labour activities, around 28% are in service, 17% are involved in agriculture activities and 14 % are in business. Among other categories, 7% DPs are active in professional services. The details of occupational status of DPs are summarized in the **Table 25**. As per ADB SPS, income will be restored, at least to the pre-project level. Additional information can be found in Chapter VII.

**Table 25 : Occupational Status of DPs**

S. N.	Occupational status	Male	%	Female	%	Total	%
1	Service	65	5.39	699	47.17	764	28.43
2	Business	185	15.35	196	13.23	381	14.28
3	Agriculture	152	12.61	299	20.18	451	16.78
4	Labor	794	65.89	120	8.10	914	34.02
5	Professional	9	0.75	168	11.74	177	6.59
<b>Total</b>		<b>1205</b>	<b>100.00</b>	<b>1482</b>	<b>100</b>	<b>2687</b>	<b>100.0</b>

124. Annual Income Level of the Affected Households

125. There are 3 (0.46%) households earning less than the official poverty level i.e. Rs. 46,680/- per year. There are 495 households (76%) having an average monthly income of above Rs. 46,680 and up to Rs. 1,00,000. The survey reveals that 101 (16%) households are earning above Rs. 1,00,000 and 37 (6%) households are earning above Rs. 2,00,00 which is a good economic indicator of their standard of living. The average income level of households in the project area is summarized in the **Table 26**.

**Table 26: Annual Income Level of the Affected Households**

Sl. No.	Annual Income Categories in (Rs)	No. of Households	%
1	Upto 46,680	3	0.46
2	Above 46,680 and up to 100,000	495	76.27
2	Above 100,000- Below 200,000	101	15.56
4	Above 200,000	37	5.70
5	Not Responded/ Found	13	2.00

<b>Total</b>	<b>649</b>	<b>100.00</b>
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126. Vulnerable Households being Affected in the Project

127. According to project census survey there are 553 households enumerated as vulnerable households. In this project vulnerable group includes 99 SC households, 13 women headed households, 3 households headed by physically handicapped persons, 383 other poor households who are living below the government poverty line and the 54 non-titleholders (squatters only) not falling under any other category of vulnerability. As per the latest Planning Commission, Government of India estimate, any person having monthly per capita consumption and expenditure (MPCE) of Rs. 7789 in rural area and Rs. 923 in urban area of Bihar is considered to be living below poverty line. Based on this calculation of poverty line figure, average annual household MPCE in rural Bihar is Rs. 46,680. There is one household not falling under any other category but earning less than the average MPCE also enumerated as vulnerable household in the project. The vulnerable household details are presented in the **Table 27**.

**Table 27: Vulnerable Households being affected**

Sl. No.	Vulnerable Categories	Households	%
1	Scheduled Caste Households	99	17.90
2	Scheduled Tribe Households	0	0.00
3	Women Headed Households	13	2.35
4	PH Headed Households	3	0.54
5	BPL Cardholders (not falling in other categories)	383	69.26
6	Households below Minimum Per capita Income (not falling under any other category of Vulnerability)	1	0.18
7	NTH not falling under any above Categories	54	9.76
	<b>Total</b>	<b>553</b>	<b>100.00</b>

128. Project Impact on Indigenous People

129. As per the 2011 census of India survey, total ST population of Bihar is about 1.28% of total and it is 0.04% in Khagaria district and 0.3% in Saharsa district. In this subproject, not a single tribal household is found affected. Any impact on ST household will be reported during RP implementation and they will be treated as vulnerable. Special provision has been made in the entitlement matrix of RP to deal with any impacts on tribal households.

130. Project Impact on Women

<sup>9</sup> Source: Press Note on Poverty Estimates, 2011-12, Government of India, Planning Commission, July 2013

131. Improved roads will bring equal benefits to women and girls. Direct benefits include a decrease in travel time and an increase in reliable and convenient transport services. Indirect benefits include improved access to products and services, including social services such as health, education, as well as other government services. During construction, women will also benefit from the increased employment opportunities. However, road construction and improvements may also lead to potential negative impacts such as the spread of STIs (sexually transmitted infections), trafficking, and road safety issues. Potential negative impacts will be addressed through community awareness that will be implemented by the RP implementing agency who will assist the EA (see **Appendix 5** for TOR of Implementing agency). The RP implementing agency will coordinate with relevant organizations or mobilize its own short-term experts in carrying out the activities. In addition, the contractor will also carry out HIV/AIDS awareness program among worker camps and nearby community as mandated in their contract.

### 1. Status of Women in Subproject Area

132. Out of 665 project affected households surveyed for socio-economic study 614 were found with total 1304 women above 18 years of age. Women in all 614 households were consulted separately through structured questionnaire and an analysis of the same is given in the following section.

### 2. Decision Making

133. Women were asked about their role in decision making on financial and social matters of the household. It was revealed that in around 72% household women responded negatively that they have no role in financial decision and the decision is taken by her male counterpart. Similarly, in case of social decision the male members of the households are dominant. The details are given in following **Table 28**.

**Table 28 : Role of Women in Financial Decision Making**

S.N.	Response	Financial Decision Making (HH)	%	Social Decision Making (HH)	%
1	Yes	173	28.18	195	31.76
2	No	440	71.66	418	68.08
3	No Response	1	0.16	1	0.16
	<b>Total</b>	<b>614</b>	<b>100.00</b>	<b>614</b>	<b>100.00</b>

### 3. Assets owned by the Women

134. Out of total households surveyed around 18% have women with land in their name, 14% have house, women in around 3% households have two-wheeler and around 73% have cell phone. Only around 1% have personal computer and around 0.5% have four-wheeler. The details of assets possessed by the women in project area is given below.

**Table 29 : Number of Households having Women with different Assets**

Sl.	Type of Assets	No of Household	%
1	Land (Homestead or Farm Land)	110	17.92
2	House	85	13.84
3	Four-Wheeler (Car/tractor etc.)	3	0.49
4	Two-Wheeler (Scoter/ Cycle etc.)	16	2.61
5	Cell Phone	449	73.13
6	Personal Computer	5	0.81
7	Other assets	15	2.44
<b>Total</b>		<b>614</b>	<b>100.00</b>

### 4. Bank Account

135. The women were asked about their separate bank account at the household level and it was found that about 95% households have women with their separate bank account. This is largely due to the government policies of empowering poor and girl child for financial securities in particular. The details are provided in the Table30.

**Table 30 : Number of Households having Women with Bank Account**

Sl.	Bank Account	No of Household	%
1	Yes	583	94.95

2	No	31	5.05
3	No Response	0	0.00
<b>Total</b>		<b>614</b>	<b>100.00</b>

#### 5. Member in Self Help Group

136. The women in affected households were asked about their participation in any self-help group as a member. As shown in **Table 31** it was revealed that women in around 47% households were found member of a self-help group and only around 12 % of them had apprehension that relocation due to construction of sub project might affect their working in the SHG.

**Table 31 : Number of Households having Women as Member of SHG**

S	Response	Member of SHG (HH)	%	Change in Status after Relocation (HH)	%
1	Yes	287	46.74	33	11.50
2	No	327	53.26	254	88.50
3	No Response	0	0.00	0	0.00
<b>Total</b>		<b>614</b>	<b>100.00</b>	<b>287</b>	<b>100.00</b>

137. Women in project area have received benefits under different government schemes. It was revealed that women in around 35% affected households have taken loan for different purposes. Women in around 21% households have benefited under govt's house construction scheme. Among others, women in around 21% households have taken training and assistance for self-employment. In total, women in 47% households have benefited under different government scheme. The details are provided in table below.

**Table 32 : Women benefited from Govt. Schemes**

Sl.	Type of Benefits	No of Household	%
1	Loan	100	34.84
2	House	61	21.25

3	Employment	1	0.35
4	Training	60	20.91
5	Any Other	89	31.01
<b>Total</b>		<b>287</b>	<b>100.00</b>

138. As per the findings of consultation with women group, the perceived benefits from the subprojects includes:

- 139. Improved access to social facilities like health, education
- 140. Increase in income generating activities
- 141. Frequent and affordable transport
- 142. Management of emergency situation
- 143. Improved community relations
- 144. Increased frequency of health workers, extension workers visits
- 145. Improved access to market
- 146. Increased Leisure time
- 147. Reduced time spent on transportation of forest produces
- 148. Side pavements will make walking easy

149. During the consultation process the negative impacts could not be easily articulated by the women apart from loss of assets. However, along with the loss of assets the following negative impacts were also recorded:

- 150. Loss of assets as a result of the road construction
- 151. Preference to men as wage labor over women during construction
- 152. Discrimination in wage payment
- 153. More dependence of mechanized techniques in road construction likely to have very little opportunity for labor for women

154. There are 13 women headed households affected in the project. The negative impacts of the sub-project on female-headed households will be taken up on a case-to-case basis and assistance to these households will be treated on a priority basis. During disbursement of compensation and provision of assistance, priority will be given to female-headed households. Additionally, women headed households are considered as vulnerable and provision for additional assistance has been made in the entitlement of the MP. Provision for equal wage and health safety facilities during the construction by the contractor will be ensured by the EA.

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#### 4. STAKEHOLDERS CONSULTATION AND PARTICIPATION

##### 155. Stakeholders in the Project

156. Consultations with various stakeholders were carried out during various phases of project preparation. The stakeholders in the project are both primary and secondary. The primary stakeholders are project displaced persons (DPs), project beneficiaries, Executing Agency, Implementing Agency especially the officials in BSRDC. The secondary stakeholder includes district magistrates and the revenue official, village heads, head of Gram Panchayat, village administrative officers, village council, district council, NGO and business communities in the area.

##### 157. Public Consultation in the Project

158. Public consultations were arranged at the stage of project preparation to ensure peoples' participation in the planning phase of this project and to treat public consultation and participation as a continuous two-way process beneficial in projecting planning and implementation. Aiming at promotion of public understanding and fruitful solutions of developmental problems such as local needs and problem and prospects of resettlement, various sections of DPs and other stakeholders were consulted through focus group discussions and individual interviews.

##### 159. Methods of Public Consultation

160. Consultations and discussions were held along the project with the affected families and other stakeholders. All displaced households were consulted while interacting with them during the project census survey. Consultation meetings were organized to get wider public input from both the primary and secondary stakeholders. The consultation methods followed to elicit required information (their views & opinions) are detailed below in **Table 33**.

**Table 33: Methods of Public Consultations**

Stakeholders	Consultation Method
Displaced Persons	Through Census Survey involving head of the household as respondent
Village Head/representative of APs	Through Focus Group Discussions (FGD) at affected villages
Local communities	Through Focus Group Discussions (FGD) at affected villages
Women's groups	Through Census survey and Focus Group Discussions (FGD) at affected villages
Vulnerable groups (SC, ST, BPL)	Through Focus Group Discussions (FGD) at affected villages
Executing Agency, Implementing Agency	Individual interview, discussion, joint field visit

Line Departments/Agencies	Individual meeting/interview, discussion
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161. Scope of Consultation and Issues

162. All the survey and consultation meetings were organised with free and prior information to the displaced persons and participants. Women members of the survey team assisted women to present their views on their particular concerns. During the consultation process efforts were made by the survey teams to:

- 163. Ascertain the views of the DPs, with reference to road alignment and minimization of impacts;
- 164. Understand views of the community on land acquisition, resettlement issues and rehabilitation options;
- 165. Identify and assess the major socio-economic characteristics of the villages to enable effective planning and implementation;
- 166. Obtain opinion of the community on issues related to the impacts on community property and relocation of the same;
- 167. Examine APs' opinion on problems and prospects of road related issues;
- 168. Identify people's expectations from project and their absorbing capacity;
- 169. Finally, to establish an understanding for identification of overall developmental goals and benefits of the project.

170. Findings of Focused Group Discussions

171. During the resettlement survey, FGDs were conducted in affected villages along the project road. The participants in these FGDs are not limited to the place of meeting or DPs only but also included the other interested parties from the affected villages as all of them road users and beneficiaries under the Project. Further detailed analysis is included in the report of Poverty and Social Assessment (PSA).

172. In addition to the individual consultation with all displaced households during census survey, a total of 77 male and 98 females were consulted separately in 5 consultation meetings/focused group discussions. Some of the major issues that were discussed and feedback received from the villagers during the course of the consultations and measures taken are summarized in the **Table 34**. A detail of consultation is provided in **Appendix-4** and the list of participants and consultation photographs are presented in the **Appendix-5**. Summary of DP's concerns and preferences toward relocation and resettlement were discussed and are recorded in Chapter VII: Relocation of Housing and Settlements.

**Table 34: Summary findings of Consultation**

Issue	Discussion/Suggestion	Measures Taken
Existing Road Condition	Existing road condition is bad and not sufficient to bear current traffic load. Road is narrow and accident prone due	The proposed road will have 2 lane specifications, provide all weather connectivity to people living in village along

Issue	Discussion/Suggestion	Measures Taken
	to heavy traffic and high speed of vehicles	the corridor.
Transport and communication problem	Existing road is narrow and congested and traffic jam is very common in this area.	The project road will provide better connectivity and a faster transportation to distance places
Positive project impact	The positive project impacts perceived by the local people are all weather road, direct access to many facilities, transportation of their agricultural produce, business and employment opportunities, appreciation of land value etc.	The alignment and widening is planned to provide maximum connectivity to the area and benefits to the local people
Negative project impacts	Loss of residential/commercial structures, loss of livelihood, increase of accidents, pollution.	All loss of structure will be compensated at replacement cost. Loss of livelihoods will also be compensated and assisted by the project including opportunity for laborer in construction work
Rate of compensation	Compensation at replacement cost.	The rate of compensation will be decided as per market value and replacement cost will be given.
Option for relocation	Willingness for self-relocation and cash compensation. Majority of the DPs want cash compensation.	The affected people will be given cash compensation for loss of their assets. The RP implementing agency will assist the DPs during the process.
Income Restoration	Additional assistance for income restoration	The implementation agency will assist in loan from bank, preference will be given to locals in road construction work
Consultation and participation	People want more consultation during project implementation and want to participate in the project	Public consultation will continue throughout the project cycle. Implementing agency will assist people in participation at various stages.

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Issue	Discussion/Suggestion	Measures Taken
Road safety	The proposed two-lane road may be a concern for safety specifically for women and children, accident risk will increase	Proper road safety measures are incorporated in the project design. Special measures like signage, speed breakers at schools, hospitals and market places will be provided by the project.
Transparency in Project Implementation	The project should ensure transparency in implementation and quality control	There are provisions like GRC, VLC and direct access to Implementation Office for any complain or grievances
Any other critical issue	Speed breaker, road crossing point drainage and bus stand should be given in habitation areas.	The features are already included in the road design at appropriate locations.

173. Consultation with Officials and Other Stakeholders

174. Other stakeholders in the project such as Executing Agency especially the officials in BSRDCL, PIU staff and the concerned district administration and the revenue officials were also consulted on various issues. The details of some of such consultations are summarized in the Table 35.

**Table 35: Details of Consultation with Officials**

Sl. N.	Name and Designation	Issue discussed	Contact Information
1	Mr. Sanjay Kumar CGM, BSRDCL	Overall Project planning, Coordination	9431005710
2	Mr. P.C. Gupta GM, BSRDCL	Project proposal, alignment, detailed design report, LA and R&R issue,	9431005702
3	Mr. Premnath DGM (LA), BSRDCL	DPR, Land acquisition planning, collection of revenue map.	9431005716
4	Mithilesh Kumar, LA Expert, BSRDCL-HQ	LAP, LRP, and revenue details of affected properties.	8340644841
5	Mr. Anjani Kumar, D.G.M BSRDCL-PIU-MADHEPURA	Land acquisition planning, collection of revenue map and landholder's details, site visit, coordination with	9431005694

Sl. N.	Name and Designation	Issue discussed	Contact Information
6	Mr. Ravikant, Manager (Tech), BSRDCL-PIU-MADHEPURA	line department Drawing, map, data and site verification.	9431005723
7	Mr. Bharat Bhushan, Circle Officer (C.O), Mansi, Chautham	Site visit, site verification, coordination with line departments etc.	9113410073
8	Mr. Gopal Krishan Mishra, C.I, Mansi		9430003544
9	Mr. Dilip Dev Tiwari, C.I., Chautham		9934981620
10	Mr. Nalin, Revenue Clerk, Chautham		982938637

175. Plan for further Consultation in the Project

176. The effectiveness of the R&R program is directly related to the degree of continuing involvement of those affected by the Project. Several additional rounds of consultations with DPs will form part of the further stages of project preparation and implementation. The RP implementing agency will be entrusted with the task of conducting these consultations during RP implementation, which will involve disclosure on compensation, assistance options, and entitlement package and income restoration measures suggested for the project. The consultation will continue throughout the project implementation period. The following set of activities will be undertaken for effective implementation of the RP:

177. In case of any change in engineering alignment planning the DPs and other stakeholders will be consulted in selection of road alignment for minimization of resettlement impacts, development of mitigation measures etc.
178. Together with the RP implementing agency, the PIU will conduct information dissemination sessions in the project area and solicit the help of the local community/ leaders and encourage the participation of the DP's in Plan implementation.
179. During the implementation of RP, RP implementing agency will organize public meetings, and will appraise the communities about the progress in the implementation of project works, including awareness regarding road construction.
180. Consultation and focus group discussions will be conducted with the vulnerable groups like women, SC, ST, and OBC's to ensure that the vulnerable groups understand the process and their needs are specifically taken into consideration.

181. To make reasonable representation of women in the project planning and implementation they will be specifically involved in consultation.

182. A Public Consultation and Disclosure Plan will be prepared by PIU and RP implementing agency for the project as per the format below in **Table 36**.

**Table 36 : Future Public Consultation and Disclosure Plan**

Activity	Task	Timing (Date/Period)	Agencies	Remarks
Public Notification	Notify eligibility cut-off date for NTH	March 2021	PIU/ RP implementing agency	
Disclosure of RP	Translate RP in Hindi and disclose at PIU Office and Panchayat	March 2021	PIU / RP implementing agency	
Distribution of R&R information leaflet	Prepare R&R information leaflet and distribute to DPs	May 2021	PIU/ RP implementing agency	
Internet disclosure of the RP	Post RP on ADB and EA website	May 2021	ADB/ RP implementing agency/PIU	
Consultative meetings during joint measurement survey	Face to face meetings with DPs	June 2021	PIU / RP implementing agency	
Disclosure of updated RP	Disclosure after joint measurement survey	July 2021	PIU / RP implementing agency	
Disclosure of the final or updated RP	RP disclosed on ADB and EA website and to affected households and other stakeholders at PIU and/or Panchayat offices	August 2021	ADB/PIU	

183. Information disclosure

184. To keep more transparency in planning and for further active involvement of DPs and other stakeholders the project information will be disseminated through disclosure of resettlement planning documents. The EA will submit the following documents to ADB for disclosure on ADB's website:

185. the final resettlement plan endorsed by the EA after the census of displaced persons has been completed;
186. a new resettlement plan or an updated resettlement plan, and a corrective action plan prepared during project implementation, if required; and
187. the resettlement monitoring reports.

188. The EA will translate the RP in Hindi and disclose it at PIU office and panchayat office. A resettlement information leaflet containing information on compensation, entitlement and resettlement management adopted for the project will be made available in Hindi language and distributed to DPs by the RP implementing agency during initial consultation after verification of DPs. For DPs who are illiterate, appropriate and implementable method will be followed in order for the DPs to be notified and informed. RP implementing agency will disseminate relevant information through public consultations and other channels and will pay specific attention to ensure those who are illiterate receive information on a timely basis.

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## 5. LEGAL FRAMEWORK

### 189. Introduction

190. The legal framework and principles adopted for addressing resettlement issues in the project have been guided by the existing legislation and policies of the Government of India (GOI), the Government of Bihar and Asian Development Bank. Prior to the preparation of the RP, a detailed analysis of the existing national and state policies was undertaken and the section below provides details of the various national and state level legislations studied and their applicability for the project. This RP is prepared based on the review and analysis of all applicable legal and policy frameworks of the country and ADB policy requirements.

### 191. Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act (RFCT in LARR), 2013

192. The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 (RFCT in LARR Act - 2013) has been effective from January 1, 2014 after receiving the assent of the President of Republic of India. This Act extends to the whole of India except the state of Jammu and Kashmir. The Act replaced the Land Acquisition Act, 1894.

193. The aims and objectives of the Act include: (i) to ensure, in consultation with institutions of local self-government and Gram Sabhas established under the constitution of India, a humane, participative, informed and transparent process for land acquisition for industrialization, development of essential infrastructural facilities and urbanization with the least disturbance to the owners of the land and other affected families; (ii) provide just and fair compensation to the affected families whose land has been acquired or proposed to be acquired or are affected by such acquisition; (iii) make adequate provisions for such affected persons for their rehabilitation and resettlement; (iv) ensure that the cumulative outcome of compulsory acquisition should be that affected persons become partners in development leading to an improvement in their post-acquisition social and economic status and for matters connected therewith or incidental thereto.

194. Section 27 of the Act defines the method by which market value of the land shall be computed under the proposed law. Schedule I outlines the proposed minimum compensation based on a multiple of market value. Schedule II through VI outline the resettlement and rehabilitation entitlements to land owners and livelihood losers, which shall be in addition to the minimum compensation per Schedule I.

195. The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement (Amendment) Second Ordinance, 2015: With an intention to overcome the procedural difficulties in land acquisition for important national projects, President of India has issued an amendment ordinance on 30th May 2015. Three main features of the ordinance among others are as following:

196. The Chapter II and III of the RFCT in LARR Act - 2013 regarding *determination of social impact assessment and public purpose and special provision to safeguard food security* shall not apply to the project such as (a) vital to national security or defence of India and every part



thereof, including preparation for defence or defence production; (b) rural infrastructure including electrification; (c) affordable housing and housing for the poor people; (d) industrial corridors ; and (e) infrastructure and social infrastructure projects including projects under public private partnership where the ownership of land continues to vest with the Government.

197. The five-year period set by the principal Act in Section 24 under sub-section (2), for lapse of 1894 Act shall exclude the cases where acquisition process is held up on account of any stay or injunction issued by any court or the period specified in the award of a Tribunal for taking possession.

198. The five-year period set by the principal Act for any land acquired and unused is now will be *a period specified for the setting up of any project or five years, whichever is later.*

199. Legal and Policy Frameworks of Bihar State

200. The legislations and policy concerning the land acquisition and resettlement by State Government of Bihar are discussed in the following section.

**201. Bihar Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Rules, 2014** (Government of Bihar Department of Revenue and Land Reforms Notification No-1401, Dated-27/10/2014)

202. In exercise of the powers conferred by sub-section (2) of Section 100 of the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 (30 of 2013), the Governor of the State of Bihar notified the rules to apply for land acquisition in the state where the State Government will be the requiring body as defined by the prime Act.

**203. Appointment of Social Impact Assessment Unit by Government of Bihar** (Government of Bihar Department of Revenue and Land Reforms Notification No-647, Dated-09/05/2014)

204. The Government of Bihar has authorized Lalit Narayan Mishra Institute of Economic Development & Social Change, Patna and Sinha Institute of Social Studies, Patna as Social Impact Assessment Unit under the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013.

**205. Bihar Raiyats Land Lease Policy 2014 (No. 14/D.L.A (Lease) – Policy –69/2014 – 1440/R) with Amendment Rules April-2018.**

206. In exercise of the powers conferred under section 104 of The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013, the State Government of Bihar has announced its state policy for taking land on perpetual lease from the raiyats for the works of public purposes as an option for public projects of infrastructure and public purposes. The subsequent amendment of this policy in April 2018 specifies the limit of purchase of land under this policy by Road

improvement/Upgradation, Widening and Strengthening of Mansi-Fungo Halt Section of Mansi- Saharsa-Hardi Chaughara Road (SH-95) in the State of Bihar on EPC Mode

Construction Department is up to 25 Acres and empowers the Executive Engineers to register the land in their name.

207. ADB's Safeguard Policy Statement (SPS), 2009

208. The objectives of ADB's SPS (2009) with regard to involuntary resettlement are: (i) to avoid involuntary resettlement wherever possible; (ii) to minimize involuntary resettlement by exploring project and design alternatives; (iii) to enhance, or at least restore, the livelihoods of all displaced persons in real terms relative to pre-project levels; and (iv) to improve the standards of living of the displaced poor and other vulnerable<sup>10</sup> groups.

209. ADB's SPS (2009) covers physical displacement (relocation, loss of residential land, or loss of shelter) and economic displacement (loss of land, assets, access to assets, income sources, or means of livelihoods) as a result of; (i) involuntary acquisition of land, or (ii) involuntary restrictions on land use or on access to legally designated parks and protected areas. It covers displaced persons whether such losses and involuntary restrictions are full or partial, permanent or temporary.

210. The three important elements of ADB's SPS (2009) are: (i) compensation at replacement cost for lost assets, livelihood, and income prior to displacement; (ii) assistance for relocation, including provision of relocation sites with appropriate facilities and services; and (iii) assistance for rehabilitation to enhance, or at least restore, the livelihoods of all displaced persons relative to national minimum standard of living.

211. Comparison of Government and ADB Policies

212. The new act 'The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013', which has integrated provisions of National Rehabilitation and Resettlement Policy (2007) with that of The Land Acquisition Act (LAA) of 1894 (as amended in 1984), recognizes titleholders and non-titleholders affected by land acquisition area notified under the Act. Whereby, squatters and encroachers on existing government land are excluded from the purview of the act.

213. RFACT in LARR Act – 2013 has come into effect from January 1, 2014. This Act is both complement the revision of the NRRP (2007) and decrease significantly the gaps between the LAA and ADB's SPS, 2009. The Act also expands compensation coverage of the principal act by requiring that the value of trees, plants, or standing crops damaged must also be included and solatium being 100% of the all amounts inclusive. The Act furthermore has match ADB requirements for all compensation to be paid prior to project taking possession of any land.

214. Therefore, the RFACT in LARR Act – 2013 has established near equivalence of the government's policies with those of ADB's SPS, 2009. Adoption of the below principles for the project has ensured that

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<sup>10</sup>vulnerable groups include: especially those below the poverty line, the landless, the elderly, women and children, and Indigenous Peoples, and those without legal title to land

both are covered in their application to this project. A comparison of ADB and GoI policy and measures to fill the gaps is presented in the Table: 37.

**Table 37: Comparison of ADB and GoI Policy**

	Aspect	ADB Safeguard Requirement	Fair Compensation and Transference in Land Acquisition, Rehabilitation and Resettlement Act, 2013	Measures to Bridge the GAP
1	Screen the project	Screen the project to identify past, present, and future involuntary resettlement impacts and risks. Conduct survey and/or census of displaced persons, including a gender analysis, specifically related to resettlement	4 (l) it is obligatory for the appropriate Government intends to acquire land for a public purpose to carry out a Social Impact Assessment study in consultation with concern Panchayat, Municipality or Municipal Corporation, as the case may be, at village level or ward level in the affected area. The Social Impact Assessment study report shall be made available to the public in the manner prescribed under section 6.	Screening of all sub-projects in line with the IR checklist of ADB, towards enabling identification of the potential resettlement impacts and associated risks.
2	Consultation with stake holders and establish grievance redress mechanism	Carryout consultations with displaced persons, host communities and concerned NGOs. Inform all displaced persons of their entitlements and resettlement options	Whenever a Social Impact Assessment is required to be prepared under section 4, the appropriate Government shall ensure that a public hearing is held at the affected area, after giving adequate publicity about the date, time and venue for the public hearing, to ascertain the views of the affected families to be recorded and included in the Social Impact Assessment Report.  The Land Acquisition Rehabilitation and Resettlement Authority shall be established in each State by the concerned State  Government to hear disputes arising out of projects where land acquisition has been initiated by the State Government or its agencies.	No gap between SPS and FCTLARR.
3.	Improve, or at least restore, the livelihoods of all displaced, and payment at	Improve or restore the livelihoods of all displaced persons through: (i) land-	The Collector having determined the market value of the land to be acquired shall calculate the total amount of compensation to be paid to the land owner (whose land has been acquired) by including all assets attached to the land. Livelihood losers are eligible for various	No gap between SPS and FCTLARR.  Assets to be compensated at replacement cost

Improvement/Upgradation, Widening and Strengthening of Mansi-Fungo Halt Section of Mansi- Saharsa-Hardi Chaughara Road (SH-95) in the State of Bihar on EPC Mode

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	Aspect	ADB Safeguard Requirement	Fair Compensation and Transference in Land Acquisition, Rehabilitation and Resettlement Act, 2013	Measures to Bridge the GAP
	replacement cost	based resettlement strategies; (ii) prompt replacement of assets with access to assets of equal or higher value, (iii) prompt compensation at full replacement cost for assets that cannot be restored, and (iv) additional revenues and services through benefit sharing schemes where possible.	rehabilitation grants.	without depreciation and other Livelihood assistances and income restoration measures will be included.
4.	Assistance for displaced persons	Provide physically and economically displaced persons with needed assistance	Schedule I, provides market value of the land and value of the assets attached to land. Schedule II provides RPL package for land owners and for livelihood losers including landless and special provisions for Scheduled Tribes.	No gap between SPS and FCTLARR.  Entitlement Matrix outlines compensation and assistance for DPs.
5.	Improve standard of living of displaced vulnerable groups	Improve the standards of living of the displaced poor and other vulnerable groups, including women, to at least national minimum standards	FCTLARR only provide special provisions scheduled tribe.	Provisions outlined in ADB SPS will be followed for the project
6.	Negotiated Settlement	Develop procedures in a transparent, consistent, and equitable manner if land acquisition is through negotiated settlement to ensure that those people who enter into negotiated settlements will maintain	FCTLARR only apply in case of land acquired/purchased for PPP projects and for Private Companies. Section: 2. (2), and 46.	Provisions outlined in ADB SPS will be followed for the project.

	Aspect	ADB Safeguard Requirement	Fair Compensation and Transference in Land Acquisition, Rehabilitation and Resettlement Act, 2013	Measures to Bridge the GAP
		the same or better income and livelihood status		
7.	Compensation For non-title holders	Ensure that displaced persons without titles to land or any recognizable legal rights to land are eligible for resettlement assistance and compensation for loss of non-land assets.	Non-titleholders on acquired land area is only included but not clear about non-titleholders in existing govt. land	Provisions outlined in ADB SPS will be followed for the project.
8.	Requirement of RP	Prepare a resettlement plan / indigenous peoples plan elaborating on displaced persons' entitlements, the income and livelihood restoration strategy, institutional arrangements, monitoring and reporting framework, budget, and time-bound implementation schedule.	Preparation of Rehabilitation and Resettlement Scheme including time line for implementation. <i>Section: 16. (1) and (2).</i>  Separate development plans to be prepared. <i>Section 41</i>	No gap between SPS and FCTLARR.  RP will be prepared for project with impact.
9.	Public disclosure	Disclose a draft resettlement plan, including documentation of the consultation process in a timely manner, before project appraisal, in an accessible place and a form and language(s) understandable to displaced persons and other stakeholders. Disclose the final resettlement plan and its updates to displaced persons and other stakeholders	Under clause 18, the Commissioner shall cause the approved Rehabilitation and Resettlement Scheme to be made available in the local language to the <i>Panchayat</i> , Municipality or Municipal Corporation. As the case may be, and the offices of the District Collector, the Sub-Divisional Magistrate and the <i>Tehsil</i> , and shall be published in the affected areas, in such manner as may be prescribed and uploaded on the website of the appropriate Government.	In addition to the publishing of the approved resettlement plan, the RF includes provision for disclosure of the various documents pertaining to RP implementation.
10.	Costs	Include the full costs of measures proposed in the	16. (I) Upon the publication of the preliminary	No gap between SPS and FCTLARR. Cost of

	Aspect	ADB Safeguard Requirement	Fair Compensation and Transference in Land Acquisition, Rehabilitation and Resettlement Act, 2013	Measures to Bridge the GAP
	resettlement	resettlement plan and indigenous peoples plan as part of project's costs and benefits. For a project with significant involuntary resettlement impacts and / or indigenous peoples plan, consider implementing the involuntary resettlement component of the project as a stand-alone operation.	notification under sub-section (/) of section 11 by the Collector, the Administrator for Rehabilitation and Resettlement shall conduct a survey and undertake a census of the affected families, in such manner and within such time as may be Prescribed, which shall include: (a) particulars of lands and immovable properties being acquired of each affected family; (b) livelihoods lost in respect of land losers and landless whose livelihoods are primarily dependent on the lands being acquired; (c) a list of public utilities and Government buildings which are affected or likely to be affected, where resettlement of affected families is involved; (d) details of the amenities and infrastructural facilities which are affected or likely to be affected, where resettlement of affected families is involved; and (e) details of any common property resources being acquired'	resettlement will be covered by the EA.
11.	Taking over possession before Payment of compensation	Pay compensation and provide other resettlement entitlements before physical or economic displacement. Implement the resettlement plan under close supervision throughout project implementation.	38 (I) The Collector shall take possession of land after ensuring the full payment of compensation as well as rehabilitation and resettlement entitlements are paid or tendered to the entitled persons within a period of three months for the compensation and a period of six months for the monetary part of rehabilitation and resettlement entitlements listed in the Second Schedule commencing from the date of the award made under section 30.	No gap between SPS and FCTLARR.
12.	Monitoring	Monitor and assess resettlement outcomes, their impacts on the standards of living of displaced persons, and whether the objectives of the resettlement plan have been achieved by taking into account the baseline conditions and	48 (I)The Central Government may, whenever necessary for national or inter-State projects, constitute a National Monitoring Committee for reviewing and monitoring the implementation of rehabilitation and resettlement schemes or plans under this Act.	For project, monitoring mechanism and frequency will follow ADB SPS based on categorization.

	Aspect	ADB Safeguard Requirement	Fair Compensation and Transference in Land Acquisition, Rehabilitation and Resettlement Act, 2013	Measures to Bridge the GAP
		the results of resettlement monitoring. Disclose monitoring reports.		

215. R&R Policy Framework for the Project

216. Based on the above analysis of government provisions and ADB policy, the following resettlement principles are adopted for this Project:

217. Screen the project early on to identify past, present, and future involuntary resettlement impacts and risks. Determine the scope of resettlement planning through a survey and/or census of displaced persons, including a gender analysis, specifically related to resettlement impacts and risks. Measures to avoid and minimize involuntary resettlement impacts include the following: (i) explore alternative alignments or locations which are less impacting, (ii) ensure the appropriate technology is used to reduce land requirements, (iii) modify the designs, cross sections, and geometrics of components to minimize the ROW and ensure involuntary resettlement is avoided or minimized.
218. Carry out meaningful consultations with displaced persons, host communities, and concerned nongovernment organizations. Inform all displaced persons of their entitlements and resettlement options. Ensure their participation in planning, implementation, and monitoring and evaluation of resettlement programs. Pay particular attention to the needs of vulnerable groups, especially those below the poverty line, the landless, the elderly, women and children, and indigenous peoples, and those without legal title to land, and ensure their participation in consultations. Establish a grievance redress mechanism to receive and facilitate resolution of the concerns of displaced persons. Support the social and cultural institutions of displaced persons and their host population. Where involuntary resettlement impacts and risks are highly complex and sensitive, compensation and resettlement decisions should be preceded by a social preparation phase.
219. Improve, or at least restore, the livelihoods of all displaced persons through; (i) land-based resettlement strategies when affected livelihoods are land based where possible or cash compensation at replacement cost for land when the loss of land does not undermine livelihoods, (ii) prompt replacement of assets with access to assets of equal or higher value, (iii) prompt compensation at full replacement cost for assets that cannot be restored, and (iv) additional revenues and services through benefit sharing schemes where possible.
220. Provide physically and economically displaced persons with needed assistance, including the following: (i) if there is relocation, secured tenure to relocation land, better housing at resettlement sites with comparable access to employment and production opportunities, integration of resettled persons economically and socially into their host

communities, and extension of project benefits to host communities; (ii) transitional support and development assistance, such as land development, credit facilities, training, or employment opportunities; and (iii) civic infrastructure and community services, as required.

221. Improve the standards of living of the displaced poor and other vulnerable groups, including women, to at least national minimum standards. In rural areas provide them with legal and affordable access to land and resources, and in urban areas provide them with appropriate income sources and legal and affordable access to adequate housing.
222. Ensure that displaced persons without titles to land or any recognizable legal rights to land are eligible for all compensation, relocation and rehabilitation measures, except land. .
223. Prepare a resettlement plan elaborating on the entitlements of displaced persons, the income and livelihood restoration strategy, institutional arrangements, monitoring and reporting framework, budget, and time-bound implementation schedule. This resettlement plan will be approved by ADB prior to contract award.
224. Disclose a draft resettlement plan, including documentation of the consultation process in a timely manner, before project appraisal, in an accessible place and in a form and language(s) understandable to displaced persons and other stakeholders. Disclose the final resettlement plan and its updates to displaced persons and other stakeholders.
225. Conceive and execute involuntary resettlement as part of a development project or program. Include the full costs of resettlement in the presentation of project's costs and benefits. For a project with significant involuntary resettlement impacts, consider implementing the involuntary resettlement component of the project as a stand-alone operation.
226. Pay compensation and provide other resettlement entitlements before physical or economic displacement. Implement the resettlement plan under close supervision throughout project implementation.
227. Monitor and assess resettlement outcomes, their impacts on the standard of living of displaced persons, and whether the objectives of the resettlement plan have been achieved by taking into account the baseline conditions and the results of resettlement monitoring. Disclose monitoring reports.
228. Valuation of Assets
229. The valuation of affected land and structures will be governed by the following process:

230. Land surveys for determining the payment of compensation would be conducted on the basis of updated official records and ground facts. The land records containing information like legal title, and classification of land will be updated expeditiously for ensuring adequate cost compensation and allotment of land to the entitled displaced persons. Records as they are on the cut-off date will be taken into consideration while determining the current use of land. The economically unviable residual land remaining after the land acquisition will be acquired as per the provisions of RFCT in LARR Act, 2013. The owner of such land/property if desired so, will have the right to seek acquisition of his entire contiguous holding/ property provided the residual land if is economically unviable. However, the Collector will decide on the viability and acquisition of such land under section 94 (1-4) of RFCTLARR Act, 2013 and his decision will be termed as final.



231. The methodology for verifying the replacement cost for each type of loss will be calculated as per the provision made in the RFCT in LARR Act -2013, which take account of market value, additional solatium, transitional value and therefore, equivalent to the replacement cost defined in the SPS 2009.

**232. Valuation of Land:**

233. The District Collector/Deputy Commissioner shall determine the market value of the land with assessment of (a) the market value, if any, specified in the Indian Stamp Act, 1899 for the registration of sale deeds or agreements to sell, as the case may be, in the area, where the land is situated; or (b) the average sale price for similar type of land situated in the nearest village or nearest vicinity area; or (c) consented amount of compensation as agreed upon, whichever is higher.

234. Where the market value as per above section (1) cannot be determined for the reason that: (a) the land is situated in such area where the transactions in land are restricted by or under any other law for the time being in force in that area; or (b) the registered sale deeds or agreements to sell for similar land are not available for the immediately preceding three years; or (c) the market value has not been specified under the Indian Stamp Act, 1899; the appropriate authority, the State Government concerned shall specify the floor price or minimum price per unit area of the said land based on the Price calculated in the manner specified in the above section (1) in respect of similar types of land situated in the immediate adjoining areas.

235. The market value calculated as per above section (1) shall be multiplied by a factor of (a) 1 (one) to 2 (two) in rural areas based on the distance of project from Urban Area as notified by the State Government; and (b) one in urban areas.

236. Solatium amount equivalent to 100% of the market value calculated on the basis of above (1 or 2) x 3.

Hence;

The cost of land in rural areas =  $X + 100\%$  of  $X$ ,

The cost of land in urban areas =  $X + 100\%$  of  $X$

Where  $X$  = Market Value as determined above x 1 to 2.

**237. Valuation of Building and Structure:**

238. The cost of buildings will be estimated based on updated Basic Schedule of Rates (BSR) as on date without depreciation. Since, all the affected structures belong to non-titleholders, no Solatium will be added to the estimated market value of the structure as it is provided to only the titleholders under the provision of RFCT in LARR Act -2013. During valuation of structure/building following parameters should be taken in to account:

- 239. From where they use to buy materials
- 240. Type of shops
- 241. Distance to be traveled
- 242. Sources (local or foreign) and the cost of various materials
- 243. Who will build the structures (owner or contractor) and whether they will use the hired labor or their own labor;
- 244. Obtaining cost estimates by meeting at least three contractors/suppliers in order to identify cost of materials and labor
- 245. Identifying the cost of different types of houses of different categories and compare the same with district level prices.
- 246. Calculation of the labor cost even if the structure is constructed by the household only without hiring any labor.

247. Even after payment of compensation, DPs would be allowed to take away the materials salvaged from their dismantled houses and shops and no charges will be levied upon them for the same. In case of any structures not removed by the DPs in stipulated 60 days period, a notice to that effect will be issued intimating that DPs can take away the materials so salvaged within 48 hours of their demolition; otherwise, the same will be disposed by the project authority without giving any further notice.

**248. Valuation of Trees:**

249. Compensation for trees will be based on their full replacement cost. The District Collector/Deputy Commissioner for the purpose of determining the market value of trees and plants attached to the land acquired, use the services of experienced persons/agencies in the field of agriculture, forestry, horticulture, sericulture, or any other field, as may be considered necessary by him.

250. Trees standing on the land owned by the government will be disposed off through open auction by the concerned Revenue Department/ Forest Department. DPs will be provided with an advance notice of three months prior to relocation. Further, all compensation and assistance will be paid to DPs at least 60 days prior to displacement or dispossession of assets.

251. For temporary impact on land and common resources, any land required by the project on a temporary basis will be compensated in consultation with landowners and will be restored to previous or better quality. Implementation issues can be found in the Entitlement Matrix.

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## 6. ENTITLEMENTS, ASSISTANCE AND BENEFITS

### 252. Introduction

253. The project will have three types of displaced persons i.e., (i) persons with formal legal rights to land lost in its entirety or in part; (ii) persons who lost the land they occupy in its entirety or in part who have no formal legal rights to such land, but who have claims to such lands that are recognized or recognizable under national laws; and (iii) persons who lost the land they occupy in its entirety or in part who have neither formal legal rights nor recognized or recognizable claims to such land. The involuntary resettlement requirements apply to all three types of displaced persons. The project involves land acquisition and therefore legal titleholders will be affected, the RP describes provision for all type of DPs and formulated the entitlement matrix.

### 254. Cut-off-Date for Entitlement

255. For titleholders in case of land acquisition, the date of publication of preliminary notification for acquisition under section 11 of the RFCT in LARR Act – 2013 will be treated as the cut-off date. For non-titleholders, the cut-off date will be the start date of the census survey which is 17th November 2021. The cut-off date for non-titleholders will be officially declared by the EA/IA along with the disclosure of RP. DPs who settle in the affected areas after the cut-off date will not be eligible for compensation. They, however, will be given sufficient advance notice, requested to vacate premises and dismantle affected structures prior to project implementation. Their dismantled structures and materials will not be confiscated and they will not pay any fine or suffer any sanction.

### 256. Project Entitlement

257. In accordance with the R&R measures outlined in the previous chapter, all displaced households and persons will be entitled to a combination of compensation packages and resettlement assistance depending on the nature of ownership rights on lost assets and scope of the impacts including socio-economic vulnerability of the displaced persons and measures to support livelihood restoration if livelihood impacts are envisaged. The displaced persons will be entitled to the following five types of compensation and assistance packages:

- 258. Compensation for structures (residential/ commercial) and other immovable assets at their replacement cost.
- 259. Compensation for the loss of land, crops/ trees at their replacement cost;
- 260. Assistance in the form of the loss of business/ wage income and income restoration assistance,
- 261. Assistance for shifting and provision for the relocation site (if required), and
- 262. Rebuilding and/ or restoration of community resources/facilities.

263. **Loss of land** will be compensated at replacement cost plus refund of transaction cost (land registration cost, stamp duties etc) incurred for purchase of replacement land within the time frame mentioned in the entitlement matrix. DPs with traditional title/occupancy rights will also be eligible for full compensation for land at replacement value. If the residual plot(s) becomes not viable three options

are to be given to the DP, subject to his acceptance which are (i) The DP remains on the plot, and the compensation and assistance paid to the tune of required amount of land to be acquired, (ii) Compensation and assistance are to be provided for the entire plot including residual part, if the owner of such land wishes that his residual plot should also be acquired by the IA, the IA will acquire the residual plot and pay the compensation for it. The viability of such plot would be certified by concerned subdivisional magistrate (SDM) and concerned building department of the PWD. (iii) If the DP is from vulnerable group, compensation for the entire land by means of land for land will be provided if DP wishes so, provided that land of equal productive value is available. The replacement of land option will be considered by the District Collector/SDM while acquiring land wherever feasible alternate land is available. All fees, stamp duties, taxes and other charges, as applicable under the relevant laws, incurred in the relocation and rehabilitation process, are to be borne by the EA/IA. Each titleholder family losing land will be entitled for following assistances.

264. One time resettlement allowance of Rs. 50,000.

265. One time assistance option from: (i) Where jobs are created through the project, employment for at least one member of the affected family with suitable training and skill development in the required field; or (ii) one-time payment of Rs. 50,000.

**266. Loss of Structures** will be compensated at replacement value with other assistance to the non-titleholders. The details of entitlement will be as:

1. Compensation for structure at the replacement cost to be calculated as per latest prevailing basic schedules of rates (BSR) without depreciation.
2. Right to salvage materials from structure and other assets with no deductions from replacement value.
3. One-time Resettlement allowance of Rs. 50,000
4. One-time financial assistance of Rs. 25,000 to the families losing cattle sheds for reconstruction
5. One time shifting assistance of Rs. 50,000 towards transport costs etc.

**267. Loss of livelihood due to loss of primary source of income** will be compensated through rehabilitation assistances. There are only non-titleholders in this project losing primary source of income. Details of entitlements in the above categories are described below:

268. One-time financial assistance of minimum Rs. 25,000, for skill up-gradation training to DP's opted for (one member of the affected family) income restoration.

269. Preference in employment under the project during construction and implementation.

270. Monthly Subsistence allowance of Rs. 3,000 for one year (total Rs. 36,000) from the date of award

271. **Loss trees and crops** will be compensated by cash compensation. The entitlements to the DPs losing trees will be compensated for trees based on timber value at market price, and compensation for perennial crops and fruit trees at annual net product market value multiplied by remaining productive years; to be determined in consultation with the Forest Department for timber trees and the Horticulture Department for other trees/crops. Since there is no land acquisition under the subproject, no loss of trees is envisaged.

272. **Additional assistance to vulnerable households** (Vulnerable households includes BPL, SC, ST, WHH, disabled and elderly and non-titleholders DPs) will be paid with special assistance as detailed below. The following provision in addition to the compensation for lost assets will ensure that the vulnerable people affected under the Project will be able to improve their standard of living or attain at least national minimal level.

- 273. One-time lump sum assistance of Rs. 25,000 to vulnerable households. This will be paid above and over the other.
- 274. Receive preference in income restoration training program under the project.
- 275. Preference in employment under the project during construction and implementation according to their acquired skills.
- 276. Access to basic utilities and public services.

277. **Loss of community infrastructure/common property resources** will be compensated either by cash compensation at replacement cost to the community (registered trust, society or village committee as appropriate) or reconstruction of the community structures in consultation with the affected community. CPR clearing and reconstruction including any ceremonial/religious expenses to relocate such structures will be undertaken by civil works contractors, and the associated costs are incorporated in their contracts.

278. **Temporary Impacts** on agricultural land due to plant site for contractor etc will be eligible for cash compensation for loss of income potential including:

- 279. Any land required by the Project on a temporary basis will be compensated in consultation with the landholders.
- 280. Rent at market value for the period of occupation
- 281. Compensation for assets at replacement cost
- 282. Restoration of land to previous or better quality
- 283. Location of construction camps will be fixed by contractors in consultation with Government and local community.
- 284. 60 days advance notice regarding construction activities, including duration and type of temporary loss of livelihood.
- 285. Cash assistance based on the minimum wage/average earnings per month for the loss of income/livelihood for the period of disruption, and contractor's actions to ensure there is no income/access loss consistent with the EMP.

286. Assistance to mobile vendors/hawkers to temporarily shift for continued economic activity.

287. **Any unanticipated impacts** due to the project will be documented during the implementation phase and mitigated based on provision made in the Entitlement Matrix of this RP.

288. Entitlement Matrix

289. An Entitlement Matrix has been developed for the entire Bihar State Highways III Project and is applicable to phase II also. It summarizes the types of losses and the corresponding nature and scope of entitlements; and is in compliance with National/ State Laws and ADB SPS-2009 (**refer to Table 38**). Appropriate compensation and assistance will be fully paid prior to any physical or economic displacement.

290. All compensation and other assistances<sup>11</sup> will be paid to all DPs prior to commencement of civil works. After payment of compensation, DPs would be allowed to take away the materials salvaged from their dismantled houses and shops and no charges will be levied upon them for the same. The cost of salvaged materials will not be deducted from the overall compensation amount due to the DPs. A notice to that effect will be issued intimating that DPs can take away the materials.

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11 While compensation is required prior to dispossession or displacement of affected people from their assets, the full resettlement plan implementation, which may require income rehabilitation measures, might be completed only over a longer period of time after civil works have begun. Displaced people will be provided with certain resettlement entitlements, such as land and asset compensation and transfer allowances, prior to their displacement, dispossession, or restricted access.

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Table 38: Entitlement Matrix

S.N.	Type of Loss	Application	Definition of Entitled Person	Compensation Policy	Implementation Issues	Responsible Agency
<b>Land</b>						
1-a	Loss of private land	Agricultural land <sup>12</sup> , homestead land or vacant plot	Legal titleholders/  Family with traditional titleholders <sup>13</sup>	Compensation at replacement cost or land-for-land where feasible. <sup>14</sup> If land-for-land is offered, titles will be in the name of original landowners.  One time Resettlement allowance <sup>15</sup> of Rs. 50,000 per affected family <sup>16</sup>	Compensation accounts for all taxes and fees, and does not account for any depreciation.  Vulnerable households will be identified during the	The Valuation Committee will determine replacement value as per the procedures outlined in the subsequent sections of this document. PIU will ensure provision of notice. PIU will verify the extent of impacts through a

<sup>12</sup> The LARR, 2013 Act says no irrigated multi-cropped land shall be acquired under this Act, except in exceptional circumstances, as a demonstrable last resort. Wherever such land is acquired, an equivalent area of cultivable wasteland shall be developed for agricultural purposes or an amount equivalent to the value of land acquired shall be deposited with the appropriate Government for investment in agriculture for enhancing food-security. Such costing shall also reflect while preparing Resettlement Budget.

<sup>13</sup> Traditional land rights refer to households with customary rights to land, and shall be treated equivalent to titleholders. The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 defines “Forest Dwelling Scheduled Tribes” as the members or community of the Scheduled Tribes who primarily reside in and who depend on the forests and forest lands for bona fide livelihood needs and includes the Scheduled Tribe pastoralist communities. The act provides right to in situ rehabilitation including alternative land in cases where the Scheduled Tribes and other traditional forest dwellers have been illegally evicted or displaced from forest land of any description without receiving their legal entitlement or rehabilitation prior to the 13th of December 2005.

<sup>14</sup> Including option for compensation for non-viable residual portions.

<sup>15</sup> The LARR Act–2013 specifies that each affected family shall be given one time Resettlement Allowance of Rs.50,000/- only. This is to cover transport and shifting.

S.N.	Type of Loss	Application	Definition of Entitled Person	Compensation Policy	Implementation Issues	Responsible Agency
				Each affected family shall be eligible for choosing one time assistance option from: (i) Where jobs are created through the project employment for at least one member of the affected family with suitable training and skill development in the required field; or (ii) One time payment of Rs. 500,000 per affected family. 292. Additional assistance to Vulnerable Households	291. Census. Re-titling to be completed prior to project completion 292. For option of choosing job created through project, job will be paid at living wage and monitored by CSC.	100% survey of DPs, determine assistance, and identify vulnerable households.
1-b	Loss of private land	Agricultural land, homestead land or vacant plot	Tenants and leaseholders (whether having written tenancy/lease documents or not / Sharecroppers	Compensation for rental deposit or unexpired lease (such amount will be deducted from the compensation of land owners). 293. Additional assistance to Vulnerable Households	Land owners will reimburse tenants and leaseholders land rental deposit or unexpired lease 294. Vulnerable households will be identified during the census.	PIU will confirm land rental and ensure tenants and leaseholders receive reimbursement for land rental deposit or unexpired lease, and report to PIU. PIU will ensure provision of notice.
1-c	Loss of Government	Vacant plot, Agricultural land	Leaseholders	Compensation for rental deposit or unexpired lease (such amount will be deducted from the compensation	296. Vulnerable households will be identified during the	PIU will ensure provision of notice and identify vulnerable

<sup>16</sup> 'Family' includes a person, his or her spouse, minor children, minor brothers and minor sisters dependent on him. Widows, divorcees and women deserted by families shall be considered separate family. An adult of either gender with or without spouse or children or dependents shall be considered as a separate family – as defined under LARR Act-13.



S.N.	Type of Loss	Application	Definition of Entitled Person	Compensation Policy	Implementation Issues	Responsible Agency
	land	homestead land		of the lessee). 295. Additional assistance to Vulnerable Households	census.	households.
1-d	Loss of Government land	Vacant plot, Agricultural land, homestead land, RoW of road	Non-Title Holders/Squatters <sup>17</sup> , Encroachers <sup>18</sup>	297. At least 60 days advance notice to shift from occupied land. 298. Notice to harvest standing seasonal crops and compensation. 299. Additional assistance to Vulnerable Households	300. Vulnerable households will be identified/verified during the RP implementation.	PIU will ensure provision of notice.  PIU will identify vulnerable households.
<b>Residential Structures<sup>19</sup></b>						
2-a	Loss of residential structure	Residential structure and other assets <sup>20</sup>	Legal titleholders  Family with traditional land right	Each affected family shall be eligible for choosing one time assistance option from:  301. Replacement cost of the structure and other assets (or part	Compensation accounts for all taxes and fees, and does not account for any depreciation.  Vulnerable households will	Valuation committee will verify replacement value. PIU will verify the extent of impacts through a 100% survey of DHs determine assistance, verify and identify

<sup>17</sup> Squatters are those who have no recognizable rights on the land that they are occupying.

<sup>18</sup> Encroachers are those who build a structure which is in whole or is part of an adjacent property to which he/she has no title. The vulnerability of these encroachers will be based on their other criteria except their NTH status.

<sup>19</sup> Some of the entitlements under section are the same as previous rows as it is structured separately for each affected category and should not be duplicated in reading.

<sup>20</sup> Other assets include, but is not limited to walls, fences, sheds, wells, etc.

S.N.	Type of Loss	Application	Definition of Entitled Person	Compensation Policy	Implementation Issues	Responsible Agency
				<p>of the structure and other assets (if remainder is viable);</p> <p>or</p> <p>302. In Rural area, the displaced family will be provided with the option of constructed house as per Indira Awas Yojana specifications in lieu of cash compensation;</p> <p>303. In Urban area, the displaced family will be provided with the option of constructed house of minimum 50 sq. m. plinth area in lieu of cash compensation.</p> <p>Fees, taxes, and other charges related to replacement structure.</p> <p>Right to salvage materials from structure and other assets with no deductions from replacement value.</p> <p>One-time Resettlement allowance of Rs. 50,000 per affected household</p> <p>One-time financial assistance of Rs. 25,000 to the families losing cattle sheds for reconstruction</p> <p>All displaced families will receive one time Shifting assistance of Rs.</p>	<p>be identified/verified during the RP implementation.</p>	<p>vulnerable households.</p>

S.N.	Type of Loss	Application	Definition of Entitled Person	Compensation Policy	Implementation Issues	Responsible Agency
				50,000 towards transport costs etc. 304. Additional assistance to Vulnerable Households		
2-b	Loss of residential structure	Residential structure and other assets	Tenants and leaseholders	<p>Replacement cost of part/whole of structure constructed by the tenant/leaseholder and this will be deducted from the compensation amount of the owner.</p> <p>Compensation for rental deposit or unexpired lease.</p> <p>Right to salvage materials (of the portion constructed by tenants or leaseholders) from structure and other assets</p> <p>One time Resettlement allowance of Rs. 50,000 per affected family</p> <p>One-time financial assistance of Rs. 25,000 to the families losing cattle sheds for reconstruction.</p> <p>All displaced families will receive one time Shifting assistance of Rs. 50,000 towards transport costs etc.</p> <p>305. Additional assistance to</p>	<p>Land/structure owners will reimburse tenants and leaseholders rental deposit or unexpired lease.</p> <p>Vulnerable households will be identified/verified during the RP implementation.</p>	Valuation committee will verify replacement value. PIU will verify the extent of impacts through 100% surveys of DHs determine assistance, verify and identify vulnerable households.

S.N.	Type of Loss	Application	Definition of Entitled Person	Compensation Policy	Implementation Issues	Responsible Agency
				Vulnerable Households		
2-c	Loss of residential structure	Residential structure and other assets	Non-Title Holders	306. At least 60 days advance notice to shift. 307. Replacement cost of structure without depreciation 308. Right to salvage materials from structure and other assets without any cost 309. One time Resettlement allowance of Rs. 50,000 per affected family 310. All displaced families (squatters only) will receive one time shifting assistance of Rs. 50,000 towards transport costs etc. 311. Additional assistance to Vulnerable Households	Vulnerable households will be identified/verified during the RP implementation.	PIU will verify the extent of impacts through a 100% survey of DHs determine assistance, verify and identify vulnerable households.
<b>Commercial Structures</b>						
3-a	Loss of commercial structure	Commercial structure and other assets	Legal title holders  Family with traditional land right	Replacement cost of the structure and other assets (or part of the structure and other assets, if remainder is viable)  Fees, taxes, and other charges related	Compensation accounts for all taxes and fees, and does not account for any depreciation.	Valuation committee will determine replacement value. PIU will verify the extent of impacts through a 100% survey of DHs determine assistance, verify and

21 Replacement cost will be based on the following elements: (i) fair market value; (ii) transaction costs; (iii) interest accrued, (iv) transitional and restoration costs; and (v) other applicable payments, if any. Where market conditions are absent or in a formative stage, the borrower/client will consult with the displaced persons and host populations to obtain adequate information about recent land transactions, land value by types, land titles, land use, cropping patterns and crop production, availability of land in the project area and region, and other related information.

S.N.	Type of Loss	Application	Definition of Entitled Person	Compensation Policy	Implementation Issues	Responsible Agency
				<p>to replacement structure.</p> <p>Right to salvage materials from structure and other assets with no deductions from replacement value.</p> <p>One time Resettlement allowance of Rs. 50,000 per affected family</p> <p>One-time financial assistance of Rs. 25,000 to the families losing shop for reconstruction of shop.</p> <p>All physically displaced families will receive one time Shifting assistance of Rs. 50,000 towards transport costs etc.</p> <p>312. Additional assistance to Vulnerable Households</p>	<p>Vulnerable households will be identified during the census.</p>	<p>identify vulnerable households.</p>
3-b	Loss of commercial structure	Commercial structure and other assets	Tenants and leaseholders	<p>Replacement cost of part/whole of structure constructed by the tenant/leaseholder, and this will be deducted from the compensation amount of the owner.</p> <p>Compensation for rental deposit or unexpired lease.</p> <p>Right to salvage materials (of the</p>	<p>Land/structure owners will reimburse tenants and leaseholders land rental deposit or unexpired lease.</p> <p>Vulnerable households will be identified during the</p>	<p>Valuation committee will determine replacement value. PIU will verify the extent of impacts through a 100% survey of DHs determine assistance, verify and identify vulnerable households.</p>

S.N.	Type of Loss	Application	Definition of Entitled Person	Compensation Policy	Implementation Issues	Responsible Agency
				<p>portion constructed by tenants or leaseholders) from structure and other assets</p> <p>One time Resettlement allowance of Rs. 50,000 per affected family</p> <p>All displaced families will receive both:            (i) One time Shifting assistance of Rs. 50,000 towards transport costs etc.; and            (ii) monthly Subsistence allowance of Rs. 3,000 for one year (total Rs. 36,000) from the date of award</p> <p>313. Additional assistance to Vulnerable Households</p>		
3-c	Loss of commercial structure	Commercial structure and other assets	Non-Title Holder/Squatters, Encroacher	<p>Replacement cost of structure constructed by the squatter</p> <p>Right to salvage materials from structure and other assets</p> <p>One time Resettlement allowance of Rs. 50,000 per affected family</p> <p>All displaced families will receive one time Shifting assistance of Rs. 50,000 towards transport costs etc.</p>	Vulnerable households will be identified during the census.	PIU will verify the extent of impacts through 100% surveys of DHs determine assistance, verify and identify vulnerable households.

S.N.	Type of Loss	Application	Definition of Entitled Person	Compensation Policy	Implementation Issues	Responsible Agency
				Displaced families belong to Scheduled Caste (SC) and Scheduled Tribe (ST) will receive additional one-time Rs. 50,000 as subsistence allowance. 314. Additional assistance to Vulnerable Households		
<b>Livelihood</b>						
4	Loss of livelihood	Livelihood	Legal titleholder losing business/ commercial establishment  Family with traditional land right  Commercial tenant Commercial leaseholder  Employee in commercial establishment  Agricultural laborer (long term)	315. One-time financial assistance of minimum Rs. 25,000. 316. Skill up-gradation training to be opted for (one member of the affected family) income restoration. 317. Preference in employment under the project during construction and implementation. 318. Monthly Subsistence allowance of Rs. 3,000 for one year (total Rs. 36,000) from the date of award 319. Additional assistance to Vulnerable Households	Vulnerable households will be identified/verified during the RP implementation.	PIU will verify the extent of impacts through a 100% survey of DHs determine assistance, verify and identify vulnerable households.  For Agricultural laborer (long timer) Only those who are in fulltime / permanent employment of the land owner will be eligible for this assistance. Seasonal agricultural laborers will not be entitled for this assistance.

S.N.	Type of Loss	Application	Definition of Entitled Person	Compensation Policy	Implementation Issues	Responsible Agency
			Artisans Commercial Squatters and Encroachers			
<b>Trees and Crops</b>						
5	Loss of trees and crops	Standing trees and crops	Legal titleholder Family with traditional land right Agricultural tenant/leaseholder Sharecroppers Non-Title holders Squatter	320. Advance notice of 60 days to harvest crops, fruits, and timbers. 321. Compensation for standing crops in case of such loss, based on an annual crop cycle at market value 322. Compensation for trees based on timber value at market price, and compensation for perennial crops and fruit trees at annual net product market value multiplied by remaining productive years; to be determined in consultation with the Forest Department for timber trees and the Horticulture Department for other trees/crops.	Harvesting prior to acquisition will be accommodated to the extent possible Work schedules will avoid harvest season. Seasonal crops will be given at least 60 days' notice. If notice cannot be given, compensation for standing crops will be compensated at market value. Market value of trees/crops has to be determined.	PIU will ensure provision of notice. Valuation Committee will undertake valuation of standing crops, perennial crops and trees, and finalize compensation rates in consultation with DPs.
<b>Vulnerable</b>						
6	Impacts on vulnerable APs	All impacts	Vulnerable APs	323. One-time lump sum assistance of Rs. 25,000 to vulnerable households. This will be paid above and over the other assistance provided in items 1, 2, 3, 4 and 5. 324. Receive preferential in	Vulnerable households will be identified/verified during the RP implementation.	PIU will verify the extent of impacts through 100% surveys of DHs determine assistance, verify and identify vulnerable households.



S.N.	Type of Loss	Application	Definition of Entitled Person	Compensation Policy	Implementation Issues	Responsible Agency
				<p>income restoration training program under the project.</p> <p>325. Preference in employment under the project during construction and implementation.</p> <p>326. Access to basic utilities and public services</p>		<p>The PIU with support from the PM/AE and RP Implementation agency<sup>22</sup> will conduct a training need assessment in consultations with the displaced persons so as to develop appropriate income restoration schemes.</p> <p>Suitable trainers or local resources will be identified by PIU and RP implementation agency in consultation with local training institutes.</p>
<b>Temporary Loss</b>						
7	Temporary loss of land <sup>23</sup>	Land temporarily required for sub-project	<p>Legal titleholders</p> <p>Family with traditional</p>	<p>327. Any land required by the Project on a temporary basis will be compensated in consultation with the landholders.</p> <p>328. Rent at market value for the period of occupation</p>	Assessment of impacts if any on structures, assets, crops and trees due to temporary occupation.	Valuation Committee will determine rental value and duration of construction survey and consultation with DPs. PIU will ensure compensation is paid prior

<sup>22</sup>When suitable agency is not available, the PIU will be staffed with qualified and experienced social workers to assist the IA in RP implementation

<sup>23</sup>Temporary possession of land for project purpose can be taken only for three years from the date of commencement of such possession/occupation.

S.N.	Type of Loss	Application	Definition of Entitled Person	Compensation Policy	Implementation Issues	Responsible Agency
		construction	land right	<p>329. Compensation for assets at replacement cost</p> <p>330. Restoration of land to previous or better quality.<sup>24</sup></p> <p>331. Location of construction camps will be fixed by contractors in consultation with Government and local community.</p>	Site restoration.	to site being taken-over by contractor. Contractor will be responsible for site restoration.
8	Temporary disruption of livelihood		Legal titleholders, non-titled APs	<p>332. 60 day advance notice regarding construction activities, including duration and type of disruption.</p> <p>333. Cash assistance based on the average earnings per month for the loss of income/livelihood for the period of disruption, and contractor's actions to ensure there is no income/access loss consistent with the EMP.<sup>25</sup></p> <p>334. Assistance to mobile vendors/hawkers to temporarily shift for continued economic activity.<sup>26</sup></p>	Identification of alternative temporary sites to continue economic activity.	<p>Valuation Committee will determine income lost.</p> <p>Contractors will perform actions to minimize income/access loss.</p>

<sup>24</sup> If the land has become permanently unfit to be used for the purpose for which it was used immediately before the commencement of such term, and if the persons interested shall so require, the appropriate Government shall proceed under the Act to acquire the land as if it was needed permanently for a public purpose.

<sup>25</sup> This includes: leaving spaces for access between mounds of soil, providing walkways and metal sheets to maintain access across trenches for people and vehicles where required, increased workforces to finish work in areas with impacts on access, timing of works to reduce disruption during business hours, phased construction schedule and working one segment at a time and one side of the road at a time.

<sup>26</sup>For example, assistance to shift to the other side of the road where there is no construction.

S.N.	Type of Loss	Application	Definition of Entitled Person	Compensation Policy	Implementation Issues	Responsible Agency
<b>Common Resources</b>						
9	Loss and temporary impacts on common resources	Common resources	Communities	335. Replacement or restoration of the affected community facilities – including public water stand posts, public utility posts, temples, shrines, etc.	Follow ADB SPS	PIU and Contractor.
<b>Other</b>						
10	Any other loss not identified	-	-	336. Unanticipated involuntary impacts will be documented during the implementation phase and mitigated.	-	PIU will finalize the entitlements in line with ADB's SPS, 2009.

## 7. RELOCATION OF HOUSING AND SETTLEMENTS

### 337. Basic Provision for Relocation

338. The EA will provide adequate and appropriate replacement of structures or cash compensation at full replacement cost for lost structures, adequate compensation for partially damaged structures, and relocation assistance, according to the Entitlement Matrix. The EA will compensate to the non-titleholders for the loss of assets other than land, such as dwellings, and also for other improvements to the land, at full replacement cost.

### 339. Need for Relocation

340. Despite being a linear project and efforts made to minimize the resettlement impacts, the proposed project will affect residential and commercial structures as a result of which both physical and economic displacement will arise and need of relocation in the project. Efforts are made through various provisions in this resettlement plan to mitigate negative social impacts caused up on displaced persons and communities by supporting relocation of affected households and by restoration of income to national minimum standard.

341. In the project, 292 residential structures owned by 223 households, 168 commercial structures owned by 153 households, 15 residential-cum-commercial structures owned by 13 households and 95 other private structures owned by 71 households are being affected as shown in table below.

**Table 39: Loss of Private Structure**

Sl. No.	Type of Structure	No. of Structure	DHs
1	Residential Structure	292	223
2	Commercial Structure	168	153
3	Resi+Commercial Structure	15	13
4	Other Private Structure	95	71
<b>Total</b>		<b>570</b>	<b>460</b>

### 342. Relocation and Compensation Option by DPs

343. To understand and know the relocation options, DPs were consulted during the census survey and out of total 649 households 437 (67%) have opted for self-relocation and 33% have opted for project-based relocation. The choice of DPs is further supported by their compensation option as maximum (95%) opted cash compensation against loss of their structure. The details are given in **Table 40**.

**Table 40: DPs Choice on Relocation and Compensation**

Sl. No.	Relocation Options	No. of Households	%	Compensation Option	No. of Households	%
1	Self-Relocation	437	67.33	Structure for Structure loss	30	4.62
2	Project Assisted Relocation	212	32.67	Cash for Structure loss	619	95.38
<b>Total</b>		<b>649</b>	<b>100.0</b>	<b>100.00</b>	<b>649</b>	<b>100.0</b>

344. Relocation Strategy

345. With the scattered nature of resettlement impacts the residential structures affected in the project are spread all along the sub project road. Most of the DPs preferred for cash compensation and self-relocation and during the focused group discussion, while discussing about relocation options people were very much in favour of resettlement within the village to avoid disruption of community life and problem with host community. Therefore, cash compensation at market rate along with relocation assistances is adopted as more practical solution in this case.

346. All the structures affected in the project as per provisions made in the entitlement matrix will be eligible for the following:

1. Compensation for structures will be paid at the replacement cost to be calculated as per latest prevailing basic schedules of rates (BSR) without depreciation,
2. One-time Resettlement allowance of Rs. 50,000 per affected household
3. Shifting assistance to all structures at @ of Rs. 50,000 per structure,
4. Right to salvage materials from structure and other assets with no deductions from replacement value, and

347. To help the DPs living structures in getting all above entitlements and relocating themselves, following relocation strategy will be adopted in the project:

1. At least 60 days advance notice before demolition of structure.
2. Their dismantled structures materials will not be confiscated and they will not pay any fine or suffer any sanction.  
The RP implementing agency engaged for RP implementation will assist DPs during verification of assets and will provide necessary counseling on payment of compensation and assistance.

4. The RP implementing agency will assist the project authorities in ensuring a smooth transition (during the part or full relocation of the DPs), helping the DPs to take salvaged materials and shift.
5. In close consultation with the DPs, the RP implementing agency will fix the shifting dates agreed with the DPs in writing and the arrangements desired by the DPs with respect to their entitlements.
6. In case of self-relocation also, the RP implementing agency will assist the DPs in finding alternative land within the village if so desired by the DPs in consultation with village committee and other beneficiaries in the villages.

348. Relocation Strategy for CPR

349. There are 29 common property resources reported to be affected under the sub-project as provided in table 18 of this RP. The CPRs will be compensated either by cash compensation at replacement cost to the community (registered trust, society or village committee as appropriate) or reconstruction of the community structure in consultation with the affected community. CPR clearing and reconstruction including any ceremonial/religious expenses to relocate such structures will be undertaken by civil works contractors, and the associated costs are incorporated in their contracts.

8. INCOME RESTORATION AND REHABILITATION

350. Loss of Livelihoods in the Project

351. The project impacts reveal that due to loss of land and commercial structures 371 households will experience loss of their livelihood. As per the findings of census survey, 189 owners of agriculture land, 153 owners of commercial structures, 13 owners of residential cum-commercial structures and 16 tenants doing business activity will be losing their livelihood due to the project. The details of impact on livelihoods in the project are summarized in the **Table 41**.

Table 41 : Loss of Livelihoods in the Project

Sl. No.	Loss	Households
1	Owners of Agricultural Land	189
2	Agricultural Labourer	0
3	Agricultural Tenants/ Leaseholders	0
4	Sharecropper	0
5	Loss of Commercial Structure	153
6	Loss of Residential cum Commercial Structure	13
7	Commercial Tenants	16
8	Employees in Structures	0

<b>Total</b>	<b>371</b>
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352. The above table shows that out of total DPs about 56% households are losing livelihood under the subproject. Income loses due to loss of commercial structure will be restored in a sustainable manner; in addition to subsistence allowance and livelihood allowance, DPs will be provided with skill up-gradation and training.

353. Provisions for Loss of Livelihood

354. The DPs losing their livelihoods include titleholders losing land and structures, non-titleholders having commercial structures, and commercial tenants in affected commercial structures and land under the project. In the case of economically displaced persons, regardless of whether or not they are physically displaced, the EA will promptly compensate for the loss of income or livelihood sources at full replacement cost. The EA will also provide assistance such as credit facilities, training, and employment opportunities so that they can improve, or at least restore, their income-earning capacity, production levels, and standards of living to national minimum standard. The RP implementing agency will prepare the micro plan with specific income restoration activities for each DPs at such appropriate time to enable the DPs to initiate restore their income in line with the construction schedule.

355. In cases where land acquisition affects commercial structures which are required to be relocated, affected business owners are entitled to:

- 356. the costs of reestablishing commercial activities elsewhere;
- 357. the subsistence allowance lost during the transition period; and
- 358. the costs of transferring the plant, machinery, or other equipment.

359. Business owners with legal rights or recognized or recognizable claims to land where they carry out commercial activities are entitled to replacement property of equal or greater value or cash compensation at full replacement cost. Non-titleholder households losing business structure and livelihood will be compensated for the structure loss and receive transitional assistance as well. The IA will ensure that no physical displacement or economic displacement will occur until:

- 360. compensation at full replacement will paid to each displaced person for project components or sections that are ready to be constructed;
- 361. other entitlements listed in the resettlement plan have been provided to displaced persons; and
- 362. a comprehensive income and livelihood rehabilitation program, supported by an adequate budget, is in place to help displaced persons improve, or at least restore, their incomes and livelihoods.

363. Income Restoration Measures

364. The entitlement proposed for the project has adequate provisions for restoration of livelihood of the affected communities. The focus of restoration of livelihoods is to ensure that the DPs are able to at least regain national minimum standards. To restore and enhance the economic conditions of the DPs, certain income generation and income restoration programs are incorporated in the RP. To begin with providing employment to the local people during the construction phase will enable them to

benefit from the project, reduce the size of intrusive work forces and keep more of the resources spent on the project in the local economy. It will also give the local communities a greater stake and sense of ownership in the project.

365. Among specific rehabilitation measures, capacity buildings of all the economically displaced persons will be carried out by the project authority. The RP implementing agency to be engaged under the Project will identify the eligible and most suitable candidate from the family by carry out training need assessment and prepare micro plan for rehabilitation of DPs. The RP implementing agency will impart training to the selected/eligible DPs for income restoration and skill up-gradation as per the micro plan. The EA will also provide opportunities to displaced persons to derive appropriate development benefits from the project. The vulnerable DPs will be given preference in availing employment opportunities in project construction work. The women headed households also will be taken care of in a case-to-case basis and the RP implementing agency will help them in forming Self Help Groups (SHGs), establish linkages to available credit facilities, special trainings, and linking them with ongoing govt. schemes. Budget for training in terms of assistance is provided to DPs losing livelihoods and the RP implementing agency will either organize training programs by employing appropriate resource persons or link the DPs to various ongoing training schemes. Fund for training is provided in the R&R budget keeping in view the average expenditure for ongoing training programs in the project area.

366. Additional Support from Ongoing Poverty Reduction Programs

367. In addition to project-sponsored programs, the RP implementing agency will play a proactive role to mobilize DPs to get benefits from various government schemes National Farmer Policy, animal husbandry and dairy development, development of inland fisheries and agriculture, providing kishan credit card, agriculture insurance schemes etc. and ensure their accessibility particularly of vulnerable groups. The RP implementing agency will work with the panchayat governments to make available to the DPs benefits of some of the ongoing program for poverty reduction.

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## 9. RESETTLEMENT BUDGET AND FINANCING PLAN

### 368. Introduction

369. The resettlement cost estimate for this project includes eligible compensation, resettlement assistance and support cost for RP implementation. The support cost, which includes staffing requirement, monitoring and reporting, involvement of RP implementing agency in project implementation and other administrative expenses are part of the overall project cost. The unit cost for structures and other assets in this budget has been derived through field survey, consultation with affected families, relevant local authorities and reference from old practices. Contingency provisions have also been made to take into account variations from this estimate. Some of the major items of this R&R cost estimate are outlined below:

- 370. Compensation for agricultural, residential and commercial land at their replacement value
  - 371. Compensation for structures (residential/ commercial) and other immovable assets at their replacement cost
  - 372. Compensation for trees
  - 373. Subsistence assistance in lieu of the loss of business and livelihood
  - 374. Assistance in lieu of the loss of business/ wage income/ employment and livelihood
  - 375. Assistance for shifting of the structures
  - 376. Resettlement and Rehabilitation Assistance in the form of Training allowance
  - 377. Special assistance to vulnerable groups for their livelihood restoration
  - 378. Cost for implementation of RP.
379. Compensation
380. **Private Land:** For the purpose of cost estimate, the unit rate for agricultural land has been estimated on the basis of latest official rate and prevailing market value assessment during census survey. However, the actual compensation for land at replacement cost will be determined by District Collector. For cost estimates of land multiplying factor is taken 1 for urban areas while it is considered as 2 in case of rural areas.
381. **Residential/ Commercial and other structures:** For the purpose of cost estimate, average rates of various types of structures are estimated on the basis of latest BSR and market assessment. The average rate for permanent structures without land has been calculated at Rs. 15,000/m<sup>2</sup>, semi-permanent structures have been calculated at Rs. 10,000/m<sup>2</sup>, and temporary structures have been calculated at the rate of Rs. 5,000/m<sup>2</sup>. However, the actual compensation will be calculated by the professional valuer taking into account the latest BSR without depreciation.
382. **Compensation for tree:** For cost estimate the rate for fruit and non-fruit trees are computed as Rs. 15,000 and Rs. 8,000 per tree. However, the revenue department will calculate the actual cost of trees during field verification.
383. Assistance
384. All title-holder DPs losing land and non-titleholder DPs losing structures will be eligible for onetime resettlement allowance of Rs. 50,000/- (Rupees Fifty Thousand Only) per affected family.

385. Titleholder DPs losing land will be eligible for onetime assistance of Rs. 5,00,000/- (Rupees Five Lakh Only) per affected family.

386. Titleholder DPs losing structure, non-titleholder DPs losing structures (squatters only) and tenants will be eligible for onetime shifting assistance of Rs. 50,000/- (Rupees Fifty Thousand Only) towards transport costs.

387. DPs losing cattle shed will be eligible for Rs. 25,000/- (Rupees Twenty-Five Thousand Only) as assistance for reconstruction of cattle shed.

388. All DPs losing livelihood will be eligible for monthly subsistence allowance of Rs. 3,000/- per month for a period of one year from the date of award i.e., Rs. 36,000/- (Rupees Thirty Six Thousand Only) per affected family.

389. All DP losing livelihood will be eligible for onetime financial assistance of minimum Rs. 25,000/- (Rupees Twenty-Five Thousand Only) per affected family.

390. Skill up-gradation training to DPs (one member of the affected family) opted for income restoration. Based on the prevailing training expenditure Rs. 10,000/- (Rupees Ten Thousand Only) per families losing livelihood.

391. Additional onetime assistance of Rs. 25,000/- (Rupees Twenty-Five Thousand Only) per affected vulnerable family.

392. Compensation for Community and Government Property

393. The inventory of CPR was conducted under the census survey and the list of the affected CPRs are provided in Appendix 2. CPR clearing and reconstruction including any ceremonial/religious expenses to relocate such structures will be undertaken by civil works contractors, and the associated costs are incorporated in their contracts.

394. RP Implementation and Support Cost

395. The unit cost for hiring of the RP implementing agency has been calculated on a lump sum basis for Rs. 6,000,000/- (Rupees Sixty Lakhs Only). The service of RP implementing agency will be required for 2 to 3 years period. Costs will be updated during implementation if required. A 5% contingency has been added in order to adjust any cost escalation during project implementation. For grievance redress process and carrying out consultation during project implementation a lump sum of Rs. 1,000,000/- (Rupees Ten Lakhs only) is provided. The other cost of RP implementation and administrative activities will be a part of existing departmental expenditure. For hiring of an external monitoring agency/expert a lump sum Rs. 1,500,000 (Rupees Fifteen Lakhs only) has been made.

396. R&R Budget

397. The total R&R budget for the proposed project RP works out to Rs 714.3 million. A detailed indicative R&R cost is given in **Table 42**.

Table 42: R&R Budget

Sl. No.	Item	Unit	Rate	Amount
<b>A Compensation for Land</b>		<b>in Acre</b>		<b>in Rupees</b>
1	Compensation for Private Land in Rural Area	67.77	Varied	66,513,248
			Multiplied by factor 2	133,026,496
			100% solatium	166,052,992
<b>Subtotal A</b>				<b>266052992</b>
<b>B Compensation for Structure</b>		<b>in Sq. mtr./mtr.</b>	<b>Rupees</b>	
1	Compensation for Permanent Structure	1,369	15,000	20,535,000
2	Compensation for Semi-Permanent Structure	3,983	10,000	39,830,000
3	Compensation for Temporary Structure	4,343	5,000	21,715,000
4	Compensation for Boundary Wall		2,000	304,000
<b>Subtotal B</b>				<b>82384000</b>
<b>C Compensation for Trees</b>		<b>Number</b>	<b>Rupees</b>	
1	Fruit Bearing Tree	119	15,000	1,785,000
2	Non-fruit bearing	224	8,000	1,792,000
<b>Subtotal C</b>				<b>3,577,000</b>
<b>D Assistance</b>		<b>Number</b>		
1	One-time assistance to land titleholder	453	500,000	226,500,000
2	Resettlement allowance to all DPs	665	50,000	33,250,000

3	Shifting assistance to DPs losing structure & Tenants	460	50,000	23,000,000
4	One time allowance for skill upgradation to DPs losing Livelihood	371	25,000	9,275,000
5	Subsistence allowance to DPs losing Livelihood	371	36,000	13,356,000
6	Special assistance to Vulnerable DPs	553	25,000	13,825,000
7	Assistance for reconstruction of cattle shed	23	25,000	575,000
<b>Subtotal D</b>				<b>319781000</b>
<b>E</b>	<b>RP Implementation Support Cost</b>	<b>Number</b>		
1	Hiring of RP Implementation Agency	1	6,000,000	6,000,000
2	Grievance Redressal & Consultation Cost	Lump sum	1,000,000	1,000,000
3	Hiring External Monitoring Agency/Expert	1	1,500,000	1,500,000
<b>Subtotal E</b>				<b>8,500,000</b>
<b>Total (A+B+C+D+E)</b>				<b>680,294,992</b>
<b>Contingency (5%)</b>				<b>34,014,749.6</b>
<b>GRAND TOTAL</b>				<b>714,309,741.6</b>

398. Source of Funding and Fund Flow Management

399. The cost related to resettlement will be borne by the EA. The EA will ensure allocation of funds and availability of resources for smooth implementation of the project R&R activities. The EA will, in advance, initiate the process and will try to keep the approval for the R&R budget in the fiscal budget through the Ministry of finance. In the case of assistance and other rehabilitation measures, the EA will directly pay the money or any other assistance as stated in the RP to DPs. The RP implementing agency will be involved in facilitating the disbursement process and rehabilitation program.

## 10. GRIEVANCE REDRESS MECHANISM

### 400. Introduction

401. In the project RP implementation, there is a need for an efficient grievance redress mechanism that will assist the DPs in resolving their queries and complaints. Therefore, formation of Grievance Redress Committee (GRC) will be most important for grievance redress and it is anticipated that most, if not all grievances, would be settled by the GRC.

### 402. Grievance Redress Mechanism

403. A project-specific grievance redress mechanism (GRM) will be established to receive, evaluate and facilitate the resolution of displaced people's concerns, complaints and grievances about the social and environmental performance at the level of the Project. The GRM will aim to provide a time-bound and transparent mechanism to voice and resolve social and environmental concerns linked to the project. The project-specific GRM is not intended to bypass the government's own redress process, rather it is intended to address displaced people's concerns and complaints promptly, making it readily accessible to all segments of the displaced people and is scaled to the risks and impacts of the project.

404. During project preparation, information regarding GRCs will be disclosed as part of the public consultation process. Grievances related to the implementation of the project will be acknowledged, evaluated, and responded to the complainant with corrective action proposed. The outcome shall also form part of the semi-annual monitoring report that will be submitted to ADB. The decision of the GRCs is binding, unless vacated by the court of law. The GRC will continue to function, for the benefit of the DPs, during the entire life of the project including the maintenance period.

### 405. Constitution and Function of the GRC

406. The GRC will be headed by the District Collector (DC) or his designated representative. The GRC will have representative from the PIU office, representatives of DPs, particularly of vulnerable DPs, local government representatives, representative of local NGOs and other interest groups. The GRC will meet at least once in each 15 days. Other than disputes relating to ownership rights under the court of law, GRC will review grievances involving all resettlement benefits, compensation, relocation, and other assistance. At least one member from each Panchayat will be a woman. The Committee will co-opt a member from each of the affected Panchayat institution when dealing with matters coming from a particular panchayat. Some of the specific functions of the GRC will be as following:

- 407. To provide support for the DPs on problems arising out of land/property acquisition like award of compensation and value of assets;
- 408. To record the grievances of the DPs, categorize and prioritize the grievances that needs to be resolved by the Committee and solve them within a month;
- 409. To inform PIU of serious cases within an appropriate time frame; and
- 410. To report to the aggrieved parties about the development regarding their grievance and decision of PIU.

411. It is proposed that GRC will meet regularly (at least twice in a month) on a pre-fixed date. The committee will look into the grievances of the people and will assign the responsibilities to implement the decisions of the committee. The claims will be reviewed and resolved within 15 days from the date of submission to the committee. All Grievances will be routed through the RP implementing agency to

the GRC. Through public consultations, the DPs will be informed that they have a right to grievance redress. The DPs can call upon the support of the RP implementing agency to assist them in presenting their grievances or queries to the GRC. The RP implementing agency will act as an in-built grievance redress body. The DPs, who would not be satisfied with the decision of the GRC, will have the right to take the grievance to the BSRDC Head Office for its redress. Failing the redressal of grievance at BSRDC, the DPs may take the case to Judiciary. Taking grievances to Judiciary will be avoided as far possible and the RP implementing agency will make utmost efforts at reconciliation at the level of GRC. All grievances received (written or oral) and their redress will be recorded and documented properly. The EA will ensure that, such records will be made available to the external monitor or ADB review mission on request. All the GRC related expenses will be borne by the project.

412. People who are, or may in the future be, adversely affected by the project may submit complaints to ADB's Accountability Mechanism. The Accountability Mechanism provides an independent forum and process whereby people adversely affected by ADB-assisted projects can voice and seek a resolution of their problems, as well as report alleged violations of ADB's operational policies and procedures. Before submitting a complaint to the Accountability Mechanism, affected people should make a good faith effort to solve their problems by working with the concerned ADB operations department. Only after doing that, and if they are still dissatisfied, should they approach the Accountability Mechanism.<sup>27</sup>

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For further information see: <http://www.adb.org/Accountability-Mechanism/default.asp>.

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## 11. INSTITUTIONAL ARRANGEMENT

### 413. Institutional Requirement

414. For implementation of RP there will be a set of institutions involve at various levels and stages of the project. For successful implementation of the RP the proposed institutional arrangement with their role and responsibility has been outlined in this section. The primary institutions, who will be involved in this implementation process, are the following:

415. Bihar State Road Development Corporation (BSRDC), Government of Bihar

416. Project Implementation Unit (PIU)

417. RP Implementing Agency

418. Village Level Committee (VLC)

419. District Grievance Redress Committee (GRC)

420. Construction Supervision Consultant (CSC)/Authority Engineer (AE)

### 421. Executing Agency

422. The Executing Agency (EA) for the Project is BSRDC, Government of Bihar. The EA, headed by MD will have overall responsibility for implementation of loan and will also be responsible for the overall coordination among ADB, Government of Bihar. BSRDC has already set up a Project Implementation Unit (PIU) for implementation for the project which will be functional for the whole Project duration.

### 423. Resettlement Management at PIU

424. For resettlement activities, PIU will do the overall coordination, planning, implementation, and financing and monitoring. The PIU is headed by Deputy General Manager (DGM) and assisted by two Managers. Each of the Managers will be responsible for looking after the Land Acquisition and R&R activities of respective sections i.e. North and South sections. The PIU will hire an RP implementing agency for supporting implementation of resettlement activities in the project. The PIU will maintain all databases, work closely with DPs and other stakeholders and monitor the day today resettlement activities. Some of the specific functions of the PIU with regards to resettlement management will include:

425. Overall responsibility of implementation and monitoring of R&R activities in the Project;

426. Ensure availability of budget for R&R activities;

427. Liaison lined agencies support for land acquisition and implementation of RP;

428. Selection and appointment of the RP implementing agency.

429. Coordinating with line Departments, PIU, RP implementing agency and CSC/AE.

430. Monitor physical and financial progress on land acquisition and R&R activities;

431. Participate in regular meetings in GRC; and

432. Organize monthly meetings with the RP implementing agency to review the progress on R&R

### 433. RP Implementing agency

434. Voluntary resettlement is a sensitive issue and strong experience in R&R matters along with community related skills will be required by the PIU in order to build a good rapport with the affected community and facilitate satisfactory R&R of the DPs. To overcome this deficiency, experienced and well-qualified RP implementing agency in this field will be engaged to assist the PIU in the

implementation of the RP. The RP implementing agency would play the role of a facilitator and will work as a link between the PIU and the affected community. RP implementing agency will assist DPs in income restoration by preparing micro plan and guiding to access into various ongoing government development schemes and agencies providing financial assistance and loan. Taking into account the significant role of the RP implementing agency in RP implementation, it is extremely important to select the agency that are capable, genuine and committed to the tasks assigned in order to ensure the success of the Plan. The Terms of Reference for the RP implementing agency is appended as **Appendix: 6.**

435. The roles and responsibilities of various agencies to be involved in resettlement planning process and implementation of resettlement activities are summarized in **Table 43.**

**Table 43 : Agencies Responsible for Resettlement Implementation**

Key Agency	Responsibility
EA (BSRDC)	436. Make final decision on roads to be included under the project 437. Overall responsibility for project design, feasibility, construction and operation and guide PIU 438. Ensure that sufficient funds are available to properly implement all agreed social safeguards measures 439. Ensure that all project comply with the provisions of ADB's SPS 2009 and Gol's policies and regulations 440. Submit semi-annual safeguards monitoring reports to ADB
Project Implementation Unit (PIU)	(a) District Level 441. Disseminate project information to the project affected community with assistance from DPR Consultants 442. Ensure establishment of grievance Redress Committee at the district level for grievance redress with assistance from DPR Consultants (b) Field Level 443. Disclosure of project information in public spaces and through relevant media. 444. Disseminate project information to the community in coordination with DPR Consultants 445. Facilitate the socioeconomic survey and census 446. Facilitate consultation by the civil works contractor with community throughout implementation 447. Oversee land acquisition and coordinate with Deputy Commissioner 448. Supervise the mitigation measures during implementation and its progress 449. Conduct internal monitoring and prepare reports
Detailed Project Report (DPR) Consultants	450. Undertake consultations involving community and DPs 451. Prepare due diligence report if no land acquisition 452. Encourage community/ DPs to voluntarily participate during the implementation
RP Implementing Agency	453. Assist in the implementation of the RP if involuntary resettlement is identified.
Construction Supervision Consultant	454. Provide technical support and advise to the IAs in the implementation of the RP specifically for addressing complaints and grievances and participate in resolving issues as a member of the GRC

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Key Agency	Responsibility
(CSC)/ Authority Engineer (AE)	455. Monitor and assist the RP implementing agency by providing Technical Support and advice during implementation of RP. 456. Provide technical advice and on the job training to the contractors as necessary 457. Preparation of semi-annual monitoring reports based on the monitoring checklists and submission to RDA for further submission to ADB 458. Act as External Monitor for project with significant impact
Contractor	459. Consult community and PIU regarding location of construction camps 460. Sign agreement with titleholder for temporary use of land and restore the land to equal or better condition upon completion 461. Commence construction only when alignment is free of encumbrance 462. Respond in a timely fashion to recommendations from GRCs
District level officials	463. Provide any existing socioeconomic information, maps and other related information to DPR Consultant prior to the field data/information collection activities. 464. Act as the local focal point of information dissemination 465. Execute land acquisition process
Community Based Organizations	466. Ensure the community participation at various stages of the project 467. Coordination with stakeholder organizations 468. Assist in Monitoring of the project 469. Providing indigenous knowledge as required
Village Level Committee	470. Provide correct and accurate data and information from project formulation stage 471. Assist the project team to implement the project smoothly 472. Arrange proper community participation.
ADB	473. Review due diligence report on RP and endorse or modify the project classification 474. Review planning documents and disclose the draft and final reports on the ADB's website as required 475. Monitor implementation through review missions 476. Provide assistance to the EA and IA of project, if required, in carrying out its responsibilities and for building capacity for safeguard compliance 477. Monitor overall compliance of the project to ADB SPS

478. Capacity Building on RP in the EA

479. The BSRDC has already established a PIU headed by a DGM dealing with the land acquisition and resettlement for other projects. These officers have been working closely with the consultant team for the preparation of RP. The designated officials from BSRDC were also actively participated during the preparation of LA Plan and census survey. Capacity building training was also initiated through a series of consultations and informal orientation sessions in the local administration level especially in the local revenue offices. The concerned district collector was also informed about the project and the local revenue officials were consulted for collection of relevant land data and land holders' details. During the preparation of RP and especially, during the land acquisition and resettlement survey, concerned officials were informed about their role during the implementation of RP particularly during the disbursement of compensation, assistance and relocation etc.

480. To allow an effective execution of all RP related tasks some expansion of the capacity on RP currently available at EA/PIU may be needed. As soon as the project will become effective BSRDC will

carry out a capacity need assessment and will define the capacity building activities and if needed the additional experts required. All concerned staff at PIU level involved in land acquisition and resettlement activities will undergo an orientation and training in ADB resettlement policy and management. The ADB's PPTA consultant's resettlement specialist will organize a training workshop and provide training to the PIU staff. Broadly, the training will cover various topics such as (i) Principles and procedures of land acquisition; (ii) Public consultation and participation; (iii) Entitlements and compensation & assistance disbursement mechanisms; Grievance redress; and (iv) Monitoring of resettlement operations. These will be covered through a formal workshop by the consultant under the ongoing technical assistance program. The specific components under the training will cover the following:

481. Understanding of the ADB Policy Guidelines and requirements and differences between country policy and laws
482. Understanding of the policy and procedure adopted for the Project
483. Understanding of the Implementation Schedule activities step-by-step
484. Understanding of the Monitoring and reporting mechanism
485. Understanding of the economic rehabilitation measures

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## 12. IMPLEMENTATION SCHEDULE

### 486. Introduction

487. Implementation of RP mainly consists of compensation to be paid for affected structures and rehabilitation and resettlement activities. The time for implementation of resettlement plan will be scheduled as per the overall project implementation. All activities related to the land acquisition and resettlement must be planned to ensure that compensation is paid prior to displacement and commencement of civil works. The EAs and PIUs will ensure that no physical or economic displacement of displaced households will occur until: (i) compensation at full replacement cost has been paid to each displaced person for project components or sections that are ready to be constructed; (ii) other entitlements listed in the resettlement plan are provided to the displaced persons; and (iii) a comprehensive income and livelihood rehabilitation program, supported by adequate budget, is in place to help displaced persons, improve, or at least restore, their incomes and livelihoods. Furthermore, all RPs will be revised during detailed design, and the updated RPs will be approved by government and ADB and disclosed prior to implementation. Public consultation, monitoring and grievance redress will be undertaken intermittently throughout the project duration. However, the schedule is subject to modification depending on the progress of the project activities. The civil works contract for each project will only be awarded after all compensation and relocation has been completed for project and rehabilitation measures are in place.

### 488. Schedule for Project Implementation

489. The proposed project R&R activities are divided into three broad categories based on the stages of work and process of implementation. The details of activities involved in these three phases like Project Preparation phase, RP Implementation phase, Monitoring and Reporting period are discussed in the following paragraphs.

### 490. Project Preparation Phase

491. The major activities to be performed in this period include establishment of PIU at project level; submission of RP for ADB approval; appointment of RP implementation agency and establishment of GRC etc. The information campaign and community consultation will be a process initiated from this stage and will go on till the end of the project.

### 492. RP Implementation Phase

493. After the project preparation phase the next stage is implementation of RP which includes issues like compensation of award by A; payment of all eligible assistance; relocation of DPs; initiation of economic rehabilitation measures; site preparation for delivering the site to contractors for construction and finally starting civil work.

### 494. Monitoring and Reporting Period

495. As mentioned earlier the monitoring will be the responsibility of PIU and RP implementing agency and will start early during the project when implementation of RP starts and will continue till the completion of the project. Keeping in view the significant involuntary resettlement impacts, an external monitoring and reporting expert will be hired for the project.

### 496. R&R Implementation Schedule

497. A composite implementation schedule for R&R activities in the project including various sub tasks and time line matching with civil work schedule is prepared and presented in the form of **Table 44**.

However, the sequence may change or delays may occur due to circumstances beyond the control of the Project and accordingly the time can be adjusted for the implementation of the plan. The implementation schedule can also be structured through package wise. The entire stretch can be Improvement/Upgradation, Widening and Strengthening of Mansi-Fungo Halt Section of Mansi- Saharsa-Hardi Chaughara Road (SH-95) in the State of Bihar on EPC Mode

divided in to various contract packages and the completion of resettlement implementation for each contract package shall be the pre-condition to start of the civil work at that particular contract package.

Table 44. R&R Implementation Schedule

Sl. No.	Activity	2021				2022				2023				2024			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Project Preparation</b>																	
1	Conduct census survey																
2	Preparation of RPs																
3	ADB and Government approval of RP																
4	Procurement of RP implementation agency																
5	Procurement of civil works																
<b>Land Acquisition</b>																	
6	Payment of Compensation																
7	Relocate houses, shops, businesses																
8	Clear the ROW																
<b>Income Restoration</b>																	
9	Income Restoration																
10	Restoration of Community Resources																
<b>Construction</b>																	
11	Issue notice for start of civil works																
12	Civil works																
<b>Ongoing Activities</b>																	

13	Management Information System																		
14	Grievance Redressing																		
15	Consultations with DPs																		
16	Internal Monitoring																		
17	External Monitoring																		

13. MONITORING AND REPORTING

498. Need for Monitoring and Reporting

499. Monitoring and reporting are critical activities in involuntary resettlement management in order to ameliorate problems faced by the DPs and develop solutions immediately. Monitoring is a periodic assessment of planned activities providing midway inputs. It facilitates change and gives necessary feedback of activities and the directions on which they are going. In other words, monitoring apparatus is crucial mechanism for measuring project performance and fulfilment of the project objectives.

500. Monitoring in the Project

501. RP implementation for the project by the RP implementing agency will be closely monitored by the EA. Keeping in view the significance of resettlement impacts of the project and being categorised overall as 'A', the monitoring mechanism for this project will have both internal monitoring by PIU and external monitoring by an external expert.

502. Monitoring by PIU

503. One of the main roles of PIU will be to see proper and timely implementation of all activities in RP. Monitoring will be a regular activity for PIU and Resettlement Officer at this level will see the timely implementation of R&R activities. Monitoring will be carried out by the PIU and RP implementing agency and will prepare monthly reports on the progress of RP Implementation. PIU will collect information from the project site and assimilate in the form of monthly report to assess the progress and results of RP implementation and adjust work program where necessary, in case of delays or any implementation problems as identified. This monitoring will form parts of regular activity and reporting on this will be extremely important in order to undertake mid-way corrective steps. The monitoring by PIU will include:

1. **administrative monitoring:** daily planning, implementation, feedback and trouble shooting, individual DP database maintenance, and progress reports;
2. **socio-economic monitoring:** case studies, using baseline information for comparing DP socio-economic conditions, evacuation, demolition, salvaging materials, morbidity and mortality, community relationships, dates for consultations, and number of appeals placed; and  
**impact monitoring:** Income standards restored/improved, and socioeconomic conditions of the displaced persons. Monitoring reports documenting progress on resettlement implementation and RP completion reports will be provided by the PIU for review and approval from ADB.

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504. External Monitoring

505. The monitoring of RP will be undertaken by external monitor hired by the EA. However, as experienced in some of the previous projects the Social Development Monitoring Expert of the CSC/Authority Engineer can also be engaged and in that case the cost mentioned in the R&R budget will be adjusted accordingly. The main objective of this monitoring is to supervise overall monitoring of the project and submit a biannual report to determine whether resettlement goals have been achieved, more importantly whether livelihoods and living standards have been restored/ enhanced and suggest suitable recommendations for improvement. The external monitoring consultant will be mobilized within three months of loan approval and the monitoring will be carried out intermittently during the RP implementation. The external monitor will assess resettlement outcomes, their impacts on the standards of living of displaced persons, and whether the objectives of the resettlement plan have been achieved by taking into account the baseline conditions and the results of resettlement monitoring. The EM will undertake a post-resettlement evaluation of the effectiveness of RP implementation with comparison to baseline information.

506. The ToR for External monitoring is attached as **Appendix: 6**. The key tasks during external monitoring will include:

- 507. Review and verify the monitoring reports prepared by PIU;
- 508. Review of socio-economic baseline census information of pre-displaced persons and conduct (if necessary) baseline survey;
- 509. Identification and selection of impact indicators;
- 510. Impact assessment through formal and informal surveys with the displaced persons;
- 511. Consultation with DPs, officials, community leaders for preparing review report;
- 512. Assess the resettlement efficiency, effectiveness, impact and sustainability, drawing lessons for future resettlement policy formulation and planning.

513. The following should be considered as the basis for indicators in monitoring of the project:

- 514. socio-economic conditions of the DPs in the post-resettlement period;
- 515. communication and reactions from DPs on entitlements, compensation, options, alternative developments and relocation timetables etc.;
- 516. changes in housing and income levels;
- 517. rehabilitation of informal settlers;
- 518. valuation of property;
- 519. grievance procedures;
- 520. disbursement of compensation; and
- 521. level of satisfaction of DPs in the post resettlement period.

522. Stages of Monitoring

523. Considering the importance of the various stage of project cycle, the EA will handle the monitoring at each stage as stated below:

524. Preparatory Stage

525. During the pre-relocation phase of resettlement operation, monitoring is concerned with administrative issues such as, establishment of resettlement unit, budget, land acquisition, consultation with DPs in the preparation of resettlement plan, payments of entitlement due, grievance redresses and so on. The key issue for monitoring will be:

- 526. Conduct baseline survey
- 527. Consultations
- 528. Identification of DP and the numbers
- 529. Identification of different categories of DPs and their entitlements
- 530. Collection of gender disaggregated data
- 531. Inventory and losses survey
- 532. Asset inventory
- 533. Entitlements
- 534. Valuation of different assets
- 535. Budgeting
- 536. Information dissemination
- 537. Institutional arrangements
- 538. Implementation schedule review, budgets and line items expenditure

539. Relocation Stage

540. Monitoring during the relocation phase covers such issues as site selection in consultation with DPs, development of relocation sites, assistance to DPs (especially to vulnerable groups) in physically moving to the new site. Likewise, aspects such as adjustment of DPs in the new surroundings, attitude of the host population towards the new comers and development of community life are also considered at this stage. The key issue for monitoring will be:

- 541. Payment of compensation
- 542. Delivery of entitlement
- 543. Grievance handling
- 544. Preparation of resettlement site, including civic amenities (water, sanitation, drainage, paved streets, electricity)
- 545. Consultations
- 546. Relocation
- 547. Payment of compensation
- 548. Livelihood restoration assistance and measures

549. Rehabilitation Stage

550. Once DPs have settled down at the new sites, the focus of monitoring will shift to issues of economic recovery programs including income restoration measures, acceptance of these schemes by DPs, impact of income restoration measures on living standards, and the sustainability of the new livelihood patterns. The key issue for monitoring will be:

- 551. Initiation of income generation activities
- 552. Provision of basic civic amenities and essential facilities in the relocated area
- 553. Consultations
- 554. Assistance to enhance livelihood and quality of life

555. Monitoring Indicators

556. The most crucial components/indicators to be monitored are specific contents of the activities and entitlement matrix. The RP contains indicators and benchmarks for achievement of the objectives under the resettlement program. These indicators and benchmarks are of three kinds:

557. Process indicators including project inputs, expenditures, staff deployment, etc.

558. Output indicators indicating results in terms of numbers of affected people compensated and resettled, training held, credit disbursed, etc and

559. Impact indicators related to the longer-term effect of the project on people's lives.

560. Some of the indicative monitoring indicators are as following and a sample land acquisition planning and monitoring form is presented in the **Annexure: 6**.

### **1. Delivery of Entitlements**

561. Entitlements disbursed, compared with number and category of losses set out in the entitlement matrix.

562. Disbursements against timelines.

563. Identification of the displaced persons losing land temporarily, e.g. through soil disposal, borrow pits, contractors' camps, been included.

564. Timely disbursements of the agreed transport costs, relocation costs, income substitution support, and any resettlement allowances, according to schedule.

565. Provision of replacement land plots.

566. Quality of new plots and issue of land titles.

567. Construction of relevant community infrastructure.

568. Restoration of social infrastructure and services.

569. Progress on income and livelihood restoration activities being implemented as set out in the income restoration plan, for example, utilizing replacement land, commencement of production, the number of the displaced persons trained in employment with jobs, microcredit disbursed, number of income-generating activities assisted.

570. Affected businesses receiving entitlements, including transfer and payments for net losses resulting from lost business.

### **2. Consultation and Grievances**

571. Consultations organized as scheduled including meetings, groups, and community activities.

572. Knowledge of entitlements by the displaced persons.

573. Use of the grievance redress mechanism by the displaced persons.

574. Information on the resolution of the grievances.

575. Information on the implementation of the social preparation phase.

576. Implementation of special measures for Indigenous Peoples.



### 3. Communications and Participation

- 577. Number of general meetings (for both men and women).
- 578. Percentage of women out of total participants.
- 579. Number of meetings exclusively with women.
- 580. Number of meetings exclusively with vulnerable groups.
- 581. Number of meetings at new sites.
- 582. Number of meetings between hosts and the displaced persons.
- 583. Level of participation in meetings (of women, men, and vulnerable groups).
- 584. Level of information communicated—adequate or inadequate.
- 585. Information disclosure.
- 586. Translation of information disclosure in the local languages.

### 4. Budget and Time Frame

- 587. Land acquisition and resettlement staff appointed and mobilized on schedule for the field and office work.
- 588. Capacity building and training activities completed on schedule.
- 589. Achieving resettlement implementation activities against the agreed implementation plan.
- 590. Funds allocation for resettlement-to-resettlement agencies on time.
- 591. Receipt of scheduled funds by resettlement offices.
- 592. Funds disbursement according to the resettlement plan.
- 593. Social preparation phase as per schedule.
- 594. Land acquisition and occupation in time for implementation.

### 5. Livelihood and Income Restoration

- 595. Number of displaced persons under the rehabilitation programs (women, men, and vulnerable groups).
- 596. Number of displaced persons who received vocational training (women, men, and vulnerable groups).
- 597. Types of training and number of participants in each.
- 598. Number and percentage of displaced persons covered under livelihood programs (women, men, and vulnerable groups).
- 599. Number of displaced persons who have restored their income and livelihood patterns (women, men, and vulnerable groups).
- 600. Number of new employment activities.
- 601. Extent of participation in rehabilitation programs.
- 602. Extent of participation in vocational training programs.
- 603. Degree of satisfaction with support received for livelihood programs.
- 604. Percentage of successful enterprises breaking even (women, men, and vulnerable groups).
- 605. Percentage of displaced persons who improved their income (women, men, and vulnerable groups).

- 606. Percentage of displaced persons who improved their standard of living (women, men, and vulnerable groups)
- 607. Number of displaced persons with replacement agriculture land (women, men, and vulnerable groups)
- 608. Quantity of land owned/contracted by displaced persons (women, men and vulnerable groups)
- 609. Number. of households with agricultural equipment
- 610. Number of households with livestock

**6. Benefit Monitoring**

- 611. Noticeable changes in patterns of occupation, production, and resource use compared to the pre-project situation.
  - 612. Noticeable changes in income and expenditure patterns compared to the pre-project situation.
  - 613. Changes in cost of living compared to the pre-project situation.
  - 614. Changes in key social and cultural parameters relating to living standards.
  - 615. Changes occurred for vulnerable groups.
  - 616. Benefiting from the project by the displaced persons.
617. Reporting Requirements
618. The PIU, responsible for supervision and implementation of the RP will prepare monthly progress reports on resettlement activities and submit semi-annual reports to ADB.
619. The external monitoring expert responsible for monitoring of the RP implementation will submit a semi-annual review report to PIU to determine whether resettlement goals have been achieved, more importantly whether livelihoods and living standards have been restored/ enhanced and suggest suitable recommendations for improvement.
620. All the resettlement monitoring reports will be disclosed to DPs as per procedure followed for disclosure of resettlement documents by the EA. The monitoring reports will also be disclosed on ADB Website.

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APPENDIX 1: CENSUS SURVEY QUESTIONNAIRE

**Bihar State Highways Project -3 (Phase-2)**

**Census Questionnaire for PAPs**

**1. General**

A. Road Name: ..... B. Questionnaire No: .....

C. Name of the Village: ..... D. Name of Block: .....

E. Name of District: ..... F. Thana No: .....

G. Plot No: ..... H. Km/Chalnage: .....

**2: Ownership of Affected Land**

**1. Ownership of the Land**

1. Private    2. Government    3. Religious    4. Community    5. Others: .....

**2. Type of Land:**

1. Irrigated    2. Non-Irrigated    3. Barren    4. Forest    5. Residential

6. Commercial    7. Pond    8. Others: .....

**3. Use of Land**

1. Cultivation    2. Orchard    3. Residential    4. Commercial    5. Forestation

6. No Use/ Barren    7. Other: .....

4. Affected area of the Land/Plot (in Acre): .....

5. Total Area of the affected Land/Plot (in Acre): .....

6. Total Land Holding of the Affected Person (in Acre)

1. Irrigated: ..... 2. Non-Irrigated: .....

3. Other: ..... 4. Total: .....

**7. Status of Ownership**

1. Titleholder    2. Customary Right    3. License from Local Authority

4. Encroacher    5. Squatter    6. Other (specify): .....

**8. Type of Private Ownership**

1. Individual/Single    2. Joint/Shareholders    3. Other (specify): .....

9. Name of the Owner/Occupier (s).....

10. Father's Name: .....

**11. Rate of the Land (Per Acre)**

1. Market Rate: ..... 2. Revenue Rate: .....

**12. Any of the following people associated with the Land**

A. Agricultural laborer    1. Yes    2. No

Name (i)..... (ii).....

B. Tenant/lessee    1. Yes    2. No

Name (i)..... (ii).....

Sharecropper    1. Yes    2. No

Name (i)..... (ii).....

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*(Use supplementary sheet for any additional DPs under Question-12)*

**3. Details of Affected Non-land Assets**

13. Any structure in the Affected Land 1. Yes..... 2. No.....
14. Distance of the main structure from centerline of the road (in mtr.).....
15. Distance of boundary wall (if any) from centerline of the road (in mtr.).....
16. Area of the affected structure (in Square Meter)  
 a) Length ..... b) Width ..... c) Height .....
17. Area of the boundary wall only (in Meter): a) Length ..... b) Height .....
18. Area of the total structure (in Square Meter)  
 a) Length ..... b) Width ..... c) Height .....
19. Scale of Impact on structure  
 (a) Up to 25% (b) > 25% and < 50% (c) > 50% and > 75% (d) >75%
20. Type of Construction of the Structure  
 1. Temporary (buildings with mud/brick/wood made walls, thatched/tin roof)   
 2. Semi-Permanent (buildings, with tiled roof and normal cement floor)  
 3. Permanent (with RCC, Single/ Double storey building)
21. Type of Construction of the Boundary Wall *(use code from Question 20)*
22. Age of the Structure (in years).....
23. Market Value of the Structure (in Rs.).....
24. Use of the Structure *(select appropriate code from below)*
- A. Residential Category  
 1. House 2. Hut 3. Other (specify).....
- B. Commercial Category  
 4. Shops 5. Hotel 6. Small Eatery 7. Kiosk 8. Farm House  
 9. Petrol Pump 10. Clinic 11. STD Booth 12. Shop 13. Vendors  
 14. Com. Complex 15. Industry 16. Pvt. Office 17. Other.....
- C. Mixed Category  
 18. Residential-cum-Commercial Structure
- D. Community Type  
 19. Community Center 20. Club 21. Temple 22. Memorials 23. Other.....
- E. Religious Structure  
 24. Temple 25. Church 26. Mosque 27. Gurudwara 28. Shrines  
 29. Sacred Grove 30. Other.....
- F. Government Structure  
 31. Government Office 32. Hospital 33. School 34. College  
 35. Bus Stop 36. Other.....
- G. Other Structure  
 37. Boundary Wall 38. Foundation 39. Cattle Shed 40. Other.....
25. Type of Business/ Profession by Head of Household: .....
26. Status of the Structure   
 1. Legal Title Deed 2. Customary Right 3. License from Local Authority  
 4. Encroachment 5. Squatter 6. Other.....
27. Any of the following people associated with the Structure?   
 A. Tenant in the structure 1. Yes 2. No  
 Name (i)..... (ii).....  
 (iii)..... (iv).....

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B. Employee/wage earner in commercial structure 1. Yes 2. No

Name (i) ..... (ii) .....  
 (iii) ..... (iv) .....

C. Employee/wage earner in residential structure 1. Yes 2. No

Name (i) ..... (ii) .....  
*(Use supplementary sheet for any of the DPs under Question-27)*

28. Number of trees within the affected area  
 1. Fruit Bearing..... 2. Non-fruit Bearing..... 3. Total.....

4. Details of Affected Household

29. Social Category of AP  
 1. SC 2. ST 3. OBC 4. General 5. Others.....

30. Religious Category  
 1. Hindu 2. Muslim 3. Christian 4. Buddhist 5. Jain 6. Other.....

31. Number of family members Male..... Female..... Total.....

32. Number of family members with following criteria  
 1. Unmarried Son/brother > 18 years..... 2. Unmarried Daughter/Sister > 18 years.....  
 3. Divorcee/Widow..... 4. Minor Orphan.....

33. Vulnerability Status of the Household:  
 1. Woman headed household 2. Headed by elderly / physically disabled person?   
 3. Below Poverty Line (BPL) 4. Other.....

34. Annual income of the family Rs.....

35. If displaced, do you have additional land to shift? 1. Yes 2. No

36. Resettlement/ Relocation Option  
 1. Self Relocation 2. Project Assisted Relocation

37. Compensation Option for Land loser  
 1. Land for land loss 2. Cash for Land loss

38. Compensation Options for Structure loser  
 1. Structure for structure loss 2. Cash for Structure loss

39. Income Restoration Assistance (fill codes in preferred order)  
 1. Employment Opportunities in Construction work   
 2. Assistance/ Loan from other ongoing development scheme   
 3. Vocational Training  4. Others (specify .....)

40. Total number of women above 18 years of age in the family.

41. Are women in the family included in financial decision-making 1. Yes 2. No

42. Are women in the family included in social decision-making 1. Yes 2. No

43. Do women exclusively own any of the following assets?

S.N.	Assets	(1. Yes 2. No)
1	Land (Homestead or Farm Land)	
2	House	
3	Four Wheeler (Car/tractor etc.)	
	Two Wheeler (Scooter/ Cycle etc.)	
5	Cell Phone	
6	Personal Computer	
7	Any Other.....	

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44. Are the women in the family have a separate bank account? 1. Yes 2. No

45. Any women of your family are the member in SHGs? 1. Yes 2. No

46. If yes, will the relocation affect their work? 1. Yes 2. No


If yes in Question 47, Please explain.....

47. Do any women members in your family have received any benefit from Government Schemes?

S.N.	Type of Benefit	Name of Scheme	(1. Yes 2. No)
1	Loan		
2	House		
3	Employment		
4	Training		
5	Any Other		

48. Details of Family Members: (fill appropriate code)

Sl. No.	Name of the Family Member	Age	Sex	Marital Status	Education	Occupation
	Note: Please add a separate sheet if required.	in years	1. Male 2. Female 3. Other	1. Married 2. Unmarried 3. Widow 4. Widower 5. Others	1. Literate 2. Literate 3. Up to middle 4. Below middle 5. Middle 6. Graduate 7. Above Grad. 8. Below 6 years	1. Service 2. Business 3. Agriculture 4. Study 5. Retired 6. Labour 7. Unemployed 8. Professional 9. Below 6 years 10. Old/Inactive
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						

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**Supplementary Sheet1 for Occupiers/Tenant**

1. Census Questionnaire/Survey No. ....
2. Name of the Owner.....
3. Name of the Occupier.....
4. Father's Name of Occupier.....
5. Status of Occupier 
  - A. Agricultural Laborer
  - B. Agricultural Tenant/Lessee
  - C. Sharecropper
  - D. Tenant in structure
  - E. Employee/ wage earner in Residential/Commercial Structure
6. Social Category of AP
  1. SC
  2. ST
  3. OBC
  4. General
  5. Others (specify).....
7. Religious Category
  1. Hindu
  2. Muslim
  3. Christian
  4. Buddhist
  5. Jain
  6. Other (specify).....
8. Number of family members: Male..... Female..... Total.....
9. Vulnerability Status of the Household:
  - A. Is it a woman headed household? 1. Yes 2. No
  - B. Is it headed by physically/mentally challenged person? 1. Yes 2. No
  - C. Is it a household below Poverty Line (BPL) 1. Yes 2. No
10. Annual Income of the family Rs. ....
11. Income Restoration Assistance (fill codes in preferred order)
  1. Employment Opportunities in Construction work
  2. Assistance/ Loan from other ongoing development scheme
  3. Vocational Training
  4. Others (specify) .....
12. Details of Family Members: (fill appropriate code)

S. N.	Name of the Family Member	Age In Years	Sex 1. Male 2. Female 3. Other	Marital Status 1. Married 2. Unmarried 3. Widow 4. Widower 5. Other	Education 1. Below Primary 2. Up to middle 3. Below metric 4. Metric 5. Graduate 6. Above Grad. 7. Below 6 year	Occupation 1. Service 2. Business 3. Agriculture 4. Study 5. Housewife 6. Labourer 7. Unemployed 8. Professional 9. Below 6 years 10. Old/ inactive 11. Others
1						
2						
3						
4						
5						
6						
7						

Use more sheets as applicable

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## APPENDIX 2: LIST OF DISPLACED PERSONS (LAND TITLEHOLDERS)

S.N.	Name of the Village	Name of Block	Chainage Kilometer	Affected Area (in Acre)	Scale of Impact (%)	Name of the Owner	Area Affected Structure (sq.m)	Scale of Impact (In %)	Type of Construction of Structure	Use of Structure	Vulnerability
1	Khirnia	Chautham	7+400-7+500	0.0523	Non-Significant	Phulay Devi (Umesh Thakur)					BPL
2	Khirnia	Chautham	7+400-7+500	0.3761	Significant	Md Jamil					
3	Khirnia	Chautham	7+400-7+500	0.0500	Non-Significant	Rita Devi (Shankar Thakur)					BPL
4	Khirnia	Chautham	7+500-7+600	0.0436	Non-Significant	Phulchand Chaudhary					
5	Khirnia	Chautham	7+500-7+600	0.0981	Significant	Rajendra Chaudhary (Chandan Devi)					BPL
6	Khirnia	Chautham	7+500-7+600	0.3764	Significant	Sabnam Khatun					BPL
7	Khirnia	Chautham	7+500-7+600	0.2068	Non-Significant	Subhash Thakur					BPL
8	Khirnia	Chautham	7+500-7+600	0.1355	Significant	Jogindra Thakur					BPL
9	Khirnia	Chautham	7+500-7+600	0.2074	Significant	Maheshwar Mistri (Amit Kumar)					BPL
10	Khirnia	Chautham	7+550-7+600	0.3531	Significant	Lalan Mistri					BPL
11	Khirnia	Chautham	7+550-7+600	0.3761	Significant	Shanti Devi					BPL
12	Khirnia	Chautham	7+550-7+600	0.5056	Non-Significant	Rajiv Ranjan Kumar					
13	Khirnia	Chautham	7+600-7+650	0.8785	Non-Significant	Md Taki (Md Isratl)					
14	Khirnia	Chautham	7+650-7+700	0.1813	Significant	Laddu Thakur					BPL

S.N.	Name of the Village	Name of Block	Chainage Kilometer	Affected Area (in Acre)	Scale of Impact (%)	Name of the Owner	Area Affected Structure (sq.m)	Scale of Impact (In %)	Type of Construction of Structure	Use of Structure	Vulnerability
15	Hardiya	Chautham	8+000-8+050	0.7748	Significant	Sanjay Yadav (Himansu Kumar)					BPL
16	Hardiya	Chautham	8+000-8+050	0.4847	Significant	Bindeshary Yadav					
17	Hardiya	Chautham	8+050-8+100	0.0158	Non-Significant	Sulekha Devi					BPL
18	Hardiya	Chautham	8+050-8+100	0.0158	Non-Significant	Mukhi Lal Singh					BPL
19	Hardiya (Purani Hardiya)	Chautham	8+050-8+100	0.0158	Non-Significant	Balweshar Sah					
20	Hardiya (Purani Hardiya)	Chautham	8+100-8+150	0.7845	Significant	Pramod Kumar Chaudhary					BPL
21	Hardiya (Purani Hardiya)	Chautham	8+150-8+200	0.0634	Non-Significant	Krishna Dev Yadav (Rajniti Kumar)					BPL
22	Hardiya	Chautham	8+150-8+200	0.6827	Significant	Hareram Singh					
23	Hardiya	Chautham	8+150-8+200	0.2331	Significant	Indradev Paswan					SC
24	Hardiya	Chautham	8+150-8+200	0.4340	Non-Significant	Gopal Singh					
25	Hardiya	Chautham	8+150-8+200	0.8838	Significant	Ram Balik Singh					
26	Hardiya	Chautham	8+200-8+250	0.4348	Non-Significant	Bathuaa Devi					
27	Hardiya	Chautham	8+300-8+400	0.1614	Non-Significant	Jay Jay Ram Chaudhary					
28	Hardiya	Chautham	8+300-8+400	0.1615	Significant	Kamal Kishor Chaudhary					
29	Hardiya	Chautham	8+400-8+500	0.3793	Significant	Dev Narayan Bhagat					BPL
30	Hardiya	Chautham	8+400-8+500	0.3793	Significant	Sinkandar Bhagat					BPL
31	Hardiya	Chautham	8+400-8+500	0.3795	Significant	Kamli Yadav					BPL

S.N.	Name of the Village	Name of Block	Chainage Kilometer	Affected Area (in Acre)	Scale of Impact (%)	Name of the Owner	Area Affected Structure (sq.m)	Scale of Impact (In %)	Type of Construction of Structure	Use of Structure	Vulnerability
32	Hardiya	Chautham	8+400-8+500	0.5664	Significant	Janardan Yadav					
33	Hardiya (Purani Hardiya)	Chautham	8+450-8+500	0.2545	Non-Significant	Ranjit Yadav					
34	Hardiya	Chautham	8+500-8+600	0.0244	Non-Significant	Banarsi Paswan					SC
35	Hardiya	Chautham	8+500-8+600	0.5156	Non-Significant	Subhash Cahudhary					
36	Dighari	Chautham	8+600-8+650	0.1860	Significant	Manish Kumar					p
37	Dighari	Chautham	8+600-8+650	0.4870	Non-Significant	Pravendra Kumar (Chakradhar Gopal)					BPL
38	Dighari	Chautham	8+800-8+900	0.4369	Non-Significant	Jitendra Mandal					
39	Dighari	Chautham	8+850-8+900	0.0003	Non-Significant	Subdhi Devi					SC
40	Dighari	Chautham	8+800-8+900	0.5697	Non-Significant	Kumar Shambhu Singh					
41	Dighari	Chautham	8+900-8+950	0.0502	Non-Significant	Moji Sada					SC
42	Dighari	Chautham	8+900-8+950	1.6323	Significant	Surendra Chaudhary					BPL
43	Dighari	Chautham	8+900-8+950	0.4729	Significant	Chandar Sada					SC
44	Dighari	Chautham	9+100-9+150	0.4850	Significant	Raj Kishor Yadav					BPL
45	Dighari	Chautham	9+100-9+150	0.7833	Significant	Kamtlal Yadav					BPL
46	Dighari	Chautham	9+150-9+200	0.0061	Non-Significant	Sukram Sada					SC
47	Dighari	Chautham	9+150-9+200	1.2278	Significant	Shyam Lal Mandal					BPL

S.N.	Name of the Village	Name of Block	Chainage Kilometer	Affected Area (in Acre)	Scale of Impact (%)	Name of the Owner	Area Affected Structure (sq.m)	Scale of Impact (In %)	Type of Construction of Structure	Use of Structure	Vulnerability
48	Dighari	Chautham	9+300-9+350	0.2961	Significant	Satrogan Yadav					BPL
49	Dighari	Chautham	9+300-9+350	0.2961	Significant	Siya Saran Yadav					
50	Dighari	Chautham	9+300-9+350	0.2961	Significant	Pinki Kumari					
51	Dighari	Chautham	9+300-9+350	0.2966	Significant	Niranjan Kumar					
52	Dighari	Chautham	9+400-9+450	0.1961	Significant	Mantu Yadav					
53	Dighari	Chautham	9+400-9+450	0.1373	Non-Significant	Bhujagi Yadav					BPL
54	Dighari	Chautham	9+500-9+550	0.1588	Significant	Anita Devi					BPL
55	Dighari	Chautham	9+500-9+550	0.1588	Significant	Sugandha Devi					BPL
56	Dighari	Chautham	9+500-9+550	0.4317	Significant	Ram Bachan Yadav					BPL
57	Dighari	Chautham	9+550-9+600	0.2727	Significant	Viraj Yadav					BPL
58	Dighari	Chautham	9+800-9+850	1.0734	Significant	Ramvinay Paswan					SC
59	Dighari	Chautham	9+000-9+950	0.4453	Significant	Wakil Singh					BPL
60	Dighari	Chautham	9+000-9+950	1.5189	Significant	Narayan Singh					
61	Dighari ( Bangalia)	Chautham	9+000-9+950	0.3671	Significant	Samtola Devi (Anjesh Singh)	18 +4.5 BW	75-100	Semi Perma	House	BPL
62	Dighari (Bangalia)	Chautham	9+950-10+000	0.0326	Non-Significant	Turani Singh	40.95	75-100	Temp	House	BPL
63	Dighari ( Bangalia)	Chautham	9+950-10+000	0.0326	Non-Significant	Tuntun Ram					SC
64	Dighari ( Bangalia)	Chautham	9+950-10+000	0.0326	Non-Significant	Rukmani Devi					SC

S.N.	Name of the Village	Name of Block	Chainage Kilometer	Affected Area (in Acre)	Scale of Impact (%)	Name of the Owner	Area Affected Structure (sq.m)	Scale of Impact (In %)	Type of Construction of Structure	Use of Structure	Vulnerability
65	Dighari ( Bangalia)	Chautham	9+950-10+000	0.0326	Non-Significant	Chandra Kala Devi					SC
66	Dighari ( Bangalia)	Chautham	9+950-10+000	0.0326	Significant	Pinki Devi					BPL
67	Dighari ( Bangalia)	Chautham	9+950-10+000	0.1686	Significant	Baleshwar Singh (Naresh)					BPL
68	Dighari ( Bangalia)	Chautham	9+950-10+000	0.0326	Non-Significant	Shobha Singh	35	75-100	Temp	House	BPL
69	Dighari ( Bangalia)	Chautham	9+950-10+000	0.0326	Non-Significant	Tuntun Sharma					BPL
70	Dighari ( Bangalia)	Chautham	9+950-10+000	0.0326	Non-Significant	Inzula Devi					BPL
71	Dighari ( Bangalia)	Chautham	9+950-10+000	0.0782	Significant	Baba Ji Singh	24.6	75-100	Permanent	House	BPL
72	Dighari ( Bangalia)	Chautham	9+950-10+000	0.0782	Non-Significant	Sanjay Kumar Bharti					
73	Dighari ( Bangalia)	Chautham	9+950-10+000	0.0782	Significant	Lalo Singh					
74	Dighari ( Bangalia)	Chautham	9+950-10+000	0.1564	Significant	Dinesh Singh					BPL
75	Dighari ( Bangalia)	Chautham	9+950-10+000	0.0782	Significant	Chandeshwari Yadav	72.5	75-100	Permanent	House	BPL
76	Dighari ( Bangalia)	Chautham	9+950-10+000	0.0782	Non-Significant	Raj Kumar Yadav	65.36 + 7.0 BW	75-100	Permanent	House	BPL
77	Dighari ( Bangalia)	Chautham	9+950-10+000	0.0782	Non-Significant	Shankar Yadav	129	75-100	Permanent	House	BPL
78	Dighari ( Bangalia)	Chautham	9+950-10+000	0.4463	Significant	Ram Lakhan Singh					BPL
79	Dighari ( Bangalia)	Chautham	10+000-10+050	0.0782	Significant	Pramod Pathak/Raj Kumar Pathak					BPL
80	Dighari ( Bangalia)	Chautham	10+000-10+050	0.0782	Significant	Prakash Paswan					SC
81	Dighari ( Bangalia)	Chautham	10+000-10+050	0.0783	Significant	Vijay Kumar Yadav					

S.N.	Name of the Village	Name of Block	Chainage Kilometer	Affected Area (in Acre)	Scale of Impact (%)	Name of the Owner	Area Affected Structure (sq.m)	Scale of Impact (In %)	Type of Construction of Structure	Use of Structure	Vulnerability
82	Dighari ( Bangalia)	Chautham	10+150-10+200	0.2180	Significant	Mato Singh	2.25	50-75	Semi Perma	Toilet	BPL
83	Dighari ( Bangalia)	Chautham	10+150-10+200	0.1744	Significant	Hardev Singh	42	75-100	Permanent	House	
84	Dighari ( Bangalia)	Chautham	10+150-10+200	0.3010	Significant	Indra Dev Singh	18.24+13.0 BW	75-100	Permanent	House	BPL
85	Dighari ( Bangalia)	Chautham	10+150-10+200	0.7731	Significant	Bahuajn Singh					BPL
86	Dighari ( Bangalia)	Chautham	10+200-10+300	0.1861	Non-Significant	Ramchandra Singh	50.73	75-100	Permanent	House	BPL
87	Dighari ( Bangalia)	Chautham	10+300-10+350	0.092	Non-Significant	Ram Vilash Singh					
88	Dighari ( Bangalia)	Chautham	10+350-10+400	0.2180	Non-Significant	Chandradev Singh	34.72	75-100	Permanent	House	
89	Dighari ( Bangalia)	Chautham	10+350-10+400	0.3190	Significant	Tara Devi					
90	Dighari ( Bangalia)	Chautham	10+350-10+400	0.4885	Significant	Ashok Singh	57.4	75-100	Semi Perma	Under Cons	BPL
91	Dighari ( Bangalia)	Chautham	10+350-10+400	0.1744	Significant	Janardhan Singh					BPL
92	Dighari ( Bangalia)	Chautham	10+350-10+400	0.0900	Significant	Jagdambi Singh					WHH
93	Dighari ( Bangalia)	Chautham	10+350-10+400	0.0872	Significant	Upendra Singh	3.6	75-100	Semi Perma	Toilet	BPL
94	Dighari ( Bangalia)	Chautham	10+350-10+400	0.2595	Significant	Anup Lal Singh					BPL
95	Dighari ( Bangalia)	Chautham	10+350-10+400	0.2595	Non-Significant	Laldhan Devi					
96	Dighari ( Bangalia)	Chautham	10+400-10+450	0.0872	Significant	Meena Devi (Bandhan)	6	75-100	Temp	Toilet	BPL
97	Dighari ( Bangalia)	Chautham	10+400-10+450	0.4318	Significant	Ramchandra Singh					
98	Dighari ( Bangalia)	Chautham	10+400-10+450	0.3903	Non-Significant	Rajesh Kumar Yadav					BPL

S.N.	Name of the Village	Name of Block	Chainage Kilometer	Affected Area (in Acre)	Scale of Impact (%)	Name of the Owner	Area Affected Structure (sq.m)	Scale of Impact (In %)	Type of Construction of Structure	Use of Structure	Vulnerability
99	Dighari ( Bangalia)	Chautham	10+400-10+450	0.2595	Significant	Sudin Singh					BPL
100	Dighari ( Bangalia)	Chautham	10+400-10+450	0.2000	Significant	Rampukar Singh					
101	Dighari ( Bangalia)	Chautham	10+400-10+450	0.2000	Significant	Vinod Singh	53.04	75-100	Semi Perma	Under Cons	
102	Dighari ( Bangalia)	Chautham	10+500-10+550	0.2595	Non-Significant	Umesh Sigh	82.8	75-100	Semi Perma	Under Cons	BPL
103	Dighari ( Bangalia)	Chautham	10+650-10+700	0.1519	Significant	Sunil Kumar					
104	Dighari ( Bangalia)	Chautham	10+500-10+550	0.2595	Non-Significant	Rampal Singh	146.52	75-100	Permanent	House	BPL
105	Dhamahara	Chautham	10+700-10+800	0.4498	Significant	Chandra Sekhar Singh					
106	Dhamahara	Chautham	10+700-10+850	0.4498	Significant	Sudha Devi					
107	Dhamahara	Chautham	10+800-10+850	0.4498	Significant	Chandra Bhushan Singh					
108	Dhamahara	Chautham	10+800-10+850	0.4498	Significant	Manju Devi					BPL
109	Dhamahara	Chautham	10+800-10+850	0.4498	Significant	Chhatrdhari Singh					BPL
110	Dhamahara	Chautham	10+800-10+850	1.0219	Significant	Dinesh Singh					BPL
111	Dhamahara	Chautham	10+900-10+950	0.6221	Significant	Gauri Bhagat (Mithlesh Bhagat)					BPL
112	Dhamahara	Chautham	10+900-10+950	0.16	Significant	Kavita Devi					
113	Dhamahara	Chautham	10+950-11+000	0.05	Significant	Renu Devi					BPL
114	Dhamahara	Chautham	10+950-11+000	0.8796	Significant	Jay Prakash Singh					
115	Dhamahara	Chautham	10+950-11+000	0.02	Significant	Vina Devi					

S.N.	Name of the Village	Name of Block	Chainage Kilometer	Affected Area (in Acre)	Scale of Impact (%)	Name of the Owner	Area Affected Structure (sq.m)	Scale of Impact (In %)	Type of Construction of Structure	Use of Structure	Vulnerability
116	Dhamahara	Chautham	10+950-11+000	0.11	Significant	Rekha Devi					BPL
117	Dhamahara	Chautham	11+100-11+150	0.7896	Significant	Kabita Devi					BPL
118	Dhamahara	Chautham	11+300-11+350	0.7123	Significant	Ram Sugarath Singh					
119	Dhamahara	Chautham	11+400-11+450	0.8796	Significant	Ram Pravesh Kumar	53.6	75-100	Semi Perma	House	
120	Dhamahara	Chautham	11+400-11+450	1.1544	Significant	Bauna Ram	58.4	75-100	Semi Perma	House	SC
121	Dhamahara	Chautham	11+400-11+450	0.5723	Significant	Darbeshawer Singh					BPL
122	Dhamahara	Chautham	11+400-11+450	0.16	Significant	Chandra Kishore Mistri	35.75	75-100	Semi Perma	House	
123	Dhamahara	Chautham	11+450-11+500	0.04	Significant	Rubi Devi	22.5	75-100	Temp	House	BPL
124	Dhamahara	Chautham	11+550-11+600	0.16	Significant	Sakindra Paswan					SC
125	Dhamahara	Chautham	11+550-11+600	0.086	Non-Significant	Sakal Dev Singh					BPL
126	Dhamahara	Chautham	11+600-11+650	0.1723	Non-Significant	Ram Sarup Singh					BPL
127	Dhamahara	Chautham	11+600-11+650	0.1723	Non-Significant	Bal Govind Sah					
128	Dhamahara	Chautham	11+600-11+650	0.08	Non-Significant	Surya Narayan Sharma					BPL
129	Dhamahara	Chautham	11+600-11+650	0.2574	Significant	Vishun Dev Singh	54.6	75-100	Semi Perma	House	BPL
130	Dhamahara	Chautham	11+650-11+700	0.08	Significant	Ranjit Kumar					BPL
131	Dhamahara	Chautham	11+650-11+700	0.045	Non-Significant	Surya Sharma					
132	Dhamahara	Chautham	11+650-11+700	0.2315	Non-Significant	Sakal Dev Singh	36	75-100	Temp	Hut	BPL



S.N.	Name of the Village	Name of Block	Chainage Kilometer	Affected Area (in Acre)	Scale of Impact (%)	Name of the Owner	Area Affected Structure (sq.m)	Scale of Impact (In %)	Type of Construction of Structure	Use of Structure	Vulnerability
133	Dhamahara	Chautham	11+700-11+750	0.085	Non-Significant	Phekan Sharma					BPL
134	Dhamahara	Chautham	11+700-11+750	0.1	Significant	Sita Devi (Jyotish Kumar)					
135	Dhamahara	Chautham	11+700-11+750	0.3569	Significant	Dashrath Thakur (Pawan Thakur)					
136	Dhamahara	Chautham	11+700-11+750	0.1723	Significant	Bhuto Singh					BPL
137	Dhamahara	Chautham	11+750-11+800	0.1723	Non-Significant	Prakash Sharma					BPL
138	Dhamahara	Chautham	11+750-11+800	0.3437	Significant	Dayanand Sah					BPL
139	Dhamahara	Chautham	11+750-11+800	0.1723	Significant	Aacho Ram					SC
140	Dhamahara	Chautham	11+750-11+800	0.3046	Significant	Chanar Dev Singh					
141	Dhamahara	Chautham	11+750-11+800	0.12	Non-Significant	Tapendra Singh					BPL
142	Dhamahara	Chautham	11+800-11+850	0.013	Non-Significant	Surendra Singh					BPL
143	Dhamahara (New Banglia)	Chautham	12+250-12+300	0.837	Significant	Siudha Devi					BPL
144	Dhamahara (New Banglia)	Chautham	12+250-12+300	0.837	Significant	Manish Kumar					BPL
145	Dhamahara (New Banglia)	Chautham	12+250-12+300	0.8371	Non-Significant	Ahsok Yadav	45.58	75-100	Semi Perma	House	
146	Dhamahara (New Banglia)	Chautham	12+250-12+300	0.3982	Significant	Ram Balak Yadav					WHH
147	Dhamahara (New Banglia)	Chautham	12+300-12+350	0.2588	Non-Significant	Wakil Yadav	42	75-100	Temp	Hut	BPL
148	Dhamahara (New Bangli)	Chautham	12+300-12+350	0.2587	Non-Significant	Digambar Yadav	25.16	75-100	Semi Perma	House	
149	Dhamahara	Chautham	12+300-12+350	2.0452	Significant	Jawahar Yadav	85.4	75-100	Semi Perma	House	

S.N.	Name of the Village	Name of Block	Chainage Kilometer	Affected Area (in Acre)	Scale of Impact (%)	Name of the Owner	Area Affected Structure (sq.m)	Scale of Impact (In %)	Type of Construction of Structure	Use of Structure	Vulnerability
150	Dhamahara	Chautham	12+500-12+550	0.4181	Non-Significant	Vimla Devi					BPL
151	Dhamahara	Chautham	12+550-12+600	0.418	Non-Significant	Sahadev Singh					BPL
152	Dhamahara	Chautham	12+600-12+650	0.431	Non-Significant	Shanti Deivi					
153	Dhamahara (Shrinagar)	Chautham	12+700-12+750	0.2168	Significant	Bebi Devi					BPL
154	Dhamahara (Shrinagar)	Chautham	12+800-12+850	0.2168	Non-Significant	Maya Ram Yadav					BPL
155	Dhamahara (Shrinagar)	Chautham	12+800-12+850	0.2168	Significant	Gana Devi					BPL
156	Dhamahara (Shrinagar)	Chautham	12+800-12+850	0.2168	Significant	Jay Hindra Yadav, RavindraYad					
157	Dhamahara (Shrinagar)	Chautham	12+800-12+850	0.2168	Significant	Ravindra Yadav					
158	Dhamahara (Shrinagar)	Chautham	12+800-12+850	0.3536	Non-Significant	Arvind Yadav					BPL
159	Dhamahara (Shrinagar)	Chautham	12+800-12+850	0.3536	Non-Significant	Hgohal Yadav					BPL
160	Dhamahara (Shrinagar)	Chautham	12+900-12+950	0.2875	Significant	Benchu Yadav					BPL
161	Dhamahara (Shrinagar)	Chautham	12+900-12+950	0.12	Significant	Jageswar Sada	22	75-100	Temp	Hut	SC
162	Dhamahara (Shrinagar)	Chautham	12+950-13+000	0.2168	Significant	Bidesh Sada	37.8	75-100	Temp	House	SC
163	Dhamahara (Shrinagar)	Chautham	12+950-13+000	0.14	Significant	Pukar Sada	31.62	75-100	Temp	House	SC
164	Dhamahara	Chautham	12+950-13+000	0.048	Significant	Mukesh Sada	36.72	75-100	Temp	House	SC
165	Dhamahara	Chautham	12+950-13+000	0.16	Significant	Chadan Sada	22	75-100	Temp	Hut	SC
166	Dhamahara	Chautham	12+950-13+000	0.044	Significant	Mukesh Kumar	35.34	75-100	Temp	House	BPL

S.N.	Name of the Village	Name of Block	Chainage Kilometer	Affected Area (in Acre)	Scale of Impact (%)	Name of the Owner	Area Affected Structure (sq.m)	Scale of Impact (In %)	Type of Construction of Structure	Use of Structure	Vulnerability
167	Dhamahara	Chautham	12+950-13+000	0.044	Significant	Sanjay Sharma	32	75-100	Temp	House	BPL
168	Dhamahara	Chautham	12+950-13+000	0.3936	Non-Significant	Manoj Kumar Singh					
169	Dhamahara	Chautham	13+000-13+050	0.3536	Significant	Badri Sada	27	75-100	Temp	House	SC
170	Dhamahara	Chautham	13+050-13+100	0.964	Significant	Bhola Mandal					BPL
171	Dhamahara	Chautham	13+100-13+150	0.072	Significant	Ranjan Yadav					WHH
172	Dhamahara	Chautham	13+050-13+100	0.0212	Non-Significant	Mago Sah					BPL
173	Dhamahara	Chautham	13+100-13+150	0.2168	Significant	Suresh Sah	36.75	75-100	Temp	House	BPL
174	Dhamahara	Chautham	13+100-13+150	0.02	Non-Significant	Inderdev Mandal					BPL
175	Dhamahara	Chautham	13+100-13+150	0.04	Non-Significant	Sakaldev Mandal					BPL
176	Dhamahara	Chautham	13+100-13+150	0.02	Non-Significant	Gudiya Devi					BPL
177	Dhamahara	Chautham	13+100-13+150	0.0068	Non-Significant	Anandi Das					SC
178	Dhamahara	Chautham	13+150-13+200	0.04	Significant	Lalita Devi					SC
179	Dhamahara	Chautham	13+150-13+200	0.04	Non-Significant	Lalita Devi	8.68	75-100	Temp	House	BPL
180	Dhamahara	Chautham	13+150-13+200	0.08	Non-Significant	Bechan Sah	52.89	75-100	Temp	House	PHH
181	Dhamahara	Chautham	13+150-13+200	0.08	Non-Significant	Putul Devi					BPL
182	Dhamahara	Chautham	13+150-13+200	0.788	Significant	Bharat Sah					BPL
183	Dhamahara	Chautham	13+200-13+250	0.1728	Significant	Sanjay Yadav					BPL

S.N.	Name of the Village	Name of Block	Chainage Kilometer	Affected Area (in Acre)	Scale of Impact (%)	Name of the Owner	Area Affected Structure (sq.m)	Scale of Impact (In %)	Type of Construction of Structure	Use of Structure	Vulnerability
184	Dhamahara	Chautham	13+200-13+250	0.4529	Significant	Dilo Sah					BPL
185	Dhamahara	Chautham	13+200-13+250	0.453	Significant	Jay Narayan Sah	19.2	75-100	Temp	House	BPL
186	Dhamahara	Chautham	13+250-13+300	0.1726	Significant	Ghuran Chaudhary					BPL
187	Dhamahara	Chautham	13+250-13+300	0.0006	Non-Significant	Viveka Nand Yadav					
188	Dhamahara	Chautham	13+250-13+300	0.0005	Non-Significant	Deelip Singh					BPL
189	Dhamahara	Chautham	13+250-13+300	0.1726	Non-Significant	Vinay Kumar Singh					WHH
190	Buchcha (Dhanchhar)	Chautham	13+700-13+750	0.1265	Significant	Suresh Singh					BPL
191	Buchcha (Dhanchhar)	Chautham	13+700-13+750	0.5868	Significant	Sanjay Kumar Singh					BPL
192	Buchcha (Dhanchhar)	Chautham	13+700-13+750	0.2	Significant	Jay Kumar Singh					BPL
193	Buchcha (Dhanchhar)	Chautham	13+750-13+800	0.2579	Significant	Murti Devi					BPL
194	Buchcha (Dhanchhar)	Chautham	13+750-13+800	0.16	Non-Significant	Sukama Devi					BPL
195	Buchcha (Dhanchhar)	Chautham	13+750-13+800	0.1347	Non-Significant	Saryug Singh					
196	Buchcha (Dhanchhar)	Chautham	13+750-13+800	0.1321	Significant	Shabo Devi					BPL
197	Buchcha (Dhanchhar)	Chautham	13+800-13+850	0.1790	Non-Significant	Ram Ji Singh					
198	Buchcha (Dhanchhar)	Chautham	13+800-13+850	0.219	Significant	Anil Kumar					BPL
199	Buchcha (Dhanchhar)	Chautham	13+850-13+900	0.1308	Significant	Upendra Sigh	18.4	75-100	Semi Perma	House	
200	Buchcha (Dhanchhar)	Chautham	13+850-13+900	0.1308	Significant	Sambhu Singh	4.48	75-100	Temp	Toilet	BPL

S.N.	Name of the Village	Name of Block	Chainage Kilometer	Affected Area (in Acre)	Scale of Impact (%)	Name of the Owner	Area Affected Structure (sq.m)	Scale of Impact (In %)	Type of Construction of Structure	Use of Structure	Vulnerability
201	Buchcha (Dhanchhar)	Chautham	13+850-13+900	0.1790	Significant	Nibha Devi	33.6	75-100	Temp	Hut	BPL
202	Buchcha (Dhanchhar)	Chautham	13+850-13+900	0.2757	Non-Significant	Ram Lakhan Singh	6.76	75-100	Permanent	Toilet	
203	Buchcha (Dhanchhar)	Chautham	13+900-13+950	0.1393	Significant	Mahadev Singh					BPL
204	Buchcha (Dhanchhar)	Chautham	13+900-13+950	0.0393	Non-Significant	Phul Kumari					BPL
205	Buchcha (Dhanchhar)	Chautham	13+900-13+950	0.1492	Significant	Jay Kishor Singh					
206	Buchcha (Dhanchhar)	Chautham	13+900-13+950	0.1492	Significant	Umesh Singh					BPL
207	Buchcha (Dhanchhar)	Chautham	13+900-13+950	0.01	Non-Significant	Manoj Kumar Singh	27.2	75-100	Permanent	Resi+Com	BPL
208	Buchcha (Dhanchhar)	Chautham	13+900-13+950	0.03	Non-Significant	Jay Kishor Singh					BPL
209	Buchcha (Dhanchhar)	Chautham	13+900-13+950	0.02	Non-Significant	Ganesh Singh					BPL
210	Buchcha (Dhanchhar)	Chautham	13+900-13+950	0.02	Non-Significant	Phulesar Singh					BPL
211	Buchcha (Dhanchhar)	Chautham	13+900-13+950	0.1504	Non-Significant	Urmila Devi					BPL
212	Buchcha (Dhanchhar)	Chautham	13+950-14+000	0.1099	Significant	Mira Devi					BPL
213	Buchcha (Dhanchhar)	Chautham	13+950-14+000	0.2897	Significant	Gunna Devi					BPL
214	Buchcha (Dhanchhar)	Chautham	13+950-14+000	0.2897	Significant	Sulekha Devi	26.22	75-100	Temp	House	BPL
215	Buchcha (Dhanchhar)	Chautham	13+950-14+000	0.08	Significant	Gajendra Kumar Sahu	31.11	75-100	Temp	House	BPL
216	Buchcha (Dhanchhar)	Chautham	14+000-14+100	0.1897	Significant	Girja Devi	47.5	75-100	Temp	House	BPL
217	Buchcha (Dhanchhar)	Chautham	14+050-14+100	0.1398	Significant	Ramdana Devi	17.22	75-100	Temp	Hut	BPL

S.N.	Name of the Village	Name of Block	Chainage Kilometer	Affected Area (in Acre)	Scale of Impact (%)	Name of the Owner	Area Affected Structure (sq.m)	Scale of Impact (In %)	Type of Construction of Structure	Use of Structure	Vulnerability
218	Buchcha (Dhanchhar)	Chautham	14+050-14+100	0.1259	Significant	Sekha Devi					BPL
219	Buchcha (Dhanchhar)	Chautham	14+100-14+150	0.1259	Significant	Nilam Devi					BPL
220	Buchcha (Dhanchhar)	Chautham	14+100-14+150	0.1259	Significant	Kishore Sah	54	75-100	Temp	Resi+Com	BPL
221	Buchcha (Dhanchhar)	Chautham	14+100-14+150	0.1259	Significant	Singesar Sah					
222	Buchcha (Dhanchhar)	Chautham	14+150-14+200	0.1254	Significant	Pramod Singh	66.5	75-100	Temp	Resi+Com	
223	Buchcha (Dhanchhar)	Chautham	14+150-14+200	0.2513	Non-Significant	Vinodi Singh	7.4 BW	75-100		Boundary Wall	BPL
224	Buchcha (Dhanchhar)	Chautham	14+200-14+250	0.2513	Non-Significant	Pinku Singh					
225	Buchcha (Dhanchhar)	Chautham	14+200-14+250	0.1259	Significant	Chandra Kala Devi					
226	Buchcha (Dhanchhar)	Chautham	14+200-14+250	0.2513	Non-Significant	Pankaj Singh					
227	Buchcha (Dhanchhar)	Chautham	14+250-14+300	0.1286	Non-Significant	Sanjay Singh					BPL
228	Buchcha (Dhanchhar)	Chautham	14+250-14+300	0.1286	Significant	Maya Ram Singh					BPL
229	Buchcha (Dhanchhar)	Chautham	14+250-14+300	0.1259	Significant	Uendra Sah					BPL
230	Buchcha (Dhanchhar)	Chautham	14+250-14+300	0.1259	Significant	Mani Lal Sah					BPL
231	Buchcha (Dhanchhar)	Chautham	14+250-14+300	0.1259	Significant	Kapil Dev Singh					BPL
232	Buchcha (Dhanchhar)	Chautham	14+250-14+300	0.1259	Non-Significant	Jagar Nath Chaudhary					
233	Buchcha (Dhanchhar)	Chautham	14+250-14+300	0.1259	Non-Significant	Bilash Chaudhary					BPL
234	Buchcha (Dhanchhar)	Chautham	14+250-14+300	0.1259	Non-Significant	Umesh Chaudhary					BPL

S.N.	Name of the Village	Name of Block	Chainage Kilometer	Affected Area (in Acre)	Scale of Impact (%)	Name of the Owner	Area Affected Structure (sq.m)	Scale of Impact (In %)	Type of Construction of Structure	Use of Structure	Vulnerability
235	Buchcha (Dhanchhar)	Chautham	14+250-14+300	0.1259	Significant	Sakal Dev Singh					BPL
236	Buchcha (Dhanchhar)	Chautham	14+250-14+300	0.1279	Significant	Sita Ram Prasad Singh					BPL
237	Buchcha (Dhanchhar)	Chautham	14+300-14+350	0.1259	Non-Significant	Keshar Alam					BPL
238	Buchcha (Dhanchhar)	Chautham	14+350-14+400	0.2541	Significant	Maya Devi	36.12	75-100	Semi Perma	Under Cons	BPL
239	Buchcha (Dhanchhar)	Chautham	14+350-14+400	0.1708	Significant	Bhoal Chaudhary					BPL
240	Buchcha (Dhanchhar)	Chautham	14+400-14+500	0.0027	Non-Significant	Ram Pravesh Singh					BPL
241	Buchcha (Dhanchhar)	Chautham	14+400-14+500	0.0027	Non-Significant	Chun Chun Singh					BPL
242	Buchcha (Dhanchhar)	Chautham	14+400-14+500	0.0027	Non-Significant	Dechan Devi					BPL

## LIST OF DISPLACED PERSONS (NON-TITLEHOLDERS AND TH HAVING MULTIPLE PROPERTY)

S.N.	Name of the Village	Name of Block	Chainage Kilometre	Name of the Owner	Scale of Impact (In %)	Type of Construction of Structure	Use of Structure	Status of Structure	Vulnerability Status
1	Mansi (Khutia)	Mansi	0+300-0+400	Ashok Sah	75-100	Temp	Shop	Squatter	NTH
2	Mansi (Khutia)	Mansi	0+300-0+400	Arun Yadav	75-100	Temp	Small Eatery	Squatter	BPL
3	Mansi (Khutia)	Mansi	0+300-0+400	Shankar Rajak	75-100	Temp	Cattleshed	Squatter	SC
4	Mansi (Khutia)	Mansi	0+300-0+400	Ram Ji Rajak	75-100	Temp	Cattleshed	Squatter	BPL
5	Mansi (Khutia)	Mansi	0+400-0+500	Manoj Choudhary	75-100	Temp	Shop	Squatter	SC
6	Mansi (Khutia)	Mansi	0+400-0+500	Pawan Choudhary	75-100	Temp	Shop	Squatter	SC
7	Mansi (Khutia)	Mansi	0+400-0+500	Rajesh Choudhary	75-100	Temp	Shop	Squatter	SC
8	Mansi (Khutia)	Mansi	0+400-0+500	Hajo Kumar	75-100	Temp	Shop	Squatter	SC
9	Mansi (Khutia)	Mansi	0+400-0+500	Kanhaiya Choudhary	75-100	Temp	Kiosk	Squatter	BPL
10	Mansi (Khutia)	Mansi	0+400-0+500	Kanhaiya Choudhary	75-100	Temp	Shop	Squatter	
11	Mansi (Khutia)	Mansi	0+400-0+500	Munna Choudhary	75-100	Temp	Shop	Squatter	SC
12	Mansi (Khutia)	Mansi	0+400-0+500	Ramvilash Sah	75-100	Temp	Shop	Squatter	BPL
13	Mansi (Khutia)	Mansi	0+400-0+500	Daya Ram Sah	50-75	Temp	Shop	Squatter	BPL
14	Mansi (Khutia)	Mansi	0+400-0+500	Santosh Sah	50-75	Temp	Shop	Encroacher	BPL
15	Mansi (Chak Husaini)	Mansi	0+500-0+600	Manoj Yadav	0-25	Semi Perma	Shop	Encroacher	BPL
16	Mansi (Chak Husaini)	Mansi	0+500-0+600	Manoj Yadav	25-50	Semi Perma	Shop	Encroacher	



S.N.	Name of the Village	Name of Block	Chainage Kilometre	Name of the Owner	Scale of Impact (In %)	Type of Construction of Structure	Use of Structure	Status of Structure	Vulnerability Status
17	Mansi (Chak Husaini)	Mansi	0+500-0+600	Sawitri Devi	25-50	Semi Perma	Shop	Encroacher	BPL
18	Mansi (Chak Husaini)	Mansi	0+500-0+600	Md Manjur Alam	75-100	Temp	Kiosk	Squatter	BPL
19	Mansi (Chak Husaini)	Mansi	0+500-0+600	Bijendra Yadav	25-50	Semi Perma	Shop	Encroacher	BPL
20	Mansi (Chak Husaini)	Mansi	0+500-0+600	Rajesh Kumar	0-25	Semi Perma	Shop	Encroacher	BPL
21	Mansi (Chak Husaini)	Mansi	0+500-0+600	Shankar Yadav	0-25	Semi Perma	Shop	Encroacher	
22	Mansi (Chak Husaini)	Mansi	0+500-0+600	Naresh Yadav	75-100	Temp	Kiosk	Squatter	NTH
23	Mansi (Chak Husaini)	Mansi	0+500-0+600	Sada Shiv Prasad	25-50	Temp	Shop	Encroacher	
24	Mansi (Chak Husaini)	Mansi	0+600-0+700	Sada Shiv Prasad	25-50	Temp	Shop	Squatter	
25	Mansi (Chak Husaini)	Mansi	0+500-0+600	Alok Anand	50-75	Temp	Shop	Squatter	NTH
26	Mansi (Chak Husaini)	Mansi	0+500-0+600	Alok Anand	75-100	Temp	Shop	Squatter	
27	Mansi (Chak Husaini)	Mansi	0+500-0+600	Alok Anand	50-75	Semi Perma	Shop	Squatter	
28	Mansi (Chak Husaini)	Mansi	0+500-0+600	Manish Kumar	75-100	Temp	Kiosk	Squatter	NTH
29	Mansi (Chak Husaini)	Mansi	0+500-0+600	Dinesh Kumar	25-50	Semi Perma	Shop	Squatter	BPL
30	Mansi (Chak Husaini)	Mansi	0+600-6+700	Santosh Kumar Singh	75-100	Semi Perma	Shop	Squatter	
31	Mansi (Chak Husaini)	Mansi	0+600-6+700	Devid Kumar	0-25	Temp	Shop	Squatter	NTH
32	Mansi (Chak Husaini)	Mansi	0+600-6+700	Sanjiv Kumar	25-50	Temp	Shop	Encroacher	BPL
33	Mansi (Chak Husaini)	Mansi	0+600-6+700	Gopal Singh	75-100	Semi Perma	Boundary Wall	Squatter	

S.N.	Name of the Village	Name of Block	Chainage Kilometre	Name of the Owner	Scale of Impact (In %)	Type of Construction of Structure	Use of Structure	Status of Structure	Vulnerability Status
34	Mansi (Chak Husaini)	Mansi	0+600-6+700	Ranjit Kumar	50-75	Temp	Shop	Squatter	NTH
35	Mansi (Chak Husaini)	Mansi	0+800-0+900	Mithlesh Sah	25-50	Temp	Shop	Squatter	BPL
36	Mansi (Chak Husaini)	Mansi	0+800-0+900	Vijay Kumar Sah	0-25	Temp	Shop	Squatter	NTH
37	Mansi (Chak Husaini)	Mansi	0+900-1+000	Sunil Kumar	50-75	Temp	Kiosk	Squatter	BPL
38	Mansi (Chak Husaini)	Mansi	0+900-1+000	Abhishek Kumar	25-50	Temp	Small Eatery	Squatter	NTH
39	Mansi (Chak Husaini)	Mansi	1+100-1+200	Parmod Pandit	50-75	Temp	Kiosk	Squatter	
40	Mansi (Chak Husaini)	Mansi	1+200-1+300	Gita Devi	50-75	Temp	Resi+Com	Squatter	WHH
41	Mansi (Chak Husaini)	Mansi	1+200-1+300	Pankaj Mallick	75-100	Temp	House	Squatter	SC
42	Mansi (Chak Husaini)	Mansi	1+300-1+400	Anita Devi	75-100	Temp	House	Squatter	SC
43	Mansi (Chak Husaini)	Mansi	1+300-1+400	Naresh Mallick	25-50	Permanent	House	Squatter	SC
44	Mansi (Chak Husaini)	Mansi	1+300-1+400	Wakil Mallick	25-50	Semi Perma	House	Squatter	SC
45	Mansi (Chak Husaini)	Mansi	1+300-1+400	Gopal Singh	50-75	Temp	Small Eatery	Squatter	NTH
46	Mansi (Chak Husaini)	Mansi	1+500-1+600	Munna Singh	0-25	Semi Perma	Shop	Encroacher	BPL
47	Mansi (Chak Husaini)	Mansi	1+800-1+900	Tufan Singh	50-75	Temp	Hut	Squatter	BPL
48	Balha	Mansi	5+000-5+100	Upendra Mahto	75-100	Temp	Kiosk	Squatter	BPL
49	Balha	Mansi	5+200-5+300	Kishor Sada	25-50	Temp	Hut	Squatter	SC
50	Balha	Mansi	5+400-5+500	Pawan Sharma	75-100	Temp	Kiosk	Squatter	WHH

S.N.	Name of the Village	Name of Block	Chainage Kilometre	Name of the Owner	Scale of Impact (In %)	Type of Construction of Structure	Use of Structure	Status of Structure	Vulnerability Status
51	Balha	Mansi	5+500-5+600	Niranjan Yadav	50-75	Temp	Hut	Squatter	BPL
52	Balha	Mansi	5+500-5+600	Dayanand Yadav	50-75	Temp	Hut	Squatter	NTH
53	Balha	Mansi	5+700-5+800	Ram Bahadur Sharma	50-75	Temp	Shop	Squatter	
54	Balha	Mansi	6+000-6+100	Diwakar Kumar	0-25	Semi Perma	Cattleshed	Encroacher	BPL
55	Balha	Mansi	6+000-6+100	Vijay Kumar	75-100	Temp	Kiosk	Squatter	BPL
56	Balha	Mansi	6+100-6+200	Dukha Ram	50-75	Temp	House	Encroacher	SC
57	Balha	Mansi	6+100-6+200	Ashok Kumar	75-100	Semi Perma	Shop	Encroacher	SC
58	Balha	Mansi	6+100-6+200	Subodh Ram	75-100	Semi Perma	Boundary Wall	Squatter	SC
59	Balha	Mansi	6+100-6+200	Santosh Ram	75-100	Temp	Shop	Squatter	SC
60	Balha	Mansi	6+200-6+300	Rinku Kumar	75-100	Semi Perma	Toilet	Squatter	SC
61	Balha	Mansi	6+200-6+300	Parmod Ram	75-100	Semi Perma	Boundary Wall	Squatter	SC
62	Balha	Mansi	6+300-6+400	Subodh Kumar	50-75	Temp	Hut	Squatter	NTH
63	Balha	Mansi	6+300-6+400	Bharat Singh	25-50	Semi Perma	Shop	Encroacher	BPL
64	Khirnia	Chautham	6+500-6+600	Biro Pandit	50-75	Temp	House	Squatter	BPL
65	Khirnia	Chautham	6+500-6+600	Mahadev Sharma	25-50	Temp	Hut	Squatter	BPL
66	Khirnia	Chautham	6+500-6+600	Ranjit Sharma	50-75	Temp	House	Squatter	BPL
67	Khirnia	Chautham	6+500-6+600	Bablu Sharma	50-75	Temp	Hut	Squatter	PHH

S.N.	Name of the Village	Name of Block	Chainage Kilometre	Name of the Owner	Scale of Impact (In %)	Type of Construction of Structure	Use of Structure	Status of Structure	Vulnerability Status
68	Khirnia	Chautham	6+500-6+600	Bablu Sharma	50-75	Temp	House	Squatter	
69	Khirnia	Chautham	6+500-6+600	Ram Bilash Pandit	50-75	Temp	Hut	Squatter	BPL
70	Khirnia	Chautham	6+500-6+600	Sanjay Pandit	50-75	Temp	House	Encroacher	BPL
71	Khirnia	Chautham	6+600-6+700	Banarsi Pandit	25-50	Semi Perma	House	Encroacher	
72	Khirnia	Chautham	6+600-6+700	Sachitanand Prasad	0-25	Semi Perma	Cattleshed	Squatter	
73	Khirnia	Chautham	6+700-6+800	Suresh Thakur	75-100	Semi Perma	House	Squatter	BPL
74	Khirnia	Chautham	6+700-6+800	Tamatar Thakur	75-100	Temp	House	Squatter	NTH
75	Khirnia	Chautham	6+700-6+800	Gopal Choudhary	75-100	Semi Perma	House	Squatter	SC
76	Khirnia	Chautham	6+700-6+800	Gopal Choudhary	75-100	Temp	Hut	Squatter	
77	Khirnia	Chautham	6+700-6+800	Borhan Choudhary	75-100	Semi Perma	House	Squatter	BPL
78	Khirnia	Chautham	6+800-6+900	Manoj Choudhary	75-100	Temp	House	Squatter	NTH
79	Khirnia	Chautham	6+800-6+900	Raja Ram Choudhary	75-100	Temp	House	Squatter	BPL
80	Khirnia	Chautham	6+800-6+900	Kailash Choudhary	75-100	Temp	Hut	Squatter	BPL
81	Khirnia	Chautham	6+800-6+900	Sudhish Thakur	50-75	Temp	Hut	Squatter	BPL
82	Khirnia	Chautham	6+800-6+900	Jitendra Thakur	75-100	Permanent	Toilet	Squatter	BPL
83	Khirnia	Chautham	6+800-6+900	Jagdish Thakur	75-100	Semi Perma	House	Squatter	BPL
84	Khirnia	Chautham	6+800-6+900	Bhuttu Choudhary	75-100	Temp	Cattleshed	Squatter	BPL

S.N.	Name of the Village	Name of Block	Chainage Kilometre	Name of the Owner	Scale of Impact (In %)	Type of Construction of Structure	Use of Structure	Status of Structure	Vulnerability Status
85	Khirnia	Chautham	6+800-6+900	Parmod Choudhary	75-100	Temp	Hut	Squatter	BPL
86	Khirnia	Chautham	6+800-6+900	Vimla Devi	75-100	Temp	Hut	Squatter	BPL
87	Khirnia	Chautham	6+800-6+900	Manraj Thakur	75-100	Temp	House	Squatter	BPL
88	Khirnia	Chautham	6+900-7+000	Kaleshar Thakur	75-100	Temp	Hut	Squatter	NTH
89	Khirnia	Chautham	6+900-7+000	Damodar Thakur	75-100	Temp	Hut	Squatter	BPL
90	Khirnia	Chautham	6+900-7+000	Kapildev Thakur	75-100	Temp	Hut	Squatter	BPL
91	Khirnia	Chautham	6+900-7+000	Kisho Thakur	75-100	Temp	Hut	Squatter	BPL
92	Khirnia	Chautham	6+900-7+000	Gujo Thakur	75-100	Semi Perma	House	Squatter	BPL
93	Hardiya	Chautham	8+050-8+100	Rana Singh	75-100	Semi Perma	Poultry Farm	Squatter	
94	Hardiya	Chautham	8+050-8+100	Rana Singh	75-100	Temp	Shop	Squatter	
95	Hardiya	Chautham	8+050-8+100	Jogindra Chaudhary	75-100	Semi Perma	Shop	Squatter	NTH
96	Dighari ( Bangalia)	Chautham	9+950-10+000	Chandeshwari Yadav	75-100	Permanent	House	Titleholderr	
97	Dighari ( Bangalia)	Chautham	9+950-10+000	Chandeshwari Yadav	75-100	Permanent	Temple	Titleholderr	
98	Dighari ( Bangalia)	Chautham	9+950-10+000	Chandeshwari Yadav	75-100	Semi Perma	Under Cons	Titleholderr	
99	Dighari ( Bangalia)	Chautham	10+150-10+200	Mato Singh	75-100	Semi Perma	House	Titleholderr	
100	Dighari ( Bangalia)	Chautham	10+150-10+200	Mato Singh	75-100	Semi Perma	Cattleshed	Titleholderr	
101	Dighari ( Bangalia)	Chautham	10+150-10+200	Hardev Singh	75-100	Semi Perma	Toilet	Titleholderr	

S.N.	Name of the Village	Name of Block	Chainage Kilometre	Name of the Owner	Scale of Impact (In %)	Type of Construction of Structure	Use of Structure	Status of Structure	Vulnerability Status
102	Dighari ( Bangalia)	Chautham	10+350-10+400	Chandradev Singh	75-100	Permanent	Toilet	Titleholderr	
103	Dighari ( Bangalia)	Chautham	10+350-10+400	Chandradev Singh	75-100	Permanent	House	Titleholderr	
104	Dighari ( Bangalia)	Chautham	10+350-10+400	Chandradev Singh	75-100	Permanent	Kitchen	Titleholderr	
105	Dighari ( Bangalia)	Chautham	10+350-10+400	Ashok Singh	75-100	Temp	Hut	Titleholderr	
106	Dighari ( Bangalia)	Chautham	10+350-10+400	Ashok Singh	75-100	Semi Perma	Toilet	Titleholderr	
107	Dighari ( Bangalia)	Chautham	10+350-10+400	Upendra Singh	75-100	Temp	House	Titleholderr	
108	Dighari ( Bangalia)	Chautham	10+350-10+400	Upendra Singh	75-100	Temp	Hut	Titleholderr	
109	Dighari ( Bangalia)	Chautham	10+350-10+400	Upendra Singh	75-100	Temp	Kitchen	Titleholderr	
110	Dighari ( Bangalia)	Chautham	10+400-10+450	Vinod Singh	75-100	Temp	Hut	Titleholderr	
111	Dighari ( Bangalia)	Chautham	10+400-10+450	Vinod Singh	75-100	Temp	Hut	Titleholderr	
112	Dhamahara	Chautham	11+650-11+700	Ram Pravesh Kumar	75-100	Temp	Hut	Titleholderr	
113	Dhamahara	Chautham	11+650-11+700	Ram Pravesh Kumar	75-100	Temp	Hut	Titleholderr	
114	Dhamahara	Chautham	11+650-11+700	Ram Pravesh Kumar	75-100	Temp	Hut	Titleholderr	
115	Dhamahara	Chautham	11+650-11+700	Bauna Ram	75-100	Temp	Hut	Titleholderr	
116	Dhamahara	Chautham	11+650-11+700	Bauna Ram	75-100	Permanent	Toilet	Titleholderr	
117	Dhamahara	Chautham	11+400-11+450	Chandra Kishore Mistri	75-100	Temp	Cattleshed	Titleholderr	
118	Dhamahara	Chautham	11+600-11+650	Vishun Dev Singh	75-100	Temp	Hut	Titleholderr	

S.N.	Name of the Village	Name of Block	Chainage Kilometre	Name of the Owner	Scale of Impact (In %)	Type of Construction of Structure	Use of Structure	Status of Structure	Vulnerability Status
119	Dhamahara	Chautham	11+600-11+650	Vishun Dev Singh	75-100	Permanent	Toilet	Titleholderr	
120	Dhamahara	Chautham	11+600-11+650	Vishun Dev Singh	75-100	Temp	Hut	Titleholderr	
121	Dhamahara	Chautham	11+650-11+700	Sakal Dev Singh	75-100	Temp	Hut	Titleholderr	
122	Dhamahara	Chautham	11+650-11+700	Sakal Dev Singh	75-100	Permanent	Toilet	Titleholderr	
123	Dhamahara (New Banglia)	Chautham	12+250-12+300	Ahsok Yadav	75-100	Temp	Hut	Titleholderr	
124	Dhamahara (New Banglia)	Chautham	12+250-12+300	Ahsok Yadav	75-100	Permanent	House	Titleholderr	
125	Dhamahara (New Banglia)	Chautham	12+250-12+300	Ahsok Yadav	75-100	Temp	Hut	Titleholderr	
126	Dhamahara (New Banglia)	Chautham	12+250-12+300	Ahsok Yadav	75-100	Semi Perma	House	Titleholderr	
127	Dhamahara (New Banglia)	Chautham	12+250-12+300	Ahsok Yadav	75-100	Temp	House	Titleholderr	
128	Dhamahara (New Banglia)	Chautham	12+300-12+350	Wakil Yadav	75-100	Semi Perma	House	Titleholderr	
129	Dhamahara (New Banglia)	Chautham	12+300-12+350	Wakil Yadav	75-100	Semi Perma	House	Titleholderr	
130	Dhamahara (New Banglia)	Chautham	12+300-12+350	Wakil Yadav	75-100	Temp	Hut	Titleholderr	
131	Dhamahara (New Banglia)	Chautham	12+300-12+350	Digambar Yadav	75-100	Temp	House	Titleholderr	
132	Dhamahara (New Banglia)	Chautham	12+300-12+350	Digambar Yadav	75-100	Semi Perma	House	Titleholderr	
133	Dhamahara	Chautham	12+300-12+350	Digambar Yadav	75-100	Temp	Hut	Titleholderr	
134	Dhamahara	Chautham	12+300-12+350	Jawahar Yadav	75-100	Permanent	House	Titleholderr	
135	Dhamahara	Chautham	12+300-12+350	Jawahar Yadav	75-100	Permanent	House	Titleholderr	

S.N.	Name of the Village	Name of Block	Chainage Kilometre	Name of the Owner	Scale of Impact (In %)	Type of Construction of Structure	Use of Structure	Status of Structure	Vulnerability Status
136	Dhamahara	Chautham	12+300-12+350	Jawahar Yadav	75-100	Temp	House	Titleholderr	
137	Dhamahara (Shrinagar)	Chautham	12+900-12+950	Jageswar Sada	75-100	Temp	House	Titleholderr	
138	Dhamahara (Shrinagar)	Chautham	12+900-12+950	Jageswar Sada	75-100	Temp	Hut	Titleholderr	
139	Dhamahara (Shrinagar)	Chautham	12+900-12+950	Jageswar Sada	75-100	Temp	Hut	Squatter	
140	Dhamahara	Chautham	12+950-13+000	Mukesh Kumar	75-100	Temp	House	Titleholderr	
141	Dhamahara	Chautham	12+950-13+000	Mukesh Kumar	75-100	Temp	House	Titleholderr	
142	Dhamahara	Chautham	12+950-13+000	Mukesh Kumar	75-100	Temp	House	Titleholderr	
143	Dhamahara	Chautham	12+950-13+000	Sanjay Sharma	75-100	Temp	Hut	Titleholderr	
144	Dhamahara	Chautham	13+100-13+150	Suresh Sah	75-100	Temp	Hut	Titleholderr	
145	Dhamahara	Chautham	13+150-13+200	Lalita Devi	75-100	Semi Perma	Toilet	Titleholderr	
146	Dhamahara	Chautham	13+150-13+200	Lalita Devi	75-100	Temp	House	Titleholderr	
147	Dhamahara	Chautham	13+150-13+200	Bechan Sah	75-100	Semi Perma	Toilet	Titleholderr	
148	Dhamahara	Chautham	13+150-13+200	Bechan Sah	75-100	Permanent	Toilet	Titleholderr	
149	Buchcha (Dhanchhar)	Chautham	13+850-13+900	Upendra Sigh	75-100	Semi Perma	Toilet	Titleholderr	
150	Buchcha (Dhanchhar)	Chautham	13+850-13+900	Upendra Sigh	75-100	Temp	House	Titleholderr	
151	Buchcha (Dhanchhar)	Chautham	13+850-13+900	Sambhu Singh	75-100	Temp	House	Titleholderr	
152	Buchcha (Dhanchhar)	Chautham	13+850-13+900	Sambhu Singh	75-100	Temp	House	Titleholderr	



S.N.	Name of the Village	Name of Block	Chainage Kilometre	Name of the Owner	Scale of Impact (In %)	Type of Construction of Structure	Use of Structure	Status of Structure	Vulnerability Status
153	Buchcha (Dhanchhar)	Chautham	13+850-13+900	Ram Lakhan Singh	75-100	Semi Perma	Resi+Com	Titleholderr	
154	Buchcha (Dhanchhar)	Chautham	13+850-13+900	Ram Lakhan Singh	75-100	Semi Perma	Clinic	Titleholderr	
155	Buchcha (Dhanchhar)	Chautham	13+850-13+900	Ram Lakhan Singh	75-100	Semi Perma	Toilet	Titleholderr	
156	Buchcha (Dhanchhar)	Chautham	13+850-13+900	Ram Lakhan Singh	75-100	Temp	Shop	Titleholderr	
157	Buchcha (Dhanchhar)	Chautham	13+850-13+900	Ram Lakhan Singh	75-100	Temp	Resi+Com	Titleholderr	
158	Buchcha (Dhanchhar)	Chautham	13+850-13+900	Ram Lakhan Singh	75-100	Temp	House	Titleholderr	
159	Buchcha (Dhanchhar)	Chautham	13+950-14+000	Sulekha Devi	75-100	Temp	Hut	Titleholderr	
160	Buchcha (Dhanchhar)	Chautham	13+950-14+000	Sulekha Devi	75-100	Semi Perma	Under Cons	Titleholderr	
161	Buchcha (Dhanchhar)	Chautham	13+950-14+000	Sulekha Devi	75-100	Temp	Cattleshed	Titleholderr	
162	Buchcha (Dhanchhar)	Chautham	13+950-14+000	Sulekha Devi	75-100	Semi Perma	Toilet	Titleholderr	
163	Buchcha (Dhanchhar)	Chautham	13+950-14+000	Gajendra Kumar Sahu	75-100	Temp	Hut	Titleholderr	
164	Buchcha (Dhanchhar)	Chautham	13+950-14+000	Gajendra Kumar Sahu	75-100	Temp	House	Titleholderr	
165	Buchcha (Dhanchhar)	Chautham	13+950-14+000	Gajendra Kumar Sahu	75-100	Semi Perma	Toilet	Titleholderr	
166	Buchcha (Dhanchhar)	Chautham	14+000-14+100	Girja Devi	75-100	Temp	Hut	Titleholderr	
167	Buchcha (Dhanchhar)	Chautham	14+000-14+100	Girja Devi	75-100	Permanent	House	Titleholderr	
168	Buchcha (Dhanchhar)	Chautham	14+100-14+150	Kishore Sah	75-100	Semi Perma	Under Cons	Titleholderr	
169	Buchcha (Dhanchhar)	Chautham	14+150-14+200	Pramod Singh	75-100	Temp	House	Titleholderr	

S.N.	Name of the Village	Name of Block	Chainage Kilometre	Name of the Owner	Scale of Impact (In %)	Type of Construction of Structure	Use of Structure	Status of Structure	Vulnerability Status
170	Buchcha (Dhanchhar)	Chautham	14+150-14+200	Pramod Singh	75-100	Semi Perma	House	Titleholderr	
171	Buchcha (Dhanchhar)	Chautham	14+150-14+200	Pramod Singh	75-100	Temp	House	Titleholderr	
172	Buchcha (Dhanchhar)	Chautham	14+150-14+200	Pramod Singh	75-100	Permanent	Toilet	Titleholderr	
173	Kopadiya	Salakhua	16+300-16+400	Manoj Kumar	25-50	Semi Perma	House	Encroacher	BPL
174	Kopadiya	Salakhua	16+700-16+800	Harinarayan Yadav	0-25	Temp	Cattleshed	Encroacher	BPL
175	Kopadiya	Salakhua	16+700-16+800	Shyam Sunder Yadav	0-25	Temp	House	Squatter	WHH
176	Kopadiya	Salakhua	16+800-16+900	Sanjendra Yadav	25-50	Semi Perma	Shop	Encroacher	BPL
177	Kopadiya	Salakhua	16+800-16+900	Kishore Yadav	0-25	Temp	Cattleshed	Squatter	BPL
178	Kopadiya	Salakhua	17+000-17+100	Dhaneswar Yadav	25-50	Temp	Hut	Encroacher	BPL
179	Kopadiya	Salakhua	17+100-17+200	Bindesari Baghta	50-75	Semi Perma	Shop	Encroacher	BPL
180	Kopadiya	Salakhua	17+300-17+400	Lahtan Yadav	75-100	Temp	Hut	Squatter	BPL
181	Kopadiya	Salakhua	17+300-17+400	Ajay Kumar	50-75	Semi Perma	Abandoned	Encroacher	
182	Kopadiya	Salakhua	17+300-17+400	Ram Pravesh Mahanth (Pujari)	50-75	Temp	Hut	Squatter	BPL
183	Kopadiya	Salakhua	17+300-17+400	Pintu Yadav	25-50	Temp	Shop	Encroacher	BPL
184	Kopadiya	Salakhua	17+500-17+600	Samuli Yadav	75-100	Temp	Kiosk	Squatter	NTH
185	Kopadiya	Salakhua	17+600-17+700	Sanjit Kumar	75-100	Temp	Kiosk	Squatter	BPL
186	Kopadiya	Salakhua	17+700-17+800	Opendar Kumar	50-75	Semi Perma	Shop	Encroacher	

S.N.	Name of the Village	Name of Block	Chainage Kilometre	Name of the Owner	Scale of Impact (In %)	Type of Construction of Structure	Use of Structure	Status of Structure	Vulnerability Status
187	Kopadiya	Salakhua	17+700-17+800	Sunil Yadav	75-100	Temp	Shop	Squatter	BPL
188	Kopadiya	Salakhua	17+900-18+000	Subodh Yadav	75-100	Temp	Hut	Squatter	BPL
189	Kopadiya	Salakhua	18+100-18+200	Rajendra Yadav	75-100	Temp	Godown	Squatter	BPL
190	Mobarakpur	Salakhua	22+000-22+100	Uday Yadav	25-50	Temp	Cattleshed	Encroacher	BPL
191	Mobarakpur	Salakhua	22+000-22+100	Manoj Ram	50-75	Temp	House	Squatter	BPL
192	Mobarakpur	Salakhua	22+000-22+100	Ranjit Ram	75-100	Temp	House	Squatter	SC
193	Mobarakpur	Salakhua	22+000-22+100	Saini Ram	75-100	Temp	House	Squatter	SC
194	Mobarakpur	Salakhua	22+000-22+100	Ram Pukar Yadav	50-75	Temp	Abandoned	Encroacher	BPL
195	Mobarakpur	Salakhua	22+000-22+100	Mukesh Ram	25-50	Temp	Hut	Squatter	SC
196	Mobarakpur	Salakhua	22+000-22+100	Tarachand Ram	50-75	Semi Perma	House	Squatter	SC
197	Mobarakpur	Salakhua	22+000-22+100	Pravesh Ram	75-100	Semi Perma	House	Squatter	SC
198	Mobarakpur	Salakhua	22+100-22+200	Lalan Ram	75-100	Temp	House	Squatter	SC
199	Mobarakpur	Salakhua	22+100-22+200	Sipin Ram	75-100	Temp	House	Squatter	SC
200	Mobarakpur	Salakhua	22+100-22+200	Ram Bilash Yadav	75-100	Temp	Kiosk	Squatter	BPL
201	Mobarakpur	Salakhua	22+200-22+300	Vinod Yadav	75-100	Semi Perma	Toilet	Squatter	BPL
202	Mobarakpur	Salakhua	22+200-22+300	Vishun Dev Yadav	75-100	Semi Perma	Toilet	Squatter	BPL
203	Gurgawan	Salakhua	23+100-23+200	Rajendra Singh	75-100	Semi Perma	House	Squatter	

S.N.	Name of the Village	Name of Block	Chainage Kilometre	Name of the Owner	Scale of Impact (In %)	Type of Construction of Structure	Use of Structure	Status of Structure	Vulnerability Status
204	Gurgawan	Salakhua	23+300-23+400	Bipin Kumar	75-100	Semi Perma	Shop	Encroacher	BPL
205	Gurgawan	Salakhua	23+300-23+400	Bipin Kumar	75-100	Permanent	Shop	Squatter	
206	Gurgawan	Salakhua	23+300-23+400	Sanoj Yadav	75-100	Temp	Kiosk	Squatter	BPL
207	Gurgawan	Salakhua	23+400-23+500	Umesh Sah	75-100	Temp	Small Eatery	Squatter	SC
208	Gurgawan	Salakhua	23+400-23+500	Chandan Yadav	75-100	Semi Perma	Shop	Squatter	BPL
209	Gurgawan	Salakhua	23+600-23+700	Sudhir Pandit	75-100	Temp	Store Room	Squatter	NTH
210	Gurgawan	Salakhua	23+600-23+700	Ramvilash Malik	75-100	Temp	House	Squatter	SC
211	Gurgawan	Salakhua	23+600-23+700	Ram Malik	75-100	Temp	Hut	Squatter	SC
212	Gurgawan	Salakhua	23+600-23+700	Bilash Malik	50-75	Permanent	House	Encroacher	SC
213	Gurgawan	Salakhua	23+600-23+700	Fullo Malik	25-50	Permanent	House	Encroacher	SC
214	Gurgawan (Phensaha)	Salakhua	23+600-23+700	Vimal Chaudhary	75-100	Semi Perma	House	Squatter	SC
215	Gurgawan (Phensaha)	Salakhua	23+600-23+700	Inderjit Chaudhary	75-100	Semi Perma	House	Encroacher	SC
216	Gurgawan (Phensaha)	Salakhua	23+700-23+800	Babita Devi	0-25	Permanent	House	Encroacher	SC
217	Gurgawan (Phensaha)	Salakhua	23+800-23+900	Md Imran	75-100	Temp	Kiosk	Squatter	BPL
218	Gurgawan (Phensaha)	Salakhua	23+800-23+900	Md Iqramul Haque	75-100	Semi Perma	Resi+Com	Squatter	NTH
219	Gurgawan (Phensaha)	Salakhua	23+900-24+000	Md Imteyazul Haque	75-100	Permanent	House	Encroacher	BPL
220	Gurgawan (Phensaha)	Salakhua	23+900-24+000	Md Javed Akhtar	50-75	Semi Perma	House	Encroacher	

S.N.	Name of the Village	Name of Block	Chainage Kilometre	Name of the Owner	Scale of Impact (In %)	Type of Construction of Structure	Use of Structure	Status of Structure	Vulnerability Status
221	Gurgawan (Phensaha)	Salakhua	23+900-24+000	Md Nasarullah	75-100	Permanent	Toilet	Squatter	WHH
222	Gurgawan (Phensaha)	Salakhua	23+900-24+000	Rajiya Khatun	75-100	Semi Perma	Kitchen	Squatter	BPL
223	Gurgawan (Phensaha)	Salakhua	23+900-24+000	Rajiya Khatun	75-100	Semi Perma	House	Squatter	
224	Gurgawan (Phensaha)	Salakhua	23+900-24+000	Md Zohair Alam	75-100	Permanent	Toilet	Squatter	BPL
225	Gurgawan (Phensaha)	Salakhua	23+900-24+000	Md Ozair Alam	75-100	Semi Perma	House	Squatter	NTH
226	Gurgawan (Phensaha)	Salakhua	23+900-24+000	Md Mujahidul Islam	75-100	Semi Perma	House	Squatter	BPL
227	Gurgawan (Phensaha)	Salakhua	23+900-24+000	Md Noorul Islam	75-100	Semi Perma	Shop	Squatter	BPL
228	Gurgawan (Phensaha)	Salakhua	23+900-24+000	Md Salman Alam	50-75	Semi Perma	Shop	Encroacher	BPL
229	Gurgawan (Phensaha)	Salakhua	24+000-24+100	Md Noman Ali	75-100	Semi Perma	House	Squatter	WHH
230	Gurgawan (Phensaha)	Salakhua	24+000-24+100	Fazlu Rahman	50-75	Semi Perma	Shop	Squatter	BPL
231	Gurgawan (Phensaha)	Salakhua	24+000-24+100	Md Sakirali	75-100	Temp	Kiosk	Squatter	NTH
232	Gouspur	Salakhua	24+000-24+100	Md Nasir Hussain	50-75	Semi Perma	Shop	Encroacher	BPL
233	Gouspur	Salakhua	24+000-24+100	Md Gulam Sarwar	0-25	Semi Perma	Shop	Encroacher	BPL
234	Gouspur	Salakhua	24+000-24+100	Md Anwarul Hasan	25-50	Semi Perma	Shop	Encroacher	
235	Gouspur	Salakhua	24+200-24+300	Md Masir Alam	75-100	Temp	Hut	Squatter	BPL
236	Gouspur	Salakhua	24+200-24+300	Md Hasmat	75-100	Semi Perma	Boundary Wall	Squatter	BPL
237	Gouspur	Salakhua	24+200-24+300	Molana Ahtesham	50-75	Semi Perma	Shop	Squatter	NTH

S.N.	Name of the Village	Name of Block	Chainage Kilometre	Name of the Owner	Scale of Impact (In %)	Type of Construction of Structure	Use of Structure	Status of Structure	Vulnerability Status
238	Gouspur	Salakhua	24+400-24+500	Md Insul Nadaf	75-100	Semi Perma	Kitchen	Squatter	BPL
239	Gouspur	Salakhua	24+400-24+500	Md Ibrahim Nadaf	75-100	Semi Perma	House	Squatter	BPL
240	Gouspur	Salakhua	24+400-24+500	Md Ibrahim Nadaf	75-100	Permanent	Toilet	Squatter	
241	Gouspur	Salakhua	24+400-24+500	Md Wakil Nadaf	75-100	Semi Perma	Cattleshed	Squatter	BPL
242	Gouspur	Salakhua	24+400-24+500	Md Mazlum Nadaf	75-100	Semi Perma	Hut	Squatter	BPL
243	Gouspur	Salakhua	24+400-24+500	Md Rakim Nadaf	75-100	Semi Perma	Cattleshed	Squatter	BPL
244	Gouspur	Salakhua	24+400-24+500	Md Karim Nadaf	75-100	Semi Perma	Shop	Encroacher	
245	Gouspur	Salakhua	24+400-24+500	Asma Khatun	75-100	Semi Perma	House	Squatter	BPL
246	Gouspur	Salakhua	24+400-24+500	Asma Khatun	50-75	Permanent	House	Encroacher	
247	Gouspur	Salakhua	24+400-24+500	Asma Khatun	75-100	Temp	Hut	Squatter	
248	Simri Bakhtiyarpur	Simri Bakhtiyarpur	25+000-25+100	Dilkhush Yadav	75-100	Temp	Kiosk	Squatter	NTH
249	Simri Bakhtiyarpur	Simri Bakhtiyarpur	25+400-25+500	Ranjit Malik	25-50	Temp	House	Squatter	SC
250	Simri Bakhtiyarpur	Simri Bakhtiyarpur	25+400-25+500	Lallu Malik	0-25	Temp	House	Squatter	SC
251	Simri Bakhtiyarpur	Simri Bakhtiyarpur	25+400-25+500	Sikandar Malik	25-50	Temp	House	Squatter	SC
252	Simri Bakhtiyarpur	Simri Bakhtiyarpur	25+400-25+500	Sikandar Malik	25-50	Temp	Hut	Squatter	
253	Simri Bakhtiyarpur	Simri Bakhtiyarpur	25+400-25+500	Pankaj Malik	25-50	Temp	Hut	Squatter	SC
254	Simri Bakhtiyarpur	Simri Bakhtiyarpur	25+400-25+500	Sikandra Thakur (Opender Thakur)	25-50	Temp	Hut	Squatter	BPL

S.N.	Name of the Village	Name of Block	Chainage Kilometre	Name of the Owner	Scale of Impact (In %)	Type of Construction of Structure	Use of Structure	Status of Structure	Vulnerability Status
255	Simri Bakhtiyarpur	Simri Bakhtiyarpur	25+400-25+500	Vijendra Thakur	25-50	Temp	Small Eatery	Squatter	BPL
256	Simri Bakhtiyarpur	Simri Bakhtiyarpur	25+400-25+500	Upendra Thakyr	0-25	Temp	Shop	Squatter	NTH
257	Simri Bakhtiyarpur	Simri Bakhtiyarpur	25+500-25+600	Upendra Yadav	75-100	Temp	Kiosk	Squatter	NTH
258	Simri Bakhtiyarpur	Simri Bakhtiyarpur	25+900-26+000	Indrajit Sharma	50-75	Semi Perma	House	Squatter	SC
259	Simri Bakhtiyarpur	Simri Bakhtiyarpur	25+900-26+000	Kundan Kumar	75-100	Temp	Kiosk	Squatter	SC
260	Simri Bakhtiyarpur	Simri Bakhtiyarpur	25+900-26+000	Kapil Sharma	25-50	Temp	Shop	Squatter	SC
261	Simri Bakhtiyarpur	Simri Bakhtiyarpur	25+900-26+000	Umesh Yadav	75-100	Temp	Kiosk	Squatter	BPL
262	Simri Bakhtiyarpur	Simri Bakhtiyarpur	26+100-26+200	Hira Kumar Sharma	75-100	Temp	Kiosk	Squatter	SC
263	Simri Bakhtiyarpur	Simri Bakhtiyarpur	26+200-26+300	Er. Ram Kumar	75-100	Semi Perma	Boundary Wall	Squatter	
264	Simri Bakhtiyarpur	Simri Bakhtiyarpur	26+200-26+300	Sanjeev Kumar	25-50	Semi Perma	Pvt. Office	Encroacher	
265	Simri Bakhtiyarpur	Simri Bakhtiyarpur	26+200-26+300	Anjali Kumari	75-100	Semi Perma	Boundary Wall	Squatter	BPL
266	Simri Bakhtiyarpur	Simri Bakhtiyarpur	26+300-26+400	Ramdev Swarnkar	75-100	Temp	Hut	Squatter	BPL
267	Simri Bakhtiyarpur	Simri Bakhtiyarpur	26+300-26+400	Shambhu Poddar	50-75	Temp	House	Squatter	BPL
268	Simri Bakhtiyarpur	Simri Bakhtiyarpur	26+400-26+500	Mumtaz Begam	25-50	Permanent	Shed	Encroacher	
269	Simri Bakhtiyarpur (Azad Nagar)	Simri Bakhtiyarpur	26+400-26+500	Md Shamshad Ahmad	25-50	Semi Perma	House	Encroacher	BPL
270	Simri Bakhtiyarpur (Azad Nagar)	Simri Bakhtiyarpur	26+500-26+600	Bhola Swarnkar	75-100	Permanent	Gate	Squatter	BPL
271	Simri Bakhtiyarpur (Azad Nagar)	Simri Bakhtiyarpur	26+600-26+700	Sudhir Kumar Singh	75-100	Permanent	Toilet	Squatter	BPL

S.N.	Name of the Village	Name of Block	Chainage Kilometre	Name of the Owner	Scale of Impact (In %)	Type of Construction of Structure	Use of Structure	Status of Structure	Vulnerability Status
272	Simri Bakhtiyarpur (Azad Nagar)	Simri Bakhtiyarpur	26+600-26+700	Rajesh Mehta	25-50	Temp	Hut	Encroacher	BPL
273	Simri Bakhtiyarpur (Azad Nagar)	Simri Bakhtiyarpur	26+700-26+800	Sankar Poddar	25-50	Temp	Shop	Encroacher	
274	Simri Bakhtiyarpur (Purani Bazar)	Simri Bakhtiyarpur	27+000-27+100	Shampat Jaysawal	50-75	Semi Perma	Shop	Encroacher	BPL
275	Simri Bakhtiyarpur (Purani Bazar)	Simri Bakhtiyarpur	27+000-27+100	Munni Devi	50-75	Semi Perma	Shop	Encroacher	BPL
276	Simri Bakhtiyarpur (Purani Bazar)	Simri Bakhtiyarpur	27+000-27+100	Sachin Kumar	75-100	Semi Perma	House	Squatter	NTH
277	Simri Bakhtiyarpur (Purani Bazar)	Simri Bakhtiyarpur	27+000-27+100	Janki Devi	50-75	Semi Perma	House	Encroacher	BPL
278	Simri Bakhtiyarpur (Purani Bazar)	Simri Bakhtiyarpur	27+000-27+100	Jai Narayan Swarnkar	0-25	Permanent	House	Encroacher	BPL
279	Simri Bakhtiyarpur (Purani Bazar)	Simri Bakhtiyarpur	27+100-27+200	Jai Narayan Swarnkar	50-75	Semi Perma	Shop	Encroacher	
280	Simri Bakhtiyarpur (Purani Bazar)	Simri Bakhtiyarpur	27+000-27+100	Arun Swarnkar	0-25	Permanent	House	Encroacher	
281	Simri Bakhtiyarpur (Purani Bazar)	Simri Bakhtiyarpur	27+000-27+100	Ram Narayan Swarnkar	25-50	Semi Perma	House	Encroacher	BPL
282	Simri Bakhtiyarpur (Purani Bazar)	Simri Bakhtiyarpur	27+100-27+200	Gautam Kumar	75-100	Semi Perma	Shed	Squatter	BPL
283	Simri Bakhtiyarpur (Purani Bazar)	Simri Bakhtiyarpur	27+100-27+200	Gautam Kumar	0-25	Permanent	House	Encroacher	
284	Simri Bakhtiyarpur (Purani Bazar)	Simri Bakhtiyarpur	27+100-27+200	Rajesh Swarnkar	50-75	Semi Perma	House	Encroacher	BPL
285	Simri Bakhtiyarpur (Purani Bazar)	Simri Bakhtiyarpur	27+100-27+200	Hira Kumar	0-25	Permanent	Resi+Com	Encroacher	
286	Simri Bakhtiyarpur (Purani Bazar)	Simri Bakhtiyarpur	27+100-27+200	Binda Devi	25-50	Temp	House	Encroacher	
287	Simri Bakhtiyarpur (Purani Bazar)	Simri Bakhtiyarpur	27+100-27+200	Rana Jaiswal	75-100	Temp	Shop	Squatter	BPL
288	Simri Bakhtiyarpur (Purani Bazar)	Simri Bakhtiyarpur	27+100-27+200	Mahavir Prasad	75-100	Semi Perma	Shop	Squatter	BPL



S.N.	Name of the Village	Name of Block	Chainage Kilometre	Name of the Owner	Scale of Impact (In %)	Type of Construction of Structure	Use of Structure	Status of Structure	Vulnerability Status
289	Simri Bakhtiyarpur (Purani Bazar)	Simri Bakhtiyarpur	27+100-27+200	Gurudev Kumar	75-100	Temp	Kiosk	Squatter	BPL
290	Simri Bakhtiyarpur	Simri Bakhtiyarpur	27+100-27+200	Bishundev Sah	75-100	Temp	Shop	Squatter	BPL
291	Simri Bakhtiyarpur	Simri Bakhtiyarpur	27+200-27+300	Biso Sah (Gautam Sah)	75-100	Semi Perma	Boundary Wall	Squatter	NTH
292	Simri Bakhtiyarpur	Simri Bakhtiyarpur	27+300-27+400	Chote Lal Chaudhary	75-100	Semi Perma	Under Cons	Squatter	SC
293	Simri Bakhtiyarpur	Simri Bakhtiyarpur	27+300-27+400	Upendra Chaudhary	0-25	Semi Perma	House	Encroacher	SC
294	Simri Bakhtiyarpur	Simri Bakhtiyarpur	27+300-27+400	Arjun Prasad Yadav	75-100	Semi Perma	Resi+Com	Squatter	BPL
295	Simri Bakhtiyarpur	Simri Bakhtiyarpur	27+300-27+400	Suraj Kumar	0-25	Semi Perma	House	Encroacher	BPL
296	Mansi (Khutia)	Mansi	0+000-0+100	Indal Yadav	75-100	Temp	Kiosk	Squatter	NTH
297	Mansi (Khutia)	Mansi	0+000-0+100	Raushan Thakur	75-100	Temp	Hut	Squatter	BPL
298	Mansi (Khutia)	Mansi	0+300-0+400	Suresh Rajak	0-25	Temp	Shop	Squatter	SC
299	Mansi (Chak Hussaini)	Mansi	0+500-0+600	Santosh Kumar Thakur	75-100	Temp	Shop	Squatter	BPL
300	Mansi (Chak Hussaini)	Mansi	0+500-0+600	Virbal Kumar	75-100	Temp	Shop	Squatter	BPL
301	Mansi (Chak Hussaini)	Mansi	0+800-0+900	Kishor Kumar Bhagat	50-75	Temp	Shop	Squatter	BPL
302	Mansi (Chak Hussaini)	Mansi	0+800-0+900	Arjun Poddar	0-25	Semi Perma	Shop	Encroacher	BPL
303	Mansi (Chak Hussaini)	Mansi	0+800-0+900	Nagandra Tamoli	0-25	Temp	Small Eatery	Encroacher	BPL
304	Mansi (Chak Hussaini)	Mansi	0+800-0+900	Mukesh Singh	75-100	Temp	Kiosk	Squatter	NTH
305	Mansi (Chak Hussaini)	Mansi	0+900-1+000	Gopal Poddar	0-25	Temp	Small Eatery	Squatter	BPL

S.N.	Name of the Village	Name of Block	Chainage Kilometre	Name of the Owner	Scale of Impact (In %)	Type of Construction of Structure	Use of Structure	Status of Structure	Vulnerability Status
306	Mansi (Chak Hussaini)	Mansi	1+000-1+200	Manish Kumar	0-25	Temp	Shop	Squatter	BPL
307	Mansi (Chak Hussaini)	Mansi	1+000-1+200	Jay Prakash Gupta	25-50	Semi Perma	Shop	Squatter	BPL
308	Mansi (Chak Hussaini)	Mansi	1+000-1+200	Ashish Kumar	0-25	Semi Perma	Shop	Squatter	BPL
309	Mansi (Chak Hussaini)	Mansi	1+200-1+300	Pawan Kumar	75-100	Semi Perma	Shop	Squatter	NTH
310	Mansi (Chak Hussaini)	Mansi	1+300-1+400	Akhalesh Ray	75-100	Semi Perma	Shop	Squatter	BPL
311	Mansi (Chak Hussaini)	Mansi	1+400-1+500	Wakil Singh	50-75	Semi Perma	Shop	Squatter	BPL
312	Mansi (Chak Hussaini)	Mansi	1+400-1+500	Arvind Singh	50-75	Semi Perma	Shop	Squatter	BPL
313	Mansi (Chak Hussaini)	Mansi	1+400-1+500	Arun Kumar	75-100	Semi Perma	House	Squatter	BPL
314	Mansi (Chak Hussaini)	Mansi	1+400-1+500	Ganga Prasad Singh	50-75	Temp	House	Squatter	BPL
315	Mansi (Chak Hussaini)	Mansi	1+400-1+500	Rajesh Kumar Singh	75-100	Semi Perma	Shop	Squatter	BPL
316	Mansi (Chak Hussaini)	Mansi	1+400-1+500	Bittu Kumar	75-100	Semi Perma	Shop	Squatter	BPL
317	Mansi (Chak Hussaini)	Mansi	1+400-1+500	Parmod Kumar Singh	75-100	Semi Perma	Shop	Squatter	BPL
318	Mansi (Chak Hussaini)	Mansi	1+400-1+500	Gita Devi	75-100	Semi Perma	Boundary Wall	Squatter	BPL
319	Mansi (Chak Hussaini)	Mansi	1+400-1+500	Sadanand Singh	50-75	Semi Perma	Shop	Squatter	NTH
320	Mansi (Chak Hussaini)	Mansi	1+400-1+500	Rajo Singh	75-100	Temp	Kiosk	Squatter	BPL
321	Mansi (Chak Hussaini)	Mansi	1+500-1+600	Raju Kumar	75-100	Semi Perma	Boundary Wall	Squatter	BPL
322	Mansi (Chak Hussaini)	Mansi	1+500-1+600	Balmiki Singh	25-50	Semi Perma	House	Squatter	BPL

S.N.	Name of the Village	Name of Block	Chainage Kilometre	Name of the Owner	Scale of Impact (In %)	Type of Construction of Structure	Use of Structure	Status of Structure	Vulnerability Status
323	Mansi (Chak Hussaini)	Mansi	1+500-1+600	Manoj Kumar	25-50	Semi Perma	House	Squatter	BPL
324	Mansi (Chak Hussaini)	Mansi	1+500-1+600	Sunita Devi	75-100	Semi Perma	Shop	Squatter	BPL
325	Mansi (Chak Hussaini)	Mansi	1+500-1+600	Rohit Kumar	50-75	Semi Perma	Shop	Squatter	BPL
326	Mansi (Chak Hussaini)	Mansi	1+500-1+600	Mina Devi	75-100	Temp	Shop	Squatter	BPL
327	Mansi (Chak Hussaini)	Mansi	1+500-1+600	Sanjay Singh	75-100	Temp	Hut	Squatter	BPL
328	Mansi (Chak Hussaini)	Mansi	1+600-1+700	Shushil Kumar	75-100	Temp	Kiosk	Squatter	BPL
329	Balha	Mansi	5+600-5+700	Sharvan Sah	25-50	Semi Perma	Shop	Squatter	NTH
330	Balha	Mansi	5+600-5+700	Radhe Sah	25-50	Semi Perma	Shop	Squatter	NTH
331	Balha	Mansi	5+600-5+700	Bhshan Sharma	75-100	Permanent	Toilet	Squatter	BPL
332	Balha	Mansi	5+700-5+800	Suman Kumar	75-100	Semi Perma	House	Squatter	PHH
333	Balha	Mansi	5+700-5+800	Shakar Sharma	75-100	Temp	House	Squatter	BPL
334	Balha	Mansi	5+700-5+800	Montu Sharma	50-75	Semi Perma	House	Squatter	BPL
335	Balha	Mansi	5+700-5+800	Wakil Yadav	75-100	Temp	Kiosk	Squatter	NTH
336	Balha	Mansi	5+700-5+800	Anurudh Sharma	75-100	Semi Perma	Bathroom	Squatter	
337	Balha	Mansi	5+700-5+800	Molan Sharma	75-100	Temp	House	Squatter	BPL
338	Balha	Mansi	5+700-5+800	Molan Sharma	75-100	Semi Perma	Temple	Squatter	
339	Balha	Mansi	5+700-5+800	Sagar Sharma	75-100	Semi Perma	House	Squatter	BPL

S.N.	Name of the Village	Name of Block	Chainage Kilometre	Name of the Owner	Scale of Impact (In %)	Type of Construction of Structure	Use of Structure	Status of Structure	Vulnerability Status
340	Balha	Mansi	5+700-5+800	Sagar Sharma	75-100	Permanent	Toilet	Squatter	
341	Balha	Mansi	5+700-5+800	Santosh Yadav	75-100	Semi Perma	Toilet	Squatter	NTH
342	Balha	Mansi	5+700-5+800	Yadunadan Sah	75-100	Semi Perma	Aganwadi	Squatter	NTH
343	Balha	Mansi	5+700-5+800	Yadunadan Sah	75-100	Permanent	Toilet	Squatter	
344	Balha	Mansi	5+700-5+800	Sudhir Kumar Yadav	75-100	Permanent	Toilet	Squatter	BPL
345	Balha	Mansi	6+100-6+200	Sambhu Bharti	75-100	Temp	Kiosk	Squatter	BPL
346	Balha	Mansi	6+100-6+200	Vinod Pandit	25-50	Semi Perma	House	Squatter	BPL
347	Balha	Mansi	6+200-6+300	Arun Pandit	25-50	Semi Perma	Shop	Encroacher	BPL
348	Balha	Mansi	6+300-6+400	Sunil Sah	75-100	Semi Perma	Boundary Wall	Squatter	NTH
349	Balha	Mansi	6+300-6+400	Dharmbir Kumar	50-75	Temp	Shop	Squatter	SC
350	Balha	Mansi	6+300-6+400	Lalan Yadav	50-75	Semi Perma	Cattleshed	Squatter	BPL
351	Balha	Mansi	6+300-6+400	Giro Pandit	75-100	Semi Perma	Boundary Wall	Squatter	BPL
352	Khirnia	Chautham	6+400-6+500	Nivas Pandit	0-25	Semi Perma	House	Squatter	BPL
353	Khirnia	Chautham	6+600-6+700	Jhingo Pandit	50-75	Semi Perma	House	Squatter	WHH
354	Khirnia	Chautham	6+600-6+700	Ranjan Pandit	75-100	Temp	Shop	Squatter	NTH
355	Khirnia	Chautham	6+600-6+700	Ranjan Pandit	25-50	Semi Perma	House	Encroacher	
356	Khirnia	Chautham	6+600-6+700	Arun Pandit	75-100	Semi Perma	Cattleshed	Squatter	BPL

S.N.	Name of the Village	Name of Block	Chainage Kilometre	Name of the Owner	Scale of Impact (In %)	Type of Construction of Structure	Use of Structure	Status of Structure	Vulnerability Status
357	Khirnia	Chautham	6+600-6+700	Sudhir Kumar	50-75	Semi Perma	House	Squatter	BPL
358	Khirnia	Chautham	6+600-6+700	Kailah Pandit	75-100	Semi Perma	House	Squatter	NTH
359	Khirnia	Chautham	6+700-6+800	Prakash Choudhary	75-100	Semi Perma	House	Squatter	SC
360	Khirnia	Chautham	6+700-6+800	Mahindra Choudhary	75-100	Semi Perma	House	Squatter	SC
361	Khirnia	Chautham	6+700-6+800	Sahida Khatun	50-75	Semi Perma	House	Squatter	BPL
362	Khirnia	Chautham	6+700-6+800	Ashish Kumar	75-100	Semi Perma	House	Squatter	NTH
363	Khirnia	Chautham	6+700-6+800	Shankar Choudhary	75-100	Semi Perma	House	Squatter	BPL
364	Khirnia	Chautham	6+700-6+800	Bhola Choudhary	75-100	Semi Perma	House	Squatter	BPL
365	Khirnia	Chautham	6+700-6+800	Manelal Choudhary	75-100	Semi Perma	House	Squatter	BPL
366	Khirnia	Chautham	6+800-6+900	Videshi Choudhary	25-50	Semi Perma	House	Squatter	BPL
367	Khirnia	Chautham	6+800-6+900	Sinkendra Choudhary	75-100	Semi Perma	House	Squatter	BPL
368	Khirnia	Chautham	6+800-6+900	Jay Jay Ram Choudhary	75-100	Semi Perma	Kiosk	Squatter	BPL
369	Khirnia	Chautham	6+800-6+900	Bhaya Ram Choudhary	75-100	Semi Perma	House	Squatter	BPL
370	Khirnia	Chautham	6+800-6+900	Ram Chandra Choudhary	25-50	Semi Perma	House	Squatter	BPL
371	Khirnia	Chautham	6+800-6+900	Tapendra Thakur	50-75	Temp	House	Squatter	NTH
372	Khirnia	Chautham	6+800-6+900	Rajendra Choudhary	25-50	Temp	House	Squatter	BPL
373	Khirnia	Chautham	6+800-6+900	Sikandar Choudhary	75-100	Semi Perma	House	Squatter	SC

S.N.	Name of the Village	Name of Block	Chainage Kilometre	Name of the Owner	Scale of Impact (In %)	Type of Construction of Structure	Use of Structure	Status of Structure	Vulnerability Status
374	Khirnia	Chautham	6+800-6+900	Mangal Choudhary	25-50	Semi Perma	House	Squatter	BPL
375	Khirnia	Chautham	6+800-6+900	Rohit Choudhary	75-100	Semi Perma	House	Squatter	BPL
376	Khirnia	Chautham	6+800-6+900	Anil Choudhary	75-100	Semi Perma	House	Squatter	BPL
377	Khirnia	Chautham	6+800-6+900	Pramod Choudhary	75-100	Semi Perma	House	Squatter	BPL
378	Khirnia	Chautham	6+800-6+900	Samrun Khatun	75-100	Temp	Resi+Com	Squatter	WHH
379	Khirnia	Chautham	6+900-7+000	Laddu Thakur	75-100	Temp	Hut	Squatter	BPL
380	Khirnia	Chautham	6+900-7+000	Bahadur Thakur	75-100	Temp	House	Squatter	BPL
381	Khirnia	Chautham	6+900-7+000	Mantun Thakur	75-100	Temp	House	Squatter	NTH
382	Khirnia	Chautham	6+900-7+000	Sikandar Thakur	75-100	Semi Perma	House	Squatter	BPL
383	Khirnia	Chautham	6+900-7+000	Baleshar Thakur	25-50	Temp	Hut	Squatter	BPL
384	Khirnia	Chautham	6+900-7+000	Akshay Kuamr	25-50	Temp	Hut	Squatter	NTH
385	Khirnia	Chautham	6+900-7+000	Jay Kumar Choudhary	50-75	Semi Perma	House	Squatter	BPL
386	Kopadiya	Salakhua	16+300-16+400	Pandav Kumar	0-25	Temp	Cattleshed	Squatter	WHH
387	Kopadiya	Salakhua	16+700-16+800	Parmod Yadav	50-75	Temp	Hut	Encroacher	BPL
388	Kopadiya	Salakhua	16+700-16+800	Dinesh Yadav	50-75	Temp	Cattleshed	Encroacher	BPL
389	Kopadiya	Salakhua	16+800-16+900	Baavichan Yadav	0-25	Temp	House	Squatter	BPL
390	Kopadiya	Salakhua	16+800-16+900	Karam Lal Yadav	25-50	Temp	Cattleshed	Encroacher	

S.N.	Name of the Village	Name of Block	Chainage Kilometre	Name of the Owner	Scale of Impact (In %)	Type of Construction of Structure	Use of Structure	Status of Structure	Vulnerability Status
391	Kopadiya	Salakhua	16+800-16+900	Sailendra Yadav	25-50	Temp	Hut	Encroacher	BPL
392	Kopadiya	Salakhua	17+200-17+300	Murlidhar Yadav	50-75	Temp	Cattleshed	Encroacher	BPL
393	Kopadiya	Salakhua	17+200-17+300	Suresh Prasad Yadav	50-75	Temp	Cattleshed	Squatter	NTH
394	Kopadiya	Salakhua	17+200-17+300	Brajesh Yadav	75-100	Temp	Hut	Squatter	BPL
395	Kopadiya	Salakhua	17+200-17+300	Ram Charitra Yadav	25-50	Temp	Cattleshed	Squatter	BPL
396	Kopadiya	Salakhua	17+200-17+300	Kailash Yadav	75-100	Temp	Hut	Squatter	BPL
397	Kopadiya	Salakhua	17+300-17+400	Vilash Yadav	75-100	Temp	House	Squatter	BPL
398	Kopadiya	Salakhua	17+300-17+400	Indradev Yadav	50-75	Permanent	Toilet	Encroacher	
399	Kopadiya	Salakhua	17+300-17+400	Jagdish Yadav	50-75	Semi Perma	Shop	Squatter	BPL
400	Kopadiya	Salakhua	17+300-17+400	Dev Narayan Yadav	75-100	Semi Perma	House	Squatter	BPL
401	Kopadiya	Salakhua	17+300-17+400	Bipin Kumar	75-100	Temp	Kiosk	Squatter	BPL
402	Kopadiya	Salakhua	17+400-17+500	Saheb Kumar	25-50	Temp	Shop	Squatter	BPL
403	Kopadiya	Salakhua	17+500-17+600	Raj Kumar Ray (Santosh)	25-50	Temp	Hut	Encroacher	BPL
404	Kopadiya	Salakhua	17+500-17+600	Pradip Thakur	75-100	Temp	Kiosk	Squatter	BPL
405	Kopadiya	Salakhua	17+600-17+700	Nitish Yadav	75-100	Temp	Kiosk	Squatter	BPL
406	Kopadiya	Salakhua	17+600-17+700	Ram Dev Yadav	0-25	Temp	Cattleshed	Encroacher	BPL
407	Kopadiya	Salakhua	17+600-17+700	Gaure Lal Yadav	0-25	Temp	Cattleshed	Encroacher	BPL

S.N.	Name of the Village	Name of Block	Chainage Kilometre	Name of the Owner	Scale of Impact (In %)	Type of Construction of Structure	Use of Structure	Status of Structure	Vulnerability Status
408	Kopadiya	Salakhua	17+700-17+800	Kari Yadav	75-100	Temp	Kiosk	Squatter	NTH
409	Kopadiya	Salakhua	17+700-17+800	Sita Ram Ray	50-75	Temp	Kiosk	Squatter	NTH
410	Kopadiya	Salakhua	17+800-17+900	Gopal Yadav	75-100	Temp	Kiosk	Squatter	BPL
411	Kopadiya	Salakhua	17+800-17+900	Narayan Yadav	25-50	Semi Perma	Cattleshed	Encroacher	BPL
412	Kopadiya	Salakhua	17+900-18+000	Bipin Kumar	75-100	Temp	Shop	Squatter	BPL
413	Kopadiya	Salakhua	17+900-18+000	Amit Kumar	75-100	Temp	Kiosk	Squatter	BPL
414	Mobarakpur	Salakhua	22+000-22+100	Videsh Yadav	75-100	Semi Perma	House	Squatter	BPL
415	Mobarakpur	Salakhua	22+000-22+100	Ganesh Yadav Amin	50-75	Semi Perma	House	Encroacher	BPL
416	Mobarakpur	Salakhua	22+000-22+100	Surendra Ram	75-100	Temp	Kiosk	Squatter	SC
417	Mobarakpur	Salakhua	22+000-22+100	Pankaj Kumar Ram	25-50	Semi Perma	House	Encroacher	SC
418	Mobarakpur	Salakhua	22+000-22+100	Sanjay Choudhary	25-50	Temp	House	Squatter	SC
419	Mobarakpur	Salakhua	22+000-22+100	Manoj Choudhary	50-75	Temp	House	Squatter	SC
420	Mobarakpur	Salakhua	22+000-22+100	Arjun Choudhary	75-100	Semi Perma	Hut	Squatter	SC
421	Mobarakpur	Salakhua	22+000-22+100	Sudhir Ram	50-75	Semi Perma	House	Squatter	SC
422	Mobarakpur	Salakhua	22+000-22+100	Raj Kishor Ram	75-100	Semi Perma	Toilet	Squatter	SC
423	Mobarakpur	Salakhua	22+000-22+100	Bank Ram	75-100	Semi Perma	House	Squatter	SC
424	Mobarakpur	Salakhua	22+100-22+200	Giro Ram	25-50	Semi Perma	House	Squatter	SC



S.N.	Name of the Village	Name of Block	Chainage Kilometre	Name of the Owner	Scale of Impact (In %)	Type of Construction of Structure	Use of Structure	Status of Structure	Vulnerability Status
425	Mobarakpur	Salakhua	22+100-22+200	Abhay Ram	50-75	Semi Perma	Kitchen	Squatter	SC
426	Mobarakpur	Salakhua	22+100-22+200	Anirudh Ram	75-100	Temp	House	Squatter	SC
427	Mobarakpur	Salakhua	22+100-22+200	Anirudh Ram	0-25	Permanent	House	Encroacher	
428	Mobarakpur	Salakhua	22+100-22+200	Manoj Ram	75-100	Semi Perma	House	Squatter	SC
429	Mobarakpur	Salakhua	22+100-22+200	Manoj Ram	25-50	Permanent	House	Squatter	
430	Mobarakpur	Salakhua	22+100-22+200	Sanjay Ram	75-100	Semi Perma	House	Squatter	SC
431	Mobarakpur	Salakhua	22+100-22+200	Mahendra Yadav	75-100	Semi Perma	Shop	Squatter	BPL
432	Mobarakpur	Salakhua	22+100-22+200	Ravindra Ram	75-100	Semi Perma	Toilet	Squatter	SC
433	Mobarakpur	Salakhua	22+100-22+200	Deepak Ram	50-75	Semi Perma	House	Squatter	SC
434	Mobarakpur	Salakhua	22+200-22+300	Chandan Yadav	75-100	Temp	House	Squatter	BPL
435	Mobarakpur	Salakhua	22+200-22+300	Chandan Yadav	75-100	Semi Perma	Toilet	Squatter	
436	Mobarakpur	Salakhua	22+200-22+300	Rajo Yadav	75-100	Semi Perma	Toilet	Squatter	BPL
437	Mobarakpur	Salakhua	22+200-22+300	Bijali Yadav	75-100	Temp	Hut	Squatter	BPL
438	Mobarakpur	Salakhua	22+200-22+300	Mahanthi Yadav	25-50	Temp	House	Squatter	BPL
439	Mobarakpur	Salakhua	22+200-22+300	Ramesh Yadav	50-75	Temp	Cattleshed	Squatter	BPL
440	Gurgawan	Salakhua	23+300-23+400	Kuldeep Pandit	0-25	Semi Perma	Shop	Squatter	BPL
441	Gurgawan	Salakhua	23+300-23+400	Chandeswari Poddar	75-100	Semi Perma	House	Squatter	BPL

S.N.	Name of the Village	Name of Block	Chainage Kilometre	Name of the Owner	Scale of Impact (In %)	Type of Construction of Structure	Use of Structure	Status of Structure	Vulnerability Status
442	Gurgawan	Salakhua	23+300-23+400	Chandeswari Poddar	25-50	Permanent	Under Cons	Encroacher	
443	Gurgawan	Salakhua	23+600-23+700	Sanjeet Yadav	75-100	Temp	Kiosk	Squatter	BPL
444	Gurgawan	Salakhua	23+600-23+700	Nageshwar Pandit	75-100	Temp	Hut	Squatter	BPL
445	Gurgawan	Salakhua	23+600-23+700	Ashok Chaudhary	75-100	Semi Perma	Toilet	Encroacher	
446	Gurgawan (Phensaha)	Salakhua	23+600-23+700	Lela Devi	75-100	Temp	House	Squatter	BPL
447	Gurgawan (Phensaha)	Salakhua	23+600-23+700	Anar Devi	75-100	Semi Perma	House	Squatter	BPL
448	Gurgawan (Phensaha)	Salakhua	23+600-23+700	Anar Devi	25-50	Permanent	House	Encroacher	
449	Gurgawan (Phensaha)	Salakhua	23+700-23+800	Suresh Chaudhary	75-100	Semi Perma	Resi+Com	Squatter	SC
450	Gurgawan (Phensaha)	Salakhua	23+700-23+800	Shankar Chaudhary	75-100	Semi Perma	Shop	Squatter	SC
451	Gurgawan (Phensaha)	Salakhua	23+700-23+800	Shankar Chaudhary	75-100	Temp	Shop	Squatter	
452	Gurgawan (Phensaha)	Salakhua	23+800-23+900	Rajiya Khatun	75-100	Semi Perma	Boundary Wall	Encroacher	BPL
453	Gurgawan (Phensaha)	Salakhua	23+800-23+900	Alam Ara	75-100	Semi Perma	Toilet	Squatter	BPL
454	Gurgawan (Phensaha)	Salakhua	23+900-24+000	Md Mumtaz Alam	75-100	Semi Perma	Boundary Wall	Squatter	BPL
455	Gurgawan (Phensaha)	Salakhua	23+900-24+000	Md Mokhtar	75-100	Semi Perma	Resi+Com	Squatter	BPL
456	Gurgawan (Phensaha)	Salakhua	23+900-24+000	Bibi Monira Khatun	75-100	Temp	Kiosk	Squatter	BPL
457	Gurgawan (Phensaha)	Salakhua	24+000-24+100	Md Samiullah	50-75	Semi Perma	Shop	Encroacher	
458	Gurgawan (Phensaha)	Salakhua	24+000-24+100	Md Samiullah	75-100	Semi Perma	Shop	Encroacher	

S.N.	Name of the Village	Name of Block	Chainage Kilometre	Name of the Owner	Scale of Impact (In %)	Type of Construction of Structure	Use of Structure	Status of Structure	Vulnerability Status
459	Gouspur	Salakhua	24+000-24+100	Ishrat Khatun	75-100	Semi Perma	Shop	Squatter	BPL
460	Gouspur	Salakhua	24+000-24+100	Md Owais	75-100	Semi Perma	Shop	Squatter	BPL
461	Gouspur	Salakhua	24+000-24+100	Md Akhter	75-100	Temp	Kiosk	Squatter	BPL
462	Gouspur	Salakhua	24+000-24+100	Md Afroz Alam	0-25	Semi Perma	Shop	Squatter	BPL
463	Gouspur	Salakhua	24+000-24+100	Md Shadab Ali	75-100	Semi Perma	Shop	Squatter	NTH
464	Gouspur	Salakhua	24+000-24+100	Md Zafar Ali	75-100	Temp	Kiosk	Squatter	BPL
465	Gouspur	Salakhua	24+000-24+100	Md Sajid Hussain	0-25	Semi Perma	Shop	Encroacher	
466	Gouspur	Salakhua	24+100+24+200	Sambhu Ram	75-100	Semi Perma	Under Cons	Squatter	SC
467	Gouspur	Salakhua	24+300+24+400	Md Manir Nadaf	25-50	Temp	Shop	Encroacher	BPL
468	Gouspur	Salakhua	24+400-24+500	Md Manir Nadaf	25-50	Semi Perma	House	Squatter	
469	Gouspur	Salakhua	24+400-24+500	Md Akbar	25-50	Semi Perma	House	Squatter	BPL
470	Gouspur	Salakhua	24+400-24+500	Md Murshid Nadaf	50-75	Semi Perma	House	Squatter	BPL
471	Gouspur	Salakhua	24+400-24+500	Md Shakil Nadaf	50-75	Semi Perma	Shop	Squatter	NTH
472	Gouspur	Salakhua	24+400-24+500	Sanjo Khatun	75-100	Semi Perma	Boundary Wall	Squatter	BPL
473	Gouspur	Salakhua	24+400-24+500	Md Zabir Nadaf	75-100	Permanent	House	Squatter	BPL
474	Gouspur	Salakhua	24+700-24+800	Mithlesh Yadav	50-75	Semi Perma	Shed	Encroacher	BPL
475	Gouspur	Salakhua	24+800-24+900	Sashi Yadav	75-100	Semi Perma	Boundary Wall	Encroacher	BPL

S.N.	Name of the Village	Name of Block	Chainage Kilometre	Name of the Owner	Scale of Impact (In %)	Type of Construction of Structure	Use of Structure	Status of Structure	Vulnerability Status
476	Simri Bakhtiyarpur	Simri Bakhtiyarpur	25+400+25+500	Gurudev Thakur	0-25	Temp	House	Squatter	BPL
477	Simri Bakhtiyarpur	Simri Bakhtiyarpur	25+400+25+500	Ram Pari Devi	50-75	Temp	Hut	Squatter	SC
478	Simri Bakhtiyarpur	Simri Bakhtiyarpur	25+400+25+500	Murlidhar Yadav	75-100	Temp	Kiosk	Squatter	BPL
479	Simri Bakhtiyarpur	Simri Bakhtiyarpur	25+400+25+500	Basudev Yadav	25-50	Temp	Small Eatery	Squatter	BPL
480	Simri Bakhtiyarpur	Simri Bakhtiyarpur	25+400+25+500	Ajay Yadav	25-50	Temp	Hut	Squatter	BPL
481	Simri Bakhtiyarpur	Simri Bakhtiyarpur	25+700-25+800	Ravin Sharma	25-50	Temp	House	Encroacher	SC
482	Simri Bakhtiyarpur	Simri Bakhtiyarpur	25+700-25+800	Laxman Sharma	50-75	Semi Perma	House	Squatter	SC
483	Simri Bakhtiyarpur	Simri Bakhtiyarpur	25+700-25+800	Bhagwat Sahrma	50-75	Semi Perma	House	Squatter	SC
484	Simri Bakhtiyarpur	Simri Bakhtiyarpur	25+700-25+800	Bhagwat Sahrma	25-50	Semi Perma	House	Encroacher	
485	Simri Bakhtiyarpur	Simri Bakhtiyarpur	25+700-25+800	Harender Sharma	0-25	Temp	Hut	Encroacher	SC
486	Simri Bakhtiyarpur	Simri Bakhtiyarpur	25+700-25+800	Basant Sharma	25-50	Temp	Hut	Encroacher	SC
487	Simri Bakhtiyarpur	Simri Bakhtiyarpur	25+900-26+000	Raj Kumar Sharma	75-100	Temp	Hut	Squatter	SC
488	Simri Bakhtiyarpur	Simri Bakhtiyarpur	25+900-26+000	Ram Pukar Sharma	25-50	Semi Perma	Shop	Squatter	SC
489	Simri Bakhtiyarpur	Simri Bakhtiyarpur	26+300-26+400	Md Afroz Alam	75-100	Semi Perma	Boundary Wall	Encroacher	
490	Simri Bakhtiyarpur	Simri Bakhtiyarpur	26+400-26+500	Md Abdul Qayum	50-75	Semi Perma	Under Cons	Squatter	NTH
491	Simri Bakhtiyarpur	Simri Bakhtiyarpur	26+400-26+500	Md Abdul Qayum	25-50	Permanent	House	Encroacher	
492	Simri Bakhtiyarpur (Azad Nagar)	Simri Bakhtiyarpur	26+400-26+500	Ashok Rajak	75-100	Semi Perma	House	Squatter	SC

S.N.	Name of the Village	Name of Block	Chainage Kilometre	Name of the Owner	Scale of Impact (In %)	Type of Construction of Structure	Use of Structure	Status of Structure	Vulnerability Status
493	Simri Bakhtiyarpur (Azad Nagar)	Simri Bakhtiyarpur	26+500-26+600	Randhir Rajak	0-25	Semi Perma	House	Squatter	SC
494	Simri Bakhtiyarpur (Azad Nagar)	Simri Bakhtiyarpur	26+500-26+600	Raja Swarnkar	0-25	Semi Perma	House	Squatter	NTH
495	Simri Bakhtiyarpur (Azad Nagar)	Simri Bakhtiyarpur	26+500-26+600	Raja Swarnkar	75-100	Temp	Kiosk	Squatter	
496	Simri Bakhtiyarpur (Azad Nagar)	Simri Bakhtiyarpur	26+500-26+600	Mahendra Singh	50-75	Semi Perma	Toilet	Squatter	BPL
497	Simri Bakhtiyarpur (Azad Nagar)	Simri Bakhtiyarpur	26+600-26+700	Sanjay Kumar	50-75	Temp	Cattleshed	Squatter	BPL
498	Simri Bakhtiyarpur (Azad Nagar)	Simri Bakhtiyarpur	26+600-26+700	Sanjay Kumar	25-50	Semi Perma	Cattleshed	Encroacher	
499	Simri Bakhtiyarpur (Azad Nagar)	Simri Bakhtiyarpur	26+600-26+700	Nilam Devi	0-25	Temp	Hut	Encroacher	BPL
500	Simri Bakhtiyarpur (Purani Bazar)	Simri Bakhtiyarpur	27+000-27+100	Anuj Kumar	75-100	Semi Perma	Hotel	Squatter	NTH
501	Simri Bakhtiyarpur (Purani Bazar)	Simri Bakhtiyarpur	27+000-27+100	Ravindra Kumar	75-100	Semi Perma	House	Squatter	NTH
502	Simri Bakhtiyarpur (Purani Bazar)	Simri Bakhtiyarpur	27+000-27+100	Shri Ashok Kumar	75-100	Semi Perma	Shop	Squatter	BPL
503	Simri Bakhtiyarpur (Purani Bazar)	Simri Bakhtiyarpur	27+000-27+100	Md Farood	50-75	Semi Perma	House	Encroacher	BPL
504	Simri Bakhtiyarpur (Purani Bazar)	Simri Bakhtiyarpur	27+100-27+200	Balmiki Chaudhary	75-100	Temp	Shop	Squatter	BPL
505	Simri Bakhtiyarpur (Purani Bazar)	Simri Bakhtiyarpur	27+100-27+200	Rama Shankar Bhagat	0-25	Temp	House	Encroacher	
506	Simri Bakhtiyarpur (Purani Bazar)	Simri Bakhtiyarpur	27+100-27+200	Uday Prasad Chaurasiya	75-100	Temp	Shop	Squatter	BPL
507	Simri Bakhtiyarpur (Purani Bazar)	Simri Bakhtiyarpur	27+100-27+200	Uday Prasad Chaurasiya	50-75	Semi Perma	House	Squatter	
508	Simri Bakhtiyarpur (Purani Bazar)	Simri Bakhtiyarpur	27+100-27+200	Pancha Nand Prasad	25-50	Semi Perma	Hotel	Squatter	BPL
509	Simri Bakhtiyarpur (Purani Bazar)	Simri Bakhtiyarpur	27+100-27+200	Vikram Kumar Jaiswal	75-100	Temp	Shop	Squatter	BPL

S.N.	Name of the Village	Name of Block	Chainage Kilometre	Name of the Owner	Scale of Impact (In %)	Type of Construction of Structure	Use of Structure	Status of Structure	Vulnerability Status
510	Simri Bakhtiyarpur (Purani Bazar)	Simri Bakhtiyarpur	27+100-27+200	Rahul Kumar	75-100	Temp	Kiosk	Squatter	BPL
511	Simri Bakhtiyarpur (Purani Bazar)	Simri Bakhtiyarpur	27+100-27+200	Rajeev Kumar Modi	0-25	Permanent	Resi+Com	Encroacher	BPL
512	Simri Bakhtiyarpur (Purani Bazar)	Simri Bakhtiyarpur	27+100-27+200	Vijay Modi	75-100	Semi Perma	Shop	Squatter	BPL
513	Simri Bakhtiyarpur (Purani Bazar)	Simri Bakhtiyarpur	27+100-27+200	Shiv Ji Pandey	50-75	Semi Perma	Resi+Com	Squatter	
514	Simri Bakhtiyarpur (Purani Bazar)	Simri Bakhtiyarpur	27+200-27+300	Gauri Pandey	75-100	Semi Perma	House	Squatter	
515	Simri Bakhtiyarpur (Purani Bazar)	Simri Bakhtiyarpur	27+200-27+300	Sunil Kumar Chaudhary	75-100	Semi Perma	Resi+Com	Squatter	SC
516	Bhauara	Simri Bakhtiyarpur	27+400-27+500	Nageswar Sharma	75-100	Permanent	Toilet	Squatter	BPL
517	Bhauara	Simri Bakhtiyarpur	27+500-27+600	Pradeep Kumar	75-100	Semi Perma	Boundary Wall	Squatter	BPL

## LIST OF DISPLACED PERSONS (TENANTS)

S.N.	Village name	Name of the Owner	Name of the Occupier	Status of Occupier	Social Category	Vulnerability
1	Mansi (Chak Husaini)	Sada Shiv Prasad	Niraj Kumar	Tenant	OBC	BPL
2	Mansi (Chak Husaini)	Alok Anand	Deepak Kumar	Tenant	OBC	BPL
3	Mansi (Chak Husaini)	Alok Anand	Jaay Kumar	Tenant	OBC	BPL
4	Mansi (Chak Husaini)	Alok Anand	Manish Kumar	Tenant	SC	BPL
5	Mansi (Chak Husaini)	Alok Anand	Tinku Anand	Tenant	OBC	BPL
6	Mansi (Chak Husaini)	Alok Anand	Md Mustakh	Tenant	GEN	BPL
7	Gouspur	Molana Ahtesham	Barkat Ali	Tenant	OBC	BPL
8	Simri Bakhtiyarpur (Pani Bazar)	Hira Bhagat	Shyam Kumar	Tenant	SC	BPL
9	Gouspur	Md Afroj Alam	Md Wali Alam	Tenant	OBC	BPL
10	Gouspur	Md Afroj Alam	Md Asif	Tenant	OBC	BPL
11	Gouspur	Md Afroj Alam	Md Imteyaz Alam	Tenant	OBC	BPL
12	Gouspur	Md Afroj Alam	Quasari Khatun	Tenant	OBC	BPL
13	Gouspur	Md Afroj Alam	Md Sajid Ali	Tenant	OBC	BPL
14	Gouspur	Md Afroj Alam	Shokat Ali	Tenant	OBC	BPL
15	Gouspur	Md Shadab Ali	Ranjan Kumar	Tenant	OBC	BPL
16	Gouspur	Md Shadab Ali	Zeeshan Haider	Tenant	OBC	BPL

## APPENDIX 3: LIST OF CPR

S.N.	Name of the Village	Name of Block	Name of District	Chainage Kilometer	Type of Structure		Scale of Impact (In %)	Type of Construction of Structure	Use of Structure
1	Dighari ( Bangalia)	Chautham	Khagaria	10+150-10+200	TEMPLE	7.84	75-100	Permanent	Temple
2	Mansi (Khutia)	Mansi	Khagaria	0+400-0+500	TEMPLE	47.88	75-100	Semi Perma	Temple
3	Mansi (Chak Husaini)	Mansi	Khagaria	1+100-1+200	TEMPLE	17.5	75-100	Permanent	Temple
4	Mansi (Chak Husaini)	Mansi	Khagaria	1+100-1+200	TEMPLE	5.58	75-100	Permanent	Temple
5	Mansi (Chak Husaini)	Mansi	Khagaria	1+400-1+500	TEMPLE	17.94	75-100	Permanent	Temple
6	Balha	Mansi	Khagaria	6+000-6+100	TEMPLE	9.6	75-100	Permanent	Temple
7	Gurgawan (Phensaha)	Salakhua	Saharsa	23+700-23+800	TEMPLE	14.62	75-100	Permanent	Temple
8	Gouspur	Salakhua	Saharsa	25+000-25+100	TEMPLE	6.88	0-25	Permanent	Temple
9	Simri Bakhtiyarpur	Simri Bakhtiyarpur	Saharsa	25+900-26+000	BAJRAJ BALI TEMPLE	4	75-100	Permanent	Temple
10	Kopadiya	Salakhua	Saharsa	17+900-18+000	TEMPLE	4.37	75-100	Temp	Temple
11	Simri Bakhtiyarpur	Simri Bakhtiyarpur	Saharsa	25+400+25+500	TEMPLE	21.39	25-50	Permanent	Temple
12	Khirnia	Chautham	Khagaria	6+800-6+900	TEMPLE	9.72	25-50	Semi Perma	Under Const
13	Dhamalpur	Chautham	Khagaria	13+100-13+150	SCHOOL	139.4	75-100	Permanent	School
14	Mansi (Chak Hussaini)	Mansi	Khagaria	1+900-2+000	BUS STOP	7.37	0-25	Permanent	Bus Stop
15	Saidpur	Mansi	Khagaria	3+300-3+400	BUS STOP	13.23	25-50	Permanent	Bus Stop



16	Balha	Mansi	Khagaria	5+000-5+100	BUS STOP	9.38	25-50	Permanent	Bus Stop
17	Dhamahara	Chautham	Khagaria	13+000-13+050	SWAYUDAYAK BHAWAN	85.56	75-100	Permanent	Centre
18	Dhamahara	Chautham	Khagaria	13+100-13+150	ANGANWARI CENTER	33.37	75-100	Permanent	Aaganwari
19	Buchcha (Dhanchhar)	Chautham	Khagaria	14+350-14+400	SCHOOL	115.2	75-100	Semi Perma	Under Const
20	Mansi (Chak Husaini)	Mansi	Khagaria	1+000-1+100	WARE HOUSE	56.7	0-25	Semi Perma	Godown
21	Saidpur	Mansi	Khagaria	3+300-3+400	VILLAGE GATE	4.34	75-100	Permanent	Gate
22	Buchcha (Dhanchhar)	Chautham	Khagaria	14+350-14+400	SCHOOL	46.97	75-100	Semi Perma	Under Const
23	Gouspur	Salakhua	Saharsa	24+000-24+100	ANGANWARI CENTER	7.7	0-25	Permanent	Aaganwari
24	Gouspur	Salakhua	Saharsa	24+000-24+100	ANGANWARI CENTER	2.89	75-100	Permanent	Toilet
25	Simri Bakhtiyarpur (Azad Nagar)	Simri Bakhtiyarpur	Saharsa	26+700-26+800	STATUE	3.3	25-50	Permanent	Statue
26	Mansi (Chak Hussaini)	Mansi	Khagaria	1+300-1+400	GOVT. TOILET	16.8	75-100	Permanent	Toilet
27	Mansi (Chak Hussaini)	Mansi	Khagaria	1+300-1+400	GOVT. TOILET	3.9	75-100	Permanent	Toilet
28	Mobarakpur	Salakhua	Saharsa	22+100-22+200	PANCHAYAT BHAWAN	19.2	75-100	Permanent	Panchayat Bhawan
29	Simri Bakhtiyarpur (Azad Nagar)	Simri Bakhtiyarpur	Saharsa	26+800-26+900	NATH BALI TEMPLE	10 BW	75-100		Temple

## APPENDIX4: FINDINGS OF CONSULTATIONS

Chainage	Village	Type of village	Tehasil/ Block	District	GPS Coordinates		Date of Consultation	Number of Participants
					Longitude	Latitude		
1+500 - 1+600	Mansi (Chak Husaini)	Semi Urban	Mansi	Khagaria	Longitude: N25°31' 04"	Latitude: E86°33'25"	02-01-2022	38
14+200 -14+300	Buchcha	Rural	Chaughara	Khagaria	Longitude: N25°37' 4 "	Latitude: E86°36'69"	03-01-2022	35+63
27+100 - 27+200	Simri Bakhtiyar pur (Purani Bazar)	Semi Urban	Simri Bakhtiyar pur	Saharsa	Longitude: N25°43' 37"	Latitude: E86°34'56"	05-01-2022	19+20

Question	General perception about the project and the awareness about the proposed project.	Support of local people for the proposed project.	Any critical issue or concern by the local people regarding the project ?	Any specific measure you would like to see considered during project design, construction and operation stage ?
Village				
Mansi (Chak Husaini)	Most of the villagers are aware about this project. According to them Road condition will improve but fear of accidents due to high speed.	Yes, in support of the proposed project.	Village residential/commercial structure loss should be minimized.	Drainage system and foot path should be at both side of the road.
Buchcha	People are aware and general perception is that the project should implement as soon as possible.	Yes, in support of the proposed project.	Not any critical issue, some of the residential structure need to be relocated.	Road Light and Drainage should be there. There must be water passing passage.
Simri Bakhtiyar pur (Purani Bazar)	Road condition will improve. People are not aware about the project.	Yes, in support of the proposed project.	Village residential/commercial structure loss should be minimized.	Speed breaker, Road Light, foot path and drainage system should be at both side of the road.

Village	Do you have any problem with the existing road?	In your opinion If the road has to be expanded, which side should the expansion take place and why?	What is the Mode of Transport?	How much time you spend for reaching to District HQ?
Mansi (Chak Husaini)	Existing road condition is very poor, it's not enough for the current traffic.	Both side of the existing road.	Bus, Auto, car, two-wheeler etc.	30 Minutes to reach HQ.
Buchcha	Yes, we have huge problem with existing road. It has in very poor condition.	Both side of the existing road. Because it has equal land at both sides.	Bus, Auto, car, two-wheeler etc.	1 Hour and 30 minutes.
Simri Bakhtiyar pur (Purani Bazar)	Existing road condition is not enough for the current traffic. Traffic jam is on regular basis.	Both side of the existing road.	Truck, Tractor, Auto, car etc.	30 Minutes to reach HQ.

Village	How is the Frequency of Public Transport?	Do you sell your agricultural product in the market? If yes, How do you transport them?	Is the proposed project going to reduce accidents and provide better traffic system?	Is it commercially developed area?	Is it an industrial area ?
Mansi (Chak Husaini)	20-30 minutes	Through truck, tractor and pick-up van etc.	No, it may increase the accident.	No	No
Buchcha	Between 30-40 minutes	No, we don't sell our agricultural product in the market because most of the people don't own agricultural land.	Yes, proposed project is going to reduce accident and provide better traffic system.	No	No
Simri Bakhtiyar pur (Purani Bazar)	40 minutes	Through truck, tractor and pick-up van etc.	Yes, proposed project is going to reduce accident and provide better traffic system.	Yes	No

Village	What are the economic activities? Land use, cropping pattern (Seasonal), type of crops etc.?	Current rates for the land per acre	Main source of drinking water	Is there shortage of water for human consumption?
Mansi (Chak Husaini)	Labour and agriculture, 2 Seasonal cropping pattern, Type of crops are Paddy, Maize, Wheat, Tori, Mustard etc.	Rs.2,0000000/Acre	Hand pump	No
Buchcha	Small farming, small business and labor. 2 Seasonal cropping patterns. Type of crops are Paddy, Maize, Wheat, Tori, Mustard etc.	Rs.15000000/Acre	Hand pump	No
Simri Bakhtiyar pur (Purani Bazar)	Small business, Agriculture, labor and service. 2 Seasonal cropping patterns. Type of crops are Paddy, Maize, Wheat, Tori, Mustard etc.	Rs.30000000/Acre	Supply water and Bottled water.	No

Village	Is there any Loss of residential/commercial structures due to the project?	Is there any Loss of community life like Market places or community activities to be effected?	Resettlement and Land acquisition (if foreseen due to expansion of road) Has there been land acquisition before?	Availability of Hospitals and over all environment condition. Is there any chronic disease prevalent in this area and are you aware about HIV/AIDS and STD?
Mansi (Chak Husaini)	Yes, residential and commercial structure will be damaged.	Yes, market place will be affected.	No	No, such chronic disease, aware of HIV/AIDS and STD.
Buchcha	Yes, residential and commercial structure will be damaged.	No	No	Yes, we are aware about HIV/ AIDS and STD, but no such disease.
Simri Bakhtiyar pur (Purani Bazar)	Yes, residential and commercial structure will be damaged.	Yes, market area will be affected.	No	No disease, aware of HIV/ AIDS and STD

Village	What are the challenges facing due to Covid -19 in the area?	Poverty Level: Is the area poor or very poor or well off	Education Status: Literate, illiterate etc	Employment Status: Percentage of employment/ unemployment	Migration pattern (If any), inward or outward
Mansi (Chak Husaini)	Not any challenges facing due to covid - 19	Poor	Literate 60% Illiterate 40%	Unemployed 90% Employed 10%	Outmigration in search of job.
Buchcha	None	Poor	Literate 30% Illiterate 70%	Unemployed 90% Employed 10%	Outmigration.
Simri Bakhtiyar pur (Purani Bazar)	None	Poor	Literate 70% Illiterate 30%	Unemployed 88% Employed 12%	Out migration due to lack of job opportunities.

Village	If the widening of the road necessitates displacement, where would you like to be relocated ?	What is the possibility of shifting the religious structure(s) if any? And where to relocate?	Preferred option for compensation (Cash or kind)	Perceived benefits from the project
Mansi (Chak Husaini)	Will prefer to relocate in nearby villages.	Depends on land availability	Cash	Easy to reach to the district town, Hospital, College, Land value will increase.
Buchcha	Shift to some other place.	Depends on land availability.	Cash	Easy to reach to the district town, Hospital, School/College. Land value will increase.
Simri Bakhtiyar pur (Purani Bazar)	Depends on availability of land.	Depends on availability of land.	Cash	Easy to reach to the district town, Hospital, College, Land value will increase. More chances of employment.

Village	Perceived Losses from the project	what are the organizations like NGOs/CBOs active in the area?	Is this consultation useful? How?	Likely involvement of local people in the implementation of the project?	What is the tourism potential in the area?	Any other Issues
Mansi (Chak Husaini)	Loss of residential/commercial structure, Chances of accident may will increase.	Rajiv Nasha mukti ke dola Activity: Nasha mukt Bihar	Yes, came to know many information.	Yes	Movement of people may increase but, there is no place of tourism in nearby.	None
Buchcha	Loss of agriculture land, residential/commercial structure will damage.	None	Yes, we are able to know more about this project.	Yes	No place of tourism in nearby.	Existing Road is in Poor condition, it is our request to implement this project as soon as possible.
Simri Bakhtiyar pur (Purani Bazar)	Loss of residential/commercial structure, Pollution will increase.	None	Yes, came to know many information about this project.	Yes	No place of tourism in nearby.	None

APPENDIX 5: PHOTOGRAPHS AND LIST OF PARTICIPANTS IN FGD ALONG THE ROAD



Consultation at Mansi (Chak Husaini) Village



Consultation at Buchcha and Kirna Villages



Consultation at Simri Bakhtiyar pur (Purani Bazar) and Mubarkpur vilages

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Village - Mansi (Chak/Husaizi)

Bihar State Highway Project-3 (Phase-2)

## List of Participants

S.L.	Name	Profession	Age	Sex	Signature
1	RABO DEVI	HOUSEWIFE	60	F	
2	SOSHA DEVI	"	35	F	
3	SUMITRA DEVI	OLD	62	F	
4	KALO DEVI	HOUSEWIFE	50	F	
5	MANJU DEVI	"	35	F	
6	LALITO DEVI	"	45	F	
7	SHANTI DEVI	OLD	60	F	
8	SURITA DEVI	SHOPKEEPER	42	F	
9	GITA DEVI	SHOPKEEPER	42	F	
10	LILA DEVI	LABOUR	45	F	
11	KANCHAN DEVI	"	25	F	
12	SITA DEVI	"	28	F	
13	MEEN DEVI	"	50	F	
14	PHOLA DEVI	"	42	F	
15	ASHA DEVI	"	36	F	
16					
17					
18					
19					
20					

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Village - Mansi (Chak. Hussaini)

Bihar State Highway Project-3 (Phase-2)

## 4. List of Participants

S.L	Name	Profession	Age	Sex	Signature
1	AJIT KUMAR SINGH	BUSINESS & NGO (INDIAN)	52	M	
2	RAMPERSINGH SINGH	EX-SERVILE	67	M	
3	RAJEEV KUMAR RAITI	FARMER	28	M	
4	UTTAM KUMAR	STUDENT	21	M	
5	RUNKANT KUMAR	STUDENT	21	M	
6	ASHISH KUMAR	STUDENT	20	M	
7	ARUN KUMAR	TEACHER	40	M	
8	SANJEEV KUMAR	ENG	28	M	
9	CHANDER HASIN	FARMER	36	M	
10	ASHOK SINGH	LABOUR	44	M	
11	RAJESH KUMAR SINGH	SHOPKEEPER	46	M	
12	SUBHANI KUMAR	Business	48	M	
13	ANITA KUMAR	SHOPKEEPER	42	M	
14	HUNNILAL SINGH	FARMER	59	M	
15	WAKIL SINGH	SHOPKEEPER	46	M	
16	INDERDEV DAS	BUSINESS	58	M	
17	RAVI KUMAR	ACCOUNTANCY	46	M	
18	SUBHANI KUMAR	STUDENT	15	M	
19	SUSHIL KUMAR	FARMER	32	M	
20	PINTU KUMAR	BUSINESS	40	M	
21	BINOD KUMAR	FARMER	55	M	

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Village - Mansi (Chakhasain)

Bihar State Highway Project-3 (Phase-2)

S.L.	Name	Profession	Age	Sex	Signature
22	HANAJ KUMAR	LABOUR	42	M	Mansaj Kumar
23	HANTU SINGH	LABOUR	52	M	HTS SINGH
24					
25					
26					
27					
28					
29					
30					
31					
32					
33					
34					
35					

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village - Bucheha

Bihar State Highway Project-3 (Phase-2)

## 4. List of Participants

S.L.	Name	Profession	Age	Sex	Signature
1	UPENDER SINGH	EX-MURHAYA	58	M	उपेंद्र सिंह
2	JAY PRAKASH SINGH	FARMER	71	M	जय प्रकाश सिंह
3	TIRVEDI SINGH	"	72	M	तिरुवेदी सिंह
4	SANJAY SINGH	"	40	M	संजय सिंह
5	SANJAY SINGH	"	45	M	संजय सिंह
6	FANRAJ SINGH	"	33	M	फंराज सिंह
7	SAHDEV SINGH	LABOUR	40	M	साहदेव सिंह
8	GAJENDER KUMAR	"	62	M	गजेंद्र कुमार
9	PANDA, KUMAR	FARMER	30	M	पंडा कुमार
10	SULENA DEVI	LABOUR	45	F	सुलेना देवी
11	PHULESHWAR SINGH	SMITH KEEPER	58	M	फुलेश्वर सिंह
12	JAI KISHOR SINGH	LABOUR	45	M	जयकिशोर सिंह
13	JAIWANTI DEVI	"	60	F	जयवन्ती देवी
14	GUNA DEVI	OLD	68	F	गुना देवी
15	RAMBILAS THAKUR	FARMER	60	M	रामबिलास ठाकुर
16	LALU SINGH	"	45	M	लालु सिंह
17	MANGAL SINGH	LABOUR	30	M	मंगल सिंह
18	KRISHANDEV SINGH	"	55	M	कृशानदेव सिंह
19	MUNNA KUMAR SINGH	"	34	M	मुन्ना कुमार सिंह
20	RAMBAHAR SINGH	FARMER	48	M	रामबाहर सिंह
21	BUDDHU SINGH	"	60	M	बुद्धु सिंह

village - Buchcha

Bihar State Highway Project-3 (Phase-2)

S.L	Name	Profession	Age	Sex	Signature
22	RAJENDER SINGH	FARMER	40	M	
23	UMEEN SINGH	"	60	M	उमेश सिंह
24	NAWAB SINGH	"	37	M	नवाब सिंह
25	JAYANT KUMAR	STUDENT	16	M	JAYANT K
26	SATON KUMAR DASS	LABOUR	22	M	सतन कुमार
27	BHUSAN SINGH	FARMER	46	M	भुसान सिंह
28	RAHMAN SINGH	"	45	M	रघुवर सिंह
29	SAKAL DEB SINGH	MPCHEMIC	45	M	सकल देब सिंह
30	RAJESH KUMAR	STUDENT	23	M	Rajesh Kumar
31	PAPPU SINGH	FARMER	43	M	पपु सिंह
32	SARJODAY KUMAR HUMANSU	"	39	M	सर्जोदय कुमार
33	WARIL SINGH	"	52	M	वरिल सिंह
34	MANOJ KUMAR	AI ARTICULAR ENGINEER	40	M	मनोज कुमार
35	PRANOD SINGH	FARMER	44	M	प्रनोद सिंह

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village. KAIMIA

Bihar State Highway Project-3 (Phase-2)

## 4 List of Participants

S.L.	Name	Profession	Age	Sex	S
1	SAHEDA KHATUN	HOUSEWIFE	60	F	
2	MANJUL DEVI	LABOUR	40	F	दीनमंदी
3	SUKHO DEVI	HOUSEWIFE	40	F	
4	BJMALA DEVI	LABOUR	50	F	
5	POONAM DEVI	LABOUR	35	F	युती दी देवी
6	MANJULA DEVI	LABOUR	60	F	
7					
8	SABITA DEVI	LABOUR	50	F	
9					
10	LAXMI DEVI	HOUSEWIFE	50	F	
11	NILAM DEVI	HOUSEWIFE	40	F	दीनमंदी
12	VIJASHI DEVI	LABOUR	35	F	
13	PINKI DEVI	HOUSEWIFE	27	F	पिंकी देवी
14	PRAMILA DEVI	HOUSEWIFE	60	F	
15	YIMALA DEVI	HOUSEWIFE	50	F	
16					
17	MINA DEVI	HOUSEWIFE	60	F	
18	SJMA DEVI	HOUSEWIFE	41	F	सजमा देवी
19	NIRO DEVI	HOUSEWIFE	50	F	
20	SA'				
21					

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Village - Khirmia

Bihar State Highway Project-3 (Phase-2)

List of Participants











S.L.	Name	Profession	Age	Sex	Signature
1	MATHNI DEVI	LABOUR	60	F	
2	RANI DEVI	"	27	F	रानी देवी
3	PREMLATA DEVI	"	26	F	प्रेमलता देवी
4	NEELAM DEVI	"	30	F	नीलम देवी
5	GUNJAN DEVI	"	28	F	गुंजन देवी
6	GANITA DEVI	"	30	F	गणित देवी
7	ARUNA DEVI	"	35	F	
8	NANDNI DEVI	OLD AGE	60	F	
9	NITU DEVI	HOUSE WIFE	28	F	नितु देवी
10	DIHRA DEVI	LABOUR	32	F	
11	NEELAM DEVI	"	28	F	नीलम देवी
12	GURIYA DEVI	"	27	F	गुरिया देवी
13	SATI DEVI	"	30	F	सती देवी
14	BIMLA DEVI	"	40	F	
15	SONI DEVI	"	30	F	
16	SIRONANI DEVI	"	45	F	सिरोनी देवी
17	SHABILA KHATOON	OLD	60	F	
18					
19					
20					

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village- LAHIRIA.

Bihar State Highway Project-3 (Phase-2)

## List of Participants

S.L	Name	Profession	Age	Sex	Signature
1	BURU DEVI	LABOUR	36	F	
2					
3	SADIA KHATOON	HOUSE WIFE	50	F	
4					
5	SONI DEVI	LABOUR	30	F	सोनी देवी
6					
7	SIRHANI DEVI	LABOUR	55	F	
8					
9	ADRA DEVI	OLD	60	F	
10					
11	SATO DEVI	LABOUR	50	F	
12					
13	REKH DEVI	LABOUR	35	F	
14					
15	MAND DEVI	LABOUR	60	F	
16					
17	BHAGWATI DEVI	LABOUR	35	F	
18					
19	SUBHANI DEVI	LABOUR	50	F	
20	RAVEENA DEVI	HOUSE WIFE	25	F	

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village: Khimria

Bihar State Highway Project-3 (Phase-2)

## List of Participants

S.L	Name	Profession	Age	Sex	Signature
1	BHAGWANTI	LABOUR	60	F	
2	SEEMA DEVI	HOUSE WIFE	28	F	
3	ARUNA DEVI	OLD AGE	62	F	
4	PHULO DEVI	..	60	F	
5	PUNAM DEVI	HOUSE WIFE	28	F	
6	PARTIBHA DEVI	LABOUR	25	F	
7	PRIYANK DEVI	HOUSEWIFE	22	F	
8	BINDU DEVI	LABOUR	30	F	
9	RITA DEVI	..	30	F	
10	JUNA DEVI		30	F	
11	BESNI DEVI	LABOUR	28	F	
12	GITA DEVI	OLD	63	F	
13					
14	RANJAN DEVI	LABOUR	35	F	
15	TARA DEVI	..	56	F	
16	BIMLA DEVI	OLD	60	F	
17	NIRDHAN DEVI	..	55	F	
18	USHA DEVI	LABOUR	35	F	
19	REBHA DEVI	..	40	F	
20	BIMAL DEVI	..	50	F	

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Village- Simri Bakhtiyarpur (Purani Bazar)  
Bihar State Highways Project -3 (Phase-2)

List of Participants

S.no.	Name	Profession	Age	Sex	Sign
1	SUNIL KUMAR JAINWAL	BUSINESS	55	M	Sunil Kumar
2	VIVEK RANJAN	STUDENT	20	M	Vivek Ranjan
3	RAJESH KUMAR	BUSINESS	34	M	Rajesh Kumar
4	SHAYAM KUMAR	"	24	M	Shyam Kumar
5	RASA KUMAR	STUDENT	20	M	Raja Kumar
6	GAURI SHANKAR SAH	BUSINESS	51	M	G S Sah
7	MURESH KUMAR SAHOO	VENDOR	34	M	Muresh Kumar Sahoo
8	SULSHAN KUMAR	STUDENT	22	M	Sulshan Kumar
9	RAS KUMAR PEDI	BUSINESS	46	M	R K PEDI
10	HIRA KUMAR	FARMER	34	M	Hira Kumar
11	LAMA SHANKAR BHAGAT	BUSINESS	60	M	Lama Shankar Bhagat
12	RAJU KUMAR	STUDENT	26	M	Raju Kumar
13	SIMPAL KUMAR	"	27	M	Simpal Kumar
14	PERWEZ ALAM	BUSINESS	37	M	Perwez Alam
15	SONU KUMAR	STUDENT	21	M	Sonu Kumar
17	SARADISEEP SAWANER	BUSINESS	38	M	Saradiseep Sawaner
18	SURESH KUMAR	SHOPKEEPER	25	M	Suresh Kumar
19	GAURI SHANKAR PANDAY	BUSINESS	65	M	Gauri Shankar Pandey

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village- Mobarkpur

Bihar State Highway Project-3 (Phase-2)

## List of Participants

S.L.	Name	Profession	Age	Sex	Signature
1	PINKI DEVI	LABOUR	25	F	पिंकी देवी
2	CHANDA KUMARI	"	23	F	चंदा कुमारी
3	SUGIA DEVI	"	40	F	सुगिया देवी
4	SUDHA DEVI	"	42	F	सुधा देवी
5	MANITA DEVI	"	26	F	मनिता देवी
6	BIBAH DEVI	"	31	F	बिबाह देवी
7	MEERA DEVI	"	45	F	मेरा देवी
8	CHEDNI DEVI	"	35	F	चेदनी देवी
9	MANCHAN DEVI	"	25	F	मन्चान देवी
10	SWITA DEVI	"	35	F	स्विता देवी
11	MEGHA DEVI	"	35	F	मेघा देवी
12	SHANTI DEVI	"	45	F	शान्ति देवी
13	INDU DEVI	"	25	F	इन्दु देवी
14	SOBHA DEVI	"	30	F	सोभा देवी
15	CHANDANIYA DEVI	"	30	F	चन्दनिया देवी
16	NISHA DEVI	"	32	F	निशा देवी
17	ANITA DEVI	"	60	F	अनिता देवी
18	DAYRANI DEVI	"	45	F	दयराणी देवी
19	GITA DEVI	"	50	F	गिता देवी
20	BRODANTA DEVI	OLD	65	F	ब्रोदन्ता देवी

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APPENDIX 6: TERMS OF REFERENCE (TOR) FOR THE RP IMPLEMENTING AGENCY TO IMPLEMENT THE RESETTLEMENT PLAN (RP) FOR TWO-LANE SH-95

**621. Project Background**

622. The Bihar State Road Development Corporation Limited (BSRDCL), Government of Bihar is presently implementing Bihar State Highways (BSHP) Project under Asian Development Bank (ADB) assistance to strengthen and rehabilitate the deteriorated state roads and upgrade some newly declared state roads to provide reliable road transport services in the state. BSRDCL is planning for Upgradation of SH-95 (28.08 km) into 2-lane road in Khagaria and Saharsa Districts and requested ADB for financing under project loan modality.

623. This RP for two-lane SH-95 project is prepared based on the detailed design report prepared by BSRDC. As per the RP total private land to be acquired is 67.77 acre and total number of structures affected is about 570, number of households affected is about 665 and number of CPRs is about 29. The RP complies with the applicable State Government, Government of India and ADB policy and legal framework. This project is considered as Category-A28 as per as Involuntary Resettlement (IR) is concerned. BSRDC is implementing the project and an RP implementing agency is required to implement the Resettlement Plan prepared for the project.

624. The RP implementing agency shall be responsible for assisting BSRDCL in implementing resettlement activities for the two-lane SH-95 project. The proposed road traverses along 14 villages of Khagaria and Saharsa districts.

625. The project construction would necessitate clearance of road and displacement and loss of assets, livelihood and community property resources. The displaced households include titleholders losing land and structures and non-titleholders losing assets.

626. The overall implementation period for this assignment is 36 months from the commencement of contract.

**627. Objectives of the Assignment**

628. The RP implementing agency shall be responsible for assisting BSRDC in facilitating and Resettlement Plan (RP) implementation and assistance in getting the Government land transferred in name of BSRDC in an efficient and transparent manner for the project road. The implementation shall follow The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 and the ADB's Safeguard Policy Statement 2009.

28 According to ADB Safeguard Policy Statement (SPS-2009), Involuntary Resettlement Category A: Significant means 200 or more affected people will experience major impacts, which are defined as (i) being physically displaced from housing, or (ii) losing 10% or more of their productive assets (income generating). Involuntary Resettlement Category B: Not Significant include involuntary resettlement impacts that are not deemed significant as per the ADB Operational manual Involuntary Resettlement Category C: No involuntary resettlement impacts. A resettlement plan is required in case of both Category A and B project.

629. The overall tasks of the RP implementing agency are to:
- 630. Coordinate the entire process from start to finish for disseminating assistance to relevant DPs;
  - 631. Coordinate with, and provide support, where needed, to Revenue officials and other relevant line agencies in expediting the land acquisition and resettlement process;
  - 632. Implement livelihood and income restoration program;
  - 633. Disseminate project information to DPs in an ongoing manner;
  - 634. Assist the DPs in redressing their grievances (through the grievance redress committee set up for the project);
  - 635. Conduct awareness program for HIV/AIDs, health and hygiene, and human trafficking in affected villages;
  - 636. Conduct awareness on Road Safety aspect and train the stakeholders with regard to road safety as required/directed by the Project Management and Authority Engineer of the Project.
  - 637. Collect data and submit progress reports on a monthly and quarterly basis for BSRDC to monitor the progress of RP implementation; and
  - 638. Any other tasks as assigned by BSRDC.

**639. Scope of Work**

640. The principal responsibilities of the RP implementing agency will include, but not limited to the following:

**641. Administrative Responsibilities of the RP implementing agency**

642. The RP implementing agency will work under the direction of the Deputy General Manager (Tech.)/ Project Resettlement Officer or any person authorized by the him. RP implementing agency shall assist BSRDC in carrying out the implementation of the RP for the project road.

643. The RP implementing agency shall assist BSRDC in conducting all public meetings, information campaigns at the commencement and during implementation. The road safety information as per the direction of Road safety Expert of Project Management and Authority Engineer of the project and give full information to the affected villages. This includes translating the summarized RP into local language in a form of a Project Information Brochure for disclosure and dissemination to DPs.

644. The RP implementing agency shall submit monthly and quarterly progress report to BSRDC. The report should cover implementation issues, grievances and summary of consultations

645. The RP implementing agency shall assist BSRDC in convening the GRC and keep the records of GRC at PIU and State level.

646. Assist BSRDC in the management of the database of the DPs, and at the end of the assignment, ensure proper handover of all data and information to BSRDC.

**647. Responsibilities for Implementation of the RP**

26. The agency shall verify the information already contained in the RP and the individual losses of the relevant DPs. They should validate the data provided in the RP and make suitable changes if required and wherever changes are made it should be supported by documentary evidence. The RP implementing agency shall establish rapport with all DPs, consult and provide information to them about the respective entitlements as proposed under the RP, and distribute entitlement cum Identity Cards to the eligible DPs. The identity card should include a photograph of the DP, the extent of loss suffered due to the project, and the choice of the DP with regard to the mode of compensation and assistance.

648. The RP implementing agency shall develop rapport between the DPs and the Project Authority. This will be achieved through regular meetings with both the PIU and the DPs. Meetings with the PIU will be held at least fortnightly, and meetings with the DPs will be held monthly, during the entire duration of the assignment. All meetings and decisions taken shall be documented by the RP implementing agency.

649. The RP implementing agency shall display the list of eligible DPs in prominent public places like villages, Panchayat Offices, Block/Tehsil headquarters, and the District Headquarters.

650. During the verification of the eligible DPs, the RP implementing agency shall ensure that each of the DPs are contacted and consulted either in groups or individually. The agency shall specially ensure consultation with women from the DP families especially women headed households.

651. Participatory methods should be adopted in assessing the needs of the DPs, especially with regard to the vulnerable groups of DPs. The methods of contact may include village level meetings, gender participation through group's interactions, and Individual meetings and interactions.

652. The RP implementing agency shall explain to the DPs the provisions of the policy and the entitlements under the RP. This shall include communication to the roadside squatters and encroachers about the need for their eviction, the timeframe for their removal and their entitlements.

653. The RP implementing agency shall disseminate information to the DPs on the possible consequences of the project on the communities' livelihood systems and the options available, so that they do not remain ignorant.

654. In all of these, the RP implementing agency shall consider women as a special focus group, and deal with them with care and sympathy.

655. The RP implementing agency shall assist the project authorities in ensuring a smooth transition (during the part or full relocation of the DPs), helping the DPs to take salvaged materials and shift. In close consultation with the DPs, the RP implementing agency shall inform PIU about the shifting dates agreed with the DPs in writing and the arrangements desired by the DPs with respect to their entitlements.

656. The RP implementing agency shall assist the DPs in opening bank accounts explaining the implications, the rules and the obligations of a bank account and how s/he can access the resources s/he is entitled to. The RP implementing agency shall recommend methods of disbursement for assistance to

BSRDC for approval. The disbursement method should be transparent, efficient and meets government audit requirements.

657. The RP implementing agency shall prepare a micro plan based on its verification and socio-economic survey and implement the livelihood restoration program for those DPs who qualify for the same. The RP implementing agency shall coordinate with relevant organization or mobilize its own short-term experts in carrying out the training activities.

658. The RP implementing agency shall ensure proper utilisation of the R&R budget available for the subproject. The RP implementing agency shall counsel the DPs in finding suitable economic investment options and help them in regaining the losses of land and other productive assets.

659. Accompanying and Representing the DPs at the Grievance Committee Meetings

660. The RP implementing agency shall nominate a suitable person (from the staff of the RP implementing agency) to be a member of the GRCs. The RP implementing agency shall make the DPs aware of the existence of grievance redressal committees (GRCs).

661. The RP implementing agency shall help the DPs in filling the grievance application and also in clearing their doubts about the procedure as well as the context of the GRC award.

662. RP implementing agency/It shall submit a draft resolution with respect to the particular grievance of the DP, suggesting multiple solutions, if possible, and deliberate on the same in the GRC meeting through the RP implementing agency representative in the GRC.

663. To accompany the DPs to the GRC meeting on the decided date, help the DP to express his/her grievance in a formal manner if requested by the GRC and again inform the DPs of the decisions taken by the GRC within 3 days of receiving a decision from the GRC.

### 3. Carry out Public Consultation

664. In addition to counseling and providing information to DPs, the RP implementing agency will carry out periodic and ongoing consultation with DPs and other stakeholders.

665. Assisting the PII with the Project's Social Responsibilities

666. The RP implementing agency shall assist the BSRDC to implement Road safety awareness, HIV/AIDS awareness measures, basic health and hygiene and trafficking. The RP implementing agency shall coordinate with Project Management and Authority Engineer and relevant organization or mobilize its own short-term experts in carrying out the activities.

#### 4. Monitoring and Reporting

667. The RP implementing agency involved in the implementation of the RP will be required to supply all information, documents to the external monitor.

#### 668. Documentation and Reporting by RP Implementation Agency

669. The RP implementing agency shall submit all of the following reports, brochures and outputs in a format approved by BSRDC.

670. **Inception Report.** To be submitted within two weeks of mobilization which includes work plan for the whole contract period, staffing and personnel deployment plan, and a withdrawal plan at the end of the period of contract.
671. **Project Information Brochure.** Summarize the RP, translate summary and produce Project Information Brochure in local language within 1 month of mobilization. For distribution to all affected households.
672. **Micro plans for relevant Non-titleholders.** Includes issuance of ID cards and other documents. To be completed at an agreed time with BSRDC.
673. **Monthly Progress Reports.** To be submitted to BSRDC at the end of each month. Shall include weekly progress and work charts as against the scheduled timeframe of RP implementation.
674. **Quarterly Progress Reports.** To be submitted to BSRDC at the end of each quarter. Shall include progress on implementation, livelihood restoration program, GRC, HIV/AIDS awareness program, issues and challenges, and etc.
675. **Completion Report** at the end of the contract period summarizing the actions taken during the project, the methods and personnel used to carry out the assignment, and a summary of support/assistance given to the DPs.
676. All other reports/documentation as described in these terms of reference.
677. Record minutes of all meetings.

#### 678. Staffing Schedule

679. The table below details the required staffing structure for the assignment. Key personnel will be evaluated during the proposal evaluation stage. The RP implementing agency is required to submit CVs for the key personnel positions. Non-key personnel will not be evaluated during proposal stage. At least one woman should be included as Field Support Staff.

#### 680. Required Experts

No.	Particulars	No. Positions	Estimated Person-months
<b>Key Personnel</b>			
1.	Team Leader	1	18 (intermittent over 36 months)
2.	Key Professional (A) R&R Expert	2 (one for each revenue district)	24 (intermittent over 36 months)
3.	Key Professional (B) Civil Engineer	2 (one for each revenue district)	6 (intermittent over 36 months)

4.	Key Professional (C) Social Development Expert	2 (one for each revenue district)	24 (intermittent over 36 months)
5.	Key Professional (D) Land Acquisition Expert	2 (one for each revenue district)	18 (intermittent over 36 months)

**Non-key Personnel**

6.	Field Support Staff	4 (two for each revenue district)	24 (intermittent over 36 months)
7.	MIS Expert	1	24 (intermittent over 36 months)
8.	Support Staff Amin, Chain-man and field staff	6 (one each for each revenue district)	12 (intermittent over 36 months)
<b>Total</b>		<b>20</b>	<b>354</b>

681. All staff should be mobilized within 3 days of notice from the project resettlement officer.

**682. Key Indicative Tasks per Position**

683. The position-based tasks specified for each of the positions is mentioned below. The tasks are indicative and the RP implementing agency needs to propose its own working arrangements as a team based on the overall requirements in the TOR.

No. Particulars

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No.	Particulars	
1	Team Leader	Provide overall technical and operational management of RP implementing agency team. Act as main counterpart when communicating with BSRDC and relevant government agencies. Draft work plan and ensure work plan is followed. Ensure deliverables and activities are completed in a timely and transparent fashion. Review documentation and reports to verify accuracy.
2	Key Professional (A) R&R Expert	Responsible for assigned section of alignment Provide guidance to Field Staff and verify information collected. Ensure deliverables and activities are completed in a timely and transparent fashion. Provide support to Grievance Redressal Mechanism
3	Key Professional (B) Civil Engineer	Responsible for assigned section of alignment. Valuation of assets of DPs. Responsible collecting field level information. Undertake continued information disclosure and consultation.
4.	Key Professional (C) Social Development Expert	Responsible for community development and community awareness related assignment. Road Safety and Highway users psychology understanding. Responsible collecting field level information. Undertake continued information disclosure and consultation.
5.	Key Professional (D) Land Acquisition Expert	Responsible for land acquisition related matter and co-ordination with revenue department of the district. Preparation of compensation with LA office and facilitating distribution of compensation. Preparation/distribution of assistance amount.
6.	Field Support Staff	Responsible for working on field with DPs.
6.	MIS Officer	Perform all computer/database related needs for the assignment.

#### 706. Qualification & Experience

707. Qualification and experience requirements for experts are listed below.

**Staff**

**Qualification & Experience**

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Staff	Qualification & Experience
Team Leader	<ul style="list-style-type: none"> <li>3. Minimum: Post graduate degree in social science or Sociology/ Economics/ Master in Social Work/ Masters in Rural Development, Bachelors of law shall be added qualification</li> <li>4. 10 years of minimum professional experience in R&amp;R implementation.</li> <li>5. 5 years of minimum relevant experience with 3 (three) linear project experience in implementing land acquisition and resettlement and rehabilitation activities. Previous experience in project funded by external donors. Good understanding of land acquisition process and The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013</li> </ul>
Key Professional (A)	<ul style="list-style-type: none"> <li>1. Minimum: Bachelor's degree in Social Science (Sociology/Social work/Anthropology/Geography/Economics). Post graduate degree in social science is preferred</li> </ul>
R&R Expert	<ul style="list-style-type: none"> <li>1. 10 years of minimum professional experience</li> <li>3. 5 years of minimum relevant experience in at least 3 linear project implementing land acquisition and resettlement and rehabilitation activities. Previous experience in project funded by external donors strongly preferred. Good understanding of land acquisition process and The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013. Proficient in local language preferred.</li> </ul>
Key Professional (B)	<ul style="list-style-type: none"> <li>1. Minimum: Bachelor's degree in Civil Engineering. 3 years of minimum professional experience with experience in valuation of land asset/building, preparation of estimate. Knowledge of LA act is essential particularly the estimate preparation.</li> </ul>
Civil Engineer	<ul style="list-style-type: none"> <li>3. Previous experience in working rural communities required. Proficiency in local language is required.</li> </ul>
Key Professional (C)	<ul style="list-style-type: none"> <li>3. Minimum: Bachelor's degree in Social Science (Sociology/Social work/Anthropology/Geography/Economics). Post graduate degree in social science is preferred</li> </ul>
Social Development Expert	<ul style="list-style-type: none"> <li>1. 10 years of minimum professional experience. 5 years of minimum relevant experience in at least 3 linear project in community development and community awareness projects. Previous experience in project funded by external donors strongly preferred. Good understanding of land acquisition process and The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013. Proficient in local language preferred.</li> </ul>
Key Professional (D)	<ul style="list-style-type: none"> <li>3. Land Acquisition Expert Should be at least a graduate. S/he should have about 15 years of working experience in the field of land measurement, land records, and, acquisition of land. Should have worked for at least 5 years in R&amp;R or rural development projects. S/he should have experience of participatory management. Knowledge of local language is a necessary qualification.</li> </ul>
Land Acquisition Expert	
Field Support Staff	<ul style="list-style-type: none"> <li>3. The field support professionals should be graduate or equivalent in social sciences. Knowledge of local language and experience of working in the region is essential.</li> </ul>
MIS Officer	<ul style="list-style-type: none"> <li>3. Minimum: Bachelor's degree in computer application or related fields.</li> <li>1. 3 years of minimum professional experience</li> <li>2. Proficient in operating computer and Microsoft Word, and Excel. Ability to design and manage database. Proficient in English and local language.</li> </ul>

### 723. Condition of Services

724. The RP implementing agency shall ensure that the RP is implemented in an effective and proper manner. The prime responsibility of the RP implementing agency shall be to ensure that each and every eligible DP receives appropriate and due entitlement (within the Entitlement Framework) and that, at the end of the project R&R services, the eligible DPs have improved (or at least restored) their previous standard of living. Additionally, the RP implementing agency shall help the BSRDC in all other matters deemed to be required to implement the RP in its spirit and entirely including activities involving some financial implications.

725. All documents created, generated or collected during the period of contract, in carrying out the services under this assignment will be the property of the BSRDC. No information gathered or generated during and in carrying out this assignment shall be disclosed by the RP implementing agency without explicit permission of the BSRDC.

**726. Data, Services and Facilities to be provided by BSRDC**

727. The BSRDC will provide to the RP implementing agency the copies of all relevant documents required for the agency to undertake its work. Documents will include the DPs' Census, the RP, and technical drawings. The BSRDC will assist the RP implementing agency in collaborating with the Supervision Consultants. All facilities required in the performance of the assignment, including office space, office stationery, transportation and accommodation for staff of the RP implementing agency, etc., shall be arranged by the RP implementing agency.

**728. Payment Schedule:**

729. The following payment milestone is proposed for making the payment to the RP implementing agency. The payment will be made subject to the submission of a certificate from the BSRDC that the targets have been achieved in a satisfactory manner.

Sl. No.	Indicative Payment Milestone	Payment (% of contract Value)
1	On submission and approval of the inception Report complete in all respects	10%
2	On completion of the identification, verification of DPs and initial consultation sessions, and submission of updated data on DPs (Identification and Verification report) and review of the same by the BSRDC.	10%
3	Demarcation of ROW,	5%
4	On submission and approval of first 30% of the Micro Plans of DPs	5%
5	Publication of Declaration and Summary of R&R up to Section 19 of LA Act,	5%
8	Preparation of Compensation sheet and Declaration Award up to Section 22 & 23 of LA Act	5%
9	On submission and approval of second 30% of the Micro Plans of DPs	5%
9	On submission and approval of final 40% of the Micro Plans of DPs	5%
7	On completion of distribution of compensation amount to DPs.	20%
8	On completion of the rehabilitation process and implementation of Livelihood and Income Restoration Program, Road Safety Awareness and HIV/AIDS, health and hygiene, and human trafficking in affected villages.	10%
9	On submission of the Final Completion Report	10%
10	On approval of the Final Completion Report	10%
	Total	100%

730. For livelihood restoration Road Safety awareness and HIV/AIDS awareness component, BSRDC will provide additional funding specific for those activities. RP implementing agency will submit cost proposal to BSRDC for approval prior to implementation of specific component. RP implementing agency will be reimbursed based on actual costs.

731. The above remuneration includes all costs related to carrying out the services, including overheads. The service tax or any other tax component shall be reimbursed/ paid to agency on production of documents. The insurance cost will be separate of the total project cost; the client shall be billed for this.

APPENDIX 7: TERMS OF REFERENCE FOR AN EXTERNAL MONITORING AGENCY/EXPERT FOR 2-LANE SH-95 ROAD PROJECT

**732. Introduction**

733. The Bihar State Road Development Corporation Limited (BSRDCL), Government of Bihar is presently implementing Bihar State Highways (BSHP) Project under Asian Development Bank (ADB) assistance to strengthen and rehabilitate the deteriorated state roads and upgrade some newly declared state roads to provide reliable road transport services in the state. BSRDCL is planning for upgradation of SH-99 (65.360 km) into two-lane road and requested ADB for financing under project loan modality.

734. This RP for two-lane road project is prepared based on the detailed design report prepared by BSRDC. The RP complies with the applicable State Government, Government of India and ADB policy and legal framework. This project is considered as Category-A29 as per as Involuntary Resettlement (IR) is concerned. BSRDC require an independent consultant for external monitoring and reporting of RP implementation for the project.

**735. Objectives and Requirements of Monitoring and Evaluation**

736. The objectives of monitoring and evaluation are to assess whether the RP is implemented on schedule and within budget and whether the goals and principles of the RP are achieved. Specifically, monitoring and evaluation will focus on the following aspects of the DPs' situation and the resettlement process.

- 737. Social and economic situation prior to and after resettlement;
- 738. Timely disbursement of funds;
- 739. Functioning of the grievance redress mechanism
- 740. Environmental conditions;
- 741. Social adaptability after resettlement;
- 742. Rehabilitation of vulnerable groups
- 743. Special items related to the vulnerable groups
- 744. Condition and quality of land temporarily acquired when it is returned to the original land users;
- 745. Measures taken to restore affected livelihoods; and,
- 746. Living conditions and economic status of DPs following resettlement in comparison to the "without project" scenario

747. Monitoring and evaluation will include (i) the verification or establishment of a socio-economic baseline of the DPs prior to actual land acquisition, physical displacement/relocation, loss of assets or disruption of business (as relevant); (ii) verification of internal monitoring data and reports; (iii) the regular monitoring of their {resettlement or displacement/relocation (as relevant)} and adjustment during Project implementation; and (iv) evaluation of their situation for a period of one year after land acquisition or displacement or relocation (as relevant). In addition, qualitative and quantitative evaluation will be made on the sustainability of living conditions of DPs. Investigation will

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29According to the Safeguard Policy Statement (SPS-2009), Involuntary Resettlement Category A: Significant means 200 or more affected people will experience major impacts, which are defined as (i) being physically displaced from housing, or (ii) losing 10% or more of their productive assets (income generating). Involuntary Resettlement Category B: Not Significant include involuntary resettlement impacts that are not deemed significant as per the ADB Operational manual Involuntary Resettlement Category C: No involuntary resettlement impacts. A resettlement plan is required in case of both category A and B project.

include consultations and observations with DPs, IAs, local officials, village leaders, as well as a quantitative sample survey of displaced households. Focus group discussion will be conducted with male and female DPs, and vulnerable groups.

748. If the findings of the EM indicate significant compliance DPs, the EM will work with the EA and PIU to prepare a separate corrective action plan (CAP) in cooperation with the relevant stakeholders, to address pending or new LAR impacts. The EM will monitor and report on the implementation of the CAP.

#### 749. Monitoring Indicators

750. Monitoring will include process, output and outcome indicators. The monitoring framework and formats stipulated in the RP will be adopted. The following general indicators will be covered.

751. Disbursement of entitlements to DPs and enterprises/businesses: compensation, relocation, housing, cultivated farmland, and employment as specified in the RP.
752. Provision of relocation options: the affected persons must move into chosen resettlement/housing option at least one month before physical displacement/relocation; for those opting for self-construction, payment of compensation and provision of housing sites should be completed at least three months before physical displacement/relocation; the compensation for construction of houses should be equivalent to the replacement cost; the DPs must receive their entitlements and allowances on time.
753. Development of economic productivity: re-allocation of cultivated land, land restoration, job opportunities available to DPs, number of DPs employed or unemployed.
754. Standard of living: Throughout the implementation process, the trends in standards of living will be observed and the potential problems in the way of restoration of standards of living will be identified and reported. The Monitor will carry out a comprehensive socio-economic survey after the completion of resettlement implementation to document the standards of living and the conditions of the DPs after resettlement. The survey will be updated annually.
755. Restoration of civic infrastructure: all necessary infrastructure should be restored at the resettlement sites at least to a standard equal to the standard at the original location; the compensation for all infrastructure should be sufficient to reconstruct it to the same quality
756. Effectiveness of resettlement planning. Adequacy of assets measurement, entitlements, sufficiency of budget, and timeliness of mitigation measures.
757. Level of satisfaction of DPs: level of satisfaction of DPs with various aspects of the resettlement program; the operation of the mechanisms for grievance redress will be reviewed and the speed and results of grievance redress measures will be monitored.
758. Social adaptability and cohesion: impacts on children, indigenous peoples/ethnic minorities and other vulnerable groups, public participation, DPs' attitudes and reaction to post resettlement situation, number of complaints and appeal procedures, implementation of preferential policies, income restoration measures, and improvements in women's status in villages.
759. Other Impacts. The monitor will verify if there are unintended environmental impacts and impacts on employment and incomes.

#### 760. Special Considerations

761. Special attention will be paid to women, indigenous peoples/ethnic minorities/groups, as well as the poor and vulnerable groups during monitoring; these include:

- 762. The status and roles of women: Closely monitor any change in women's status, function and situations.
- 763. Differential impacts on indigenous peoples/ethnic minority groups. Closely monitor the socioeconomic status of indigenous peoples to ensure that they have not been further marginalized. Monitoring indicators should to the extent possible be disaggregated by gender and ethnicity.
- 764. Care and attention to vulnerable groups: Closely monitor living conditions of the poor, the elderly, the handicapped, female headed households and other vulnerable groups after resettlement, to ensure that their livelihood is improved.
- 765. Monitoring and evaluation will provide information on the utilization and adequacy of resettlement funds.

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**APPENDIX 8: PHOTO IDENTIFICATION OF DISPLACED PERSON**

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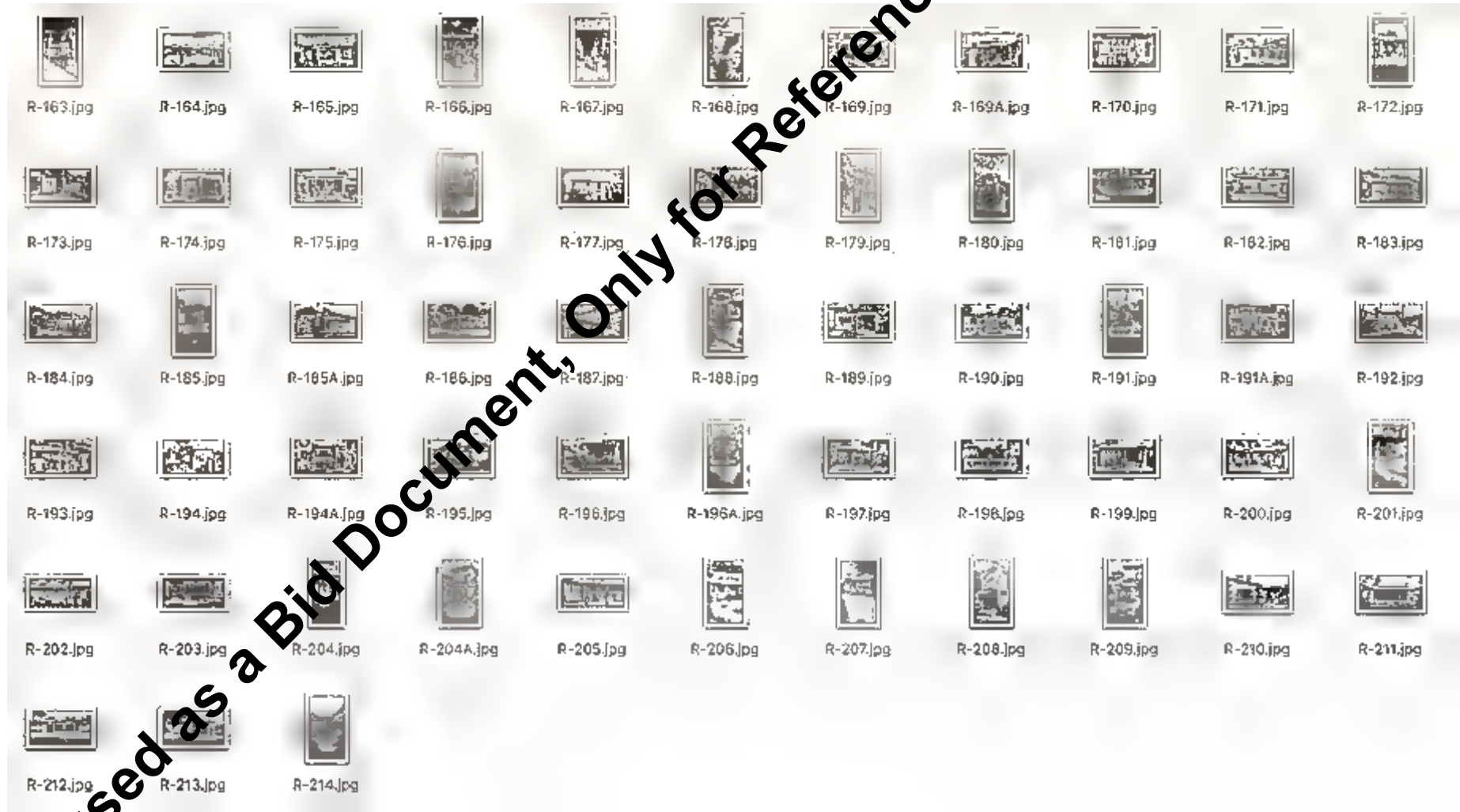


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## SCHEDULE – E

(See Clauses 2.1 and 14.2)

### MAINTENANCE REQUIREMENTS

#### 1 Maintenance Requirements

- 1.1 The Contractor shall, at all times maintain the Project Highway in accordance with the provisions of this Agreement, Applicable Laws and Applicable Permits. The Contractor shall, at all times maintain and repair the existing carriageway for smooth movement of the traffic from the date of appointment. No separate payment for maintenance and repair of the existing carriageway shall be admissible till the project completion period and will be the part of the Contract Amount.
- 1.2 The Contractor shall repair or rectify any Defect or deficiency set forth in Paragraph 2 of this Schedule-E within the time limit specified therein and any failure in this behalf shall constitute non-fulfilment of the Maintenance obligations by the Contractor. Upon occurrence of any breach hereunder, the Authority shall be entitled to effect reduction in monthly lump sum payment as set forth in Clause 14.6 of this Agreement, without prejudice to the rights of the Authority under this Agreement, including Termination thereof.
- 1.3 All Materials, works and construction operations shall conform to the MORTH Specifications for Road and Bridge Works, and the relevant IRC publications. Where the specifications for a work are not given, Good Industry Practice shall be adopted.

#### 2 Repair/rectification of Defects and deficiencies

The obligations of the Contractor in respect of Maintenance Requirements shall include repair and rectification of the Defects and deficiencies specified in Annex - I of this Schedule-E within the time limit set forth therein.

#### 3. Other Defects and deficiencies

In respect of any Defect or deficiency not specified in Annex - I of this Schedule-E, the Authority's Engineer may, in conformity with Good Industry Practice, specify the permissible limit of deviation or deterioration with reference to the Specifications and Standards, and any deviation or deterioration beyond the permissible limit shall be repaired or rectified by the Contractor within the time limit specified by the Authority's Engineer.

#### 4 Extension of time limit

Notwithstanding anything to the contrary specified in this Schedule-E, if the nature and extent of any Defect or deficiency justifies more time for its repair or rectification than the time specified herein, the Contractor shall be entitled to additional time in conformity with Good Industry Practice. Such additional time shall be determined by the Authority's Engineer and conveyed to the Contractor and the Authority with reasons thereof.

**5 Emergency repairs/restoration**

Notwithstanding anything to the contrary contained in this Schedule-E, if any Defect, deficiency or deterioration in the Project Highway poses a hazard to safety or risk of damage to property, the Contractor shall promptly take all reasonable measures for eliminating or minimizing such danger.

**6 Daily inspection by the Contractor**

The Contractor shall, through its engineer, undertake a daily visual inspection of the Project Highway and maintain a record thereof in a register to be kept in such form and manner as the Authority's Engineer may specify. Such record shall be kept in safe custody of the Contractor and shall be open to inspection by the Authority and the Authority's Engineer at any time during office hours.

**7. Pre-monsoon inspection / Post-monsoon inspection**

The Contractor shall carry out a detailed pre-monsoon inspection of all bridges, culverts and drainage system before 1st June every year in accordance with the guidelines contained in IRC: SP35. Report of this inspection together with details of proposed maintenance works as required on the basis of this inspection shall be sent to the Authority's Engineer before the 10th June every year. The Contractor shall complete the required repairs before the onset of the monsoon and send to the Authority's Engineer a compliance report. Post monsoon inspection shall be done by the 30th September and the inspection report together with details of any damages observed and proposed action to remedy the same shall be sent to the Authority's Engineer.

**8. Repairs on account of natural calamities**

All damages occurring to the Project Highway on account of Force Majeure Event or default or neglect of the Authority shall be undertaken by the Authority at its own cost. The Authority may instruct the Contractor to undertake the repairs at the rates agreed between the Parties.

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## Annexure I

(Schedule-E)

## Repair/rectification of Defects and deficiencies

The Contractor shall repair and rectify the Defects and deficiencies specified in this Annex-I of Schedule-E within the time limit set forth in the table below.

Table -1: Maintenance Criteria for Pavements:

Asset Type	Performance Parameter	Level of Services (LOS)		Frequency of Inspection	Tools / Equipment	Standards and References for Inspection and Data Analysis	Time limit for Rectification/ Repair	Maintenance Specifications
		Desirable	Acceptable					
Flexible Pavement (Pavement of MCW, service Road, approaches Asset types of Grade structure, approaches of connecting roads, slip road lay byes etc. as applicable)	Potholes	Nil	<0.1% of area and subject to limit of 10mm in depth	Daily	Length Measurement Unit like Scale, Tape, odometer etc.	IRC 82:2015 and Distress Identification Manual for Long Term Pavement Performance Program, FHWA 2003 ( <a href="http://www.tfrc.com/pavement/ltp/reports/03031">http://www.tfrc.com/pavement/ltp/reports/03031</a> )	24-48 hours	MORT&H Specification 3004.2
	Cracks	Nil	<5% subject to limit of 0.5 sqm for any 50 m length	Daily			7-15 Days	MORT&H Specification 3004.3
	Rutting	Nil	<5 mm	Daily	Straight Edge		15-30 Days	MORT&H Specification 3004.2
	Corrugations	Nil	<0.1% of	Daily	Length		2-7 Days	IRC:82-2015

Asset Type	Performance Parameter	Level of Services (LOS)		Frequency of Inspection	Tools / Equipment	Standards and References for Inspection and Data Analysis	Time limit for Rectification/ Repair	Maintenance Specifications
		Desirable	Acceptable					
	and Shoving		area		Measurement Unit			
	Bleeding	Nil	<1% of Area	Daily	Scale, Tape, odometer etc.		3-7 Days	MORT&H Specification 3004.4
	Ravelling / Stripping	Nil	<1% of Area	Daily			7-15 Days	IRC:82-2015 read with IRC SP 81
	Edge Deformation/Breaking	Nil	<1 m for any 100 m section and width 1.5 m at any location, restricted to 50 cm from the edge	Daily			7-15 Days	IRC:82-2015
	Roughness BI	2000 mm/km	2400 mm/km	Bi-Annually		Class I Profilometer SCRIM (Sideway-force Coefficient Routine Investigation Machine or equivalent)	Class I Profilometer : ASTM E950 {98} : 2004 – Standard Test Method for measuring Longitudinal Profile of travelled surfaces with accelerometer	180 Days
	Skid Number	60SN	50SN	Bi-Annually	Established Inertial Profiling Reference ASTM E1656 – 94:2000 – Standard Guide for Classification of Automatic Pavement		180 Days	BS:7941-1:2006
	Pavement Condition Index		2.1	Bi-Annually			180 Days	IRC:82-2015
	Other Pavement Distresses			Bi-Annually			2-7 Days	IRC:82-2015

Asset Type	Performance Parameter	Level of Services (LOS)		Frequency of Inspection	Tools / Equipment	Standards and References for Inspection and Data Analysis	Time limit for Rectification/ Repair	Maintenance Specifications
		Desirable	Acceptable					
						Condition Survey Equipment		
	Deflection/Remaining Life			Annually	Penetration Weight Deflectometer	IRC115:2014	180 days	IRC:115-2014
<b>Rigid Pavement (Pavement of MCW, Service Road, Grade structure, approaches of connecting roads, slip roads, lay byes etc. as applicable)</b>	Roughness BI	2200 mm/Km	2400 mm/km	Bi-Annually	Class I Profilometer	ASTM E950(98):2004 and ASTM E1656-94:2000	180 Days	IRC:SP:83-2008
	Skid	Skid Resistance no. at different speed of vehicles		Bi-Annually	SCRIM (Sideway- Force Coefficient Routine Investigation Machine or equivalent)	IRC:SP:83-2008	180 Days	IRC:SP:83-2008
		Minimum SN	Traffic Speed (Km/h)					
		36	50					
		33	65					
		31	80					
		31	95					
		31	110					
<b>Embankment/Slope</b>	Edge drop shoulders	Nil	40mm	Daily			7-15 days	MORT&H Specification 408.4
	Slope of camber/cross fall	Nil	<2% variation in prescribed slope of camber/cross fall	Daily	Length Measurement Unit like Scale, Tape, odometer etc.	IRC	7-15 days	MORT&H Specification 408.4
	Embankment Slopes	Nil	<15% variation in	Daily			7-15 days	MORT&H Specification

Asset Type	Performance Parameter	Level of Services (LOS)		Frequency of Inspection	Tools / Equipment	Standards and References for Inspection and Data Analysis	Time limit for Rectification/ Repair	Maintenance Specifications
		Desirable	Acceptable					
			prescribe side slope					408.4
	Embankment Protection	Nil	Nil	Daily	NA		7-15 days	MORT&H Specification
	Rain Cuts/Gullies in slope	Nil	Nil	Daily Special During Rainy Season	NA		7-15 days	MORT&H Specification

In addition to the above performance criterion, the contractor shall strictly maintain the rigid pavements as per requirements in the following table

**Table – 2 : Maintenance Criteria for Rigid Pavements:**

S.No.	Type of Distress	Measured Parameter	Degree of Severity	Assessment Rating	Repair Action	
					For the case $d < D/2$	For the case $d > D/2$
<b>CRACKING</b>						
1	Single Discrete Cracks Not intersecting with any joint	W = width of crack L = Length of crack D = depth of crack D = depth of slab	0	Nil, not discernible	No action	Not applicable
			1	W < 0.2 mm. hair cracks		
			2	W = 0.2 – 0.5 mm, discernible from slow – moving car	Seal without delay	Seal and stitch if L > 1m. Within 7 days.
			3	W = 0.5 – 1.5 mm, discernible from fast-moving car		
			4	W = 1.5 – 3.0 mm		
5	W > 3mm,	Seal, and stitch if L > 1m, within 7 days	Staple or Dowel bar retrofit, FDR for affected portion. Within 15 days.			
2	Single Transverse (or	W = width of crack L = Length of crack	0	Nil, not discernible	No action	
			1	W < 0.2 mm. hair cracks	Route and seal	Staple or Dowel

	<b>Diagonal) Crack intersecting with one or more joints</b>	d = depth of crack D = depth of slab	2	W = 0.2 – 0.5 mm, discernible from slow vehicle	with epoxy. Within 7 days	Bar retrofit.  Within 15 days
			3	W = 0.5 – 3.0 mm, discernible from fast vehicle	Route, seal and stitch, if L > 1 m. Within 7 Days	
			4	W = 3 – 6.0 mm	Dowel Bar Retrofit.  Within 15 days	Full Depth Repair Dismantle and reconstruct affected.
			5	W < 6 mm, usually associated with spalling, and / or slab rocking under traffic	Not Applicable, as it may be full depth	Portion with norms and specifications – see Para 5.5 & 9.2 Within 15 days.
3	<b>Single Longitudinal Crack intersecting with one or more joints</b>	W = width of crack L = Length of crack d = depth of crack D = depth of slab		Nil, not discernible		
				W < 0.5 mm, discernible from slow vehicle	Seal with epoxy, if L > 1m Within 7 days	Staple or dowel bar retrofit. Within 15 Days
			2	W = 0.5 – 3.0 mm, discernible from fast vehicle	Route, seal and stitch, if L > 1 m. Within 15 Days	
			3	W = 3.0 – 6.0 mm	Staple, if L > 1m. Within 15 days	Partial Depth Repair with stapling. Within 15 days
			4	W = 6.0 – 12.0 mm, usually associated with spalling	Not Applicable, as it may be full depth	Full Depth Repair Dismantle and reconstruct affected portion as per norms and specifications see Para 5.6.4 Within 15 days
5	W > 12mm, usually associated with spalling and / or slab rocking under traffic					
	<b>Multiple Cracks intersecting with</b>	w = width of crack	0	Nil, not discernible	No Action	
			1	W < 0.2 mm. hair cracks	Seal, and stitch if	



	<b>one or more joints</b>		2	W = 0.2 – 0.5 mm, discernible from slow vehicle	L > 1 m. Within 15 days	
			3	W = 0.5 – 3.0 mm, discernible from fast vehicle	Full depth repair within 15 days	Dismantle, Reinstatement sub base, Reconstruct whole slab as per specifications within 30 days
			4	W = 3.0 – 6.0 mm, panel broken into 2 or 3 pieces		
			5	w > 6 mm and / or panel broken into more than 4 pieces		
5	<b>Corner Break</b>	w = width of crack L = length of crack	0	Nil, not discernible	No Action	
			1	w < 0.5mm; only 1 corner broken	Seal with low viscosity epoxy to secure broken parts within 7 days	Seal with epoxy seal with epoxy within 7 days
			2	w < 1.5 mm; L < 0.6 m, only one corner broken		
			3	w < 1.5 mm; L < 0.6 m, only two corner broken	Partial Depth (Refer Figure 8.3 of IRC:SP:83-2008) within 15 days	Full depth repair
			4	w < 1.5 mm; L < 0.6 m, only three corner broken		
			5	Three or four corner broken		
6	<b>Punchout (Applicable Continuous Reinforced Concrete Pavement (CRCP) only)</b>	w = width of crack L = length (m/m <sup>2</sup> )	0	Nil, not discernible		No Action
			1	w < 0.5mm; L < 3 m/m <sup>2</sup>	Not Applicable, as it may be full depth	Seal with low viscosity epoxy to secure broken parts. Within 15 days
			2	Either w > 0.5 mm or L < 3 m/m <sup>2</sup>		
			3	w > 1.5 mm and L < 3 m/m <sup>2</sup>		
			4	w > 1.5 mm and L < 3 m/m <sup>2</sup> and deformation		

			5	w > 1.5 mm and L > 3 m/m <sup>2</sup> and deformation		replace damaged area taking care not to damage reinforcement. Within 30 days.
7	<b>Ravelling or Honeycomb type surface</b>	r = area damaged surface / total surface of slab (%) h = maximum depth of damage	0	Nil, not discernible	Short term	Long Term
			1	r < 1%	No action	Not Applicable
			2	r = 2 – 10 %	Local repair of areas damage. And liable to be damaged. Within 15 days	
			3	r = 10-25%	Bonded Inlay, 2 or 3 slabs if affecting. Within 30 days	
			4	r = 25.50%		
			5	R > 50% and h > 25 mm	Reconstruct slabs, 4 or more slabs if affecting. Within 30 days	
8	<b>Scaling</b>				<b>Short Term</b>	<b>Long Term</b>
			0	Nil, not discernible	No Action.	Not Applicable
			1	r < 2%	Local repair of areas damaged and liable to be damaged. Within 7 days	
			2	r = 2 – 10 %	Bonded inlay within 15 days	
			3	r = 10-20%		
			4	r = 20-30%	Reconstruct slab within 30 days.	
		5	R > 30% and h > 25 mm			

9	<b>Polished Surface/Glazing</b>	t = Texture depth, sand patch test	0		No Action	Not Applicable
			1	t > 1mm		
			2	t = 1- 0.6 mm	Monitor rate of deterioration	
			3	t = 0.6- 0.3 mm		
			4	t = 0.3- 0.1 mm		
			5	t < 0.1 mm	Diamond Grinding if affecting 50% or more slabs in a continuous stretch of minimum 5 km. Within 30 days	
10	<b>Popout (Small Hole), Pathole Refer Para 8.4</b>	n = Number / m2 d = Diameter h = Maximum depth	0	d<50 mm; h< 25mm; n<1 per 5 m2	No Action	Not Applicable
			1	d = 50 -100 mm; h<50mm; n<1 per 5m2	Partial depth repair 65 mm deep. Within 15 days	
			2	d = 50 -100 mm; h<50mm; n<1 per 5 m2		
			3	d = 100 -300 mm; h<100mm; n<1 per 5 m2	Partial depth repair 110 mm i.e. 10 mm more than the depth of the hole Within 30 days	
			4	d = 100 -300 mm; h<100mm; n<1 per 5 m2		
			5	d = 300 mm; h<100mm; n<1 per 5 m2	Full depth repair. Within 30 days	
<b>Joint Defects</b>						
11	<b>Joint Seal Defects</b>	Loss or damage L = Length as % total Joint length	0	Difficult to discern.	<b>Short Term</b> No Action.	<b>Long Term</b> Not Applicable
			1	Discernible, L<25% but of little immediate consequence with regard to ingress of water or trapping incompressible material.	Clean joint, inspect later.	

			3	Notable, $L < 25\%$ insufficient protection against ingress of water and trapping incompressible material.	Clean and reapply sealant in selected locations. Within 7 days.	
			5	Severe; $w > 30\text{ mm}$ negligible protection against ingress of water and trapping incompressible materials.	Clean, widen and reseal the joint. Within 7 days	
12	Spalling of Joints	w = width on either side of the joint L = length of spalled portion (as % joint length)	0	Nil/not discernible	No Action	Not Applicable
			1	$w < 10\text{ mm}$	Apply low viscosity epoxy resin/ mortar in cracked portion. Within 7 days	
			2	$w = 10 - 20\text{ mm}$ , $L < 25\%$		
			3	$w = 20 - 40\text{ mm}$ , $L > 25\%$	Partial Depth Repair. Within 15 days	
			4	$w = 40 - 80\text{ mm}$ , $L > 25\%$	30-50 mm deep, $h = w + 20\%$ of w, Within 30 days	
			5	$w > 80\text{ mm}$ , and $L > 25\%$	50-100 mm deep repair, $h = w + 20\%$ of w, Within 30 days	
			13	Faulting (or Stepping) in Cracks or Joints	f = difference of level	
1	$f < 3\text{ mm}$					
2	$f = 3 - 6\text{ mm}$	Determine cause and observe, take action for diamond grinding				Replace the slab as appropriate. Within 30 days
3	$f = 6 - 12\text{ mm}$	Diamond Grinding				
4	$f = 12-18\text{ mm}$	Raise sunken slab.				

			5	$f > 18 \text{ mm}$	Strengthen subgrade and sub-base by grouting and raising sunken slab	as appropriate. Within 30 days
14	<b>Blowup or Buckling</b>	h = vertical displacement from normal profile	0	Nil, not discernible	No Action	
			1	$h < 6 \text{ mm}$		
			2	$h = 6 - 12 \text{ mm}$	Install Sign to Warn Traffic Within 7 days	
			3	$h = 12 - 25 \text{ mm}$	Full Depth Repair. Within 30 days	
			4	$h > 25 \text{ mm}$	Replace broken slabs. Within 30 days	
			5	Shattered slabs, i.e. 4 or more pieces		
15	<b>Depression</b>	h = negative vertical displacement from normal profile L = length	0	Not discernible, $h < 5\text{mm}$	No Action	Not Applicable
			1	$h = 5-15 \text{ mm}$		
			2	$h = 15 - 30 \text{ mm}$ , Nos. $< 20\%$ joints	Install Signs to warn Traffic within 7 days	
			3	$h = 30 - 50 \text{ mm}$	Strengthen subgrade. Reinstate pavement at normal level if $L < 20 \text{ m}$ . Within 30 days	
			4	$h > 50 \text{ mm}$ or $> 20\%$ joints		
			5	$h > 100 \text{ mm}$		
16	<b>Heave</b>	h = Positive vertical displacement from normal profile. L = length	0	not discernible, $h < 5\text{mm}$	<b>Short Term</b>	<b>Long Term</b>
					No action.	<b>scrabble</b>
			1	$h = 5-15 \text{ mm}$	Follow up.	
			2	$h = 15 - 30 \text{ mm}$ , Nos. $< 20\%$ joints	Install Signs to warn Traffic within 7 days	
			3	$h = 30 - 50 \text{ mm}$		

			4	$h > 50 \text{ mm}$ or $> 20\%$ joint	Strengthen subgrade. Reinstate pavement at normal level if $L < 20 \text{ m}$ . Within 30 days	
			5	$h > 100 \text{ mm}$		
17	Bump	h = Vertical displacement from normal profile	0	$h < 4 \text{ mm}$	No Action	
			1	$h = 4 - 7 \text{ mm}$	Grind, in case of new construction within 7 days	Construction limit for new construction.
			3	$h = 7 - 15 \text{ mm}$	Grind, in case of ongoing Maintenance Within 15 days	Replace in case of new construction. Within 30 days
			5	$h > 15 \text{ mm}$	Full Depth Repair. Within 30 days	Full Depth Repair. Within 30 days
18	Lane to Shoulder Dropoff	f = difference of level	0	Nil, Not discernible, $< 3 \text{ mm}$	No action	
			1	$f = 3-10 \text{ mm}$	Spot repair of shoulder Within 7 days	
			2	$f = 10 - 25 \text{ mm}$		
			3	$f = 25 - 50 \text{ mm}$		
			4	$f = 50-75 \text{ mm}$		
			5	$f > 75 \text{ mm}$	Fill up shoulder within 7 days	For any 100 m stretch reconstruct shoulder, if affecting 25% or more of stretch. Within 30 days
19	Pumping	Quantity of fines and water expelled through open joints and cracks Nos.	0	Not discernible	No action	
			1 to 2	Slight/ occasional Nos $< 10\%$	Repair cracks and joints without delay.	Inspect and repair sub-drainage at distressed sections and upstream.
			3 to 4	Appreciable / Frequent 10-25%	Lift or jack slab within 30 days.	

			5	Abundant, crack development > 25%	Repair distressed pavement sections. Strengthen subgrade and sub-base. Replace slab. Within 30 days	
20	<b>Ponding</b>	Ponding on slabs due to blockage of drains	0-2	No discernible problem	No Action	
			3 to 4	Blockages observed in drains, but water flowing	Clean drains etc within 7 days, follow up	Action Required to stop water damaging foundation within 30 days.
			5	Ponding, accumulation of water observed	-do-	

**Table -3 : Maintenance Criteria for Safety Related items and Other Furniture items:**

Asset Type	Performance Parameter	Level of Service (LOS)			frequency of Measurement	Testing Method	Recommended Remedial measures	Time limit for Rectification	Specifications and Standards
<b>Highway</b>	Availability of Safe Sight Distance	As per IRC SP :84-2014, a minimum of safe stopping sight distance shall be available throughout.			Monthly	Manual Measurements with Odometer along with video/image backup	Removal of obstruction within 24 hours, in case of sight line affected by temporary objects such as tree, temporary encroachments.  In case of permanent structure of design deficiency: Removal of obstruction/improvement of deficiency at the earliest.  Speed Restriction boards and suitable traffic calming measures such as transverse bar		IRC : SP 73-2018.
		Design Speed, kmph	Desirable Minimum Sight Distance (m)	Safe Stopping Sight Distance (m)					

		100	360	180				marking blinkers, etc. shall be applied during the period of rectification.										
		80	260	130														
<b>Pavement marking</b>	Wear	<70% of marking remaining			Bi-Annually	Visual Assessment as per Annexure-F of IRC :35-2015	Re-painting	Cat-1 defect- within 24 hours  Cat-2 Defect- within 2 month	IRC :35-2015									
	Day time Visibility	During expected life Service Time Cement Road- 130mcd/ m <sup>2</sup> /lux Bituminous Road- 100mcd/m <sup>2</sup> /lux			Monthly	As per Annexure-D of IRC : 35-2015	Re-painting	Cat-1 defect- within 24 hours  Cat-2 Defect- within 2 month	IRC :35-2015									
	Night Time Visibility	<u>Initial and Minimum Performance of Dry Retro reflectivity during night time:</u> <table border="1"> <thead> <tr> <th>Design Speed</th> <th colspan="2">(RL) Retro Reflectivity (med/ m<sup>2</sup>/lux)</th> </tr> </thead> <tbody> <tr> <td></td> <td>Initial (7 days)</td> <td>Minimum Threshold level (TL) &amp; warranty period required up to 2 years</td> </tr> <tr> <td>Up to</td> <td>200</td> <td>80</td> </tr> </tbody> </table>			Design Speed	(RL) Retro Reflectivity (med/ m <sup>2</sup> /lux)			Initial (7 days)	Minimum Threshold level (TL) & warranty period required up to 2 years	Up to	200	80	Bi-Annually	As per Annexure-E of IRC :35-2015	Re painting	Cat-1 defect- within 24 hours  Cat-2 Defect- within 2 month	IRC :35-2015
Design Speed	(RL) Retro Reflectivity (med/ m <sup>2</sup> /lux)																	
	Initial (7 days)	Minimum Threshold level (TL) & warranty period required up to 2 years																
Up to	200	80																



		<table border="1"> <tr> <td>65</td> <td></td> <td></td> </tr> <tr> <td>65-100</td> <td>250</td> <td>120</td> </tr> <tr> <td>Above 100</td> <td>350</td> <td>150</td> </tr> </table> <p><u>Initial and Minimum Performance for Night Visibility under wet condition (retro reflectivity):</u></p>	65			65-100	250	120	Above 100	350	150					
65																
65-100	250	120														
Above 100	350	150														
		Initial 7 days Retro reflectivity : 100 mcd/m <sup>2</sup> /lux Minimum Threshold Level: 50 mcd/m <sup>2</sup> /lux														
	Skid Resistance	Initial and Minimum performance for skid resistance: Initial (7days): 55BPN Min. Threshold: 44BPN *Noted: shall be considered under urban/city traffic condition encompassing the locations like pedestrian crossing, bus bay, bus stop, cycle track intersection delineation, transverse bar markings etc	By Annual	As per Annexure-G of IRC: 35-2015		Within 24 hours	IRC :35-2015									
<b>Road Signs</b>	Shape and Position	Shape and Position as per IRC:67-2012. Signboard should be clearly visible for the design speed of the section.	Daily	Visual with video/image backup	Improvement of shape, in case if shape is damaged.  Relocation as per requirement	48 hours in case of Mandatory Signs, Cautionary and Informatory Signs (Single and Dual post signs) 15 Days in case of Gantry/Cantilever Sign boards	IRC: 67-2012									

	Retro reflectivity	As per specifications in IRC: 67-2012	Bi-Annually	Testing of each signboard using Retro Reflectivity measuring Device in accordance with ASTM D4956-09	Change of signboard	48 hours in case of Mandatory Signs, Cautionary and Informatory Signs (Single and Dual post signs)  1 Month in case of Gantry/cantilever Sign boards	IRC: 67-2012
<b>Kerb</b>	Kerb Height	As per IRC 86: 1983 depending upon type of kerb	Bi-Annually	Use of distance measuring tape	Raising kerb Height	Within 1 Month	RC 86: 1983
	Kerb painting	Functionality: Functioning of Kerb painting as intended	Daily	Visual with video/image backup	Kerb Repainting	Within 7 days	RC 35: 2015
<b>Other Road Furniture</b>	Reflective pavement Markers (Road Studs)	Number and Functionality as per specifications in IRC: SP 84-2014 and IRC: 35-2015 unless specified in Schedule-B.	Daily	Counting	New Installation	Within 2 months	IRC: SP 84-2014, IRC: 35-2015
	Pedestrian Guardrail	Functionality: Functioning of guardrail as intended	Daily	Visual with video/image backup	Rectification	Within 15 days	IRC: SP:84-2014
	Traffic Safety Barrier	Functionality: Functioning of Safety Barriers as intended	Daily	Visual with video/image backup	Rectification	Within 7 days	IRC: SP: 84-2014, IRC: 119-2015
	End treatment of Traffic Safety barriers	Functionality: Functioning of End Treatment as intended	Daily	Visual with video/image backup	Rectification	Within 7 days	IRC: SP: 84-2014, IRC: 119-2015
	Attenuators	Functionality: Functioning of Attenuators as intended	Daily	Visual with video/image	Rectification	Within 7 days	IRC:SP-2014

				backup			IRC: 119-2015
	Guard Posts and Delineators	<u>Functionality:</u> Functioning of Guard Posts and Delineators as intended	Daily	Visual with video/image backup	Rectification	Within 15 days	IRC: 79-1981
	Overhead Sign Structure	Overhead sign structure shall be structurally adequate	Daily	Visual with video/image backup	Rectification	Within 15 days	IRC: 67-2012
	Traffic Blinkers	<u>Functionality:</u> Functioning of Traffic Blinkers as intended	Daily	Visual with video/image backup	Rectification	Within 7 days	IRC: SP 84-2014
<b>Highway Lighting System</b>	Highway Lights	<u>Illumination:</u> Minimum 40 Lux illumination on the road surface	Daily	The illumination level shall be measured with lux meter	Improvement in Lighting System	24 hours	IRC: SP: 84-2014
		No major failure in the lighting system	Daily	-	Rectification of failure	24 hours	IRC: SP: 84-2014
		No minor failure in the lighting system	Monthly		Rectification of failure	8 hours	IRC: SP 84-2014
	Toll Plaza Canopy Lights	Minimum 40 Lux illumination on the road surface	Daily	The illumination level shall be measured with lux meter	Improvement in Lighting System	24 hours	IRC: SP: 84-2014
		No major/minor failure in the lighting system	Daily		Rectification of failure	8 hours	IRC: SP:84-2014
<b>Trees and Plantation including median plantation</b>	Obstruction in a minimum head-room of 5.5 m above carriageway or obstruction in	No obstruction due to trees	Monthly	Visual with video/image backup	Removal of trees	Immediate	IRC: SP: 84-2014

	visibility of road signs						
	Deterioration in health of trees and bushes	Health of Plantation shall be as per requirement of specifications & instructions issued by Authority from time to time	Daily	Visual with video/image backup	Timely watering and treatment. Or replacement of trees and Bushes.	Within 90 days	IRC: SP-84-2014
	Vegetation affecting sight line and road structures	Sight line shall be free from obstruction by vegetation	Daily	Visual with video/image backup	Removal of Trees	Immediate	IRC: SP: 84-2014
<b>Rest Areas</b>	Cleaning of toilets		Daily			Every 4 hours	
	Defects in electrical, water and sanitary installations		Daily		Rectification	24 hours	
<b>Other Project Facilities and Approach roads</b>	Damage or deterioration in Approach Roads, Pedestrian facilities, truck lay-bys, Bus-bays, bus-shelters, cattle crossings, traffic Aid Post, medical Aid Posts and other works.		Daily		Rectification	15 days	IRC: SP-84-2014

Asset Type	Performance Parameter	Level of Service (LOS)	Frequency of Measurement	Testing Method	Recommended Remedial measures	Time Limit for Rectification	Specification and Standards
Pipe / box / Culverts	Free waterway / unobstructed flow section	85% of culvert normal flow area to available	2 times in a year (before and after rainy season)	Inspection by Bridge engineer as per IRC SP: 35-1990 and recording of depth of silting and area of vegetation.	Cleaning silt up soils and debris in culvert barrel after rainy season, removal of bushes and vegetation, U/s of barrel, under barrel and D/s of barrel before rainy season.	15 days before onset of monsoon and within 30 days after end of rainy season.	IRC 5-2015, IRC SP:40-1993 and IRC SP : 13-2004
	Leak-proof expansion joints if any	No leakage through expansion joints	Bi-Annually	Physical inspection joints as per IRC SP : 35-1990 if any, for leakage strains on walls at joints.	Fixing with sealant suitably	30 days or before onset of rains whichever comes earlier	IRC SP : 40-1993 and IRC SP : 69-2011
	Structurally sound and protection works in good condition	Spalling of concrete not more than 0.25 sq. m Delamination of concrete not more than 0.25 sq. m. Cracks wider than 0.3 mm not more than 1m aggregate length	Bi-Annually	Detailed inspection of all components of culvert as per IRCSP:35-1990 and recording the defects	Repairs to spalling cracking delamination, rusting shall be followed as per IRC:SP:40-1993	15 days	IRC, SP 40-1993 and MORTH Specifications clause 2800

		damaged of rough stone apron or bank revetment not more than 3 sqm, damage to solid apron (concrete apron) not more than 1 sqm	2 times in a year (before and after rainy season)	condition survey as per IRC SP : 35-1990	Repairs to damaged aprons and pitching	30 days after defect observation or 2 weeks before onset of rainy season whichever is earlier	IRC:SP 40-1993 and IRC:SP:13-2004.
<b>Bridges including ROBs, VUP, etc. as applicable</b>	Riding quality or user comfort	No pothole in wearing coat on bridge deck	Daily	Visual inspection as per IRC SP :35-1990	Repairs to BC or wearing coat	15 days	MORT&H Specification 2811
<b>Super Structure</b>	Bumps	No bumps at expansion joints	Daily	Visual inspection as per IRC SP :35-1990	Repairs to BC on either side of expansion joints, profile correction course on approach slab in case of settlement to approach embankment	15 days	MORT&H Specification 3004.2 & 2811
	User safety (condition of crash barrier and guard rail )	No damaged or missing stretch of crash barrier or pedestrian hand railing	Daily	Visual inspection and detailed condition survey as per IRC SP :35-1990	Repairs and replacement of safety barriers as the case may be	3 days	IRC: 5-1998, IRC SP:84-2014 and IRC SP :40-1993.
	rusted reinforcement	Not more than 0.25 sq.m	Bi-Annually	Detailed condition survey as per	All the corroded reinforcement	15 days	IRC SP:40-1993 and MORTH
Spalling of	Not more than						

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	concrete	0.50 sq.m		IRC SP:35-1990 using Mobile bridge inspection Unit	shall need to be thoroughly cleaned from rusting and applied with anti-corrosive coating before carrying out the repairs to affected concrete portion with epoxy mortar / concrete.		Specification 1600.
	Delamination	Not more than 0.50 sq.m					
	Cracks wider than 0.30 mm	Not more than 1 m total length	Bi-Annually	Detailed condition survey as per IRC SP:35-1990 using Mobile bridge inspection Unit	Grouting with epoxy mortar, investigating causes for cracks development and carry out necessary rehabilitation.	48 Hours	IRC SP:40-1993 and MORTH Specification 2800.
	Rainwater seepage through deck slab	Leakage – nil	Quarterly	Detailed condition survey as per IRC SP:35-1990 using Mobile bridge inspection Unit	Grouting of deck slab at leakage areas, waterproofing, repairs to drainage spouts	1 months	MORTH specifications 2600 & 2700.
	Deflection due to permanent loads and live loads	Within design limits.	Once in every 10 years for spans more than 40 m	Load test method	Carry out major rehabilitation works on bridge to retain original design loads capacity	6 months	IRC SP:51-1999.

	Vibrations in bridge deck due to moving trucks	Frequency of vibrations shall not be more than 5 Hz	Once in every 5 years for spans more than 30m and every 10 years for spans between 15 to 30m	Laser displacement sensors or laser vibro-meter	Strengthening of super structure	4 months	AASHTOLRFD Specifications
	Leakage in Expansion joints	No. damage to elastomeric sealant compound in strip seal expansion joint no leakage of rain water through expansion joint in case of buried and asphalt plug and copper strip	Bi Annually	Detailed condition survey as per IRC SP:35-1990 using Mobile bridge inspection Unit	Replace of seal in expansion joint	15 days	MORTH specifications 2600 and IRCSP:40-1993
	Debris and dust in strip seal expansion joint	No dust or debris in expansion joint gap.	Monthly	Detailed condition survey as per IRC SP:35-1990 using Mobile bridge inspection Unit	Cleaning of expansion joint gaps thoroughly	3 days	MORTH specifications 2600 and IRCSP:40-1993
	Drainage spouts	No down take pipe missing / broken below soffit of the deck slab. No silt debris, clogging of	Monthly	Detailed condition survey as per IRC SP:35-1990 using Mobile bridge inspection Unit	Cleaning of drainage spouts thoroughly, Replacement of missing / broken down take pipes with	3 days	MORTH specifications 2700.

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		drainage spout collection chamber.			a minimum pipe extension of 500 mm below soffit of slab. Providing sealant around the drainage spout if any leakages observed.		
<b>substructure</b>	Cracks / spalling of concrete / rusted steel	No cracks, spalling of concrete and rusted steel	Bi-Annually	Detailed condition survey as per IRC SP:35-1990 using Mobile bridge inspection Unit	All the corroded reinforcement shall need to be thoroughly cleaned from rusting and applied with anti-corrosive coating before carrying out repairs to substructure by grouting / guniting and micro concreting depending on type of defect noticed	30 days	IRC SP:40-1993 and MORTH Specification 2800.
	Bearing	Delamination of bearing reinforcement not more than 5%, cracking or tearing of	Bi-Annually	Detailed condition survey as per IRC SP:35-1990 using Mobile bridge	In case of failure of even one bearing on any pier / abutment, all the bearing on	3 months	MORTH specifications 2810 and IRCSP:40-1993

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		rubber not more than 2 locations per side, no rupture of reinforcement or rubber		inspection Unit	that pier / abutment shall be replaced, in order to get uniform load transfer on to bearings.		
<b>Foundations</b>	Scouring around foundations	Scouring shall not be lower than maximum scour level for the bridge	Bi-Annually	Condition survey and visual inspection as per IRC SP:35-1990 using Mobile Bridge Inspection Unit. In case of doubt, use Underwater camera for inspection of deep wells in major Rivers.	Suitable protection works around pier / abutment	1 month	IRC SP : 40-1993, IRC 83-2014, MORTH specification 2500
	Protection works in good condition	Damaged of rough stone apron or bank revetment not more than 3 sq.m damage to solid apron (concrete apron) not more than 1 sq.m	2 times in a year (before and after rainy season)	Condition survey as per IRC SP:35-1990	Repairs to damaged aprons and pitching.	30 days after defect observation or 2 weeks before onset of rainy season whichever is earlier.	IRC SP : 40-1993, IRC:SP:13-2004.
<p><b>Note :</b> Any Structure during the entire contract period which is found that does not complies with all requirements of this Table will be prepared, rehabilitated or even reconstructed under the scope of the contractor.</p>							

**Table 5 : Maintenance Criteria for Hill Roads- Deleted**

In addition to above, for hill roads the following provisions for maintenance is also to done.

Hill Roads.		
(i)	Damage to Retaining wall / Breast wall	7 (Seven) Days
(ii)	Landslides requiring clearance	12 (twelve) hours
(iii)	Snow requiring clearance	24 (Twenty Four) hours

**Note:** For all tables 1 to 5 above, latest BIS & IRC standards (even those not indicated herewith) along with MoRTH specifications shall be binding for all maintenance activities

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**A. Flexible Pavement**

Nature of Defect or deficiency		Time limit for repair / rectification
<b>(b) Granular earth shoulders, side slopes, drains and culverts</b>		
(i)	Variation by more than 1 % in the prescribed slope of camber /cross fall (shall not be less than the camber on the main carriageway)	7 (seven) days
(ii)	Edge drop at shoulders exceeding 40 mm	7 (seven) days
(iii)	Variation by more than 15% in the prescribed side (embankment) slopes	30 (thirty) days
(iv)	Rain cuts / gullies in slope	7 (seven) days
(v)	Damage to or silting of culverts and side drains	7 (seven) days
(vi)	Desilting of drains in urban/semi- urban areas	24 (Twenty four) hours
(vii)	Railing parapets, crash barriers	7 (seven) days (Restore immediately if causing safety hazard)
<b>(c) Road side furniture including road sign and pavement marking</b>		
(i)	Damage to shape or position, poor visibility or loss of retro-reflectivity	48 (forty eight) hours
(ii)	Painting of km stone, railing parapets, crash barriers	As and when required / once every year
(iii)	Damaged / missing signs road requiring replacement	7 (seven) days
(iv)	Damage to road mark ups	7 (seven) days
<b>(d) Road Lighting</b>		
(i)	Any major failure of the system	24 (twenty four) hours
(ii)	Faults and minor failures	8 (eight) hours
<b>(e) Trees and Plantation</b>		
(i)	Obstruction in a minimum head-room of 4 m above carriageway or obstruction in visibility of road signs	24 (twenty four) hours
(ii)	Removal of fallen trees from carriageway	4 (four) hours
(iii)	Deterioration in health of trees and bushes	Timely watering and treatment
(iv)	Trees and bushes requiring replacement	30 (thirty) days
(v)	Removal of vegetation affecting sight line and road structure	15 (fifteen) days
<b>(f) Rest area</b>		
(i)	Cleaning of toilets	Every 4 (four) hours
(ii)	Defects in electrical, water and sanitary installations	24 (twenty four) hours
<b>(g) [Toll Plaza]</b>		
<b>(h) Other Project Facilities and Approach</b>		
(i)	Damage in approach roads, pedestrian facilities, truck by-byes, bus-bays, bus-shelters, cattle crossings, [Traffic Acid Posts, Medical Aid Posts] and services roads	15 (Fifteen ) Days
(ii)	Damaged vehicles or debris on the road	4 (four) hours
(iii)	Malfunctioning of the mobile crane	4(four) hours

<b>Bridges/ ROB/VUP</b>		
<b>(a) Superstructure</b>		
(i)	Any damage, cracks spalling /scaling Temporary measures Permanent measures	Within 48 (forty eight) hours within 15 (fifteen) days or as specified by the Authority's Engineer
<b>(b) Foundation</b>		
(i)	Scouring and / or cavitation	15 (fifteen) days
<b>(c) Piers, abutments, Return walls and wing walls</b>		
(i)	Cracks and damages including settlement and tilting, spalling, scaling	30 (thirty) days
<b>(d) Bearings (metallic) of bridges</b>		
(i)	Deformation, damage, tilting or shifting of bearings	15 (fifteen) days Greasing of metallic bearings once in a year
<b>(e) Joints</b>		
(i)	Malfunctioning of joint	15 (fifteen) days
<b>(f) Other items</b>		
(i)	Deforming of pads in elastomeric bearings	7 (seven) days
(ii)	Gathering of dirt in bearings and joints; or clogging of spouts, weep holes and vent-holes	3 (three) days
(iii)	Damages or deterioration in kerbs, parapets, handrails and crash barriers	3 (three) days Immediately within 24 hours if posing danger to safety)
(iv)	Rain-cuts or erosion of banks of the side slopes and approaches	7 (seven) days
(v)	Damage to wearing coat	15 (fifteen) days
(vi)	Damage or deterioration in approach slabs, pitching, apron, tones, floor or guide bunds	30 (thirty) days
(vii)	Growth of vegetation affecting the structure or obstructing the waterway	15 (fifteen) days
<b>(g) Hill Roads- Deleted</b>		
(i)	Damage to retaining wall / breast wall	7 (seven) days
(ii)	Landslides requiring clearance	12(twelve) Hours
(iii)	Snow requiring clearance	24 (twenty four) hours

## SCHEDULE - F

(See Clause 4.1.(vii)(a))

### APPLICABLE PERMITS

#### 1 Applicable Permits

- (i) The Contractor shall obtain, as required under the Applicable Laws, the following Applicable Permits:
  - (a) Permission of the State Government for extraction of boulders from quarry;
  - (b) Permission of Village Panchayats and Pollution Control Board for installation of crushers;
  - (c) License for use of explosives;
  - (d) Permission of the State Government for drawing water from river/reservoir;
  - (e) License from inspector of factories or other competent Authority for setting up batching plant;
  - (f) Clearance of Pollution Control Board for setting up batching plant;
  - (g) Clearance of Village Panchayats and Pollution Control Board for setting up asphalt plant;
  - (h) Permission of Village Panchayats and State Government for borrow earth; and
  - (i) Any other permits or clearances required under Applicable Laws.
- (ii) Applicable Permits, as required, relating to environmental protection and conservation shall have been procured by the Authority in accordance with the provisions of this Agreement.

**SCHEDULE – G**

(See Clauses 7.1, and 19.2)

**FORM OF BANK GUARANTEE**

Annex-I

(See Clause 7.1.)

**Performance Security/Additional Performance Security**

The Chief General Manager,  
Bihar State Road Development Corporation Ltd, Patna

WHEREAS:

- (A) \_\_\_\_\_ [name and address of contractor] (hereinafter called the “**Contractor**”) and Bihar State Road Development Corporation Ltd. (BSRDC), RCD, Central Mechanical Workshop Campus, Near Airport, Sheikhpura, Patna, Bihar-800014, (hereinafter called the “**Authority**”) have entered into an agreement (hereinafter called the “**Agreement**”) for the **Improvement/Upgradation, Widening and Strengthening of Mansi-Fungo Halt Section of Mansi-Saharsa-Hardi-Chaughara Road (SH-95) on EPC Mode under Civil Works Contract Package No. BSHP-III (Phase-2)/Pkg-3/SH-95**, subject to and in accordance with the provisions of the Agreement
- (B) The Agreement requires the Contractor to furnish Performance Security for due and faithful performance of its obligations, under and in accordance with the Agreement, during the {Construction Period / Defects Liability Period and Maintenance Period} (as defined in the Agreement) in a sum of Rs..... cr. (Rupees..... crore) (the “**Guarantee Amount**”).
- (C) We,.....through our branch at.....(the “**Bank**”) have agreed to furnish this bank guarantee (hereinafter called the “**Guarantee**”) by way of Performance Security.

NOW, THEREFORE, the Bank hereby, unconditionally and irrevocably, guarantees and affirms as follows:

1. The Bank hereby unconditionally and irrevocably guarantees the due and faithful performance of the Contractor's obligations during the {Construction Period/ Defects Liability Period and Maintenance Period} under and in accordance with the Agreement, and agrees and undertakes to pay to the Authority, upon its mere first written demand, and without any demur, reservation, recourse, contest or protest, and without any reference to the Contractor, such sum or sums upto an aggregate sum of the Guarantee Amount as the Authority shall claim, without the Authority being required to prove or to show grounds or reasons for its demand and/ or for the sum specified therein.

A letter from the Authority, under the hand of an officer not below the rank of General Manager in the Improvement/Upgradation, Widening and Strengthening of Mansi-Fungo Halt Section of Mansi- Saharsa-Hardi Chaughara Road (SH-95) in the State of Bihar on EPC Mode

Bihar State Road Development Corporation Ltd, that the Contractor has committed default in the due and faithful performance of all or any of its obligations under and in accordance with the Agreement shall be conclusive, final and binding on the Bank. The Bank further agrees that the Authority shall be the sole judge as to whether the Contractor is in default in due and faithful performance of its obligations during and under the Agreement and its decision that the Contractor is in default shall be final and binding on the Bank, notwithstanding any differences between the Authority and the Contractor, or any dispute between them pending before any court, tribunal, arbitrators or any other authority or body, or by the discharge of the Contractor for any reason whatsoever.

3. In order to give effect to this Guarantee, the Authority shall be entitled to act as if the Bank were the principal debtor and any change in the constitution of the Contractor and/or the Bank, whether by their absorption with any other body or corporation or otherwise, shall not in anyway or manner affect the liability or obligation of the Bank under this Guarantee.
4. It shall not be necessary, and the Bank hereby waives any necessity, for the Authority to proceed against the Contractor before presenting to the Bank its demand under this Guarantee.
5. The Authority shall have the liberty, without affecting in any manner the liability of the Bank under this Guarantee, to vary at any time, the terms and conditions of the agreement or to extend the time or period for the compliance with, fulfillment and / or performance of all or any of the obligations of the Contractor contained in the Agreement or to postpone for any time, and from time to time, any of the rights and powers exercisable by the Authority against the Contractor, and either to enforce or forbear from enforcing any of the terms and conditions contained in the Agreement and/or the securities available to the Authority, and the Bank shall not be released from its liability and obligation under these presents by any exercise by the Authority of the liberty with reference to the matters aforesaid or by reason of time being given to the Contractor or any other forbearance, indulgence, act or omission on the part of the Authority or of any other matter or thing whatsoever which under any law relating to sureties and guarantors would but for this provision have the effect of releasing the Bank from its liability and obligation under this Guarantee and the Bank hereby waives all of its rights under any such law.
6. This Guarantee is in addition to and not in substitution of any other guarantee or security now or which may hereafter be held by the Authority in respect of or relating to the Agreement or for the fulfillment, compliance and/or performance of all or any of the obligations of the Contractor under the Agreement.
7. Notwithstanding anything contained herein before, the liability of the Bank under this Guarantee is restricted to the Guarantee Amount and this Guarantee will remain in force for the period specified in paragraph 8 below and unless a demand or claim in writing is made by the Authority on the Bank under this Guarantee all rights of the Authority under this Guarantee shall be forfeited and the Bank shall be relieved from its liabilities hereunder.
8. The Guarantee shall cease to be in force and effect on \*\*\*\*. Unless a demand or claim under this Guarantee is made in writing before expiry of the Guarantee, the Bank shall be discharged from its liabilities hereunder.
9. The Bank undertakes not to revoke this Guarantee during its currency, except with the previous express consent of the Authority in writing, and declares and warrants that it has the power to issue this Guarantee and the undersigned has full powers to do so on behalf of the Bank.
10. Any notice by way of request, demand or otherwise hereunder may be sent by post addressed to the Bank at its above referred branch, which shall be deemed to have been duly Authorized to receive such notice and to effect payment thereof forthwith, and if sent by post it shall be deemed to have been given at the time when it ought to have been delivered in due course of post and in proving such notice, when given by post, it shall be sufficient to prove that the envelope



containing then notice was posted and a certificate signed by an officer of the Authority that the envelope was so posted shall be conclusive.

11. This Guarantee shall come into force with immediate effect and shall remain in force and effect for up to the date specified in paragraph 8 above or until it is released earlier by the Authority pursuant to the provisions of the Agreement.
12. This guarantee shall also be operatable and payable at our Patna Branch at Patna, from whom, confirmation regarding the issue of this guarantee or extension / renewal / encashment thereof shall be made available on demand. In the contingency of this guarantee being invoked and payment hereunder claimed, the said branch shall accept such invocation letter and make payment of amounts so demanded under the said invocation.
13. The guarantor / bank hereby confirms that it is on the SFMS (Structural Finance Messaging System) platform & shall invariably send an advice of this Bank Guarantee to the designated bank of BSRDCL, details of which is as under:

S. No.	Particulars	Details
1.	Name of Beneficiary	Bihar State Road Development Corporation Ltd
2.	Name of Bank	Canara Bank; Patliputra Colony, Patna
3.	Account No.	2518101005873
4.	IFSC Code	CNRB0002518

Notwithstanding anything contained herein

- i) Our liability under the bank Guarantee shall not exceed Rs. ....(Rupees .....Only)
- ii) This Bank Guarantee shall be valid up to .....and
- iii) We are liable to pay the guaranteed amount or any part thereof under this guarantee, only and only if you serve upon us a written claim or demand which is received by us on or before ....., after which date we shall stand discharged of all our liabilities arising hereunder.

Signed and sealed this ..... day of ....., 20..... at .....

SIGNED, SEALED AND DELIVERED

For and on behalf of the Bank by:

(Signature)

(Name)

(Designation)

(Code Number)

(Address)

**Not to be used as a Bid Document, Only for Reference**

*NOTES:*

- (i) *The bank guarantee should contain the name, designation and code number of the officer(s) signing the guarantee.*
- (ii) *The address, telephone number and other details of the head office of the Bank as well as of issuing branch should be mentioned on the covering letter of issuing branch*

**Not to be used as a Bid Document, Only for Reference**

Annex – II

(Schedule - G)

(See Clause 19.2)

**Form for Guarantee for Advance Payment**

The Chief General Manager,  
Bihar State Road Development Corporation Ltd  
Patna

WHEREAS:

- (A) [name and address of contractor] (herein after called the “**Contractor**”) has executed an agreement (herein after called the “**Agreement**”) with the Bihar State Road Development Corporation Ltd. (BSRDCL), RCD, Central Mechanical Workshop Campus, Near Airport, Sheikhpura, Patna, Bihar-800014, (herein after called the “**Authority**”) for the **Improvement/Upgradation, Widening and Strengthening of Mansi-Fungo Halt Section of Mansi-Saharsa-Hardi-Chaughara Road (SH-95) on EPC Mode under Civil Works Contract Package No. BSHP-III (Phase-2)/Pkg-3/SH-95**, subject to and in accordance with the provisions of the Agreement
- (B) In accordance with Clause 19.2 of the Agreement, the Authority shall make to the Contractor an interest bearing (@ Bank Rate+3% advance payment (herein after called “**Advance Payment**”) equal to 10% (ten percent) of the Contract Price; and that the Advance Payment shall be made in two installments subject to the Contractor furnishing an irrevocable and unconditional guarantee by a scheduled bank for an amount equivalent to 110% (one hundred and ten percent) of such installment to remain effective till the complete and full repayment of the installment of the Advance Payment as security for compliance with its obligations in accordance with the Agreement. The amount of {first/second} installment of the Advance Payment is Rs.-----cr. Rupees-----crore) and the amount of this Guarantee is Rs.-----cr. (Rupees-----crore) (the “**Guarantee Amount**”)
- (C) We, through our branch at..... (the “**Bank**”) have agreed to furnish this bank guarantee (hereinafter called the “**Guarantee**”) for the Guarantee Amount.

NOW, THEREFORE, the Bank hereby, unconditionally and irrevocably, guarantees and affirms as follows:

1. The Bank hereby unconditionally and irrevocably guarantees the due and faithful repayment on time of the aforesaid installment of the Advance Payment under and in accordance with the Agreement, and agrees and undertakes to pay to the Authority, upon its mere first written demand, and without any demur, reservation, recourse, contest or protest, and without any reference to the Contractor, such sum or sums up to an aggregate sum of the Guarantee Amount as the Authority shall claim, without the Authority being required to prove or to show grounds or reasons for its demand and/or for the sum specified therein.

A letter from the Authority, under the hand of an officer not below the rank of General Manager in the Bihar State Road Development Corporation Ltd, that the Contractor has committed default in the due and faithful performance of all or any of its obligations for the repayment of the installment of the Advance Payment under and in accordance with the

Agreement shall be conclusive, final and binding on the Bank. The Bank further agrees that the Authority shall be the sole judge as to whether the Contractor is in default in due and faithful performance of its obligations during and under the Agreement and its decision that the Contractor is in default shall be final and binding on the Bank, notwithstanding any differences between the Authority and the Contractor, or any dispute between them pending before any court, tribunal, arbitrators or any other authority or body, or by the discharge of the Contractor for any reason whatsoever.

2. In order to give effect to this Guarantee, the Authority shall be entitled to act as if the Bank were the principal debtor and any change in the constitution of the Contractor and/or the Bank, whether by their absorption with any other body or corporation or otherwise, shall not in any way or manner affect the liability or obligation of the Bank under this Guarantee.
3. It shall not be necessary, and the Bank hereby waives any necessity, for the Authority to proceed against the Contractor before presenting to the Bank its demand under this Guarantee.
4. The Authority shall have the liberty, without affecting in any manner the liability of the Bank under this Guarantee, to vary at any time, the terms and conditions of the Advance Payment or to extend the time or period of its repayment or to postpone for anytime, and from time to time, any of the rights and powers exercisable by the Authority against the Contractor, and either to enforce or forbear from enforcing any of the terms and conditions contained in the Agreement and/or the securities available to the Authority, and the Bank shall not be released from its liability and obligation under these presents by any exercise by the Authority of the liberty with reference to the matters aforesaid or by reason of time being given to the Contractor or any other forbearance, indulgence, act or omission on the part of the Authority or of any other matter or thing whatsoever which under any law relating to sureties and guarantors would but for this provision have the effect of releasing the Bank from its liability and obligation under this Guarantee and the Bank hereby waives all of its rights under any such law.
5. This Guarantee is in addition to and not in substitution of any other guarantee or security now or which may hereafter be held by the Authority in respect of or relating to the Advance Payment.
6. Notwithstanding anything contained hereinbefore, the liability of the Bank under this Guarantee is restricted to the Guarantee Amount and this Guarantee will remain in force for the period specified in paragraph 8 below and unless a demand or claim in writing is made by the Authority on the Bank under this Guarantee all rights of the Authority under this Guarantee shall be forfeited and the Bank shall be relieved from its liabilities hereunder.
7. The Guarantee shall cease to be in force and effect on..... Unless a demand or claim under this Guarantee is made in writing on or before the aforesaid date, the Bank shall be discharged from its liabilities hereunder.
8. The Bank undertakes not to revoke this Guarantee during its currency, except with the previous express consent of the Authority in writing, and declares and warrants that it has the power to issue this Guarantee and the undersigned has full powers to do so on behalf of the Bank.
9. Any notice by way of request, demand or otherwise hereunder may be sent by post addressed to the Bank at its above referred branch, which shall be deemed to have been duly authorized to receive such notice and to effect payment thereof forthwith, and if sent by post it shall be deemed to have been given at the time when it ought to have been delivered in due course of post and in proving such notice, when given by post, it shall be sufficient to prove that the envelope containing the notice was posted and a certificate signed by an officer of the Authority that the envelope was so posted shall be conclusive.
10. This Guarantee shall come into force with immediate effect and shall remain in force and effect up to the date specified in paragraph 8 above or until it is released earlier by the

Authority pursuant to the provisions of the Agreement.

11. This guarantee shall also be operatable and payable at our Branch at Patna, from whom, confirmation regarding the issue of this guarantee or extension/renewal thereof shall be made available on demand. In the contingency of this guarantee being invoked and payment there under claimed, the said branch shall accept such invocation letter and make payment of amounts so demanded under the said invocation.
12. The guarantor/bank hereby confirms that it is on the SFMS (Structural Finance Messaging System) platform & shall invariably send an advice of this Bank Guarantee to the designated bank of BSRDCL, details of which is as under:

S. No.	Particulars	Details
1.	Name of Beneficiary	Bihar State Road Development Corporation Ltd
2.	Name of Bank	Canara Bank; Patliputra Colony, Patna
3.	Account No.	2518101005873
4.	IFSC Code	CNRB0002518

Notwithstanding anything contained herein

- i) Our liability under the bank Guarantee shall not exceed Rs. ....(Rupees .....Only)
- ii) This Bank Guarantee shall be valid up to .....and
- iii) We are liable to pay the guaranteed amount or any part thereof under this guarantee, only and only if you serve upon us a written claim or demand which is received by us on or before ....., after which date we shall stand discharged of all our liabilities arising hereunder.

Signed and sealed this ..... day of ....., 20..... at .....

SIGNED, SEALED AND DELIVERED

For and on behalf of the Bank by:

(Signature)

(Name)

(Designation)

(Code Number)

(Address)

NOTES:

- (i) The bank guarantee should contain the name, designation and code number of the officer(s) signing the guarantee.
- (ii) The address, telephone number and other details of the head office of the Bank as well as of issuing branch should be mentioned on the covering letter of issuing branch.

**Not to be used as a Bid Document, Only for Reference**

SCHEDULE H

(See Clauses 10.1(iv) and 19.3)

**Contract Price Weightages**

- 1.1 The Contract Price for this Agreement is Rs..... Crores.
- 1.2 Proportions of the Contract Price for different stages of Construction of the Project Highway shall be as specified below:

Item	Weightage in % of CP	Stage for Payment	Percentage weightage
(1)	(2)	(3)	(4)
<b>Road Works including Widening, strengthening/ Reconstruction / realignment, new Culverts, widening and repair of culverts, Reconstruction on existing road</b>	27.58%	<b>A- Widening and Strengthening /New /Reconstruction/ Realignment / overlay of existing road/ Missing Link/ Service Road/Junctions, etc.</b>	
		(1) Earthwork up to top of the sub-grade (Without Shoulder), Scarifying and C&G for the project length	43.07%
		(2) Earthwork in Shoulders for the project length	0.25%
		(3) Sub-base Course (GSB) for the project length	16.29%
		(4) Non bituminous Base course (WMM) for the project length	11.80%
		(5) Bituminous Base course work including tack coat +Prime coat +Tack coat+ DBM) for the project length	11.35%
		(6) Wearing coat, (BC) +Tack coat for the project length	5.59%
		(7) Widening and repair of Slab culverts and Tube Pipe Culverts for the project length	0.00%
		<b>Reconstruction/Realignment / Bypass/New service road (Rigid Pavement)</b>	
		(1) Dry Lean Concrete (DLC) Course	1.26%
(2) Pavement Quality Control (PQC) Course	4.08%		
<b>C- Reconstruction &amp; New Culverts on existing road, realignments, missing link/ bypasses Culverts (length &lt;6m)</b>	6.35%		
<b>Minor bridge/ Underpasses/</b>	2.24%	<b>A.1- Widening and repairs of Minor Bridges (length&gt;6m &amp;&lt;60m)</b>	

<b>Overpasses</b>		Minor Bridges	0.00%
		<b>A.2- New Minor bridges (length &gt;6 m and &lt; 60 m)</b>	
		(1) <b>Foundation:</b>	46.94%
		(2) <b>Sub-structure:</b>	11.91%
		(3) <b>Super-structure including bearings:</b>	14.67%
		(4) <b>Approaches</b> (including weep hole, backfilling, filter media, Approach slab, Return/Retaining wall, protection works, etc.):	23.97%
		(5) <b>Guide Bunds and River Training Works:</b>	0.00%
		(6) <b>Miscellaneous Works:</b> (wearing coat, drainage spouts, expansion joints, painting, RCC Railing, hand rails, footpath/separators, crash barriers, road signs & markings, etc.)	2.51%
		<b>B.1- Widening and repairs of underpasses/overpasses</b>	
		Underpasses/ Overpasses	0.00%
		<b>B.2- New Underpasses/Overpasses</b>	
		(1) Foundation:	0.00%
		(2) Sub-structure:	0.00%
		(3) Super-structure:	0.00%
		(4) Wing wall/return wall	0.00%
(5) Approaches and Miscellaneous Works (wearing coat, expansion joints, hand rails, crash barriers, stone pitching, protection works, road signs & markings, etc.)	0.00%		
Wearing Coat (a) in case of Overpass- Wearing coat including expansion joints	0.00%		
(b) in case of underpass-rigid pavement including drainage facility	0.00%		
<b>Major bridge(length&gt;60m) works and ROB/RUB/including viaducts, if any</b>	52.16%	<b>A.1- Widening and repairs of Major Bridges</b>	
		(1) Foundation:	0.00%
		(2) Sub-structure:	0.00%
		(3) Super-structure:	0.00%
		(4) Wearing Coat including expansion joints	0.00%

	(5) <b>Miscellaneous Works:</b> (drainage spouts, painting, RCC Railing, hand rails, footpath/separators, crash barriers, road signs & markings, etc.)	0.00%
	(6) Wing walls/return walls upto top	0.00%
	(7) Guide bunds, River Training works etc.	0.00%
	(8) <b>Approaches</b> (including weep hole, backfilling, filter media, Approach slab, Return/Retaining wall, protection works, etc.):	0.00%
	<b>A.2- New Major Bridges</b>	
	(1) Foundation:	39.78%
	(2) Sub-structure:	6.22%
	(3) Super-structure including bearings:	31.80%
	(4) Wearing Coat including expansion joints	0.74%
	(5) <b>Miscellaneous Works:</b> (drainage spouts, painting, RCC Railing, hand rails, footpath/separators, crash barriers, road signs & markings, etc.)	11.00%
	(6) Wing walls/return walls upto top	0.00%
	(7) Guide bunds, River Training works etc.	0.00%
	(8) <b>Approaches</b> (including weep hole, backfilling, filter media, approach slab, Return/Retaining wall, protection works, etc.):	11.22%
	<b>B.1- Widening and repairs of</b>	
	(a) ROB	
	(b) RUB	
	(1) Foundations	0.00%
	(2) Sub-Structure	0.00%
	(3) Super-Structure (Including bearings)	0.00%
	(4) Wearing Coat (a) in case of ROB-wearing coat including expansion joints complete in all respects as specified and	0.00%
	(b) in case of RUB-rigid pavement under RUB including drainage facility complete in all respects as specified	
	(5) Miscellaneous Items like hand rails, crash barrier, road markings etc.	0.00%



	(6) Wing walls/Return walls	0.00%
	(7) Retaining / Reinforced earth walls	0.00%
	(8) Approaches (including RE Wall and protection works, etc.)	0.00%
	<b>B.2- New ROB/RUB</b>	
	(1) Foundations	1.77%
	(2) Sub-Structure	0.81%
	(3) Super-Structure (Including bearings)	5.82%
	(4) Wearing Coat (a) in case of ROB-wearing coat including expansion joints complete in all respects as specified and	0.08%
	(b) in case of RUB-rigid pavement under RUB including drainage facility complete in all respects as specified	0.00%
	(5) Miscellaneous Items like RCC railing, drainage spout, hand rails, crash barrier, footpath/separators, painting, road markings etc.	0.09%
	(6) Wing walls/Return walls	0.00%
	(7) Approaches (including Retaining / Reinforced earth walls, fascia panel, weep holes, fixing of pipes, protection works, filter media, backfilling, approach slab, toe wall/curtain wall, etc.)	0.56%
	<b>C.1- Widening and repair of Elevated Section/Flyover/Grade Separators</b>	
	(1) Foundations	0.00%
	(2) Sub-Structure	0.00%
	(3) Super-Structure (Including bearings)	0.00%
	(4) Wearing Coat including expansion joints	0.00%
	(5) Miscellaneous Items like hand rails, crash barrier, road markings etc.	0.00%
	(6) Wing walls/Return walls	0.00%
	(7) Retaining / Reinforced earth walls	0.00%
	(8) Approaches (including RE Wall and protection works, etc.)	0.00%
	<b>C.2- New Elevated Section/Flyovers/Grade Separators</b>	
	(1) Foundations	0.00%
	(2) Sub-Structure	0.00%

		(3) Super-Structure (Including bearings)	0.00%
		(4) Wearing Coat including expansion joints	0.00%
		(5) Miscellaneous Items like hand rails, crash barrier, road markings etc.	0.00%
		(6) Wing walls/Return walls	0.00%
		(7) Retaining / Reinforced earth walls	0.00%
		(8) Approaches (including RE Wall and protection works, etc.)	0.00%
<b>Other Works</b>	<b>17.71%</b>	(i) Toll Plaza	<b>0.00%</b>
		(ii) Drain cum Footpath	<b>54.67%</b>
		(iii) Road Safety	
		a) Road signs Boards	<b>0.60%</b>
		b) Road markings	<b>0.56%</b>
		c) Kerb and KM Stones (Hectometer, Kilometer stone, boundary stones etc.)	<b>0.17%</b>
		d)retro-reflectorized road indicators & Delineators	<b>0.20%</b>
		e) safety Devices Movable crash barrier	
		f) " W " metal beam crash barrier	<b>7.87%</b>
		(iv) Project facilities	
		a) Bus Lay Bay including passenger shelter, marking, etc.	<b>4.73%</b>
		b) Truck lay Bye	<b>0.00%</b>
		c)Road Side Rest Area	<b>0.00%</b>
		d) others	
		(v) Road side plantation	
		a) Planting tree sapling by roadside including tree guard	<b>2.98%</b>
		b) Rain water harvesting arrangement	<b>0.19%</b>
		(vi) protection works including RE wall other than approaches to the bridges, elevated section /flyover/grade separators and ROBs/ RUBs & Toe wall to the slope of embankment	<b>22.25%</b>
		(vii) Safety and traffic management during construction	<b>0.00%</b>

		(viii) Miscellaneous including Intersection and junctions Works, Utility Duct, installation of hand pump, relocation of temples/religious structures, CPR, EMP Parameter testing (air, noise, water, soil), etc.	<b>3.95%</b>
		(ix) Highway Lighting (6 nos. High Mast & 106 nos. Street lights)	<b>1.77%</b>

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**1.3. Procedure of estimating the value of work done.**

**1.3.1 Road Works including Widening, strengthening/ Reconstruction / realignment, new Culverts, widening and repair of culverts, Reconstruction on existing road**

Procedure for estimating the value of road work done shall be as follows:

**Table 1.3.1**

Stage of Payment	Percentage weightage	Payment Procedure
<b>A- Widening and Strengthening /New /Reconstruction/ Realignment / overlay of existing road/ Missing Link/ Service Road/Junctions, etc.</b>		
(1) Earthwork up to top of the sub-grade (Without Shoulder), Scarifying and C&G for the project length	11.87%	Unit of measurement is linear length. Payment of each stage shall be made on pro rata basis on completion of a stage in full length or cumulative 500 meter length (both sides in full width) or cumulative 1000 meter length (one side in full width)
(a) Km 0+000 to Km 7+270	20% of 11.87 %	
(b) Km 7+270 to Km 14+125	80% of 11.87 %	
(2) Earthwork in Shoulders for the project length	0.07%	
(3) Sub-base Course (GSB) for the project length	4.49%	
(4) Non bituminous Base course (WMM) for the project length	3.25%	
(5) Bituminous Base course work including tack coat (Prime coat +Tack coat+ DBM) for the project length	3.13%	
(6) Wearing Coat (BC) +Tack coat for the project length	1.54%	
(7) Widening and repair of Slab culverts and Hume Pipe Culverts for the project length	0.30%	
<b>B- Reconstruction/Realignment / Bypass/New service road (Rigid Pavement)</b>		
(1) Dry Lean Concrete (DLC) Course	0.35%	Unit of measurement is linear length. Payment of each stage shall be made on pro rata basis on completion of a stage in full length or cumulative 500 meter length (both sides in full width) or cumulative 1000 meter length (one side in full width)
(2) Pavement Quality Control (PQC) Course	1.12%	
<b>C- Reconstruction &amp; New Culverts on existing road, realignments, missing link/ bypasses Culverts (length &lt;6m)</b>		

Culverts (length <6m)	1.75%	Cost of each culverts shall be determined on pro rata basis with respect to the total number of culverts. Payment shall be made on the completion of at least five culverts
For example, if the total length of bituminous work to be done is 100 km, the cost per km of bituminous work shall be determined as follows:		
Cost per km = P x weightage for road work x weightage for bituminous work x (1/L)		
Where		
P = Contract Price		
L = Total length in km		

<b>1.3.2 Minor Bridges and Underpasses/Overpasses</b>		
Procedure for estimating the value of Minor bridge and Underpasses/Overpasses shall be as stated in table 1.3.2:		
<b>Table 1.3.2</b>		
<b>Stage of Payment</b>	<b>Weightage</b>	<b>Payment Procedure</b>
<b>(1)</b>	<b>(2)</b>	<b>(3)</b>
<b>A.1- Widening and repairs of Minor Bridges (length&gt;6m &amp;&lt;60m)</b>		
Minor Bridges	0.00%	
<b>A.2- New Minor bridges (length &gt;6 m and &lt; 60 m)</b>		
<b>(1) Foundation:</b>	1.05%	<b>Foundation:</b> Cost of each structure shall be determined on pro- rata basis with respect to the total linear length (m) of the structure. Payment against foundation shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of foundation of the structure subject to completion of at least one foundations (including its cap in case of pile foundation). In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.

(2) <b>Sub-structure:</b>	0.27%	<b>Sub-structure:</b> Cost of each structure shall be determined on pro- rata basis with respect to the total linear length (m) of the structure. Payment against sub-structure shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of sub-structure of the structure subject to completion of at least one sub-structures of abutments/piers upto top of the abutment/pier cap level of the structure.
(3) <b>Super-structure including bearings:</b>	0.33%	<b>Super-structure:</b> Payment shall be made on pro-rata basis on completion of a stage i.e. completion of super structure of at least one span in all respects as specified in the column of "Stage of Payment" in this sub- clause. In case of structures where pre-cast girders have been proposed by the Contractor, 50% of the stage payment shall be due and payable on casting of girders for each span and balance 50% of the stage payment shall be made on completion of stage specified as above
(4) <b>Approaches</b> (including weep hole, backfilling, filter media, Approach slab, Return/Retaining wall, protection works, etc.):	0.54%	<b>Approaches:</b> Payment shall be made on pro-rata basis on completion of a stage i.e. completion of approaches in all respects as specified in the column of "Stage of Payment" in this sub-clause.
(5) <b>Guide Bunds and River Training Works:</b>	0.00%	N/A
(6) <b>Miscellaneous Works:</b> (wearing coat, drainage spouts, expansion joints, painting, RCC Railing, hand rails, footpath/separators, crash barriers, road signs & markings, etc.)	0.06%	<b>Miscellaneous work:</b> Payments shall be made on completion of all miscellaneous works like wearing coat, drainage spouts, expansion joints, painting, RCC Railing, hand rails, footpath/separators, crash barriers, road signs & markings, etc. complete in all respect.
<b>B.1- Widening and repairs of underpasses/overpasses</b>		N/A
Underpasses/ Overpasses	0.00%	
<b>B.2- New Underpasses/Overpasses</b>		
(1) Foundation:	0.00%	
(2) Sub-structure:	0.00%	
(3) Super-structure:	0.00%	
(4) Wing wall/return wall	0.00%	

(5) Approaches and Miscellaneous Works (wearing coat, expansion joints, hand rails, crash barriers, stone pitching, protection works, road signs & markings, etc.)	0.00%	
Wearing Coat (a) in case of Overpass- wearing coat including expansion joints	0.00%	
(b) in case of underpass-rigid pavement including drainage facility	0.00%	

### 1.3.3 Major Bridge (length>60 m), ROB/RUB and viaduct, if any

Procedure for estimating the value of Major Bridge works, ROB/RUB and Structures Work shall be as stated in table 1.3.3:

**Table 1.3.3**

Stage of Payment	Percentage Weightage	Payment Procedure
<b>A.1- Widening and repairs of Major Bridges</b>		
(1) Foundation:	0.00%	N/A
(2) Sub-structure:	0.00%	
(3) Super-structure:	0.00%	
(4) Wearing Coat including expansion joints	0.00%	
(5) <b>Miscellaneous Works:</b> (drainage spouts, painting, RCC Railing, hand rails, footpath/separators, crash barriers, road signs & markings, etc.)	0.00%	
(6) Wing walls/return walls upto top	0.00%	
(7) Guide bunds, River Training works etc.	0.00%	
(8) <b>Approaches</b> (including weep hole, backfilling, filter media, Approach slab, Return/Retaining wall, protection works, etc.):		
<b>A.2- New Major Bridges</b>		

(1) Foundation:	20.87%	<b>Foundation:</b> Cost of each structure shall be determined on pro- rata basis with respect to the total linear length (m) of the structure. Payment against foundation shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of foundation of the structure subject to completion of at least one foundations (including its cap in case of pile foundation). In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.
(2) Sub-structure:	3.27%	<b>Sub-structure:</b> Cost of each structure shall be determined on pro- rata basis with respect to the total linear length (m) of the structure. Payment against sub- structure shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of sub-structure of the structure subject to completion of at least one sub-structures of abutments/piers upto top of the abutment/pier cap level of the structure.
(3) Super-structure including bearings:	16.68%	<b>Super-structure:</b> Payment shall be made on pro-rata basis on completion of a stage i.e. completion of super structure of at least one span in all respects as specified in the column of "Stage of Payment" in this sub- clause. In case of structures where pre-cast girders have been proposed by the Contractor, 50% of the stage payment shall be due and payable on casting of girders for each span and balance 50% of the stage payment shall be made on completion of stage specified as above
(4) Wearing Coat including expansion joints	0.39%	<b>Wearing Coat:</b> Payment shall be made on completion of wearing coat including expansion joints complete in all respects as specified.
(5) <b>Miscellaneous Works:</b> (drainage spouts, painting, RCC Railing, hand rails, footpath/separators, crash barriers, road signs & markings, etc.)	0.58%	<b>Miscellaneous work:</b> Payments shall be made on completion of all miscellaneous works like drainage spouts, painting, RCC Railing, hand rails, footpath/separators, crash barriers, road signs & markings, etc. complete in all respect.
(6) Wing walls/return walls upto top	0.00%	N/A



(7) Guide bunds, River Training works etc.	0.00%	N/A
(8) <b>Approaches</b> (including weep hole, backfilling, filter media, Approach slab, Return/Retaining wall, protection works, etc.):	5.89%	<b>Approaches:</b> Payments shall be made on pro rata basis on completion of 10% of the scope of each stage complete in all respect.
<b>B.1- Widening and repairs of</b>		
(a) <b>ROB</b>	0.00%	N/A
(b) <b>RUB</b>		
(1) Foundations	0.00%	
(2) Sub-Structure	0.00%	
(3) Super-Structure (Including bearings)	0.00%	
(4) Wearing Coat (a) in case of ROB- wearing coat including expansion joints complete in all respects as specified and	0.00%	
(b) in case of RUB-rigid pavement under RUB including drainage facility complete in all respects as specified	0.00%	
(5) Miscellaneous Items like hand rails, crash barrier, road markings etc.	0.00%	
(6) Wing walls/Return walls	0.00%	
(7) Retaining / Reinforced earth walls		
(8) Approaches (including RE Wall and protection works, etc.)	0.00%	
<b>B.2- New ROB/RUB</b>		
(1) Foundations	0.9319%	<b>Foundation:</b> Cost of each structure shall be determined on pro- rata basis with respect to the total linear length (m) of the structure. Payment against foundation shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of foundation of the structure subject to completion of at least one foundations (including its cap in case of pile foundation). In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.

(2) Sub-Structure	0.426%	<b>Sub-structure:</b> Cost of each structure shall be determined on pro- rata basis with respect to the total linear length (m) of the structure. Payment against sub- structure shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of sub-structure of the structure subject to completion of at least one sub-structures of abutments/piers upto top of the abutment/pier cap level of the structure.
(3) Super-Structure (Including bearings)	3.054%	<b>Super-structure:</b> Payment shall be made on pro-rata basis on completion of a stage i.e. completion of super-structure including bearings of at least one span in all respects as specified. In case of structures where pre-cast girders have been proposed by the Contractor, 50% of the stage payment shall be due and payable on casting of girders for each span and balance 50% of the stage payment shall be made on completion of stage specified as above.
(4) Wearing Coat (a) in case of ROB- wearing coat including expansion joints complete in all respects as specified and	0.043%	<b>Wearing Coat:</b> Payment shall be made on completion of wearing coat including expansion joints complete in all respects as specified.
(b) in case of RUB-rigid pavement under RUB including drainage facility complete in all respects as specified	0.000%	N/A
(5) Miscellaneous Items like RCC railing, drainage spout, hand rails, crash barrier, footpath/ separators, painting, road markings etc.	0.048%	<b>Miscellaneous work:</b> Payments shall be made on completion of all miscellaneous works like hand rails, crash barriers, road signs & markings complete in all respect.
(6) Wing walls/Return walls	0.000%	N/A
(7) Approaches (including Retaining / Reinforced earth walls, fascia panel, weep hole, fixing of pipes, protection works, filter media, backfilling, approach slab, toe wall/curtain wall, etc.)	0.292%	<b>Approaches:</b> Payment shall be made on completion of 25% of total RE wall area of each structure complete in all respect.
<b>C.1- Widening and repair of Elevated Section/ Flyovers/ Grade Separators</b>		
(1) Foundations	0.00%	N/A
(2) Sub-structure	0.00%	

(3) Super-Structure (Including bearings)	0.00%	
(4) Wearing Coat including expansion joints	0.00%	
(5) Miscellaneous Items like hand rails, crash barrier, road markings etc.	0.00%	
(6) Wing walls/Return walls	0.00%	
(7) Retaining / Reinforced earth walls	0.00%	
(8) Approaches (including RE Wall and protection works, etc.)	0.00%	
<b>C.2- New Elevated Section/Flyovers/Grade Separators</b>		
(1) Foundations	0.00%	
(2) Sub-Structure	0.00%	
(3) Super-Structure (Including bearings)		
(4) Wearing Coat including expansion joints	0.00%	
(5) Miscellaneous Items like hand rails, crash barrier, road markings etc.	0.00%	
(6) Wing walls/Return walls	0.00%	
(7) Retaining / Reinforced earth walls	0.00%	
(8) Approaches (including RE Wall and protection works, etc.)	0.00%	

### 1.3.4 Other Works.

Procedure for estimating the value of other works shall be as stated in table 1.3.4:

Table 1.3.4		
Stage of Payment	Percentage Weightage	Payment Procedure
(i) Toll Plaza	0.00%	N/A
(ii) Drain cum Footpath	9.68%	Payment shall be made on pro rata basis on completion of cumulative length of 1 km.
(iii) Road Safety	0.00%	
a) Road signs Boards	0.11%	
b) Road markings	0.10%	
c) Kerb and Boundary Stones (Hectometer, Kilometer stone, boundary stones etc.)	0.03%	
d) retro-reflectORIZED road indicators & Delineators	0.05%	

e) safety Devices Movable crash barrier	0.00%	
f) " W " metal beam crash barrier	1.39%	
(iv) Project facilities		
a) Bus Lay Bay including passenger shelter, marking, etc.	0.84%	Unit of measurement is each completed facility. Payment shall be made on completion of each bus bay
b) Truck lay Bye	0.00%	N/A
c) Road Side Rest Area	0.00%	
d) others	0.00%	
(v) Road side plantation	0.00%	
a) Planting tree sapling by roadside including tree guard	0.53%	Unit of measurement is each completed facility in all respect.
b) Rain water harvesting arrangement	0.03%	Unit of measurement is each completed facility in all respect.
(vi) protection works including RE wall other than approaches to the bridges, elevated section /flyover/grade separators and ROBs/ RUBs & Toe wall to the slope of embankment	3.94%	Payment shall be made on pro rata basis on completion of cumulative length of 1 km.
(vii) Safety and traffic management during construction	0.00%	No payment, however included in other items under ACP
(viii) Miscellaneous including Intersection and junctions Works, Utility Duct, installation of hand pump, relocation of temples/religious structures, CPR, EMP Parameter testing (air, noise, water, soil), etc.	0.70%	Unit of measurement is each completed facility. Payment shall be made on completion of each Intersection and junctions Works, Utility Duct, installation of hand pump, relocation of temples/religious structures, CPR, EMP Parameter testing (air, noise, water, soil), etc.
(ix) Highway Lighting (6 nos. High Mast & 106 nos. Street lights)	0.17%	Payment shall be made on pro rata basis on completion of cumulative length of 1 km.

Note: Any/all rounding mismatch for any/all item/sub-item shall be adjusted in the last payment of that item/sub-item.

<b>2</b>	<b>Procedure for payment for maintenances</b>
2.1	The cost for maintenance shall be stated in Clause 14.1
2.2	Payment for maintenance shall be made in quarterly installments in accordance with provisions of Clause 19.7

## SCHEDULE – I

(See Clause 10.2(iv))

### DRAWINGS

#### 1. Drawings

In compliance of the obligations set forth in Clause 10.2 of this Agreement, the Contractor shall furnish to the Authority's Engineer, free of cost, all Drawings listed in Annex-I of this Schedule-I.

#### 2. Additional Drawings

If the Authority's Engineer determines that for discharging its duties and functions under this Agreement, it requires any drawings other than those listed in Annex-I, it may by notice require the Contractor to prepare and furnish such drawings forthwith. Upon receiving a requisition to this effect, the Contractor shall promptly prepare and furnish such drawings to the Authority's Engineer, as if such drawings formed part of Annex-I of this **Schedule-I**.

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Annex-I

(Schedule- I)

**List of Drawings**

Following drawing is required to be furnished by contractor: -

- (i) Drawings of horizontal alignment, vertical profile and cross sections.
- (ii) Drawings of cross drainage works.
- (iii) Drawings of interchanges, minor intersections, major intersections, grade separators, underpasses.
- (iv) Drawings of road furnitures items including traffic signage, markings, safety barriers, etc.
- (v) Drawings of traffic diversion plans and traffic control measures.
- (vi) Drawings of bridges and culverts.
- (vii) Drawings for VOP, VUP and Ramps.
- (viii) Drawing for ROB/Ramps.
- (ix) Drawings of typical details slope protection measures.
- (x) Drawings of landscaping and horticulture.
- (xi) Drawings of pedestrian crossings.
- (xii) Drawings of project facilities provided.
- (xiii) Drawings of street lighting & High Mast Light.
- (xiv) Any other drawings related to project as required by Authority Engineer.

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## SCHEDULE – J

(See Clause 10.3(ii))

### PROJECT COMPLETION SCHEDULE

#### 1 Project Completion Schedule

During Construction period, the Contractor shall comply with the requirements set forth in this Schedule-J for each of the Project Milestones and the **Scheduled Completion Date**. Within 15 (fifteen) days of the date of each Project Milestone, the Contractor shall notify the Authority of such compliance along with necessary particulars thereof.

#### 2 Project Milestone-I

- (i) Project Milestone-I shall occur on the date falling on the **447<sup>th</sup> (Four Hundred and Forty Seventh)** day from the Appointed Date (the “**Project Milestone-I**”).
- (ii) Prior to the occurrence of Project Milestone-I, the Contractor shall have commenced construction of the Project Highway and submitted to the Authority duly and validly prepared Stage Payment Statements for an amount not less than 10% (ten per cent) of the Contract Price.

#### 3 Project Milestone-II

- (i) Project Milestone-II shall occur on the date falling on the **765<sup>th</sup> (Seven Hundred and Sixty Fifth)** day from the Appointed Date (the “**Project Milestone-II**”).
- (ii) Prior to the occurrence of Project Milestone-II, the Contractor shall have continued with construction of the Project Highway and submitted to the Authority duly and validly prepared Stage Payment Statements for an amount not less than 35% (thirty five per cent) of the Contract Price and should have started construction of all bridges.

#### 4 Project Milestone-III

- (i) Project Milestone-III shall occur on the date falling on the **1020<sup>th</sup> (One Thousand and Twentieth)** day from the Appointed Date (the “**Project Milestone-III**”).
- (ii) Prior to the occurrence of Project Milestone-III, the Contractor shall have continued with construction of the Project Highway and submitted to the Authority duly and validly prepared Stage Payment Statements for an amount not less than 70% (seventy per cent) of the Contract Price and **should have started construction of all project facilities.**

**5 Scheduled Completion Date**

- (i) The Scheduled Completion Date shall occur on the **1275<sup>th</sup> (One Thousand Two Hundred and Seventy fifth)** day from the Appointed Date.
- (ii) On or before the Scheduled Completion Date, the Contractor shall have completed construction in accordance with this Agreement.

**6 Extension of time**

Upon extension of any or all of the aforesaid Project Milestones or the Scheduled Completion Date, as the case maybe, under and in accordance with the provisions of this Agreement, the Project Completion Schedule shall be deemed to have been amended accordingly.

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## SCHEDULE - K

(See Clause 12.1(ii))

### Tests on Completion

#### 1. Schedule for Tests

- (i) The Contractor shall, no later than 30 (thirty) days prior to the likely completion of construction, notify the Authority's Engineer and the Authority of its intent to subject the Project Highway to Tests, and no later than 10 (ten) days prior to the actual date of Tests, furnish to the Authority's Engineer and the Authority detailed inventory and particulars of all works and equipment forming part of Works.
- (ii) The Contractor shall notify the Authority's Engineer of its readiness to subject the Project Highway to Tests at any time after 10 (ten) days from the date of such notice, and upon receipt of such notice, the Authority's Engineer shall, in consultation with the Contractor, determine the date and time for each Test and notify the same to the Authority who may designate its representative to witness the Tests. The Authority's Engineer shall thereupon conduct the Tests itself or cause any of the Tests to be conducted in accordance with Article 12 and this Schedule-K.

#### 2. Tests

- (i) Visual and physical test: The Authority's Engineer shall conduct a visual and physical check of construction to determine that all works and equipment forming part of the Project conform to the provisions of this Agreement. The physical tests shall include (to be decided in consultation with Authority's Engineer at the time of physical tests as per relevant IRC code Manual).
- (ii) Riding quality test: Riding quality of each lane of the carriageway shall be checked with the help of a Network Survey Vehicle (NSV) fitted with latest equipment and the maximum permissible roughness for purposes of this Test shall be  $\leq 200$  (two thousand) mm for each kilometre.
- (iii) Tests for bridges/Elevated Structure: All major, minor bridges and Elevated Structure shall be subjected to the rebound hammer and ultrasonic pulse velocity tests, to be conducted in accordance with the procedure described in Special Report No. 17: 1996 of the IRC Highway Research Board on Non-destructive Testing Techniques, at two spots in every span, to be chosen at random by the Authority's Engineer. Bridges/ Structures with a span of 15 (fifteen) metres or more shall also be subjected to load testing.
- (iv) Other tests: The Authority's Engineer may require the Contractor to carry out or cause to be carried additional tests, in accordance with Good Industry Practice, for determining the compliance of the Project Highway with Specifications and Standards, excepts tests specified in clause 5, but shall include measuring the reflectivity of road markings and road sign; and measuring the illumination level (lux) of lighting equipment using requisite testing equipment.
- (v) Environmental audit: The Authority's Engineer shall carry out a check to determine conformity of the Project Highway with the environmental requirements set forth in Applicable Laws and Applicable Permits.
- (vi) Safety Audit: The Authority's Engineer shall carry out, or cause to be carried out, a safety audit to determine conformity of the Project Highway with the safety requirements and Good Industry Practice.

#### 3. Agency for conducting Tests

All Tests set forth in this Schedule-K shall be conducted by the Authority's Engineer or such other agency or person as it may specify in consultation with the Authority.

#### 4 Completion Certificate

Upon successful completion of Tests, the Authority's Engineer with prior approval of the Authority shall issue the Completion Certificate in accordance with the provisions of Article 12. The Authority or Authority Representative shall ensure that the completion certificate is approved after verifying/confirming that all works/items including ancillary items forming part of the project Highway are completed in all respects conforming to the Standard and Specifications of the Ministry. A video of completed work on the date of completion shall invariably be prepared and furnished as an authentic documentary evidence of completion of works within 15 days of completion without which completion certificate shall not be issued. Authority Engineer, apart from furnishing a certificate of completion and all tests as per specifications in accordance with contract, will also certify that all NCRs issued during the contract have been closed after successful rectification of defects within the completion date.

5. The Authority Engineer will carry out tests with following equipment at Contractor's cost in the presence of Contractor's representative.

Sr. No.	Key Metric of Asset	Equipment to be used	Frequency of condition Survey
1	Surface defects of Pavement	Network Survey Vehicle (NSV)	At least twice a year (As per survey months defined for the State basis rainy season.)
2.	Roughness of Pavement	Network Survey Vehicle (NSV)	At least twice a year (As per survey months defined for the State basis rainy season.)
3.	Strength of Pavement	Falling weight Deflectometer (FWD)	At least once a year
4.	Bridges/ Elevated Road/ Structures	By any suitable standard methods	At least twice a year (As per survey months defined for the State basis rainy season.)
5.	Road signs	Retro-reflectometer	At least twice a year (As per survey months defined for the State basis rainy season.)

The first testing with the help of NSV shall be conducted at the time of issue of completion certificate.

SCHEDULE – L

(See Clause 12.2)

**COMPLETION CERTIFICATE**

- 1 I,.....(Name of the Authority’s Engineer), acting as the Authority’s Engineer, under and in accordance with the Agreement dated .....(the “Agreement”), for **Improvement/Upgradation, Widening and Strengthening of Mansi-Fungo Halt Section of Mansi-Saharsa-Hardi-Chaughara Road (SH-95) on EPC Mode under Civil Works Contract Package No. BSHP-III (Phase-2)/Pkg-3/SH-95** through ..... (Name of Contractor), hereby certify that the Tests in accordance with Article 12 of the Agreement have been successfully undertaken to determine compliance of the Project Highway with the provisions of the Agreement, and I am satisfied that the Project Highway can be safely and reliably placed in service of the Users thereof.
  
- 2 It is certified that, in terms of the aforesaid Agreement, all works forming part of Project Highway have been completed, and the Project Highway is hereby declared fit for entry into operation on this the ..... day of ..... 20....., Scheduled Completion Date for which was the ..... day of .....20.....

SIGNED, SEALED AND DELIVERED  
For and on behalf of

the Authority’s Engineer by:

(Signature)

(Name)

(Designation)

(Address)

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SCHEDULE - M

(See Clauses 14.6, 15.2 and 19.7)

**PAYMENT REDUCTION FOR NON-COMPLIANCE**

**1. Payment reduction for non-compliance with the Maintenance Requirements**

- (i) Monthly lump sum payments for maintenance shall be reduced in the case of non-compliance with the Maintenance Requirements set forth in Schedule-E.
- (ii) Any deduction made on account of non-compliance with the Maintenance Requirements shall not be paid even after compliance subsequently. The deductions shall continue to be made every month until compliance is done.
- (iii) The Authority's Engineer shall calculate the amount of payment reduction on the basis of weightage in percentage assigned to non-conforming items as given in Paragraph 2.

**2. Percentage reductions in lump sum payments**

- (i) The following percentages shall govern the payment reduction:

S. No.	Item/Defect/Deficiency	Percentage
<b>(a)</b>	<b>Carriageway/Pavement</b>	
(i)	Potholes, cracks, other surface defects	15%
(ii)	Repairs of Edges, Rutting	5%
<b>(b)</b>	<b>Road, Embankment, Cuttings, Shoulders</b>	
(i)	Edge drop, inadequate cross fall, undulations, settlement, potholes, ponding, obstructions	10%
(ii)	Deficient slopes, raincuts, disturbed pitching, vegetation growth, pruning of trees	5%
<b>(c)</b>	<b>Bridges and Culverts</b>	
(i)	Desilting, cleaning, vegetation growth, damaged pitching, flooring, parapets, wearing course, footpath, any damage to foundations	20%
(ii)	Any Defects in superstructures, bearings and sub-structures	10%
(iii)	Painting, repairs/replacement kerbs, railings, parapets, guideposts/crash barriers	5%
<b>(d)</b>	<b>Roadside Drains</b>	
(i)	Cleaning and repair of drains	5%
<b>S. No.</b>	<b>Item/Defect/Deficiency</b>	<b>Percentage</b>

<b>(e)</b>	<b>Road Furniture</b>	
(i)	Cleaning, painting, replacement of road signs, delineators, road markings, 200 m/km/5 <sup>th</sup> km stones	5%
<b>(f)</b>	<b>Miscellaneous Items</b>	
(i)	Removal of dead animals, broken down/accidental vehicles, fallen trees, road blockades or malfunctioning of mobile crane	10%
(ii)	Any other Defects in accordance with paragraph 1.	5%
<b>(g)</b>	<b>Defects in Other Project Facilities</b>	5%

- (ii) The amount to be deducted from monthly lump-sum payment for noncompliance of particular item shall be calculated as under:

$$R=(P/100) \times (M1 \text{ or } M2) \times (L1/L)$$

Where P = Percentage of particular item/Defect/deficiency for deduction

M1 = Monthly lump-sum payment in accordance with para 1.2 above of this schedule

M2 = Monthly lump-sum payment in accordance with para 1.2 above of this schedule

L1 = Non-complying length

L = Total length of the road,

R = Reduction (the amount to be deducted for noncompliance for a particular item/Defect/deficiency

The total amount of reduction shall be arrived at by summation of reductions for each items/Defects/deficiency or noncompliance.

For any Defect in a part of one kilometer, the non-conforming length shall be taken as one kilometer.

Not to be used as a Bid Document, Only for Reference

## SCHEDULE – N

(See Clause 18.1(i))

### SELECTION OF AUTHORITY'S ENGINEER

#### 1 Selection of Authority's Engineer

- (i) The Authority shall appoint a firm of Consulting Engineers or a Project Management Authority Engineer (PMAE) substantially in accordance with the selection criteria set forth in Schedule-N, to be the engineer under this Agreement (the “**Authority's Engineer**”). In unavoidable circumstances, Authority may appoint an officer to act as Authority's Engineer until appointment of a Consulting Engineering firm/ Supervision Consultant/ PMC.
- (ii) In the event of termination of the Technical Consultants appointed in accordance with the provisions of Paragraph 1(i), the Authority shall appoint another firm of Technical Consultants forthwith and may engage a government-owned entity in accordance with the provisions of Paragraph 3 of this Schedule-N.

#### 2 Terms of Reference

The Terms of Reference for the Authority's Engineer (the “**TOR**”) shall substantially conform with Annex 1 to this Schedule N.

#### 3 Appointment of Government entity as Authority's Engineer

Notwithstanding anything to the contrary contained in this Schedule, the Authority may in its discretion appoint a government-owned entity as the Authority's Engineer; provided that such entity shall be a body corporate having as one of its primary functions the provision of consulting, advisory and supervisory services for engineering projects; provided further that a government-owned entity which is owned or controlled by the Authority shall not be eligible for appointment as Authority's Engineer.

**Note:** Project Management Authority Engineer is Authority Engineer. Wherever it is written PMAE or AE, both shall have the same meaning and same definition under the TOR, Article and contract.

Annex – I

(Schedule - N)

**TERMS OF REFERENCE FOR AUTHORITY’S ENGINEER**

**TERMS OF REFERENCE (TOR) FOR PROJECT MANAGEMENT AND AUTHORITY ENGINEER**

**(PACKAGE NO. BSHP-III, Phase-2/PMAE/SH-95/, PACKAGE-2)**

**1. Introduction and Background**

**1.1** Bihar State Road Development Corporation has been entrusted by the Government of Bihar with the responsibility of Rehabilitations, Upgrading & Strengthening of State Highways including construction of Major Bridges under Bihar State Highways III Project (BSHP-III,Phase-2 ). These Terms of Reference (TOR) define the services required of a firm of international consultants (the consultant) to carry out implementation support and authority engineering services consultant who is to be engaged to assist the Bihar State Road Development Corporation in the implementation of the aforementioned Project. The Project is being considered for financing by the Asian Development Bank (the Bank). The selected Project Roads under this package are proposed to be constructed on EPC Mode as described below:-

	Civil Package works	SH No.	Road Name	Length (Km)	Time for Completion (Month)	Team Leader Office
CSC Package No - BSHP-III, Phase-2/PMAE/SH-95 PACKAGE-2	BSHP-III, Phase-2/3/SH-95	SH-95	Mansi To Fungo halt Section of Mansi-Saharsa-Hardi Chaughara Road	4.125	42	Mansi, Khagaria
	BSHP-III, Phase-2/4/SH-95	SH-95	Fungo Halt to Simri Bakhtiarpur Section of Mansi-Saharsa-Hardi Chaughara Road	13.955	24	
<b>TOTAL</b>				<b>28.08</b>		

\* Project Location Index Maps is attached herewith as Annexure-5

The project is to construct a Road Project of SH-95 in 2 Packages (i) **Mansi To Fungo halt Section of Mansi-Saharsa-Hardi Chaughara Road ( 4.125 KM)** with 2 lane of paved shoulder with 04 Nos. Major Bridges ( 7x48.9m, 6x48.9m, 7x32.6m, 6x48.9m) including Minor Bridges, Box Culverts and one RoB etc. (ii) **Fungo Halt to Simri Bakhtiarpur Section of Mansi-Saharsa-Hardi Chaughara Road ( 13.955 KM)** with 2 lane of paved shoulder including Minor Bridges, Box Culvert one RoB etc. The main civil works contract will be structured in engineering, procurement, and construction (EPC), largely based on the model EPC agreement, and duly amended for use by ADB.<sup>30</sup> BSRDCL will be designated as the “Authority” (or “Employer” as the case may be).

<sup>30</sup> The Agreement (including references to Clauses and Articles) substantially conforms with the “EPC Agreement” at [https://mof.nic.in/sites/default/files/Revised\\_standard\\_EPC\\_Agreement\\_for\\_NH\\_and\\_Centrally\\_sponsored\\_road\\_works\\_proposed\\_to\\_be\\_implemented\\_on\\_EPC.pdf](https://mof.nic.in/sites/default/files/Revised_standard_EPC_Agreement_for_NH_and_Centrally_sponsored_road_works_proposed_to_be_implemented_on_EPC.pdf)

1.2 The project scope is to widen the existing carriageway and missing link to two lane carriageway width with earthen/paved shoulders on either side, upgrading and strengthening/reconstruction of existing pavement, rehabilitation and widening of the existing bridges, construction of new bridges and ROB, rehabilitation of existing culverts and construction of new culverts, construction of bus stops, truck parking areas, improvement of road junctions etc. The Contracts for the construction work will be procured under Open Competitive Bidding Procedures (OCB) and will be executed on Engineering Procurement and Construction (EPC) mode and the documents approved by ADB. The construction period would be as shown above against the respective civil works packages and the construction is expected to commence in **May, 2022**. BSRDC will administer the Project as the Employer through Project Implementation Unit (PIU).

1.3 One Project Management Authority Engineer (PMAE) is to be engaged for the assignment, from the Short-Listed Consultants. The PMAE services will broadly include project management as 'Engineer' in terms of civil works contract, supervision and monitoring, quality assurance, environmental management, social safeguards, contract management and making engineering decisions, approval of decision, verification of quantity, recording of measurements and certification of measurement and bills of the Contractor administering for ensuring successful and timely implementation of these construction packages.

1.4 The Authority Engineer shall incorporate latest techniques and technological developments, and if required, offer advisory services on specific terms for satisfactory project implementation. It is anticipated that services of Authority Engineer would be required from May, 2022 for the duration of construction and Maintenance Period including defect notification period.

#### 1.5 Project Preparation

1.5.1 The project preparation works have been carried out by the consulting firm engaged by the client i.e. Bihar State Road Development Corporation (BSRDC). The Authority Engineer will be required to review the entire data and modify the arrangements, if necessary, in consultation with the client (BSRDC).

1.5.2 The project reports/feasibility report for the road have been prepared for the proposed Asian Development Bank Project. The same needs to be reviewed with a view to include bridges, check the provisions for the roads and carry out designs etc.

## 2. Objectives and Scope

### 2.1 Objectives

The objective of the Project Management Authority Engineer services is to assist the Bihar State Road Development Corporation to implement the Project as follows:

- (i) To ensure high standards of quality assurance in the execution of work and consultant shall be made accountable for Project completion in scheduled time;
- (ii) Comprehensive Supervision of project implementation activities carried out by the contractor to ensure complete compliance with the drawings, technical specifications and various stipulations contained in the Contract Documents, with high standards of quality assurance in supervision and in the execution of work;



- (iii) Efficient construction supervision and monitoring by personnel who are experienced in modern methods of construction supervision and contract management.
- (iv) Proper management of civil works contracts as "the Authority Engineer" in terms of civil works contract; and
- (v) The main objective of the consulting services is to support BSRDCL to implement the project, as required under the ADB loan, and encompass (i) providing overall project management support which include developing and monitoring project implementation schedule with milestones and critical path analysis, and preparing progress reports as required for management of the project and reporting to ADB, (ii) monitoring the implementation of safeguards in accordance with ADB's Safeguard Policy Statement, (iii) ensuring implementation of the Environmental Management Plan (EMP) and other measures related to environmental protection in accordance with ADB's Safeguard Policy Statement, (iv) enhancing road safety measures, and (v) discharging the functions and duties of an Authority's Engineer.

## 2.2 Scope of Services

The scope of services is described below.

### Component 1: Overall Project Management

- Task (01) Provide project management services throughout design, procurement, construction, and commissioning stages. The consultant is to maintain and update the project schedule throughout the project, and undertake project performance management system in the format acceptable by the Employer and ADB, which consists of (1) preparing in the initial stage a project performance management system, in accordance with the ADB's project design and monitoring framework, to monitor (i) the progress of the overall project implementation, and (ii) the development impact of the project; and (2) collecting/updating the project performance indicator benchmarks.

### Component 2: Social Safeguard Implementation and Monitoring

- Task (02) Ensure implementation of Resettlement Plans (RPs) in accordance with ADB's Safeguard Policy Statement (2009) and other related policies such as the Public Communications Policy (2012) and the right to fair Compensation and Transparency in land acquisition, Rehabilitation and Resettlement Act, 2013 of the Government of India. The consultant will ensure payment of compensation to people affected by the project prior to hand-over of the site to the contractor. Prepare the due-diligence reports on resettlement implementation as needed for processing of subsequent tranches under the MFF. Provide monthly and quarterly reports on resettlement implementation, including close monitoring of resettlement implementation of Indigenous Peoples, and provide updates on the schedule and financial aspects of resettlement to the team. Monitor and provide guidance to the work of the NGOs for resettlement implementation engaged by BSRDCL and monitor the resettlement implementation at the project sites and provide training, if required, to the BSRDCL staff.

- Task (03) Act as the external monitor for the project, tasks include: (i) develop specific monitoring indicators for undertaking monitoring of RP; (ii) review results of internal monitoring and verify claims through random checking by adopting suitable sampling

method at the field level to assess whether land acquisition/resettlement objectives have been generally met; (iii) Involve the affected people and community groups in assessing the impact of land acquisition for monitoring and evaluation purposes; (iv) Evaluate and assess the adequacy of compensation given to the DPs and the livelihood opportunities and incomes as well as the quality of life of DPs of project-induced changes; and (v) evaluate and assess the adequacy and effectiveness of the consultative process with DPs, particularly those vulnerable, including the adequacy and effectiveness of grievance procedures and legal redress available to the displaced persons, and dissemination of information about these. Lastly, ensuring the implementation of the social and gender relevant features included in the design of the project, including monitoring of HIV and human trafficking community awareness activities, as well as compliance of core labor standards by civil works contractors. External monitoring report is to be submitted to ADB on a semi-annual basis.

### Component 3: Environmental Monitoring

- Task (04) Ensure implementation of the Environmental Management Plan (EMP) and other measures related to environmental protection as given in the EIA report and in accordance with ADB's Safeguard Policy Statement (2009). Update the EMP and EIA report as necessary and advise BSRDCL and the contractor in the event of un-anticipated impacts. Prepare due-diligence reports on EMP implementation as needed for processing of subsequent loans under the MFF. Provide monthly and quarterly reports on EMP implementation and provide updates on the schedule and financial aspects to the team. Provide necessary support, on coordination and monitoring of environment safeguards to BSRDCL staff.
- Task (05) Monitor implementation of the EMP by the contractor and ensure compliance with the environmental safeguard requirements of civil works contracts. Provide training and technical advices including on-site advice to the contractors as found necessary. Review and confirm that the EMP implementation records are maintained by the contractor. Prepare semi-annual environmental monitoring reports based on these records and on-site spot checks carried out and submit to BSRDCL.

### Component 4: Road Safety

- Task (06) Conduct road safety audits with use of ADB's Road Safety Audit for Road Project; An Operational Tool Kit or similar procedures acceptable to ADB. The following will be carried out:
- conduct pre-audit meetings with BSRDCL and the contractor's design team to review project information and drawings;
  - conduct office safety review of detailed designs combined with mandatory field visits to the project roads conducted both during daytime and nighttime, together with representatives of local field offices of BSRDCL, and other representatives (e.g. police) as appropriate;
  - conduct office road safety audit analysis and preparing concise Road Safety Audit Reports for the project with the list of road safety issues identified, highway risk for each issue assessed, and specific countermeasures proposed to be incorporated into detailed designs;
  - present findings and recommendations to BSRDCL and detailed design team; and
  - checking the revised detailed designs to ensure that measures to address road safety issues, as endorsed by BSRDCL, are incorporated in detailed designs; and

preparation of provisions for managing road safety aspects appropriately during construction to be included in all bidding documents

Task (07) Conduct awareness programs to concerned MORTH officers, supervision consultants, and contract staff. Involve local community, including women, in safety awareness activities.

### Component 5: Gender Action Plan Monitoring

The consultant will assist the BSRDCL in ensuring that the implementation of GAP activities is in accordance with ADB requirements.

- Task (08) The Gender Expert will undertake the following:
- (i) Provide technical support to the BSRDCL in the overall implementation of the GAP and the design and monitoring framework.
  - (ii) Supervise the NGO in carrying out GAP activities, including (a) consultation campaigns on road safety; (b) awareness programs on sexually transmitted infections, health and hygiene, and human trafficking; (c) needs assessment survey to identify livelihood skills; and (d) organization of livelihood skills training programs.
  - (iii) Establish convergence with the Bihar Rural Livelihood Promotion Society (Jeevika) to facilitate livelihoods promotion among the trained community members and to enhance the employability of the local community, including men/women, across the five highways selected.
  - (iv) Monitor GAP implementation and track the progress, and assist the BSRDCL to prepare and submit quarterly monitoring reports on GAP implementation in line with ADB reporting requirements.
  - (v) Undertake any other tasks identified by the BSRDCL during the course of project implementation.

### Component 6: Authority Engineering Service

Task (09) Discharge the functions and duties of an Authority's Engineer as prescribed

#### 3. Scope

3.1 These Terms of Reference (the "TOR") for the Authority's Engineer are being specified pursuant to the EPC Agreement dated ..... (the "Agreement"), which has been entered into between Bihar State Road Development Corporation Ltd., RCD Mechanical Workshop Campus, Near Patna Air Port, Sheikhpura, Patna, Bihar 800014 (the "Authority") and ..... (the "Contractor") for Consultancy services of Authority's Engineer for Supervision of Improvement / Upgradation and Strengthening of **Mansi To Fungo halt (14.125 KM) Section and Fungo Halt to Simri Bakhtiarpur (13.955 KM) Section including Major Bridges, Minor Bridges, Box Culverts and ROB etc. of Mansi-Saharsa-Hardi Chughara Road (SH-95) at Khagaria and Saharsa District in the state of Bihar on EPC Mode**, and a copy of which is annexed hereto and marked as Annex A to form part of this TOR.

3.2 The TOR shall apply to 42 Months for Construction period and 60 Months for Maintenance /DLP period of the Project Highway.

#### 4. Definitions and interpretation

4.1 The words and expressions beginning with or in capital letters and not defined herein but defined in the Agreement shall have, unless repugnant to the context, the meaning respectively assigned to them in the Agreement.

4.2 References to Articles, Clauses and Schedules in this TOR shall, except where the context otherwise requires, be deemed to be reference to the Articles, Clauses and Schedules of the Agreement, and references to Paragraphs shall be deemed to be references to Paragraphs of this TOR.

4.3 The rules of interpretation stated in Clauses 1.2, 1.3 and 1.4 of the EPC Agreement shall apply, mutatis mutandis, to this TOR.

## 5 General

5.1 The Authority's Engineer shall discharge its duties in a fair, impartial, and efficient manner, consistent with the highest standards of professional integrity and Good Industry Practice.

5.2 The Authority's Engineer shall perform the duties and exercise the authority in accordance with the provisions of this Agreement, but subject to obtaining prior written approval of the Authority before determining.

(a) any Time Extension.

(b) Any additional cost to be paid by the Authority to the Contractor.

(c) The Termination Payment.

(d) Issuance of Completion Certificate;

(e) Any other matter which is not specified in (a), (b) or (c) above and which creates an obligation or liability on either Party for a sum exceeding Rs. 5,000,000 (Rs. Five lakh.)

5.3 The Authority's Engineer shall submit regular periodic reports, at least once every month, to the Authority in respect of its duties and functions under this Agreement. Such reports shall be submitted by the Authority's Engineer within 10 (ten) days of the beginning of every month.

For this purpose the Authority Engineer will undertake monthly visits by himself to the project site and ensure the inspection by himself of all major Structure/Critical Activities and submit the report to BSRDCL.

5.4 The Authority's Engineer shall inform the Contractor of any delegation of its duties and responsibilities to its suitably qualified and experienced personnel; provided, however, that it shall not delegate the authority to refer any matter for the Authority's prior approval in accordance with the provisions of Clause 18.2 of EPC Agreement.

5.5 The Authority's Engineer shall aid and advise the Authority on any proposal for Change of Scope under Article 13 of EPC Agreement.

5.6 In the event of any disagreement between the Parties regarding the meaning, scope and nature of Good Industry Practice, as set forth in any provision of the Agreement, the Authority's Engineer shall specify such meaning, scope and nature by issuing a reasoned written statement relying on good industry practice and authentic literature.

## 6 Role and responsibility of Officers of the Authority

The officer in-charge of the Authority e.g. CGM, BSRDCL is responsible for the overall supervision and monitoring of the execution of project as the representative of the owner of the project. The Authority's Engineer is appointed to assist the Authority for carrying out the functions as detailed under clause 18.2 of the EPC Agreement. As such, an officer of the Authority is vested with all such powers and responsibilities as are enjoined upon the Authority's Engineer and is fully competent to issue any instructions for proper monitoring and supervision of the project, either by himself or through the Authority's Engineer. Instructions issued by the concerned officer of the Authority shall have the same effect as that of the Authority's Engineer

in terms of this Agreement. Wherever such concerned officer issues any instructions or notice to the Contractor, he shall endorse a copy thereof to the Authority's Engineer.

## 7. Construction Period

- 7.1 During the Construction Period, the Authority's Engineer shall review the Drawings furnished by the Contractor along with supporting data, including the geo-technical and hydrological investigations, characteristics of materials from borrow areas and quarry sites, topographical surveys, and the recommendations of the Safety Consultant in accordance with the provisions of Article 10 ~~Clause 10.1.6~~ of EPC Agreement. The Authority's Engineer shall complete such review and send its observations to the Authority and the Contractor within 15 (fifteen) days of receipt of such Drawings; provided, however that in case of a Major Bridge or Structure, the aforesaid period of 15 (fifteen) days may be extended upto 30 (thirty) days. In particular, such comments shall specify the conformity or otherwise of such Drawings with the Scope of the Project and Specifications and Standards.
- 7.2 The Authority's Engineer shall review and approve any revised Drawings sent to it by the Contractor and furnish its comments within 10 (ten) days of receiving such Drawings. The review/ approval of drawing should be authenticated by Authority's Engineer.
- 7.3 Quality Assurance Manual and Plan forms the basis of quality of the work. It is therefore essential that the Quality Assurance Manual and Plan prepared by the EPC Contractor be checked and approved. Thus, the Authority's Engineer shall check contents of Quality Assurance Plan and Manual of EPC Contractor as per requirements of Quality Management System (as per ISO 9001), IRC: SP: 47-1998 and IRC: SP: 57-2000 for road bridges and roads respectively. The Authority's Engineer shall also offer their comments for modifying/ improving the document within a period of 21 (twenty-one) days stating the modifications, if any required thereto. After receiving the corrected document, the Authority's Engineer shall review and formally approve the QAM and Quality Plan and send one copy to the Authority. The Authority's Engineer shall complete the review of the methodology proposed to be adopted by the Contractor for executing the Works, and convey its comments to the Contractor within a period of 10 (ten) days from the date of receipt of the proposed methodology from the Contractor.
- 7.4 The Authority's Engineer shall grant written approval to the Contractor, where necessary, for interruption and diversion of the flow of traffic in the existing lane(s) of the Project Highway for purposes of maintenance during the Construction Period in accordance with the provisions of Clause 10.4 EPC Agreement.
- 7.5 The Authority's Engineer shall review the monthly progress report furnished by the Contractor and send its comments thereon to the Authority and the contractor within 7 (seven) days of receipt of such report.
- 7.6 On a daily basis, the concerned key personnel of Authority Engineer shall inspect the Construction Works. Following activities need to be undertaken during the visits.
- Review of construction including progress, quality and safety of construction
  - Inspection of defects and deficiencies in construction works
  - Witnessing quality inspection tests at labs established by EPC Contractor on a sample basis
- Review of quality of work shall be done in reference to Quality Assurance Plan (QAP)/Manual and ISO 9001:2008, IRC: SP: 47-1998 and IRC: SP: 57-2000 for road bridges and roads respectively. The Authority's Engineer also needs to capture following documents and send to BSRDCL field office via email on a daily basis

- Scanned copy of filled RFI (Request for Inspection) form including commentary on ‘Satisfactory/Unsatisfactory’ nature of work completed by EPC Contractor
- Daily inspection report Proforma as provided in Annexure I
- Readings of quality inspection tests witnessed by the Consultant
- Minimum 6 high resolution photographs supporting the remarks made by the Authority’s Engineer in RFI form

Team Leader will be responsible for sending daily emails to BSRDCL office.

7.7 On a monthly basis, the Authority Engineer shall prepare a Monthly Inspection Report in accordance with the format prescribed in Annexure V setting forth an overview of the status, progress, quality and safety of construction, including the work methodology adopted, the materials used and their sources, and conformity of Construction Works with the Scope of the Project and the Specifications and Standards. In a separate section of the Inspection Report, the Authority Engineer shall describe in reasonable detail the lapses, defects or deficiencies observed by it in the construction of the Project Highway. The Authority Engineer shall send a copy of its Inspection Report to the Authority and the EPC Contractor latest by 7<sup>th</sup> of every month. Key sections of the Monthly Progress Report are as follows.

S No.	Section	Sub-Sections
1	Executive Summary	1.1 Construction progress in current month
		1.2 Summary of strip plan
		1.3 Detailed strip plan
		1.4 Current issues and recommended actions by AE
2	Project Overview	2.1 Salient Features of the Project
		2.2 Project Milestones
		2.3 Location Map
		2.4 Key Plan
3	Critical issues and Action log	3.1 Pending issues and action log
		3.2 Obligations as per contract
4	Physical Progress	4.1 Detailed physical progress by component
5	Land Acquisition and Clearances	5.1 LA summary
		5.2 LA detail by CALA
		5.3 LA detail by village
		5.4 Manpower with each CALA
		5.5 Clearances summary
		5.6 Status of utility shifting
6	Change of Scope	6.1 Status of pending COS proposals
7	Mobilization of Resources	7.1 Resource mobilization by EPC Contractor
8	Financial Progress Details	8.1 Pen picture- Escrow
		8.2 Escrow details
9	Summary of quality control tests	9.1 Tests witnessed by AE
		9.2 Tests conducted by AE
	Monitoring of maintenance obligations during construction phase	10.1 Critical issues and action log
		10.2 Cumulative defects and deficiencies
		10.3 Status of damages and remedial action taken by

		contractor.
11	Safety features	11.1 Pen picture on safety features at construction site 11.2 Accident report 11.3 Compliance of the recommendation made by safety Engineer.
12	Annexures	Annex 1: Detailed list of physical components as per Schedule G Annex 2 onwards: Additional details provided by AE
13	S-Curve	S-Curve of the Project
14	List of Letter	List of outgoing and incoming letters

7.8 If at any time during the Construction Period, the Authority Engineer determines that the Contractor has not made adequate arrangements for the safety of workers and Users in the zone of construction or that any work is being carried out in a manner that threatens the safety of the workers and the Users, it shall make a recommendation to the Authority forthwith, identifying the whole or part of the Construction Works that should be suspended for ensuring safety in respect thereof.

7.8 The Authority's Engineer shall conduct the pre-construction review of manufacturer's reports and standard samples of manufactured Materials, and such other Materials as the Authority's Engineer may require.

7.9 For determining that the Works conform to Specifications and Standards, the Authority's Engineer shall require the Contractor to carry out, or cause to be carried out, tests at such time and frequency and in such manner as specified in the Agreement and in accordance with Good Industry Practice for quality assurance. For purposes of this, the tests specified in the IRC Special Publication-11 (Handbook of Quality Control for Construction of Roads and Runways) and the Specifications for Road and Bridge Works issued by MORT&H (the "Quality Control Manuals") or any modifications/substitution thereof shall be deemed to be tests conforming to Good Industry Practice for quality assurance.

7.10 The Authority's Engineer shall test check at least 100 (Hundred) ~~60 (sixty)~~ percent of the quantity or number of tests prescribed for each category or type of test for quality control by the Contractor.

7.11 The timing of tests referred to in Paragraph 5.10 and the criteria for acceptance/rejection of their results shall be determined by the Authority's Engineer in accordance with the Quality Control Manuals. The tests shall be undertaken on a random sample basis and shall be in addition to, and independent of, the tests that may be carried out by the Contractor for its own quality assurance in accordance with Good Industry Practice.

7.12 In the event that results of any tests conducted under Clause 11.10 of EPC Agreement establish any Defects or deficiencies in the Works, the Authority's Engineer shall require the Contractor to carry out remedial measures.

7.13 The Authority's Engineer may instruct the Contractor to execute any work which is urgently required for the safety of the Project Highway, whether because of an accident, unforeseeable event or otherwise; provided that in case of any work required on account of a Force Majeure Event, the provisions of Clause 21.6 of EPC Agreement shall apply.

7.14 In the event that the Contractor fails to achieve any of the Project Milestones, the Authority's Engineer shall undertake a review of the progress of construction and identify potential delays, if any. If the Authority's Engineer shall determine that completion of the Project Highway is not

Not to be used as a Bid Document, Only for Reference

feasible within the time specified in the Agreement, it shall require the Contractor to indicate within 15 (fifteen) days the steps proposed to be take to expedite progress, and the period within which the Project Completion Date shall be achieved. Upon receipt of a report from the Contractor, the Authority's Engineer shall review the same and send its comments to the Authority and the Contractor forthwith.

- 7.15 The Authority's Engineer shall obtain from the Contractor a copy of all the Contractor's quality control records and documents before the Completion Certificate is issued pursuant to Clause 12.2 of EPC Agreement.
- 7.16 Authority's Engineer may recommend to the Authority suspension of the whole or part of the Works if the work threatens the safety of the Users and pedestrians. After the Contractor has carried out remedial measure, the Authority's Engineer shall inspect such remedial measures forthwith and make a report to the Authority recommending whether or not the suspension hereunder may be revoked.
- 7.17 In the event that the Contractor carries out any remedial measures to secure the safety of suspended works and users, and requires the Authority's Engineer to inspect such works, the Authority's Engineer shall inspect the suspended works within 3 (three) days of receiving such notice, and make a report to the Authority forthwith, recommending whether or not such suspension may be revoked by the Authority.
- 7.18 The Authority's Engineer shall carry out, or cause to be carried out, all the Tests specified in Schedule-K and issue a Completion Certificate or Provisional Certificate as the case may be. For carrying out its functions under this Paragraph 5.18 and all matters incidental thereto, the Authority's Engineer shall act under and in accordance with the provisions of Article 12 and Schedule-K. The Authority's Engineer shall use following equipment in carrying out the tests.

S No	Key metrics of Asset	Equipment to be used
1	Surface defects of pavement	Network Survey Vehicle (NSV)
2	Roughness of pavement	Laser Profilometer
3	Strength of pavement	Falling Weight Reflectometer (FWD)
4	Bridges	Bridge Inspection using Mobile Bridge Inspection Unit or any suitable equipment.
5	Road signs and road marking	Retro-reflectometer

- 7.19 The Authority's Engineer shall review the monthly progress report furnished by the Contractor and send its comments thereon to the Authority and the contractor within 7 (seven) days of receipt of such report. Ensure the submission of MPR from the Contractor and make comment on the same with a copy to Employer. Consultant shall also ensure the compliance status of the comments made in earlier MPR and should also be made as a part of Consultant MPR. Payment of Consultancy services shall only be made upon the above compliance.
- 7.20 Authority's Engineer is expected to get delivered the project within the scheduled Construction Period, financial implications incurred due to any delay on account of Authority Engineer in Completion of the Project shall be borne by the Authority Engineer and no Claims in this regard shall be entertained by the Authority.

## 8. Maintenance Period

- 8.1 The Authority's Engineer shall aid and advise the Contractor in the preparation of its monthly Maintenance Programme and for this purpose carry out a joint monthly inspection with Contractor.



8.2 The Authority's Engineer shall undertake regular inspections, at least once every month to evaluate compliance with the Maintenance Requirements and submit a Maintenance Inspection Report to the Authority and the Contractor.

8.3 Visual Inspection of project highway

8.3.1 The Authority Engineer shall carry out visual inspection of entire highway stretch as per the frequency defined in the following table

Nature of defect or deficiency		Frequency of inspection
<b>ROADS</b>		
(a)	Carriageway and paved shoulders	
(i)	Breach or blockade	Daily
(ii)	Pot holes	Daily
(iii)	Cracking	Weekly
(iv)	Rutting	Weekly
(v)	Bleeding/skidding	Weekly
(vi)	Ravelling/Stripping of bitumen surface	Weekly
(vii)	Damage to pavement edges	Weekly
(viii)	Removal of debris	Daily
(b)	Hard/earth shoulders, side slopes, drains and culverts	
(i)	Variation by more than 2% in the prescribed slope of camber/cross fall	Weekly
(ii)	Edge drop at shoulders	Weekly
(iii)	Variation by more than 15% in the prescribed side (embankment) slopes	Weekly
(iv)	Rain cuts/gullies in slope	Weekly
(v)	Damage to or silting of culverts and side drains during and immediately preceding the rainy season	Weekly
(vi)	Desilting of drains in urban/semi-urban areas	Daily
(c)	Road side furniture including road signs and pavement marking	
(i)	Damage to shape or position; poor visibility or loss of retro-reflectivity	Daily
(d)	Street lighting and telecom (ATMS)	
(i)	Any major failure of the system	Daily
(ii)	Faults and minor failures	Daily
(iii)	Streetlight with Lux Meter	Weekly
(e)	Trees and plantation	
(i)	Obstruction in a minimum head-room of 5 m above carriageway or obstruction in visibility of road signs	Daily
(ii)	Deterioration in health of trees and bushes	Weekly
(iii)	Replacement of trees and bushes	Weekly
(iv)	Removal of vegetation affecting sight line and road structures	Weekly
(f)	Road areas/Wayside amenities	
(i)	Cleaning of toilets	Daily

(ii)	Defects in electrical, water and sanitary installations	Daily
(g)	Toll plaza[s]	
(i)	Failure of toll collection equipment including ETC or lighting	Daily
(ii)	Damage to toll plaza	Weekly
(h)	Other Project Facilities and Approach roads	
(i)	Damage or deterioration in Approach Roads, -[pedestrian facilities, truck lay-bys, bus-bays, bus- shelters, cattle crossings, Traffic Aid Posts, Medical Aid Posts and other works]	Daily
(j)	Incident Management	
<b>Nature of defect or deficiency</b>		<b>Frequency of inspection</b>
(i)	Instances of Incident Management as reported including time of call, response time, services rendered and time of clearing of the Highway.	Daily
(ii)	List of the Incident Management Services rendered.	Weekly
<b>BRIDGES</b>		
(a)	Superstructure of bridges	
(i)	Cracks	Weekly
(ii)	Spalling/scaling	Weekly
(b)	Foundations of bridges	
(i)	Scouring and/or cavitation	Weekly
(c)	Piers, abutments, return walls and wing walls of bridges	
(i)	Cracks and damages including settlement and tilting	Weekly
(d)	Bearings of bridges	
(i)	Deformation	Weekly
(e)	Joints in bridges	
(i)	Loosening and malfunctioning of joints	Weekly
(f)	Other items relating to bridges	
(i)	Deforming of pads in elastomeric bearings	Weekly
(ii)	Gathering of dirt in bearings and joints; or clogging of spouts, weep holes and vent-holes	Weekly
(iii)	Damage or deterioration in parapets and handrails	Weekly
(iv)	Rain-cuts or erosion of banks of the side slopes of approaches	Weekly
(v)	Damage to wearing coat	Weekly
(vi)	Damage or deterioration in approach slabs, pitching, apron, toes, floor or guide bunds	Weekly
(vii)	Growth of vegetation affecting the structure or obstructing the waterway	Weekly

8.3.2 Elements which have daily inspection frequency shall be inspected weekly as well. Similarly, all elements which have weekly inspection frequency shall be inspected monthly as well.

- 8.3.3 Daily inspection report format and weekly inspection report format has been provided in Annexure II and III of this document respectively. Manpower which needs to conduct visual inspection and mode of reporting is defined in the following table

Frequency of inspection	Inspection to be carried out by	Mode of reporting
Daily	Sub-professional staff	Soft copy by Email
Weekly	Key personnel	Soft copy by Email
Monthly	Key personnel	Hard copy and Soft copy

- 8.3.4 High resolution photographs and video of the highway stretches having defects and/or deficiencies shall be submitted along with Weekly Inspection Report and Monthly Status Report. Summary of key observations around defects and deficiencies in highway stretch shall be reported in Monthly Progress Report and detailed inspection report shall be provided as Annexure to Monthly Progress Report.

- 8.3.5 The Authority's Engineer shall also be responsible for inspection and monitoring of Wayside Amenities and ATMS (Advanced Traffic Management System) and incident management.

#### 8.4 Road conditions surveys

- 8.4.1 The carrying out of condition surveys will be one of the most important and crucial field tasks under the project. The Authority Engineer shall carry out condition survey using equipment and following a frequency as defined under.

S No	Key metrics of Asset	Equipment to be used	Frequency of condition survey
1	Surface defects of pavement	Network Survey Vehicle (NSV)	At least twice a year (As per survey months defined for the state basis rainy season)
2	Roughness of pavement	Laser Profilometer	At least twice a year (As per survey months defined for the state basis rainy season)
3	Strength of pavement	Falling Weight Deflectometer (FWD)	At least once a year
4	Bridges	Bridge Inspection using Mobile Bridge Inspection Unit or any suitable equipment	At least once a year (As per survey months defined for the state basis rainy season)
5	Road signs	Retro-reflectometer	At least twice a year (As per survey months defined for the state basis rainy season)

The first equipment based inspection except under sl. no. 1 shall be conducted at the time of completion testing. The other inspections shall be conducted before and after the rainy seasons, except for FWD testing which shall be conducted once a year.

Calibration of equipment, wherever needed, is required to be done in presence of Competent Authority. Once approval of equipment, the settings and a sample data set is provided by Competent Authority, network level data for entire project stretch can be collected. Month of surveys for Bihar shall be done before rains in the month of May and after rains in the month of November as defined in Annexure-IV of this document.

The project road shall necessarily be surveyed with NSV before the start of the work, issue of completion certificate and thereafter at regular intervals for each lane of the pavements as provided in the above table with minimum parameters as under.

The minimum parameter which has to be recorded during survey with NSV in each lane, not limited to the following:

(i) Inventory of Road;

GPS coordinates, Pavement Type, Pavement Width, Terrain, Land use, Shoulder type and width, Drain Type and Width, Median Type and Width, Wayside Amenities, Crash Barrier, Signages etc.

(Note-All inventory items shall be recorded both side of road and Geo-tagged with images)

(ii) Condition of Road;

Roughness, Rutting. Distresses (cracking, Potholes, Bleeding, Surface failure etc.);

(Note-All inventory items shall be recorded for each lane and Geo-tagged)

**8.4.2 Measurement of pavement surface defects and roughness**

- i. The Authority Engineer shall use Network Survey Vehicles mounted with equipment such as Laser based automatic crack detection , high resolution digital cameras for RoW and pavement, high accuracy DGPS receiver and in vehicle data processing software or better technology to accurately measure following pavement surface properties

Surface defect	Dimensions to be reported
Cracking	<ul style="list-style-type: none"> <li>• Length</li> <li>• Width</li> <li>• Depth</li> </ul>
Potholes	<ul style="list-style-type: none"> <li>• Area</li> <li>• Depth</li> </ul>
Raveling	<ul style="list-style-type: none"> <li>• Indicator</li> <li>• %</li> <li>• Area</li> </ul>
Rutting	<ul style="list-style-type: none"> <li>• Depth</li> <li>• Width</li> </ul>
Concrete Joint Faulting	<ul style="list-style-type: none"> <li>• Length</li> </ul>
Roughness	<ul style="list-style-type: none"> <li>• IRI in both wheel paths</li> </ul>

- ii. The following criteria shall be met by the process of defects detection

- Measurement of 3D road profile using such technologies as laser scanning or other proven technologies.
- Ability to operate (collect data) at different speeds with a minimum speed of 30km/hr and upto at least 75 km/ hr.  
Profile depth accuracy of 0.5mm  
Capability for lane tracking to control driver wander' and ensure high repeatability of data between surveys.
- Measure at least 3.5m width of highway lane.

- Transverse Profile including rut depth measurement of pavement surface widths of both carriageway and shoulders. The rut depth data must be convertible to different straightedge lengths (1.8m to 3.5m) and meet industry standards (ASTM E1703 / E1703M).
  - Pavement images with capability to automatically identify and rate distresses
  - Roughness measurement with outputs of both raw longitudinal profiles and International Roughness Index (IRI) calculation shall be reported at least 100m referenced to the preceding Location Reference Post (LRP). The roughness must meet ASTM-E950 (equivalent to Class I road profiler). The IRI shall be determined in both wheel paths.
  - Ability to record images at user-defined intervals (e.g. every 5, 10m, etc.)
  - Minimum images resolution of 1600x1200
  - Outputs must include Standard JPEG image or similar industry standard
  - Distance resolution of <1mm,
  - Capable of achieving distance accuracy of 0.1% (i.e. within 1m over 1km distance)
  - All data outputs should be in a non-proprietary format (e.g. .CSV, .MDB, Excel) and not require specialist software in order to view or format data
  - Data should also be capable of being easily formatted into data compatible with HDM-4
- iii. The following are the set of deliverables which should be submitted after completion of survey as part of Monthly Progress Report
- Raw data generated from the equipment which are part of Network survey covering the parameters mentioned in above table. It should also include
    - o Survey ID, Description, Date, Lane
    - o GPS referenced data for GIS mapping
  - Video logging
    - o Pavement imagery (AVI/JPEG)
    - o 360 degree imagery (JPEG)
  - Interpretation report covering summary of entire survey and analysis of defects and deficiencies

#### 8.4.3 Measurement of pavement strength

- (i) The Authority Engineer shall carry out structural strength surveys for existing pavements using Falling Weight Deflectometer technique in accordance with the procedure given in IRC:115-2014 (Guidelines for Structural Evaluation and Strengthening of Flexible Road Pavements Using Falling Weight Deflectometer (FWD) Technique) and IRC:117-2015 (Guidelines for the Structural Evaluation of Rigid Pavement by Falling Weight Deflectometer).
- (ii) The interval at which deflection measurements are to be taken up are as per IRC:115- 2014 / IRC:117-2015. For flexible pavements, the sample size and the interval of the data to be collected depends on the length of the uniform section calculated and condition of the pavement section i.e. 'good', 'fair' and 'poor' for each lane, established on the pavement condition data based on the criterion given in IRC:115-2014. For rigid pavements, the deflection data may be collected at interiors, corners, transverse joints and longitudinal joints in the outer lanes at intervals as specified in IRC:117-2015.
- (iii) The following are the set of deliverables which should be submitted after completion of inspection test as part of Monthly Progress Report
- Data report covering following parameters
    - o Deflection Bowl (Transient Deflections at seven different points)
    - o Corrected Elastic Modulus Bituminous E1

- Corrected Elastic Modulus Granular E2
  - Corrected Elastic Modulus Subgrade E3
  - Subgrade CBR
  - Interpretation report covering summary of entire survey results and analysis of key parameters
- 8.4.4 The Authority Engineer shall carry out the condition and structural assessment survey of the bridges in accordance with IRC-SP; 35 with the use of Mobile Bridge Inspection unit (MBIU) or better technology.

- (i) The following criteria shall be met by the process of bridge condition assessment
- Automatic folding and unfolding of platform
  - 90 degree rotation of platform
  - Sufficient safety features to be incorporated such as dedicated power supply, emergency cut off system, etc
  - Complete access to hidden parts of the bridge by the raters
- (ii) Detailed bridge inspection report shall be submitted as per the Inspection Proforma provided in IRC-SP 35

8.4.5 Measurement of retroreflection of road signs

- (i) The Authority Engineer shall measure Coefficient of retro reflected luminance RA (night time retro reflection) of road traffic signs using a portable retro reflectometer.
- (ii) The following criteria shall be met by the process of road signs retro reflection measurement
- Measurement of retro reflective signs shall be conducted in accordance with ASTM E1709 and ASTM E2540
  - Measurement time after pressing trigger shall be less than or equal to 1 sec
  - Observation angle adjustment from 0.2 degrees to 3.0 degrees
  - Entrance angle adjustment from -45 degrees to +45 degrees
  - Self-contained commercially available battery
  - Inbuilt data storage of at least 2,000 measurements so that data transfer requirement is minimized while the survey is being conducted
  - Interface for transferring data from device to Computer
  - Built in GPS to capture GPS coordinates of road sign
  - Range shall be at least 0-2000 cd/lx/m<sup>2</sup>
- (iii) The following are the set of deliverables which should be submitted after completion of survey as part of Monthly Progress Report
- System generated coefficient of retro reflected luminance RA (night time retro reflection) of all road signs
  - Interpretation report covering analysis of road signs falling in different range of RA and actions to be taken

8.5 The Authority Engineer shall prepare a Monthly Status Report in O&M phase of project in respect of his duties and functions under this Agreement and in accordance with the format prescribed in

Annexure VI. 1st deliverable of the report which is an executive summary to the main report (Section 1) shall be submitted to the Authority and updated on the PMIS and project specific website by 4th of every month. Main report (Section 2 onwards) shall be submitted to the Authority and updated on the PMIS and project specific website by 7th of every month. Key sections of the Monthly Status Report are as follows;

S.No	Sections	Sub actions
1	Executive Summary	1.1 Overall road condition
		1.2 Key reporting metrics
		1.3 Key maintenance activities undertaken
		1.4 Pending issues
		1.5 Recommended actions by AE
		1.6 Strip plan for maintenance
2	Project Overview	2.1 Key project details
		2.2 Location map
		2.3 Key plan
		2.4 Summary of project features
		2.5 RoW availability
3	Critical issues and action taken	3.1 Issue and action log
		3.2 Summary of deficiencies
		3.3 Obligations as per contract
		3.4 Inspection schedule
4	Monthly Inspection Report	4.1 Summary of NCR issued
		4.2 Equipment based inspection report
5	Status of damages	6.1 Damages for non completion of project facilities
		6.2 Damages for breach of maintenance activities
		6.3 Damages for non completion of major maintenance works
6	Change of Scope proposals	7.1 Change of Scope proposals
7	Status of pending disputes	8.1 Status of pending disputes
8	Reports	9.1 Toll collection statement
		9.2 Accident Report
		9.3 Details of user complaints
		9.4 Encroachment list
		9.5 Lane closure report
9	Annexures	Annex I- Detailed visual inspection report of project highway
		Annex II onwards- Additional details provided by AE

8.6 The Authority's Engineer shall specify the tests, if any, that the Contractor shall carry out, or cause to be carried out, for the purpose of determining that the Project Highway is in conformity with the Maintenance Requirements. It shall monitor and review the results of such tests and remedial measures, if any, taken by the Contractor in this behalf.

8.7 In respect of any defect or deficiency referred to in Paragraph 3 of Schedule-E, the Authority's Engineer shall, in conformity with Good Industry Practice, specify the permissible limit of deviation or deterioration with reference to the Specifications and Standards and shall also

specify the time limit for repair or rectification of any deviation or deterioration beyond the permissible limit.

- 8.8 The Authority's Engineer shall examine the request of the Contractor for closure of any lane (s) of the Project Highway for undertakings maintenance/repair thereof, and shall grant permission with such modifications, as it may deem necessary, within 5 (five) days of receiving a request from the Contractor. Upon expiry of the permitted period of closure, the Authority's Engineer shall monitor the reopening of such lane (s), and in case of delay, determine the Damages payable by the Contractor to the Authority under Clause 14.5 of EPC Agreement

## **9. Determination of costs and time**

- 9.1 The Authority's Engineer shall determine the costs, and/or their reasonableness, that are required to be determined by it under the Agreement.
- 9.2 The Authority's Engineer shall determine the period of Time Extension that is required to be determined by it under the Agreement.
- 9.3 The Authority's Engineer shall consult each Party in every case of determination in accordance with the provisions of Clause 18.5 of EPC Agreement.

## **10. Payments**

- 10.1 The Authority's Engineer shall withhold payments for the affected works for which the Contractor fails to revise and resubmit the Drawings to the Authority's Engineer in accordance with the provision of Clause 10.2.4 (d) of EPC Agreement.
- 10.2 Authority's Engineer shall
- a) within 10 (ten) days of receipt of the Stage Payment Statement from the Contractor pursuant to Clause 19.4, determine the amount due to the Contractor and recommend the release of 90 (ninety) percent of the amount so determined as part payment, pending issue of the Interim Payment Certificate; and
  - b) within 15 (fifteen) days of the receipt of the Stage Payment Statement referred to in Clause 19.4, deliver to the Authority and the Contractor an Interim Payment Certificate certifying the amount due and payable to the Contractor, after adjustments in accordance with the provisions of Clause 19.10 of EPC Agreement.
- 10.3 The Authority's Engineer shall, within 15 (fifteen) days of receipt of the Monthly Maintenance Statement from Contractor pursuant to Clause 19.6 of EPC Agreement, verify the Contractor's statement and certify the amount to be paid to the Contractor in accordance with the provisions of the Agreement.
- 10.4 The Authority's Engineer shall certify final payment within 30 (thirty) days of the receipt of the final payment statement of Maintenance in accordance with the provision of Clause 19.16 of EPC Agreement.

## **11. Other duties and functions**

The Authority's Engineer shall perform all other duties and functions as specified in the Agreement.

## **12. Miscellaneous**

- 12.1 All key personnel and non-key personnel (sub professional and support staff) of the Supervision Consultant shall use the fingerprint based (biometric) attendance system for marking their daily attendance. Biometric Attendance System shall be installed by the



Supervision Consultant at its own cost at the site office and Team Leader Office in order to facilitate the attendance marking. 1 More system can be installed near the project highway in order to encourage frequent visits of project highway by key personnel and sub professional staff. A copy of monthly attendance records shall be attached with Monthly Progress Report. Proper justification shall be provided for cases of absence of key personnel/ non-key personnel which do not have prior approval from BSRDCL HQ. for key personnel and concerned DGM, PIU for non-key personnel.

- 12.2 A copy of all communications, comments, instructions, Drawings or Documents sent by the Supervision Consultant to the Contractor pursuant to this TOR, and a copy of all the test results with comments of the Supervision Consultant thereon including NCR on monthly basis, shall be furnished by the Supervision Consultant to the client forthwith.
- 12.3 The Authority's Engineer shall retain at least one copy each of all Drawings and Documents received by it, including 'as - built' Drawings and keep them in its safe custody.
- 12.4 Within 90 (Ninety) days of the Project Completion Date, the Authority's Engineer shall obtain a complete set of as built Drawings in 2 (two) hard copies and in micro film form or in such other medium as may be acceptable to the Authority, reflecting the Project Highway as actually designed, engineered and constructed, including an as-built survey illustrating the layout of the Project Highway and setback lines, if any, of the buildings and structures forming part of project Facilities; and shall hand them over to the Authority against receipt thereof.
- 12.5 The Authority's Engineer, if called upon by the Authority or the Contractor or both, shall mediate and assist the Parties in arriving at an amicable settlement of any Dispute between the Parties.
- 12.6 The Authority's Engineer shall inform the Authority and the Contractor of any event of Contractor's Default within one week of its occurrence.
- 12.7 As soon as level of OGL/NGL is recorded, a copy of the same duly signed by Team Leader and RE shall be submitted to PIUs with a copy to BSRDCL, HQ before the commencement of clearing & grubbing for record and its checking with the levels to be provided in the As Built Drawings.

#### 12.8 Fake CV

If any case of fake/incorrect/inflated CV is found, it shall be dealt with very severely and would result in all possible penal action including blacklisting from future projects

of BSRDCL. This would also apply even when the consulting firm is not successful in getting the assignment. In case CV of a person is turned out to be fake/incorrect/inflated during the assignment, the consultancy firms will have to refund the salary and perks drawn including interest @12% per annum in respect of the person apart from other consequences. In addition to above, 10% of the salary and perks to be refunded shall be recovered from the Firm as penalty.

### 13. PERFORMANCE CRITERIA

Authority's Engineers shall be expected to fully comply with all the provisions of the 'Terms of Reference', and shall be fully responsible for supervising the Designs, Construction and maintenance and operation of the facility takes place in accordance with the provisions of the EPC Agreement and other schedules. Any failure of the Authority's Engineer in notifying to Employer and the Contractor on non-compliance of the provisions of the EPC Contract Agreement and other schedules by the EPC Contractor, non-adherence to the provision of TOR and non-adherence to the time schedule prescribed under ToR shall amount to non-performance and shall be treated as deficiency of services.

The Authority Engineer shall appoint its authorized representative, who shall issue on behalf of the AE, Completion Certificate along with the Team Leader and shall carry out

any such task as may be decided by Employer. The AE shall take prior approval of Employer before issuing Completion Certificate. The proposal submitted shall also include the name of the authorized representative along with the authorization letter and power of attorney.

The completion certificate shall be issued by the Authority's Engineer with the prior approval of Authority. Authority shall also ensure that the completion certificate is approved after verifying/confirming that all works/items including ancillary items forming part of the project Highway are completed in all respects conforming to the Standard and Specifications of the Ministry. A video of completed work on the date of completion shall invariably be prepared and furnished as an authentic documentary evidence of completion of works within 15 days of completion without which completion certificate shall not be issued. Authority Engineer, apart from furnishing a certificate of completion and all tests as per specifications in accordance with contract, will also certify that all NCRs issued during the contract have been closed after successful rectification of defects within the completion date.

#### 14. Deficiency of Services:

Deficiencies in the services on part of supervision consultants may attract penal provisions in the form of fines, up to a maximum amount of 10% of contract price and/or debarment, blacklisting etc. by the client. Client shall have the right to communicate to all the Department/Govt./ Agencies within the state and outside the state regarding action initiated against the consulting firm regarding their inferior services. Sample deficiencies include but are not limited to the following:

- Not acting impartially or acting in collusion with contractor in award of variation, fixation of new rates, etc.
- Not keeping proper records regarding quality control, inspection, rejection/ rectification of work, etc.
- Failure to give proper and timely advice to client/contractor to enable correction during execution.
- Delay in design and withholding approvals, etc. beyond the period mentioned in this TOR for such action.
- Recommending extension to the contractor with a view to extending duration of supervision services.
- Discrepancies found regarding Quality Control Results data.
- Refusing to give reasons for decision when called for by the client.
- Not being fully conversant with manuals, specifications, standards, client's/ Ministry's guidelines and requirement of the project to be followed during construction.
- Certifying substandard work for payment.
- Not exercising required scrutiny/non approval of temporary stretch/works.
- Lack of proper coordination with contractors and Project Manager/ client's representative to ensure smooth implementation of projects.
- Permitting submitting of any part/ major works without authorisation.
- Delay in mobilisation of required staff at any stage of the contract.
- Indulging in corrupt, fraudulent, coercive or collusive practices.

## 15. CONSULTANT'S PROPOSAL

15.1 List of key personnel and non key expert to be fielded by the Consultants shall be as below:

Key Expert	
1	Team Leader Cum Senior Contract Specialist
2	Senior Bridge Engineer
3	Senior Highway cum Pavement Engineer
4	Senior Quality cum Material Expert
5	Road safety Expert
6	Senior Quantity Surveyer cum Contract Specialist
7	R&R cum Social Development Specialist
8	Envioiremental Specialist
9	Resident Engineer, Bridge
10	Resident Engineer, Highway
11	CAD Engineer
12	Gender Expert

Non Key Expert	
1	Quantity Surveyor (2 Nos)
2	Field Engineer Survey (3 Nos)
3	Field Engineer ( Highway) (2 Nos)
4	Field Engineer (Bridge). (4 Nos)
5	Junior Environmental Expert (1 Nos)
6	Material Engineer/ Quality Control Engineer (2 Nos.)
7	Lab Technician- 2 Nos

15.2 Broad job-description and minimum qualification for key personnel mentioned above is enclosed as **Enclosure-B**. However, higher marks shall be accorded to the Candidate with higher relevant qualification and experience. All the CV's of the personals mentioned in Para 5.3 (iii) of Data Sheet shall be evaluated at the time of evaluation of technical proposal. Consultants are advised in their own interest to frame the technical proposal in an objective manner as far as possible so that these could be properly assessed in respect of points to be given as part of evaluation criteria. The bio-data of the key personnel should be signed on every sheet by the personnel concerned and the last sheet of each bio-data should also be signed by the authorised signatory for the Consultant. The key personnel shall also certify at the end of their bio-data proforma that they have not left any of the Employer works without completing of their assignment and have not accepted any other offer at the time of signing of the bio-data and as such shall be available to work with the Authority Engineer, if the Project is awarded. In case the key personnel leaves the assignment without approval of Employer, Employer would be at liberty to take any appropriate action against that key personnel including debarment. The CV submitted by selected firm/JV shall be hoisted

on official website of Employer.

- 15.3 In addition to above, consultants are required to propose other key personnel, sub- professional staff and other field engineers as detailed in Enclosure-A and the minimum qualification requirements for the same is enclosed in Enclosure-B.

**16. PERIOD OF SERVICES**

- 16.1 The services of an Authority's Engineer will be in phases as per Contract Agreement.  
16.1.1 The appointment of the Authority's Engineer shall initially be as per details given below.

Period of service (in months)	Construction period  (in months)	<b>Maintenance /DLP</b>  (in months)
42+60	42	60

The proposed manpower deployment for this period shall be matching the activities to be performed during the said period. The time frame for services during the deployment of key personnel during this period shall be as shown in Enclosure A. Extension of Time for providing services of the Authority's Engineer may be extended concurrently with the Extension of Time granted, if any, to the EPC Contractor for the project, subject to satisfactory performance of the Authority's Engineer.

**17. Project Coordinator –**

**The Authority's Engineer shall also act as Project Co-ordinator.**

The Firm shall appoint a personnel from its head office to act as Project Coordinator for the assignment. He will be authorised to communicate with the Authority in respect of all matters pertaining to the project. The cost of the Project Coordinator shall be incidental to the Consultancy Assignment. Personnel representing the firm will act as an Authority's Engineer also. Such Personnel should have more professional experience than the project Team Leader and having the experience of handling EPC/PPP/Externally Aided Project Contract and should be employed with the Company/Firm for more than 2 years at the top management level. In this regard an undertaking needs to be submitted with the Technical Proposal.

Authority's Engineer shall be from the lead partner firm.

**18. Performance Security**

Consultant shall be required to submit acceptable Bank Guarantee for an amount equal to 10% (ten percent) of the accepted consultancy cost towards Performance Security proportionately in the currencies of payment asked for in the bid proposal. The validity of the Bank Guarantee(s) shall cover entire duration of consultancy period plus 6 months. The format of the Bank Guarantee(s) shall be got approved by the consultant from Employer. The Bank Guarantee(s) shall be released after satisfactory completion of the assignment and submission of final bill of the civil contractors.

## SCHEDULE - O

(See Clauses 19.4(i), 19.6(i), and 19.8(i))

### Forms of Payment Statements

#### 1. Stage Payment Statement for Works

The Stage Payment Statement for Works shall state:

- (a) the estimated amount for the Works executed in accordance with Clause 19.3(i) subsequent to the last claim;
- (b) amounts reflecting adjustments in price for the aforesaid claim;
- (c) the estimated amount of each Change of Scope Order executed subsequent to the last claim;
- (d) amounts reflecting adjustment in price, if any, for (c) above in accordance with the provisions of Clause 13.2(iii) (a);
- (e) total of (a), (b), (c) and (d) above;
- (f) Deductions:
  - (i) Any amount to be deducted in accordance with the provisions of the Agreement except taxes;
  - (ii) Any amount towards deduction of taxes; and
  - (iii) Total of (i) and (ii) above.
- (g) Net claim: (e) – (f) (iii);
- (h) The amounts received by the Contractor up to the last claim:
  - (i) For the Works executed (excluding Change of Scope orders);
  - (ii) For Change of Scope Orders; and
  - (iii) Taxes deducted

#### 2. Monthly Maintenance Payment Statement

The monthly Statement for Maintenance Payment shall state:

- (a) the monthly payment admissible in accordance with the provisions of the Agreement;
- (b) the deductions for maintenance work not done;
- (c) net payment for maintenance due, (a) minus (b);
- (d) amounts reflecting adjustments in price under Clause 19.12; and
- (e) amount towards deduction of taxes

#### 3. Contractor's claim for Damages

*Note: The Contractor shall submit its claims in a form acceptable to the Authority.*

## SCHEDULE – P

(See Clause 20.1)

### Insurance

#### 1. Insurance during Construction Period

- (i) The Contractor shall effect and maintain at its own cost, from the Appointed Date till the date of issue of the Completion Certificate, the following insurances for any loss or damage occurring on account of Non Political Event of Force Majeure, malicious act, accidental damage, explosion, fire and terrorism:
  - (a) insurance of Works, Plant and Materials and an additional sum of 15 (fifteen) per cent of such replacement cost to cover any additional costs of and incidental to the rectification of loss or damage including professional fees and the cost of demolishing and removing any part of the Works and of removing debris of whatsoever nature; and
  - (b) insurance for the Contractor's equipment and Documents brought onto the Site by the Contractor, for a sum sufficient to provide for their replacement at the Site.
- (ii) The insurance under sub para (a) and (b) paragraph 1(i) shall cover the Authority and the Contractor against all loss or damage from any cause arising under paragraph 1 other than risks which are not insurable at commercial terms.

#### 2. Insurance for Contractor's Defects Liability

The Contractor shall effect and maintain insurance cover of not less than 15% of the Contract Price for the Works from the date of issue of the Completion Certificate until the end of the Defects Liability Period for any loss or damage for which the Contractor is liable and which arises from a cause occurring prior to the issue of the Completion Certificate. The Contractor shall also maintain other insurances for maximum sums as may be required under the Applicable Laws and in accordance with Good Industry practice.

#### 3. Insurance against injury to persons and damage to property

- (i) The Contractor shall insure against its liability for any loss, damage, death or bodily injury, or damage to any property (except things insured under Paragraphs 1 and 2 of this Schedule or to any person (except persons insured under Clause 20.9), which may arise out of the Contractor's performance of this Agreement. The insurance shall be for a limit per occurrence of not less than the amount stated below with no limit on the number of occurrences.  
The insurance cover shall be not less than: Rs. 10,00,000 (Ten Lakh).
- (ii) The insurance shall be extended to cover liability for all loss and damage to the Authority's property arising out of the Contractor's performance of this Agreement excluding:
  - (a) the Authority's right to have the construction works executed on, over, under, in or through any land, and to occupy this land for the Works; and
  - (b) damage which is an unavoidable result of the Contractor's obligations to execute the Works.

#### 4. Insurance to be in joint names

The insurance under paragraphs 1 to 3 above shall be in the joint names of the Contractor and the Authority.

## Schedule-Q

(see clause 14.10)

### Tests on completion of Maintenance Period

1. **Riding Quality Test:**

Riding quality test: Riding quality of each lane of the carriageway shall be checked with the help of a calibrated bump integrator and the maximum permissible roughness for the purpose of this test shall be 2,200 ( two thousand two hundred only) mm for each km.

2. **Visual and Physical test**

The Authority's Engineer shall conduct a visual and physical check of construction to determine that all works and equipment forming part thereof conform to the provision of this Agreement. The physical test shall include measurement of cracking, rutting, stripping and potholes and shall be as per the requirement maintenance mentioned in Schedule-E

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**Schedule-R**

*(See clause 14.10)*

**Taking Over Certificate**

I,-----[name and designation of the Authority's Representative] under and in accordance with the Agreement dated -----[the "Agreement"], for **Improvement/Upgradation, Widening and Strengthening of Mansi-Fungo Halt Section of Mansi-Saharsa-Hardi-Chaughara Road (SH-95) on EPC Mode under Civil Works Contract Package No. BSHP-III (Phase-2)/Pkg-3/SH-95** through -----[name of Contractor], hereby certify that the Tests on completion of Maintenance Period in accordance with Article 14 of the Agreement have been successfully undertaken to determine compliance of the Project Highway with the provisions of the Agreement and I hereby certify that the Authority has taken over the Project highway from the Contractor on this day-----

SIGNED, SEALED AND DELIVERED

[Signature]

[name and designation of Authority's Representative]

[Address]

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**SCHEDULE-S**  
(See Clause 17.6.2)

**Performance Certificate**

I,.....(Name and designation of the Authority's representative) under and in accordance with the Agreement dated..... (the "Agreement"), for **Improvement/Upgradation, Widening and Strengthening of Mansi-Fungo Halt Section of Mansi-Saharsa-Hardi-Chaughara Road (SH-95) on EPC Mode under Civil Works Contract Package No. BSHP-III (Phase-2)/Pkg-3/SH-95** (the "Project Highway") through..... (Name of Contractor), hereby certify that the Contractor has discharged all its obligations under the Agreement and in accordance with Article 17 of the Agreement I hereby issue Performance Certificate to the Contractor on this day.....

SIGNED, SEALED AND DELIVERED

[Signature]

[name and designation of Authority 's Representative]

[Address]

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## SCHEDULE-T

(Clause 19.1.6)

### Summary of Currencies of Payment

Name of Currency	A Amount of currency	B Rate of exchange (local currency per unit of foreign)	C Local currency equivalent $C=AX B$	D Percentage of Net Bid Price(NTP) $(100 \times C)/NTP$
Local Currency				
Foreign Currency				
Net Bid Price				100.00

Note:

1. Change in scope would require agreement between parties on currency.
2. Regarding damages by the Authority, financing charges for a payment delays will be in corresponding currency amounts.
3. Delay damages will be recovered in currencies in proportion which in which contract prices payable.

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BIHAR STATE ROAD DEVELOPMENT CORPORATION  
LIMITED

(A Govt. of Bihar Undertaking)

Feasibility Report

(Only for Reference)

Improvement/Upgradation, Widening and Strengthening of Mansi-Fungo Halt Section of Mansi-Saharsa-Hardi Chaughara Road (SH-95) from KM 0+000 to KM 14+125 (Length- 14.125 KM) on EPC Mode (Civil Works Contract Package No. BSHP-III (Phase-2)/Pkg-3/SH-95)

VOLUME II – BID DOCUMENT

BIHAR STATE ROAD DEVELOPMENT CORPORATION  
LIMITED

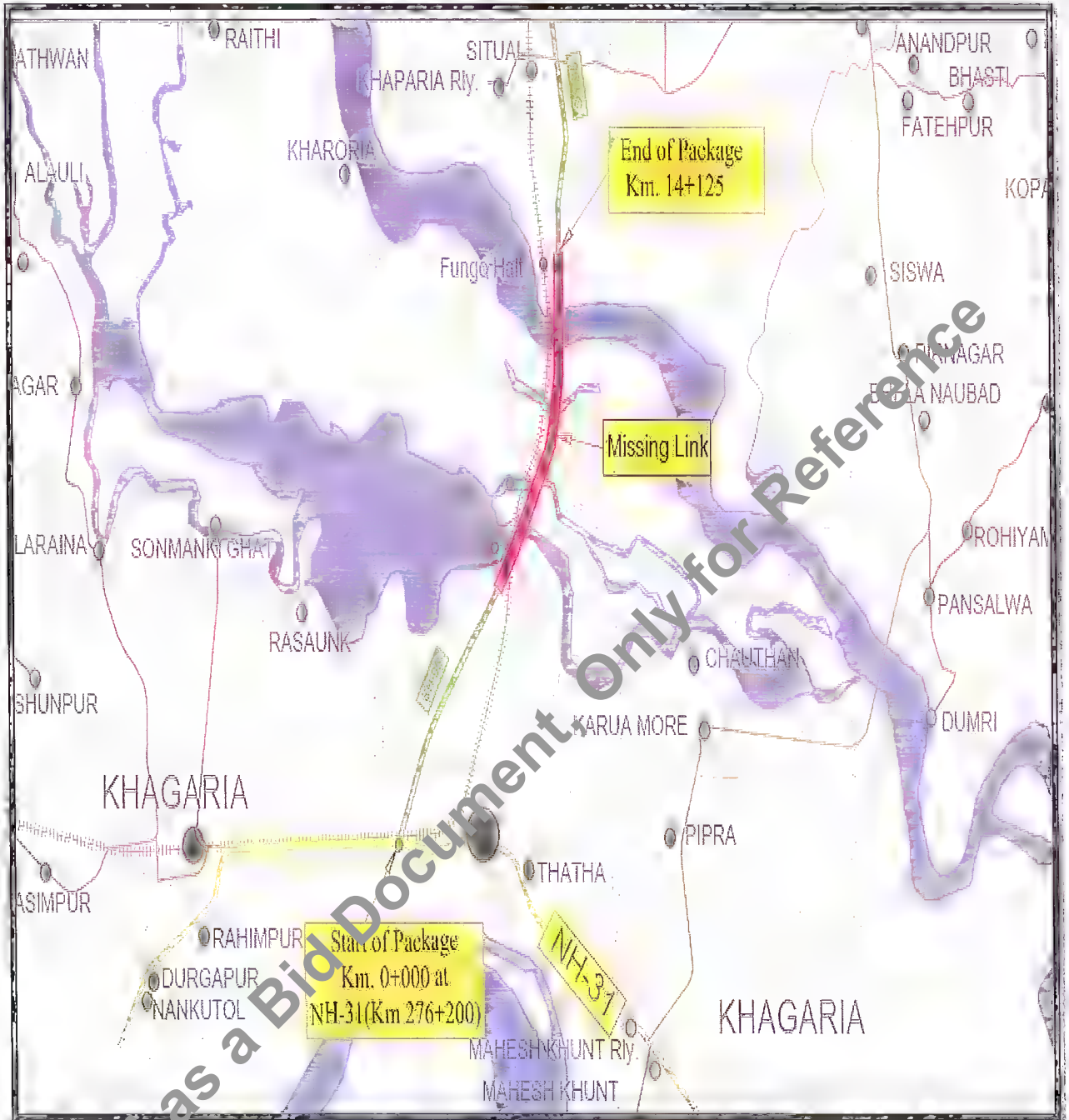
Bihar State Road Development Corporation Limited

(A Govt. of Bihar Undertaking)

RCL Mech. Workshop Campus, Sheikhpura,

Patna - 800 014, BIHAR

January 2022



MAP Km. 0+00 at NH-31 (Begusarai-Purnia section) and ends at Km. 14+125 near Fungo Halt in District Khagaria

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Missing Link KM 7+270 at Badala Bandh to Km. 14+125 near Fungo Halt in District Khagaria.

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# Feasibility Report

(Only for Reference)

The road Construction Department, Government of Bihar through Bihar State Road Development Construction Limited (BSRDCL) (the "Authority"), Government of Bihar undertakings, incorporated under (Indian) companies Act, 1956 is engaged in the development of highways and as part of this endeavor, the Authority has decided to undertake "Improvement/Upgradation, Widening and Strengthening of Mansi-Fungo- Halt Section of Mansi-Saharsa-Hardi-Chaughara Road (SH-95) on EPC Mode under Civil Works Contract Package No. BSHP-III (Phase-2)/Pkg-3/SH-95" as a part of SH-95, Mansi (NH-31)-Saharsa-Hardi chaughara (SH-66) road. The whole road Passes through 4 districts. Khagaria, Saharsa, madhepura, Supaul.

Project road starts from Km. 276+200 of NH-31 (Begusarai-Purnia section) and ends at Km. 14+125 near Fungo Halt in District Khagaria, Total Length of Project is 14.125 Km. The Project Road Follow the existing alignment upto 7.270 KM and then Green field Alignment from KM 7.270 to KM 14.125 (missing link). The project road crossed four rivers Bagmati river, Katyani river, old Koshi and main Koshi river and one railway crossing. 4 numbers of major bridges 1 no. minor bridge and one ROB have been proposed.

The Alignment Description along the Project road has been summarised below:

Sl. No.	Chainage		Alignment Description
	From	To	
1	0+000	3+600	Existing Alignment
2	3+600	7+270	Existing Alignment
3	7+270	8+350	ROB in Missing Link
4	8+350	14+125	Missing Link

**PROJECT PROPOSAL:-**

- Two-Laning with paved shoulders shall be undertaken. The paved carriageway shall be 10 m wide in accordance with the typical cross section.
- In open country, earthen shoulder of 1.0 m width shall be provided with 150mm thick compacted layer of granular material.
- Rigid Pavement with Paver Block and Drain cum footpath shall be provided in the built – up section.
- Lateral and vertical clearances at underpasses and provisions of guard rail/crash barriers shall be as per provisions of relevant manual.
- Two lane flexible Pavement with high Embankment Project Highway with missing link Km 7+270 to 14+125.
- The service/slip roads of 5.5 m carriageway width shall be constructed at the ROB.

**Pavement Design IRC: 37-2012 Method of Flexible Pavement Design****Widening and for New Construction**

Pavement composition thicknesses were designed for widening, reconstruction and new construction sections as per IRC: 37-2012. For strengthening of existing flexible road pavement overlay thickness has been considered where established as per IRC: 81-1997. 20 MSA while designing the overlay and as minimum criteria as per guide lines of IRC: SP: 73:2015 for new pavement.

**DESIGN REQUIREMENTS:-**

Flexible Pavement Thickness for Widening of Existing Lane, New pavement and Reconstruction Stretches

Design Chainage		Design CBR %	Minimum Design Traffic (msa)	Pavement Composition Thickness (mm)				
From	To			BC	DBM	WMM	GSB	Total
0+000	14+125	6	20	40	95	250	230	615

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**IRC: 81-1997 Method of Flexible Overlay – For Strengthening of Existing Pavement**

The average characteristic deflection (Dc) values to be used for design purposes have been worked from BBD survey. Since the existing deflection values observed are on the very higher side, the strengthening of entire existing road has been recommended from GSB layer as per the new pavement crust thicknesses. The bituminous layer on the existing pavement is to be removed before re-construction with GSB layers.

**IRC: 58-2011 Method of Rigid Pavement Design**

Pavement composition thickness for rigid pavements proposed at built up.

Material Type	Thickness (mm)
Pavement Quality Concrete (M-40)	300
Dry Lean Concrete (M-10)	150
Granular Sub-base	150
Subgrade	500

**STRUCTURES:-**

The New bridges and structure shall be as follows.

Sl.No.	Location at Km.	Remarks
1	2+348	Reconstruction Minor Bridge
2	3+302	Reconstruction Minor Bridge
3	7+807	New ROB Bridge
4	8+798	New Major Bridge
5	9+765	New Major Bridge
6	11+176	New Minor Bridge
7	11+057	New Major Bridge
8	13+551	New Major Bridge

Light Vehicle Underpasses shall be provided as follows.

Sl. No.	Design Chainage	Span/opening (m)	Remarks
1	10+120	1 x 7 x 4.5	2 Lane LVUP
2	11+015	1 x 7 x 4.5	2 Lane LVUP
3	11+650	1 x 7 x 4.5	2 Lane LVUP
4	12+368	1 x 7 x 4.5	2 Lane LVUP
5	13+020	1 x 7 x 4.5	2 Lane LVUP

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**Grade Separated Structures.**

Grade separated structures shall be provided as follows:

Sl. No.	Location (Chainage)		Span/opening (m)	Remarks
	From (km)	To (km)		
1	10+120	10+450	1x7x4.5	2 Lane LVUP

**Reconstruction of existing culverts.**

S.N	Design Ch.	Culverts	Recommendation	Existing Span	Proposed Span (m)
1	0+242	HP	Reconstruction	1*0.90	1x1.2
2	3+779	HP	Reconstruction	2*0.90	2x1.2
3	5+050	HP	Reconstruction	4*0.60	2x1.2
4	6+600	HP	Reconstruction	4*0.60	2x1.2

New culverts shall be constructed as per particulars given in the table below:

Sl. No.	Proposed Design Chainage	Proposed Span Arrangement (size)	Clear Width a (mm)	ClearHt b (mm)	Top Slab c (mm)	Bottom Slab d (mm)	Wall e (mm)	Proposed Structure Type	Remark
1	0+050	1x2	2000	2000	200	250	200	Rcc Box	New Const.
2	1+700	1x2	2000	2000	200	250	200	Rcc Box	New Const.
3	2+000	1x2	2000	2000	200	250	200	Rcc Box	New Const.

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4	2+810	1x2	2000	2000	200	250	200	Rcc Box	New Const.
5	4+450	1x2	2000	2000	200	250	200	Rcc Box	New Const.
6	5+940	1x2	2000	2000	200	250	200	Rcc Box	New Const.
7	6+100	1x2	2000	2000	200	250	200	Rcc Box	New Const.
8	7+040	1x2	2000	2000	200	250	200	Rcc Box	New Const.
9	8+400	1x2	2000	2000	200	250	200	Rcc Box	New Const.
10	9+300	1x2	2000	2000	200	250	200	Rcc Box	New Const.
11	10+370	1x2	2000	2000	200	250	200	Rcc Box	New Const.
12	10+665	1x2	2000	2000	200	250	200	Rcc Box	New Const.
13	11+600	1x2	2000	2000	200	250	200	Rcc Box	New Const.
14	12+300	1x2	2000	2000	200	250	200	Rcc Box	New Const.
15	12+630	1x2	2000	2000	200	250	200	Rcc Box	New Const.
16	12+871	1x2	2000	2000	200	250	200	Rcc Box	New Const.
17	13+120	1x2	2000	2000	200	250	200	Rcc Box	New Const.
18	14+000	1x2	2000	2000	200	250	200	Rcc Box	New Const.

**PROVISIONS:-**

**Drain Cum Footpath:** - Drain cum Footpath shall be constructed on both sides of the project Highway throughout as per the typical cross sections attached and as per provision of relevant Manual. Roadside drain of RCC Box type capable of bearing load for service road / road connecting to project road shall also be provided in the stretches as shown in the typical cross sections. Best engineering practices shall be observed during excavation and construction of drain along ROW line which co-exists with build-up structure.

Sl. No.	Stretch		Fully Pavement Quality Concrete/Footpaths	Reference to cross section
	From	To		
1	0+400	1+600	Paver Block & Drain-cum-Footpath	Cross-sections attached with the schedule indicated in Appendix B-I will be referred
2	5+970	6+370	Paver Block & Drain-cum-Footpath	

**Major Junctions**

The details of major junctions are as follows:

S.N	Existing Chainage (Location)	Type of Junction (+,T,Y)	At-Grade	Category of Cross Road			
				NH	SH	MDR	OTHER
1	0+000 KHAGARIA	T	At-Grade	NH-31			

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	PURNIA (Mansi)						
2	0+780 MANSI MAIN CHOWK	+	At-Grade				ODR

**ROW details for Missing Links Locations.**

Sl. No.	Design Chainage		Design Length	Proposed ROW (m)	Remarks
	From	To			
1	7+270	14+125	6.855	45	Land Acquisition Required

**ROADSIDE FURNITURE:-**

Roadside furniture shall be provided in accordance with the provisions of the Manual.

Overhead traffic signs and Informatory signs:

Sizes of overhead traffic signs shall be as per relevant section of the manual.

The minimum number of various overhead traffic signs and informatory signs are given below:

Sl. No.	Description	Numbers
1	Informatory sign	26
2	Overhead sign	4 (Full width: 2 nos. & Cantilever: 2 nos.)

**ROAD SAFETY DURING CONSTRUCTION**

All precaution shall be taken for road user safety & Safety of works as per manual such as Bollard, tapes, etc. to be maintained by the contractor compulsory at side.

**ENVIRONMENTAL IMPACT ASSESSMENT, COMPULSORY AFFORESTATION / TRANSLOCATION OF TREES.**

The number of trees which are required to be cut/ translocated should be as per policy of Government of Bihar and as per Forest Conservation Act. Environmental impacts have been assessed considering present environmental setting of the project area, nature, and

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extent of the proposed activities. Suitable approach and methodology was adopted to ascertain likely impacts both during design and construction and operation stage.

#### HAZARDOUS LOCATIONS

The safety barriers shall also be provided at the following hazardous locations:

Sl. No.	Location stretch from (km) to (km)	LHS/RHS
As per typical cross section.		

#### RAINWATER HARVESTING

As per Ministry of Environment and Forests Notification, New Delhi dated 14.01.1997 (as amended on 13.01.1998, 05.01.1999 & 6.11.2000), the construction of Rain water, harvesting structure is mandatory in and around Water Crisis area, notified by the Central Ground Water Board. So same shall be provided accordingly

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