

Environmental Due Diligence Report

June 2019

IND: Rajasthan State Highway Investment Program - Tranche 2

Prepared by PPP Division, Public Works Department, Government of Rajasthan for the
Asian Development Bank

CURRENCY EQUIVALENTS

(as of 22 May 2019)

Currency unit	–	Indian Rupee (Rs)
INR1.00	=	\$ 0.014
\$1.00	=	INR 69.687

ABBREVIATIONS

ADB	–	Asian Development Bank
ASI	–	Archeological Survey of India
CCF	–	Chief Conservator of Forests
CFE	–	Certificate for Establishment
CFO	–	Certificate for Operation
DPR	–	detailed project report
EA	–	Executing Agency
EAC	–	Expert Appraisal Committee
EARF	–	Environmental Assessment and Review Framework
EFP	–	Environment Focal Person
EMP	–	Environmental Management Plan
EMOP	–	Environmental Monitoring Plan
GOI	–	Government of India
GOR	–	Government of Rajasthan
GRC	–	Grievance Redress Committee
GRM	–	Grievance Redress Mechanism
IEE	–	Initial Environmental Examination
IRC	–	Indian Road Congress
MDR	–	Major District Road
MFF	–	Multi-tranche Financing Facility
MOEF	–	Ministry of Environment and Forests
MORTH	–	Ministry of Roads, Transport and Highway
ODR	–	Ordinary District Road
PD	–	Project Director
PIU	–	Project Implementation Unit
PMC	–	Project Management Consultant
PPP	–	Public-Private Partnership
RO	–	Regional Office
ROW	–	Right of way
RSHIP	–	Rajasthan State Highway Investment Program
RSPCB	–	Rajasthan State Pollution Control Board
SH	–	state highway
SOE	–	Safeguard Officer – Environment
SPS	–	ADB Safeguard Policy Statement, 2009
VGf	–	Viability Gap Funding
WLS	–	Wildlife Sanctuary

WEIGHTS AND MEASURES

km	–	kilometer
M	–	Meter
km ²	–	square kilometer

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I. INTRODUCTION

A. Context and Purpose of the Report

1. Rajasthan, with 10.41% of country's total geographical area is the largest state of India occupying 3.42 lakh square kilometer (km²). area. Total population is 68.6 million forming 5.5% of the country's total population. It ranks among top 4 states in attracting tourists from all across the globe. State's economy is largely dependent on agriculture, dairy, minerals, and tourism, which all require strong road network. Rajasthan, being located between landlocked northern states and western port states, imposes additional burden on roads due to interstate movement of goods and passenger traffic. Long international boundary necessitates good quality road infrastructure in border areas.

2. As of 30 September 2015, Rajasthan has a road network of 210,800 kilometers (km), including 8,016 km of national highways, 15,509 km of state highways, 6,416 km of major district roads (MDRs), 29,013 km of other district roads, and 151,845 km of village/rural roads. Road density in Rajasthan is only about 63.61 km per 100 km², compared to the national average of 166.47 km. Road density per lakh population in Rajasthan is 307 km corresponding to national figure of 400km. Further, nearly 80% of the roads are single lane. Years of underinvestment due to limited financial resources and inadequate maintenance has left many of the state highways and MDRs in poor conditions, both in terms of in terms of riding quality and network, constraining national goal of inclusive growth.

3. Appreciating the importance of good road network in social, regional and economic cohesion, Government of Rajasthan (GOR), endeavors to improve approximately 20,000 km state highways and districts roads under Rajasthan State Highway Development Program (RSHDP). In this series, The GOR requested Asian Development Bank (ADB) to consider a multi-tranche financing facility (MFF) of \$500 million to finance part of the RSHDP comprising approximately 2,000 km of state highways and major district roads. The MFF will provide financing support to the contracts of Build Operate and Transfer (BOT) through public private partnership (PPP) annuity and engineering procurement and construction (EPC) models under tranches to support the capacity development of RPWD on key areas such as business procedures for PPP project management and road safety of state highway system. The proposed models will require ADB financing to be used for 50% of total project costs to be paid during the construction period and the GOR will underpin the balance of 50% to be contributed by the private sector concessionaire. Such financing arrangements can maximize the impact of ADB's resources.

4. The ADB Loan was provided through Multi-tranche Financing Facility (MFF) modality for US\$ 500 million to be implemented in 2 tranches. The GOI entered into a Framework Financing Agreement (FFA) with ADB on 16 March 2017. The first loan for Tranche 1 (Loan Number 3534-IND) amounting to US\$ 220 million was approved by ADB Board on 30 May 2017. Subsequently a loan agreement was signed on 3 July 2017 and this loan became effective on 6 November 2017. Tranche 1 comprises 16 roads totaling 979.686 km grouped in four contract packages (see Appendix 1 for Map of Tranche 1 roads). Three of these are being implemented under BOT (Annuity) and one under EPC schemes. Table 1 summarizes details of each contract package.

Table 1: Details of Tranche 1 Roads Under Construction

Scheme	Road Sections	Length	Project Cost	Concessionaire/ Contractor and Award Date	Independent/ Authority Engineer and Award Date
Pkg-I	Kanwas-Khanpur-Aklara	74.820	174.99	M/s B G	Theme Engineering

Scheme	Road Sections	Length	Project Cost	Concessionaire/ Contractor and Award Date	Independent/ Authority Engineer and Award Date
(Annuity Mode)	(SH-74)			(Rajasthan) Highways Pvt Ltd. (05.08.2017)	Services Pvt Ltd. (01.08.2017)
	Deoli-Kanwas (SH-74A)	14.850	34.78		
	Alot - Gangdhar-Suwansara (SH-19C)	24.543	58.11		
	Kherli-Pahari SH-22	61.156	136.08		
Pkg-II (Annuity Mode)	Barmer - Sindari - Jalore (SH-16)	148.089	311.64	M/s Dinesh Chandra Tollways Pvt Ltd. (25.08.2017)	TPF GETINSA EUROESTUDIOS S.L. in association with STERLING Indo Tech Pvt Ltd. (01.08.2017)
	Ahor -Bali - Mundara (Sanderdao - Bali - Mundara) (SH-16)	29.423	67.42		
Pkg-III (Annuity Mode)	Peelibanga - Lakhuwali (MDR- 103)	34.548	88.48	M/s NagaurMukundgarh Highways Pvt Ltd. (04.09.2017)	MSV International Inc. in Association with ARMENGE Engineering and Management Consultants Pvt Ltd (17 th Oct 2017)
	Saradarshashar – Lunkaransar (SH-6A)	75.800	145.37		
	Churu -Bhaleri (SH-69)	34.800	74.25		
	Sanju -Tarnau (SH-60)	16.703	45.42		
	Roopangarh – Naraina (MDR-85)	34.792	83.67		
	Nagaur -Tarnau - Deedwana- Mukundgarh (SH-8, SH-19, SH-60, SH-82A, SH-83)	195.738	712.51		
Pkg-IV (EPC Mode)	Ajeetgarh – Chala (SH-13)	33.135	60.26	M/s LR BLC-Gawar (Joint Venture) (24.08.2017)	
	Sikar - Ganeri	75.460	212.96		
	JaswantgarhSH-20, 20A	93.000	160.35		
	Bidasar – Nokha (SH-20)	32.686	86.08		
	Singhana - Buhana Road - Haryana Border (SH-13 B)				

5. This environmental due diligence (EDD) is a requirement of the ADB on individual tranches of MFF as provided in para. 5, Section C, Multi-tranche Financing Facility, OM Section D14/BP issued on February 2015. EDD is the process of identifying environmental risk to allow the Bank to avoid or manage risks that may increase the project's cost of compliance to environmental regulations and third-party damages. EDD helps ADB "determine whether the investments are ready for financing (para. 6, OM Section D14/OP, 18 May 2010)" by allowing the early identification of potential sources of environmental risks and liabilities.

6. This EDD report assesses the compliance of Tranche 1 to GOI's environmental policies, laws, and regulations particularly relating to forest and wildlife areas and the ADB's Safeguard Policy Statement (SPS), 2009 as translated into provisions of the Environmental Assessment and Review Framework (EARF), Environmental Management Plan (EMP), and Environmental Monitoring Plan (EMoP).

B. Approach and Methodology Used for Due Diligence.

7. This report is prepared through literature review, field monitoring work, and interview of EMP implementing agencies such as Project Implementation Units (PIUs), Authority Engineers/Independent Engineers (AEs/IEs, which interchangeably mean and are understood as construction supervision consultants), concessionaires/contractors, forest authorities and local communities. The literature review covered the technical specifications

of bidding documents, the bill of quantity (BOQ) submitted by the contractors, IEE, EARF, FAM, Loan Agreement and the monthly progress reports submitted by AE/IEs as well as environmental verification checklists which provided data and information pertaining to the on-site monitoring and assessment, and implementation of EMPs and EMoPs in different contract packages. The purpose of the road sites assessment and monitoring work is to gather data and information pertaining to compliance status of the implementation and monitoring of the EARF, EMPs, and EMoPs.

I. STATUS OF TRANCHE 1 WORKS UNDER RSHIP

8. Tranche 1 roads were prepared in accordance with MORTH/IRC/state PWD guidelines. Feasibility studies were undertaken by technical consultants. Environmental assessment was done by individual consultant appointed by ADB to comply with GOI and ADB's safeguard requirements. The Environmental Assessment Review Framework (EARF) was prepared to serve as a guide on procedures for complying with environment safeguards requirements for subsequent tranches. Having complied with project preparation and bidding procedures, civil works were awarded in the month of August 2017. Although the mobilization coincided with monsoon season, site preparation and mobilization of staff and machineries were accomplished on time. Actual civil works started after monsoon season. Details of environment safeguards persons of each EMP implementing agency and physical progress of all roads are given in Table 2.

Table 2: Details of Persons Responsible for EMP Implementation

EMP Agencies	PKG - 1	PKG - 2	PKG - 3	PKG - 4
RPWD HQ	Mr.O.P.Soni, EE (SoE)-RPWD (PPP), Mobile-91-9829417803, Email: opsoni60@yahoo.com Mr. P.P. Singh, EE-RPWD (PPP) 91-9414388532, Email: prblprtpsingh09@gmail.com , aceppp.pwd@rajasthan.gov.in			
PIU,	Project Directors, Executive Engineers and Assistants Engineer of respective PIUs			
Contractors/ concessionaire	Mr. Amir Jha jha.amir@gmail.com Mob: 9873775596	Dr. Mahavir Saini sainimp170779@gmail.com , Mob: 9509557249	Mr. Yogendra Yadav yogendra.ges@gmail.com Mob: 9721357867	Mr.Garav Chauhan, info@vardanenviro.net.com Mob:8588859161
AE/IE	Mr. Suresh Saini: suresh.saini39@gmail.com Mob-9887400044	Mr. Rakesh Sathpathy, rakesh.sathpathy06@gmail.com Mobile: 91-9861106345	Dr. O.P Shukla shuka_om@rediffmail.com Mobile: 91-9415550525	Position not sanctioned However, Mr.O.P. Shukla is looking after safeguard issues
PMC with Input days	Dr. Shakti Prakash, Environmental Specialist, Intermittent Inputs – 24 months over a period 60 month, email: environmentalspecialistpmc@gmail.com , Prakash.Shakti@smec.com , Mobile: 91-9582970378			

9. The highest physical progress has been achieved in the Contract Package-3 (99.00 %), followed by the Contract Package-2 (99%), Contract package-4 (99 %) and the Contract Package-1 (65.00 %).

10. Table 3 provides the abstract of overall physical progress achieved in terms of percentages (%) from July 2017 until April , 2019.

Table 3: Physical Progress up to April , 2019

Sl. No.	PKG	ROAD	Length	C&G		EW		GSB		WMM		Target Upto April 2019		Progress Upto April 2019 (DBM/BC+PQC)	
				Km	in %	Km	in %	Km	in %	Km	in %	Km	in %	Km	in %
1	1	SH-74	74.82	52.07	70	49.56	66	44.05	59	42.41	57	74.82	100	36.12	48
2		SH-74A	14.85	11.06	74	9.925	67	9.85	66	9.06	61	14.85	100	8.77	59
3		SH-19-C	24.55	21.95	89	21.107	86	20.85	85	20.335	83	24.55	100	20.20	82
4		SH-22	61.156	51.20	84	51.6	84	50.2	82	49.6	81	61.156	100	49.43	81
5	2	SH-16	148.09	148.09	100	131.978	89	131.978	89	125.278	85	148.09	100	147.54	100
6		SH-16	29.433	28.77	98	27.101	92	27.101	92	26.801	91	29.433	100	28.00	95
7	3	MDR- 103	34.52	34.23	99	34.233	99	34.233	99	33.368	97	34.52	100	34.59	100
8		SH-6A	75.8	75.80	100	65.715	87	65.83	87	71.31	94	75.8	100	75.49	100
9		SH-69	34.75	33.15	95	33.15	95	33.15	95	32.135	92	34.75	100	33.09	95
10		SH-60	16.703	16.70	100	16.703	100	16.703	100	15.193	91	16.703	100	16.52	99
11		SH-100	34.82	34.82	100	34.82	100	34.82	100	33.775	97	34.82	100	34.74	100
12		SH-82A	196	183.85	94	177.613	91	177.08	90	169.08	86	196	100	193.59	99
13	4	SH-13	33.135	33.14	100	12.39	37	12.925	39	11.845	36	33.135	100	32.83	99
14		SH-20 & 20A	75.13	70.35	94	67.828	90	68.955	92	65.678	87	75.13	100	52.46	70
15		SH-20	93	89.00	96	45.8	49	45.8	49	45.8	49	93	100	91.63	99
16		SH-13B	32.686	32.69	100	13.058	40	13.778	42	14.258	44	32.686	100	30.54	93
TOTAL			979.443	916.86	94	792.581	81	787.303	80	765.926	78	979.443	100	885.51	90

C&G: Clearing and grubbing, EW: Earth Work, GSB: Granular Sub Base, WMM: Water Bound Macadam, DBM: Dense Bituminous Macadam, PQC: Pavement Quality Concrete

NOTE: % Progress of the Road is based on the Maximum work done in DBM or BC + PQC

II. FINDINGS OF ENVIRONMENTAL DUE DILIGENCE

11. None of the sub-projects in Tranche-1 pass through any wildlife sanctuary, national parks or any other similar eco-sensitive areas. However, forest clearances were required in 2 sub-project roads, namely Nagaur-Tarnau-Deedwana-Mukundgarh (142.06 ha) of Contract Package-3 and Sikar-Ganeri-Jaswantgarh of the Contract Package-4, wherein Stage-1 (in principle) forest clearances have already been granted. Compliance to stage-1 approval has also been submitted to Regional Office (RO) of the Ministry of Environment, Forest and Climate Change (MOEFCC), Lucknow. Final approval (stage-II) is likely to be issued shortly. Stage-I clearance for Sikar-Ganeri-Jaswantgarh-SH-20 & 20A (4.15 ha) has been obtained and the final approval from RO, Lucknow is awaited. All the contractors have obtained tree cutting permissions for all roads of their contract packages.

12. Most of the negative impacts are co-terminus with the construction stage, temporary in nature, site specific, limited within the RoW, and are easily mitigated through good engineering practices and measures recommended in package specific EMPs. Trainings on EMPs/EMoPs implementation have been conducted by the Environmental Specialist (PMC), separately for each contract package involving all parties responsible for EMP implementation viz. Project Directors of each PIUs, PIU Engineers, Team Leader, Resident engineers, Environmental Specialists of IEs/AE, Environmental Focal Persons (EFPs), site engineers and site supervisors of concessionaires and contractors. Significant findings of this EDD are discussed in the following sections.

A. Implementation of Environmental Safeguards during the Project Preparation

13. **Environmental Categorization and Public Disclosure:** Tranche-1 was categorized as Environment Category "B" in accordance with ADB's SPS 2009. Accordingly, a consolidated IEE and road specific EMPs/EMOPs were prepared for sub-projects. The IEE was disclosed in May 2016 on ADB's website. Being MFF funding, an EARF was also prepared as guidance document for Tranche-1.

14. **Preparation of Bid Documents:** The EMPs and EMoPs, which provide mitigation measures and environmental performance indicators (EPIs) monitoring measures for each stage of road development, have been incorporated in the bidding documents of all four contract packages. In addition, appendices of the bidding documents emphasized the following key measures to be implemented by each concessionaire/contractor:

- ADB environmental safeguards requirements;
- Measures recommended to reduce climate change effects;
- Measures to avoid wildlife accident and enable their safe movement;
- Precaution to be adopted during disposal of debris/solid waste including disposal of organic debris generated during road construction;
- Precaution to be adopted for sanitation and housekeeping at the labor and construction camps like toilets, hygiene, water supply, waste disposal, first aid and maintenance etc.;
- To measure and maintain the air quality standard;
- To measure and maintain the noise quality standard; and
- To check the primary water quality standards including physical and chemical properties of drinking water.
- To check the soil quality once during the entire construction period

15. Concessionaires' response on the instruction to include works for environmental impacts associated with the construction activities was satisfactory. It was noted from Concessionaires' Contract Agreements that environmental items, EMPs and EMoPs are included, environment focal persons were designated, and necessary budget was allocated to handle anticipated environmental issues and related mitigation measures as provided in EMPs. Resources were provided by each contractor to implement the Environmental Management Plans (EMPs) and Environmental Monitoring Plans (EMoPs). The succeeding table presents the total budget provided in the civil works contract and the RPWD budget to implement the EMPs and EMoPs, which is provided in the Appendix E of IEE. The total cost for implementing EMP has been estimated to be INR129 millions distributed in the following items:

- Dust suppression;
- Installation of movable noise barriers;
- Connection of side drains to nearby ponds/tanks for water harvesting, toll booth water harvesting, compensatory plantation and additional plantation;
- Monitoring cost, which includes air, water, noise, and soil quality; and
- Wildlife protection measures through provision of two vehicles to the DFO of Barmer and Nokha to assist in the rescue of injured Chinkara from road crashes

Table 4: Subproject-wise EMP Budget relative to Civil Works Cost

Scheme	Road Sections	Length	Project Cost (Cr.)	EMP Cost and % to Project Cost	
				Cr.	%
Pkg-I (Annuity Mode)	Kanwas-Khanpur-Aklara (SH-74)	74.820	174.99	0.3813	0.22
	Deoli-Kanwas(SH-74A)	14.850	34.78	0.0834	0.24
	Alot- Gangdhar- Suwansara (SH-19C)	24.543	58.11	0.0768	0.13
	Kherli-PahariSH-22	61.156	136.08	0.2796	0.21
Pkg-II (Annuity Mode)	Barmer - Sindari - Jalore (SH-16)	148.089	311.64	0.9779	0.31
	Ahor -Bali – Mundara (SH-16)	29.423	67.42	1.0042	1.49
Pkg-III (Annuity Mode)	Peelibanga – Lakhuwali MDR- 103)	34.548	88.48	0.561369	0.63
	Saradarshashar–Lunkaransar (SH-6A)	75.800	145.37	1.072962	0.74
	Churu-Bhaleri (SH-69)	34.800	74.25	1.065	1.43
	Sanju-Tarnau (SH-60)	16.703	45.42	0.537053	1.18
	Roopangarh–Naraina (MDR-85)	34.792	83.67	0.451923	0.54
	Nagaur -Tarnau - Mukundgarh (SH-8, SH-19, SH-60, SH-82A, SH-83)	195.738	712.51	1.564154	0.22
Pkg-IV (EPC Mode)	Ajeetgarh–Chala (SH-13)	33.135	60.26	1.196751	1.99
	Sikar - Ganeri JaswantgarhSH-20, 20A	75.460	212.96	2.154621	1.01
	Bidasar–Nokha (SH-20)	93.000	160.35	0.479	0.30
	Singhana - Buhana (SH-13 B)	32.686	86.08	0.827301	0.96

16. **Environmental Statutory Clearances:** As stated in the loan document, all required statutory clearances have to be obtained prior to commencing civil works at any particular section of the roads. In line with the above requirement, all statutory clearances that are required for the project at various stages of implementation have been assessed. All sub-project roads in four contract packages do not require environmental and wildlife clearances from MoEFCC and GOI.

17. Forest clearance was required in two sub-projects (Package-3 and Package-4). RPWD has obtained Stage-1 clearance for these sub-projects, final approval for both packages is awaited. Tree cutting permits have been obtained for all roads in contract packages 1, 2, 3, and 4.

18. Concessionaires of Contractor Packages 01, 02 , 03 and The Contractor of Contract Package-04, have obtained required CTEs and CTOs from RSPCB, except one CTO for HMP established in Chamola Construction Camp of the Contract Package-01 which is in advanced stages of processing with RSPCB. The status of other statutory requirements, approvals and permits have been updated up to 30th April 2019 and are given in Tables 5A, 5B, 5C and 5D in foregoing pages.

Table 5A: Status of Statutory Clearances, etc. for Package-1 as of 30th April 2019

Table 5A: Status of Statutory Clearances, Start of Package Road 01-01-2018 to 31-03-2018							
Clearance / Permits by PIUs / Executing Agencies							
Environmental Clearance from SEIAA/MOEF	Not Required						
Forest Clearance from Forest Department / MoEF	Not Required in Any Road						
Wildlife Clearance from NBWL	Not Required						
Tree cutting permit from Division Forest Department	Obtained for all four roads						
Utility Shifting	Estimates of public utilities for all roads have received from the respective owner agency and Authority has approved payments to be made to these agencies. Utilities shiftings are under progress.						
Clearance / Permits by Contractors							
Certificate of Registration of Principal Employer	Obtained						
Arrangements for water requirements for construction purposes and NOC from Central Groundwater Authority	Water requirements are being arranged and managed from local level municipal supplies tankers and authorized tubewell owners located in nearby areas around roads.						
Agreements letters with local water suppliers are to be submitted	Agreements letters with local water suppliers -- submitted						
Short Term Permits (STPs) EC for Borrow area /Mining of stone	STPs Obtained /Stone and other materials are being procured from approved sources having all required approvals / ECs						
NOCs from RSPCB	Road Name	Location	Plant			Remarks	
			TYPE	CTE	CTO		
	Consent to Establish (CTE) and Consent to Operate (CTO)	Kanwas - Khanpur - Aklera section of SH-74 (74.797 Kms)	i. Kanwas Construction Camp	HMP	Obtained, valid from 13.06.2018 to 31.05.2023	Obtained, valid from 19.09.2018 to 31.08.2023	Required CTEs and CTOs obtained.
				RMC	Obtained	Obtained	
		ii. Mirzapur Construction camp	HMP	Obtained, Valid from 13.06.2018 to 31.05.2023	Obtained, Valid from 11.09.2018 to 31.08.2023		

			Stone Crusher	Obtained, Valid from 13.06.2018 to 31.05.2023	Obtained, Valid from 11.09.2018 to 31.08.2023	
			RMC	Obtained	Obtained	
			TYPE	CTE	CTO	
	Deoli-Kanwas section of SH-74 A (14.791 Kms)	iii. Kanwas Construction Camp	HMP	Obtained, valid from 13.06.2018 to 31.05.2023	Obtained, valid from 19.09.2018 to 31.08.2023	
			RMC	Obtained	Obtained	
	Alot (MP) – Gangdhar-Suwansara (MP) section of SH-19 C (24.557 Kms)	iv. Chamola (Gangadhar) Construction Camp	HMP	Obtained valid upto 30.11.2023	Obtained valid upto 30.11.2023	CTO (Chamola) is in process with RSPCB.
			RMC	Obtained valid upto 30.11.2023	Applied	
	Kherli - Pahari section of SH-22 (61.160 Kms)	v. Beru (Near Nagar Town) construction camp	HMP	Obtained valid from 23.08.2018 to 31.07.2023	Obtained valid from 23.08.2018 to 31.07.2023	Required CTEs and CTOs obtained
			RMC	Obtained valid from 23.08.2018 to 31.07.2023	Obtained valid from 23.08.2018 to 31.07.2023	
	Labour License	Obtained, Valid upto 31.12.2019				
Workmen compensation insurance/CAR Policy	Obtained, CAR Policy valid from 01.02.2018 to 04.08.2019, The Workmen compensation insurance, valid from 24.05.2018 to 24.05.2019					
Pollution under control certificates	Obtained, valid till 2 nd , 12 th Feb and 9 th August 2019					

Consent letters from Land Owners for temporary use of land i.e. camp sites etc.	Obtained
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Table 5B: Status of Statutory Clearances, etc. for Package-2 as of 30th April 2019

Clearance / Permits by PIUs / Executing Agencies					
Environmental Clearance from SEIAA/MOEF	Not Required				
Forest Clearance	Not Required				
Wildlife Clearance from NBWL	Not Required				
Tree cutting permit	Obtained for both roads				
Utility Shifting	Inventory of affected Utilities for all roads has been finalized. Detailed Cost Estimates from Utility Owning Agencies have been received & reviewed and have been approved by Authority for payments. Utilities shiftings are under progress.				
Clearance / Permits by Contractors					
Certificate of Registration of Principal Employer	Obtained				
NOC from Central Groundwater Authority for abstraction of groundwater	Water requirements are being met through tankers and authorized tubewell owners located in nearby areas around roads. Agreements letters with local water suppliers -- submitted				
Short Term Permits (STPs) /EC for Borrow area /Mining of stone	Ordinary Earth is being procured from cuttings of huge mounds (old sand dunes) on LHS and RHS of Roads, Therefore EC for Borrow areas is not required. Obtained /Stone and other materials are being procured from approved sources, having all required approvals / ECs				
NOCs from RSPCB	Road Name	Location	Plant		
Consent to Establish (CTE) and Consent to Operate (CTO)	Barmer - Sindari – Jalore (148.000)	I. Dandeli Construction camp	Type	CTE	CTO
			HMP	Obtained, Valid from 30.09.2017 to 31.08.2022	Obtained, Valid from 28.02.2018 to 31.01.2023
		RMC	Obtained, Valid from 16.01.2019 to 31.12.2023	Obtained, Valid from 02.02.2019 to 31.12.2029	
		II. Budha-Malaru (Barmer)	Stone Crusher	Obtained, valid from 10.07.2017 to 30.06.2022	Obtained, valid from 10.07.2017 to 30.06.2022
			III. Keshvana Construction camp	HMP	Obtained, Valid from 04.03.2018 to 28.02.2023
		Stone Crusher		Obtained, Valid from 27.09.2017 to 31.08.2022	Obtained, valid from 30.08.2018 to 31.07.2023
	Ahore-Bali – Mundara (30.000)	IV. Dandeli Construction camp	RMC	Obtained, Valid from 03.09.2018 to 31.08.2023	Obtained, Valid from 06.09.2018 to 31.08.2023
			HMP	Obtained, Valid from 30.09.2017 to 31.08.2022	Obtained, Valid from 28.02.2018 to 31.01.2023
			RMC	Obtained, Valid from 16.01.2019 to 31.12.2023	Obtained, Valid from 02.02.2019 to 31.12.2029
		Stone	Obtained, valid from 10.07.2017 to	Obtained, valid from 10.07.2017 to	

			Crusher	30.06.2022	30.06.2022
		V. Keshvana Construction camp	HMP	Obtained, Valid from 04.03.2018 to 28.02.2023	Obtained, Valid from 31.10.2018 to 30.09.2023
			Stone Crusher	Obtained, Valid from 27.09.2017 to 31.08.2022	Obtained, valid from 30.08.2018 to 31.07.2023
			RMC	Obtained, Valid from 03.09.2018 to 31.08.2023	Obtained, Valid from 06.09.2018 to 31.08.2023
Labour License	Obtained, Valid up to 31.12.2019.				
Workmen compensation insurance/CAR Policy	Obtained, CAR policy valid from 18.10.2017 to 23.11.2019, Workmen Insurance Policy -valid from 20.11.2018 to 19.05.2019				
Pollution under control certificates	Obtained, Valid up to 25 th , 26 th & 27 th September 2019.				
Consent letters from Land Owners for temporary use of land i.e. camp sites etc.	Obtained				

Table 5C: Status of Statutory Clearances, etc. for Package-3 as of 30th April 2019

Clearance / Permits by PIUs / Executing Agencies						
Environmental Clearance from SEIAA/MOEF	Not Required					
Forest Clearance from Forest Department / MoEF	Stage-I Forest - obtained for 142.06Ha area in the road- R6 (Nagaur-Tarnau-Deedwana-Mukundgarh) and NPV/CA amount has been submitted to RO (MOEFCC), Lucknow. Stage-II. Final approval is awaited.					
Wildlife Clearance from NBWL	Not Required					
Tree cutting permit from Division Forest Department	Obtained for all Six Roads					
Utility Shifting	Inventory of affected Utilities for all roads has been finalized. Detailed Cost Estimates from Utility Owning Agencies have been received & reviewed and approved by Authority. Utilities shifting. are under progress.					
Clearance / Permits by Contractors						
Certificate of Registration of Principal Employer	Obtained					
NOC from Central Groundwater Authority for abstraction of groundwater	Water requirements are being met through tankers and authorized tubewell owners located in nearby areas around roads. Agreements letters with local water suppliers -- submitted					
Short Term Permits (STPs) EC for Borrow area /Mining of stone	Ordinary Earth is being procured from cuttings of huge mounds (old sand dunes) on LHS and RHS of Roads, Therefore EC for Borrow areas is not required Obtained Therefore EC for Borrow areas is not required /Stone and other materials are being procured from approved sources, having all required approvals / ECs					
NOCs from RSPCB Consent to Establish (CTE) and Consent to Operate (CTO)	Road Name	Location	Plant			Remark
			TYPE	CTE	CTO	
	Peelibanga IO– Lakhuwali (34.500 Km)	Mainawali,	HMP	Obtained, Valid from 21.09.2017 to 31.08.2022	Obtained, Deemed Consent	Demobilized for this project
			RMC	NR	NR	
	Sardarsahar-Lunkaransar (76.500 Km)	Sawai Bass Balwania,	HMP	Obtained, Valid from 31.08.2017 to 31.07.2022	Obtained, Valid from 11.06.2018 to 31.05.2023	Demobilized for this project and transferred to other project in Sardarsahar
			RMC	NR	NR	
	Churu-Bhaleri (35.000)	Ghantel	HMP	Obtained, Valid from 31.08.2017 to 31.07.2022	Obtained, Valid from 11.06.2018 to 31.05.2023	Demobilized for this project
			RMC	NR	NR	
	Sanju-	Khatoti,	HMP	Obtained, Valid from	Obtained, Valid from	Demobilized for this

	Tarnau (16.710 Km)			30.10.2018 to 30.09.2022	18.05.2018 to 17.05.2023	project
			RMC	Obtained Valid from 30.10.2018 to 30.09.2022	Obtained, Valid from 18.05.2018 to 17.05.2023	
	Roopangarh- Naraina (35.000)	Morda,	HMP	Obtained, valid from 15.01.2018 to 31.12..2022	Obtained, Valid from 01.08.2018 to 31.07.2023	Demobilized for this project
			RMC	Obtained, Valid from 24.08.2018 to 30.09.2022	Obtained, Valid from 31.03.2018 to 29.02.2023	
	Nagaur- Tarnau- Deedwana- Mukundgarh (196.000)	Khatoti,	HMP	Obtained, Valid from 30.10.2018 to 30.09.2022	Obtained, Valid from 18.05.2018 to 17.05.2023	Active for operation & maintenance purposes
			RMC	Obtained, Valid from 30.10.2018 to 30.09.2022	Obtained, Valid from 18.05.2018 to 17.05.2023	
		Khedi Dukiya	HMP	Obtained, Valid from 15.07.2017 to 30.06.2022	Obtained, Valid from 15.09.2017 to 31.08.2022	
			RMC	NR	NR	
Labour License	Renewed – valid from 01.01.2018 to 31.12.2019					
Workmen compensation insurance/CAR Policy	Obtained, CAR Policy valid from 27.09.2017 to 26.09.2019, The Workmen Compensation Insurance- Policy, valid from 09.11.2018 to 08.11.2019					
Pollution under control certificates	New vehicles purchased, complied, PUCs will be required after one year					
Consent letters from Land Owners for temporary use of land i.e. camp sites etc	Obtained					

Table 5D: Status of Statutory Clearances, etc. for Package-4 as of 30th April 2019

Clearance / Permits by PIUs / Executing Agencies						
Environmental Clearance from SEIAA/MOEF	Not Required					
Forest Clearance from Forest Department / MoEF	Stage-1 Forest Clearance - obtained for R2 (Sikar-Ganeri-Jaswantgarh), for 4.15Ha. From RO, MOEFCC Lucknow. Working permission from Principal Chief Conservator of Forest (Rajasthan) also obtained, Stage-II. Final approval is awaited.					
Wildlife Clearance from NBWL	Not Required					
Tree cutting permit from Division Forest Department	Obtained for all four roads					
Utility Shifting	Details of affected utilities for all roads have been identified. Estimates prepared and submitted to the Authority. The Authority has approved estimates for three roads and approval is under process for Bidasar-Nokha Road. Utilities shiftings are under progress.					
Clearance / Permits by Contractors						
Certificate of Registration of Principal Employer	Obtained					
Arrangements for water requirements for construction purposes and NOC from Central Groundwater Authority	Water requirements are being arranged and managed from local level municipal supplies tankers and authorized tubewell owners located in nearby areas around roads					
Agreements letters with local water suppliers are to be submitted	Agreements letters with local water suppliers--submitted					
Short Term Permits (STPs) EC for Borrow area /Mining of stone	STPs Obtained / Ordinary Earth is being procured from cuttings of huge mounds (old sand dunes) on LHS and RHS of Roads, Therefore EC for Borrow areas is not required Obtained /Stone and other materials are being procured from approved sources Stone and other materials are being procured from approved sources, having all required approvals / ECs					
NOCs from RSPCB Consent to Establish (CTE) and Consent to Operate (CTO)	Road Name	Location	Plant			Remark
			Type	CTE	CTO	
	Ajeetgarh – Chala SH-13	Bamanjoda	HMP	Obtained, Valid from 05.01.2019 to 31.12.2023	Obtained, Valid from 03.03.2019 to	. Required CTEs and CTOs obtained

	(33.135 Km)				29.02.2024		
			RMC	NR	NR		
	Sikar-Ganeri-Jaswantgarh SH-20 & 20A (75.13 Km)	Tanwar a	HMP	Obtained, Valid from 14.09.2018 to 31.08.2023	Obtained, Valid from 02.02.2019 to 31.01.2024	Required CTEs and CTOs obtained	
			RMC	NR	NR		
	Bidasar-Noha SH-20 (93.00 Km)	Sandwa s	HMP	Obtained, Valid from 04.07.2018 to 30.06.2023	Obtained, Valid from 25.01.2019 to 31.12.2023	Required CTE and CTO obtained.	
			RMC	NR	NR		
	Singhana-Buhana SH-13B (32.690 Km)	Thali	HMP	Obtained, Valid from 05.02.2018 to 31.01.2023	Obtained, Valid from 05.02.2018 to 31.01.2023	Required CTEs and CTOs obtained	
			RMC	Obtained	Obtained		
	Labour License		Obtained, valid upto 31.12.2019				
	Workmen compensation insurance/CAR Policy		Obtained, - Car Policy valid from 11.10.2017 to 10.10.2019, Workmen Insurance Policy, valid from 16.10. 2017 to 15.10.2023				
Pollution under control certificates		Obtained, Valid upto 15.05.2019, 12.06.2019, 13.06.2019, 01.07.2019, 15.11.2019 & 16.11.2019					
Consent letters from Land Owners for temporary use of land i.e. camp sites etc		Obtained					

B. Compliance with Loan Conditions

19. As per the loan agreement (ADB Loan No. 3534-IND), Schedule 5, the Borrower shall undertake the subprojects in accordance with ADB's Safeguard Policy Statement (SPS) 2009, and all applicable laws and regulations of the Borrower and the relevant State, as set forth in the EARF. These conditions are being complied by all four sub-projects under Tranche 1. Table 6 shows the compliance to various loan conditions with respect to each subproject.

Table 6: Compliance Status with Loan Conditions on Environmental Safeguards

Reference to Loan Agreement	Loan Conditions	Compliance Status
Schedule 5, Para 2	The State shall ensure that PWD employs sufficient staff for the duration of the Project with adequate and relevant experience and expertise in the field of project management, financial management, engineering, procurement, environmental and social safeguards implementation. The State shall ensure, and shall cause PWD to ensure, that all staff members employed for the project are provided with adequate office space, facilities, equipment, support staff and telecommunication and management information systems for the entire duration of the project.	Complied
Schedule 5, Para 3	The State shall ensure that towards smooth implementation of the Project, grievances if any from stakeholders relating to Project implementation or use of funds are addressed effectively and efficiently.	Complied and will be complied for remaining period of the civil works.
Schedule 5, Para 5	The Borrower shall cause the State to make available, through budgetary allocations or other means, all counterpart funds required for the timely and effective implementation of the Project, including funds required to under any Works Contract or other contract or to mitigate unforeseen environmental, resettlement and other social impacts, and to meet additional costs arising from design changes, financing gaps, price escalation in construction costs or other unforeseen circumstances.	Complied and will be complied for remaining period of the civil works.
Schedule 5, Para 9	The Borrower shall cause the State to ensure that the preparation, design, construction, implementation, operation and decommissioning of the Projects and all Project facilities comply with (a) all applicable laws and regulations of the Borrower and State relating to environment, health, and safety, (b) the Environment Safeguards; (c) the EARF; and (d) all measures and requirements set forth in the respective IEE and EMP, and any corrective or preventive actions set forth in a Safeguards Monitoring Report.	Complied and will be complied for remaining period of the civil works.
Schedule 5, Para 9	The Borrower shall cause the State to make available necessary budgetary and human resources to fully implement the EMP/RAP	Complied

Reference to Loan Agreement	Loan Conditions	Compliance Status
Schedule 5, Para 14	<p>Ensure that all bidding documents and contracts for Works contain provisions that require contractors to:</p> <ul style="list-style-type: none"> a) Comply with the measures and requirements relevant to the contractor set forth in the IEE, the EMP and the RP (to the extent they concern impacts on affected people during construction), and any corrective or preventative actions set out in a Safeguards Monitoring Report; b) Make available a budget for all such environmental and social measures; c) Provide the Borrower and State with a written notice of any unanticipated environmental, resettlement or indigenous peoples risks or impacts that arise during construction, implementation or operation of the Project that were not considered in the IEE, the EMP or the RO; 	Complied
Schedule 5, Para 15	<p>The Borrower shall cause the State to do the following:</p> <ul style="list-style-type: none"> a) Submit semi-annual Safeguards Monitoring Reports to ADB and disclose relevant information from such reports to affected persons promptly upon submission b) If any unanticipated environmental and/or social risks and impacts arise during constructions, implementation or operation of the Project that were not considered in the IEE, the EMP or the RP, promptly inform ADB of the occurrence of such risks or impacts, with detailed description of the event and proposed corrective action plan. c) Report any actual or potential breach of compliance with the measures and requirements set forth in the EMP, the RP or the IPP promptly after becoming aware of the breach. 	<p>Compliance Monitoring Report is under preparation by PMC.</p> <p>No unanticipated environmental risk identified to date.</p>
Schedule 5, Para 16	The Borrower shall cause the State to ensure that no proceeds of the Loan are used to finance any activity included in the list of prohibited investment activities provided in Appendix 5 of the SPS.	Complied
Schedule 5, Para 17	The Borrower and the State shall ensure that Works contracts under the Project follow all applicable labor laws of the Borrower and the State and that these further include provisions to the effect that contractors; a) carried out HIV/AIDS awareness programs for labor and disseminate information's at worksites on risks of sexually transmitted diseases and HIV/AIDS as part of health and safety measures for those employed during construction; and b) follow and implement all statutory provisions on labor (including not employing or using children as labor, equal pay for equal work), health safety, welfare, sanitation, and working conditions. Such contracts shall also include clauses for termination in case of any breach of the stated provisions by the contractors.	Complied. All these provisions are included in general and specific clauses of contract agreement.

C. Implementation of Environmental Safeguards

1. Pre-construction phase

20. Pre-construction stage environmental safeguard issues mainly relate to securing necessary clearances and permits applicable to the project. Clearances during this stage are

limited to tree cutting and forest clearance. Required No Objections from concerned departments, shifting of utilities like telephone, irrigation, water supply, and owners of other public utilities laid along across the road, have been obtained. Cost estimates for fees required by these departments were approved by the Authority (Additional Chief Engineer, RPWD-PPP) and public utilities shiftings are in progress in all contract packages.

21. Forest clearances were required for one road in Package-3 and Package-4. Stage-1 clearances for Packages-3 and 4 have been granted and final approval is awaited. Tree cutting permissions have been obtained for all roads. Inventories of affected public utilities such as water pipelines and electric lines have been finalized. Detailed cost estimates from utility-owning agencies have been received and reviewed and have been approved by the Authority. The PIUs in cooperation with concessionaires and contractors are coordinating with respective state agencies and departments for shifting of the roadside utilities. Appendix 3 presents the status of implementation of EMPs (pre-construction activities and construction), up to 30th April 2019, for all four contract packages of Tranche-1.

2. Implementation of Environmental Safeguards During Construction

22. The civil works contracts for all four contract packages were awarded in August 2017. Subsequently, contractors were mobilized for these subprojects and implementation is in progress. All contract packages have completed mobilization, camp settings, sites clearings and structures and road works are in progress. Overall progress achieved in individual roads of all packages until the end of April 2019 has already been discussed above and summarized in Table 3.

23. Environmental issues that are likely to confront the project include pollution of air, water, groundwater, and land, loss of topsoil, soil compaction, and occupational health and safety. Specific mitigation measures were provided to guide the contractors in addressing these issues. Onsite assessment of EMPs and EMoPs implementation and monitoring is conducted through periodic inspections by the Environmental Specialist (PMC and AE/IEs) along with environment focal persons (EFPs, concessionaires and contractors) by focusing upon following aspects and issues as given in the EMPs and EMoPs of roads of contract packages 1, 2, 3 and 4:

- Borrow Area: Operation and Management
- Quarry areas: Operation and Management
- Material Storage Areas: Operation and Management
- Top Soil Preservation and Management
- Construction Material Re-use and Disposal
- Workers Camps Management
- Soil Erosion and Sediment Control
- Air, noise, soil and water pollution monitoring

24. **Setting up site offices and construction camps:** Site offices and construction camps for all roads in four contract packages have been established by contractors. Field visits confirmed the contractors' site offices, storage facilities and construction camps are not located nearby any water bodies, residential areas or other sensitive locations. The PIUs and AE/IEs (supervision consultants) were consulted in the selection of construction camp sites. All construction camp sites are located in private land and contractors have obtained necessary lease agreements with the property owners. Each subproject has separate workers and construction camps. Workers camps are equipped with adequate drinking water supply, storage tanks, sanitation, and medical facilities. LPG is being used as fuel for cooking. At all the

campsites and plant sites, advance Diesel Generator (DG) sets (low emission and noiseless) have been installed. The gaseous emission and noise levels have been observed to be within prescribed limits. At plant sites, drums of diesel and other petroleum products are stored on impervious platforms in all the projects in order to avoid land contamination. The spent oils are stored separately in drums and are sold to authorized vendors. Only minor non-compliances were noted such as oil and bitumen spills but these were readily corrected. Contractors have been advised to maintain hygienic conditions at all times in the workers and construction camps with provision as required and suggested in EMPs, especially amenities and facilities including adequate water supply and sanitation facilities.

25. **Site Clearing:** Site clearing works have been significantly completed in most of the roads of all four contract packages. Contractors have been instructed to strictly continue the compliance being achieved in implementing safety measures at all work zones. The satisfactory compliance to safety provisions was mostly observed during field visit at all work sites. Minor types of non-compliances such as installation of construction safety signages on the wrong side have been observed in a few locations but were immediately corrected and improved.

26. **Cut and Fill for the Preparation of Embankment:** The scope of works under Tranche 1 mostly involves strengthening of existing roads with some widening. Hence, requirement of earth material is not significant. Due to undulating vertical profile, good quantity of earth is available due to cuttings of big humps (old sand dunes) within RoW. Heap of old and stabilized sand dunes with suitable CBR value fulfilled the requirement. However, for any additional requirement of ordinary earth, the contractors may or may not need to obtain permission from state mining department and environmental clearance from DEIAA, due to unavailability of approved sources for supplies of remaining requirements of ordinary earth, in case needed. Contractors of Packages 1 and 4 have obtained short term permits (STPs) under Rajasthan Minor Mineral Concession Rules -2017 (RMMCR-2017). The ordinary earth requirements, up to satisfactory CBR Ratio, in contract packages 2, 3 and 4 have been fulfilled by roadside (LHS and RHS of RoW) and big humps (old sand dunes). At this stage, there are no significant adverse effects on environment as cut and fill are balanced. The mitigation measures proposed in EMPs are being followed by contractors to manage cut and fill material wherever required.

27. **Wildlife Management Activities:** Movement of Chinkara (a schedule-1 animal as per Wildlife Act but least concern under IUCN classification) was observed during IEE study in few sub-projects (Kanwas-Aklara, Barmer-Sindari section of Barmer-Jalore sub-project and Bidasar-Nokha). Adequate measures like (i) informatory and cautionary sign post (ii) conversion of pipe culverts to box culverts at locations where movement is more anticipated (iii) rescue vans, etc. were recommended in package-specific EMPs. Adequate budgetary provisions were also made and included in the BOQ. Some of the measures are routinely under implementation with progress of civil works, like culvert reconstruction/expansion. For remaining measures, PMC has advised all AE/IEs to monitor wildlife movement and reconfirm the locations for site specific actions in consultation with forest/wildlife department. PMC also advised them to install temporary sign posts during construction and not to wait for other road furniture works to be started which are normally undertaken once civil works are over. Appedix 3 on the status of the monitoring of the implementation of EMPs provides the completed and progress status of structures and related mitigation measures for safe crossing and movements of aforementioned wildlife and other animals.

28. **Occupational Health and Safety.** The contractors have submitted the site specific EHS management plan for each package. Specific attention is being paid to safety aspects of works

as well as local communities. Workers have been provided with personal protective equipment (PPEs). Regular training is also provided to workers on environmental, health and safety aspects and issues. Health checkup camps and HIV/AIDs camps have been organized. However, some areas such as work zone safety management and workers camp facilities and usage of PPEs by the workers needs further improvement. The AE/IEs, together with contractors/concessionaires have been advised and have organized regular on-site training sessions for workers on occupational, health and safety issues including use of PPEs. Onsite assessment of implementation of occupational, health and safety measures at work sites by AE/IEs indicated good compliance to traffic safety measures, traffic control and traffic diversion signages as well as appreciable use of PPEs among the entire workforce while working on active construction sites. Some minor non-compliances were observed in a few of the sites such as improper storage of hazardous chemicals, water ponding which create potential breeding grounds for vectors, etc. The same will be reported in detailed manner in the next quarterly monitoring report (April to June 2019). Annual monitoring report from August 2017 to September 2018 was already submitted with the concurrence for displaying on ADB website given by the Additional Chief Engineer, RPWD-PPP.

29. Tree Cutting, Compensatory and Additional Plantations: Tree cutting permissions have been obtained for all roads in contract packages 1, 2, 3 and 4. Plantation activities have begun since the onset of monsoon season 2018 and again start and continue during the monsoon season of 2019. A summarized view of tree cuttings attempted, and tree plantation is given in Table 7. Additional plantation proposed for Kanwas- Aklera and Alot – Gangdhar roads is yet to be started.

Table 7: Progress of Tree Cutting and Plantation as of 30th April 2019

Sl. No.	Pkg. No.	Road No.	Road Name	Road Length (in KM)	Total No. of Trees To Be Cut	Total No. of Saplings to be Planted	Total No. of Trees Cut	Total No. of Saplings Planted	% Trees To Be Cut	% Saplings to be Planted	District(s)
1	RSHIP 1	SH-74	Kanwas Khanpur- Aklera	74.820	2060	6180	2060	0	0	100	Kota, Jhalwar
2		SH-74 A	Deoli - Kanwas	14.850	530	1590	530	0	0	100	Kota
3		SH-19C	Alot (MP) Gangdhar-Suwansara (MP)	24.543	268	804	268	0	0	100	Jhalwar
4		SH-22	Kherli – Pahari	61.156	1741	5223	1741	0	0	100	Alwar, Bharathapur
5	RSHIP 2	SH-16	Barmer Sindari-Jalore	148.089	4044	12132	3992	0	1	100	Barmer,Jalore
		SH-16	Ahore Bali- Mundara (Sanderao-Mundara)	29.423	796	2388	681	0	14	100	Pali
7	RSHIP 3	MDR-103	Peelibanga – Lukhuwali	34.548	711	2133	711	2133	0	0	Hanumangarah
8		SH-6 A	Sardarshahar-Loonkaransar	75.800	491	1473	491	1473	0	0	Churu,Bikaner
9		SH-69	Churu – Bhaleri	34.800	233	699	233	699	0	0	Churu
10		SH-60	Sanju-Tarnau	16.703	82	246	82	246	0	0	Nagaur
11		SH-100	Roopangarh – Naraina	34.792	0	0	0	0	0	0	Jaipur, Ajmer
12		SH-8, 19, 60, 82 A, 83	Nagaur Tarnau- Deedwana-Mukundgarh	195.738	2237	6711	2237	6711	0	100	Nagaur,Sikar,Churu,Jhun Jhunu
13	RSHIP 4	SH-13	Ajeetgarh – Chala	33.135	262	2000	262	0	0	100	Sikar
14		SH-20, 20 A	Sikar Ganeri – Jaswantgarh	75.460	2399	4830	2270	0	5	100	Sikar, Churu, Nagaur
15		SH-20, 20 A	Bidasar-Nokha	93.000	5	453	5	0	0	100	Churu, Bikaner
16		SH-13 B	Singhana Buhana-Haryana Border	32.686	282	1410	282	0	0	100	Jhun Jhunu
Grand Total (All 4 Packages)				979.543	16136	46977	16141	47962	1.0	68.75	

30. **Assessment of Unanticipated Impacts:** At this stage, no unanticipated environmental impacts is anticipated or identified so far. Mitigation measures, as suggested in EMPs, have been found appropriate and adequate, for handling the environmental impacts associated with construction activities. The summarized status of EMPs and EMOs implementation in all four Contract Packages is shown in Appendix 3.

31. **Environmental Pollution monitoring:**

- i. All contractors have outsourced environmental pollution monitoring on quarterly basis to NABL accredited, MOEFCC recognized laboratories, which are also approved by RSPCB;
- ii. Protocols and Test Methods adopted for sampling and analysis, as are enumerated in Test Reports are approved methods of CPCB /BIS;
- iii. Quarterly pollution monitoring for air, noise and water quality parameters for the quarter January to March 2018, April to June 2018 and October to December 2017 was conducted for all roads in contract packages 1 and 3, for October to December 2017 and April to June 2018 for all roads in Contract Packages 4 and 3 and for April to June 2018 and October to December 2018 in the Contract Package-2. Test results for all roads of contract package 1 and 3 are in compliance with National Ambient Air Quality NAAQS), National Noise Quality Standards (NNQS), IS-10500-2012 Standards for drinking water quality and soil quality stands of ICAR;
- iv. There has been no exceedance due to any construction activity;
- v. Main cause/reasons for exceeding values of $PM_{2.5}$ and PM_{10} in all four roads of contract package-4 during October to December 2017 quarter are not related to construction activities of roads but due to high vehicular movements and human activities such as biomass burning, naturally blowing sand particles, heaping and use of different types of building construction materials on roadsides, indiscriminate dumping of waste materials around roadsides and immediate vicinity, as well as dryness due to the winter season. High traffic volume, uncontrolled honking and high-speed during winter season are reasons for noise quality levels exceeding prescribed limits for silence and residential zones;
- vi. The contractor has been advised to make more arrangements for adequate water sprinkling, especially during construction activities around settlement areas and sensitive receptors and to provide required PPEs and implement construction practices, suggested in EMPs as remedial measures for the prevention and control of noise, especially during construction activities around settlements and sensitive receptors. And also, to request local level municipal corporations and panchayat bodies and other civic societies to pay attention for stopping waste dumping, heaping of construction materials around road sides and seek help of local police in preventing uncontrolled honking by vehicles; and
- vii. A brief review and analysis of tests results of above-referred environmental pollution monitoring is presented in Table 8 in foregoing pages.

Table 8: Analysis of Environmental Pollution Monitoring for Tranche 1 Roads

Contract Package & Road	Components of The Environment	October to December 2018	April -June 2018	January to March 018	October to December 2017
Contract Package-01 Kanwas Khanpur-Aklara	Air (AQ)	AQ monitoring was conducted at 7 locations during this period. No exceedance with NAAQS was reported for any of the monitored parameters	AQ monitoring was conducted at 8 locations No exceedance with NAAQS was reported for any of the monitored parameters	AQ monitoring was conducted at 6 locations No exceedance with NAAQS was reported for any of the monitored parameters	AQ monitoring was not carried out
	Noise	Noise level monitoring was conducted at 7 locations No exceedance was reported with National Noise Level Limits for commercial category	Noise level monitoring was conducted at 8 locations No exceedance was reported with National Noise Level Limits for commercial category	Noise level monitoring was conducted at 6 locations. No exceedance was reported with National Noise Level Limits for commercial areas category	Noise level monitoring was not carried out
	Water (Groundwater-Drinking water)	Drinking water quality was monitored at 7 locations. Test results are in compliance with IS-10500:2012	Groundwater quality monitoring was not carried out.	Groundwater quality was monitored at 6 locations. Test results are in compliance with IS-10500:2012	Groundwater quality monitoring was not carried out
Contract Package-01 Deoli - Kanwas	Air	AQ monitoring was conducted at 2 locations No exceedance with NAAQS was reported for any of the monitored parameters	AQ monitoring was conducted at 4 locations No exceedance with NAAQS was reported for any of the monitored parameters.	AQ monitoring was conducted in 5 locations No exceedance with NAAQS was reported for any of the monitored parameters	AQ monitoring was not carried out
	Noise	Noise level monitoring was conducted at 2 locations No exceedance was reported with National Noise Level Limits for commercial category	Noise quality monitoring was conducted at 4 locations No exceedance was reported with National Noise Level Limits for commercial category	Noise quality monitoring was conducted at 5 locations. No exceedance was reported with National Noise Level Limits for commercial categories	Noise level monitoring was not carried out
	Water (Groundwater-	Groundwater water quality was monitored at	Water quality monitoring was not conducted	Groundwater quality was monitored at 5	Monitoring was not carried out

Contract Package & Road	Components of The Environment	October to December 2018	April -June 2018	January to March 018	October to December 2017
	Drinking Water)	7 locations. Test results are in compliance with IS-10500:2012		locations.Test results are in compliance with IS-10500:2012	
Contract Package-01 Alot (MP) Gangdhar-Suwansara (MP)	Air	AQ monitoring was conducted at 6 locations. All parameters found to be within prescribed limits.	AQ monitoring was conducted at 4 locations.. All parameters found to be within prescribed limits	AQ monitoring was conducted at 4 locations All parameters found to be within prescribed limits	AQ monitoring was not carried out
	Noise	Noise level monitoring was was conducted at 6 locations. Noise level confirms prescribed limit for commercial category.	Noise quality monitoring was conducted at 4 locations Noise level confirms prescribed limit for commercial category.	Noise quality monitoring was conducted at 4 locations Noise level confirms prescribed limit for commercial category.	Noise level monitoring was not carried out
	Water (Groundwater -Drinking Water)	Groundwater quality was monitored at 4 locations.. Test results are in compliance with IS-10500:2012	Groundwater quality monitoring was not conducted	Groundwater quality was monitored at 4 locations.. Test results are in compliance with IS-10500:2012	Groundwater quality monitoring was not carried out
Contract Package-01 Kherli – Pahari	Air	AQ monitoring was conducted at 10 locations All parameters found to be within prescribed limits.	AQ monitoring was conducted at 10 locations All parameters found to be within prescribed limits.	AQ monitoring was conducted at 6 locations All parameters found to be within prescribed limits.	AQ monitoring was not carried out.
	Noise	Noise level monitoring was was conducted at 10 locations. Noise level confirms prescribed limit for commercial category.	Noise level monitoring was was conducted at 10 locations. Noise level confirms prescribed limit for commercial category.	Noise level monitoring was was conducted at 6 locations. Noise level confirms prescribed limit for commercial category.	Noise level monitoring was not carried out. .
	Water (Groundwater-Drinking Water)	Groundwater quality was monitored at 10 locations Test esults are in compliance with IS-10500:2012	Groundwater quality monitoring was conducted at 1 location. Test results are in compliance with IS-10500:2012	Groundwater quality was monitored at 6 locations Test results are in compliance with IS-10500:2012	Groundwater quality monitoring was not carried out.
Contract	Air	AQ monitoring was	AQ monitoring was	Monitoring was not	AQ monitoring was not

Contract Package & Road	Components of The Environment	October to December 2018	April -June 2018	January to March 018	October to December 2017
Package-02 Barmer Sindari-Jalore		conducted at 4 locations All parameters found to be within prescribed limits.	conducted at 6 locations All parameters found to be within prescribed limits.	carried out	carried out
	Noise	Noise level monitoring was conducted at 4 locations Noise level confirms prescribed limit for commercial category.	Noise level monitoring was conducted at 6 locations Noise level confirms prescribed limit for commercial category.	Noise level Monitoring was not carried out	Noise level Monitoring was not carried out
	Water (Groundwater-Drinking Water)	Groundwater quality was monitored at 2 locations. Test results are in compliance with IS-10500:2012	Groundwater quality was monitored at 6 locations Test results are in compliance with IS-10500:2012	Groundwater quality monitoring was not carried out	Groundwater quality monitoring was not carried out
Contract Package-02 Ahore Bali-Mundara (Sanderao-Mundara)	Air	AQ monitoring was conducted at 2 locations. Monitored parameters at locations found to be within NAAQS prescribed limit	AQ monitoring was not carried out	AQ monitoring was not carried out	AQ monitoring was not carried out
	Noise	Noise level monitoring was conducted for 1 location. It confirms prescribed limit for commercial category.	Noise level monitoring was not carried out	Noise level monitoring was not carried out	Noise level monitoring was not carried out
Contract Package-03 Peelibanga – Lukhuwali	Air	AQ monitoring was conducted at 4 locations Monitored parameters at all locations found to be within NAAQS prescribed limit	AQ monitoring was conducted at 7 locations Monitored parameters at all locations found to be within NAAQS prescribed limit	AQ monitoring was conducted at 7 locations. Monitored parameters at all locations found to be within NAAQS prescribed limit	AQ monitoring was conducted at 7 locations. Monitored parameters at all locations found to be within NAAQS prescribed limit
	Noise	Noise level monitoring was conducted at 4 locations. It confirms prescribed limit for	Noise level monitoring was conducted at 7 locations It confirms prescribed limit for	Noise level monitoring was conducted at 7 locations It confirms prescribed limit for	Noise level monitoring was conducted at 7 locations It confirms prescribed limit for

Contract Package & Road	Components of The Environment	October to December 2018	April -June 2018	January to March 018	October to December 2017
		commercial areas.	commercial areas.	commercial areas.	commercial areas.
	Water (Groundwater-Drinking Water)	Groundwater quality was monitored at 1 location Test results are in compliance with IS-10500:2012.	Groundwater quality was monitored at 1 location Test results are in compliance with IS-10500:2012..	Groundwater quality was monitored at 1 location Test results are in compliance with IS-10500:2012.	Groundwater quality was monitored at 1 location Test results are in compliance with IS-10500:2012.
	Soil	Soil quality was monitored at 1 location.Test results are in compliance with ICAR Standards.	Soil quality was monitored at 1 location.Test results are in compliance with ICAR Standards.	Soil quality was monitored at 1 location.Test results are in compliance with ICAR Standards.	Soil quality was monitored at 1 location.Test results are in compliance with ICAR Standards.
Contract Package-03 Sardarshahar-Loonkaransar	Air	AQ monitoring was conducted at 5 locations. All parameters meet the NAAQS prescribed limit.	AQ monitoring was conducted at 7 locations. All parameters meet the NAAQS prescribed limit.	AQ monitoring was conducted at 7 locations. All parameters meet the NAAQS prescribed limit	AQ monitoring was conducted at 7 locations. All parameters meet the NAAQS prescribed limit.
	Noise	Noise level monitoring was conducted at 5 locations. It confirms the CPCB prescribed limit of commercial category.	Noise level monitoring was conducted at 7 locations. It confirms the CPCB prescribed limit of commercial category.	Noise level monitoring was conducted at 7 locations. It confirms the CPCB prescribed limit of commercial category.	Noise level monitoring was conducted at 7 locations. It confirms the CPCB prescribed limit of commercial category.
	Water (Groundwater -Drinking water)	Groundwater quality was monitored at 1 location. Test results are in compliance with IS-10500:2012.	Groundwater quality was monitored at 1 location. Test results are in compliance with IS-10500:2012..	Groundwater quality was monitored at 1 location. Test results are in compliance with IS-10500:2012.	Groundwater quality was monitored at 1 location. Test results are in compliance with IS-10500:2012.
	Soil	Soil quality was monitored at 1 location.Test results are in compliance with ICAR Standards.	Soil quality was monitored at 1 location.Test results are in compliance with ICAR Standards..	Soil quality was monitored at 1 location.Test results are in compliance with ICAR Standards..	Soil quality was monitored at 1 location.Test results are in compliance with ICAR Standards.
Contract Package-03 Churu –	Air	AQ monitoring was conducted at 4 locations. All parameters meet the NAAQS prescribed limit.	AQ monitoring was conducted at 7 locations. All parameters meet the NAAQS prescribed limit.	AQ monitoring was conducted at 7 locations. All parameters meet the NAAQS prescribed limit.	AQ monitoring was conducted at 7 locations. All parameters meet the NAAQS prescribed limit.

Contract Package & Road	Components of The Environment	October to December 2018	April -June 2018	January to March 018	October to December 2017
Bhaleri	Noise	Noise level monitoring was conducted at 4 locations. It confirms the CPCB prescribed limit of commercial category.	Noise level monitoring was conducted at 7 locations. It confirms the CPCB prescribed limit of commercial category.	Noise level monitoring was conducted at 7 locations. It confirms the CPCB prescribed limit of commercial category..	Noise level monitoring was conducted at 7 locations. It confirms the CPCB prescribed limit of commercial category.
	Water (Groundwater-Drinking Water)	Groundwater quality was monitored at 1 location. Test results are in compliance with IS-10500:2012.	Groundwater quality was monitored at 1 location. Test results are in compliance with IS-10500:2012..	Groundwater quality was monitored at 1 location. Test results are in compliance with IS-10500:2012..	Groundwater quality was monitored at 1 location. Test results are in compliance with IS-10500:2012..
	Soil	Soil quality was monitored at 1 location. Test results are in compliance with ICAR Standards.	Soil quality was monitored at 1 location. Test results are in compliance with ICAR Standards.	Soil quality was monitored at 1 location. Test results are in compliance with ICAR Standards..	Soil quality was monitored at 1 location. Test results are in compliance with ICAR Standards.
Contract Package-03 Sanju-Tarnau	Air	AQ monitoring was conducted at 2 locations. All parameters meet the NAAQS prescribed limit.	AQ monitoring was conducted at 4 locations. All parameters meet the NAAQS prescribed limit.	AQ monitoring was conducted at 4 locations. All parameters meet the NAAQS prescribed limit.	AQ monitoring was conducted at 4 locations. All parameters meet the NAAQS prescribed limit.
	Noise	Noise level monitoring was conducted at 2 locations. It confirms the CPCB prescribed limit of commercial category.	Noise level monitoring was conducted at 4 locations. It confirms the CPCB prescribed limit of commercial category..	Noise level monitoring was conducted at 4 locations. It confirms the CPCB prescribed limit of commercial category.	Noise level monitoring was conducted at 4 locations. It confirms the CPCB prescribed limit of commercial category.
	Water (Groundwater-Drinking Water)	NA – Camp site is located in Naraina-Tarnau-Deedwana-Munukdgarh Road	NA – Camp site is located in Naraina-Tarnau-Deedwana-Munukdgarh Road	NA – Camp site is located in Naraina-Tarnau-Deedwana-Munukdgarh Road	NA – Camp site is located in Naraina-Tarnau-Deedwana-Munukdgarh Road
	Soil	NA – Camp site is located in Naraina-Tarnau-Deedwana-Munukdgarh Road	NA – Camp site is located in Naraina-Tarnau-Deedwana-Munukdgarh Road	NA – Camp site is located in Naraina-Tarnau-Deedwana-Munukdgarh Road	NA – Camp site is located in Naraina-Tarnau-Deedwana-Munukdgarh Road
Contract Package-03	Air	AQ monitoring was conducted at 4 locations. All parameters meet the	AQ monitoring was conducted at 7 locations. All parameters meet the	AQ monitoring was conducted at 7 locations. All parameters meet the	AQ monitoring was conducted at 7 locations. All parameters meet the

Contract Package & Road	Components of The Environment	October to December 2018	April -June 2018	January to March 018	October to December 2017
Roopangarh – Naraina		NAAQS prescribed limit.	NAAQS prescribed limit.	NAAQS prescribed limit.	NAAQS prescribed limit.
	Noise	Noise level monitoring was conducted at 2 locations. It confirms the CPCB prescribed limit of commercial category.	Noise level monitoring was conducted at 7 locations. It confirms the CPCB prescribed limit of commercial category.	Noise level monitoring was conducted at 7 locations. It confirms the CPCB prescribed limit of commercial category.	Noise level monitoring was conducted at 4 locations. It confirms the CPCB prescribed limit of commercial category..
	Water (Groundwater-Drinking Water)	Groundwater quality was monitored at 1 location. Test results are in compliance with IS-10500:2012.	Groundwater quality was monitored at 1 location. Test results are in compliance with IS-10500:2012..	Groundwater quality was monitored at 1 location. Test results are in compliance with IS-10500:2012.	Groundwater quality was monitored at 1 location. Test results are in compliance with IS-10500:2012..
	Soil	Soil quality was monitored at 1 location. Test results are in compliance with ICAR Standards..	Soil quality was monitored at 1 location. Test results are in compliance with ICAR Standards.	Soil quality was monitored at 1 location. Test results are in compliance with ICAR Standards.	Soil quality was monitored at 1 location. Test results are in compliance with ICAR Standards.
Contract Package-04 Nagaur - Tarnau-Deedwana-Mukundgarh	Air	AQ monitoring was conducted at 7 locations. All parameters meet the NAAQS prescribed limit.	AQ monitoring was conducted at 10 locations. All parameters meet the NAAQS prescribed limit.	AQ monitoring was conducted at 10 locations. All parameters meet the NAAQS prescribed limit.	AQ monitoring was conducted at 10 locations. All parameters meet the NAAQS prescribed limit
	Noise	AQ monitoring was conducted at 7 locations. All parameters meet the NAAQS prescribed limit.	AQ monitoring was conducted at 10 locations. All parameters meet the NAAQS prescribed limit.	AQ monitoring was conducted at 10 locations. All parameters meet the NAAQS prescribed limit.	AQ monitoring was conducted at 10 locations. All parameters meet the NAAQS prescribed limit.
	Water (Groundwater-Drinking water)	Groundwater quality was monitored at 2 locations Test results are in compliance with IS-10500:2012.	Groundwater quality was monitored at 2 locations Test results are in compliance with IS-10500:2012.	Groundwater quality was monitored at 2 locations Test results are in compliance with IS-10500:2012..	Groundwater quality was monitored at 2 locations Test results are in compliance with IS-10500:2012.
	Soil	Soil quality was monitored for 2 locations in the month of December 2018, in the	Soil quality was monitored for 2 locations in months of April, May and June 2018, in dates	Soil quality was monitored for 2 locations in months of January and February 2018, in dates	Soil quality was monitored for 2 locations in the months of December 2017, in dates 14 th

Contract Package & Road	Components of The Environment	October to December 2018	April -June 2018	January to March 018	October to December 2017
		date 25 th December. Test results are in compliance with ICAR Standards.	16 th April, 14 th May and 15 th June. Test results are in compliance with ICAR Standards.	15 th January and 14 th February. Test results are in compliance with ICAR Standards.	December. Test results are in compliance with ICAR Standards.
Contract Package-04 Ajeetgarh – Chala	Air	AQ monitoring was conducted at 4 locations. All parameters meet the NAAQS prescribed limit.	AQ monitoring was conducted at 5 locations. All parameters meet the NAAQS prescribed limit.	AQ monitoring was not carried during this quarter	AQ monitoring was conducted at 24 locations , All parameters found to be within prescribed limit except marginal exceedance in PM _{2.5} , and PM ₁₀ at 5 locations which range from 63.24 to 66.4 µg/m ³ , for PM _{2.5} ,and 136.25 to 150.12 µg/m ³ for PM ₁₀ . Main reasons for exceeding values of PM _{2.5} and PM ₁₀ are vehicular movements human activities such as biomass burning, naturally blowing sand particles, heaping and use of different type of building construction materials on roadsides, indiscriminate dumping of waste materials around roadsides and surrounding locations. Also it is attributed to winter season having atmospheric conditions, mainly, temperature inversions, not allowing adequate dispersions of pollutants.
	Noise	Noise level monitoring	Noise level monitoring	Noise level monitoring	Noise level monitoring

Contract Package & Road	Components of The Environment	October to December 2018	April -June 2018	January to March 018	October to December 2017
		was conducted 4 locations in the month of December 2018 in dates, 26 th , and 27 th December. No exceedance was reported for National Noise Quality Levels for commercial areas	was conducted 5 locations in the month of June 2018 in dates 4 th , 5 th , 6 th , 7 th , 8 th & 9 th June, No exceedance was reported for National Noise Quality Levels for commercial areas.	was conducted during this quarter	was conducted at 22 locations. Exceedances was reported for residential and silence zone. Day level ranges from 98.6dB (A)-Near a Power house - Transmission lines generated noise to 62.30 dB (A) and at night ranges from 50.06 dB (A). to 70.6dB(A). This is mainly due to vehicular movement, traffic congestion and uncontrolled honking
	Water (Groundwater-Drinking water)	Groundwater quality was monitored for 1 location in the month of December 2018, in the date 25 th December. Test results are in compliance with IS-10500:2012.	Groundwater quality was monitored for 1 location in the month of June 2018, in the date 8 th June. Test results are in compliance with IS-10500:2012.	Ground water quality monitoring was not carried out during this quarter	Groundwater quality was monitored for 1 location in the month of December 2017, in the date 10 th December. Test results are in compliance with IS-10500:2012.
	Soil	Soil quality was monitored for 1 location in the month of December 2018, in the date 25 th December. Test results are in compliance with ICAR Standards.	Soil quality was monitored for 3 locations in the month of June 2018, in the date 9 th June. Test results are in compliance with ICAR Standards.	Soil quality monitoring was not carried out during this quarter.	Soil quality was monitored in the month of December 2017, in the 10 th December' 2017. All the parameters are within the permissible limit as per ICAR standard
Contract Package-04 Sikar Ganeri – Jaswantgarh	Air	AQ monitoring was conducted for 4 locations in the month of December 2018 in dates 24 th , 25 th , 26 th and 27 th December.	AQ monitoring was conducted for 7 locations in the month of June 2018 in dates 2 nd & 3 rd June. No exceedance	AQ monitoring was not carried out during this quarter	AQ monitoring was conducted at 38 locations in the month of December 2017, in dates 3 rd , 4 th , 5 th , 6 th & 7 th December. No

Contract Package & Road	Components of The Environment	October to December 2018	April -June 2018	January to March 018	October to December 2017
		No exceedance with NAAQSs (CPCB/RSPCB) was reported for parameters PM _{2.5} , PM ₁₀ , NOx, SOx, CO	with NAAQSs (CPCB/RSPCB) was reported for parameters PM _{2.5} , PM ₁₀ , NOx, SOx, CO		exceedance with NAAQSs (CPCB/RSPCB) was reported for parameters-PM _{2.5} , NOx, SOx, CO, however, exceedances were reported for 6 locations for, which range from 110.25 to 120.24 µg/m ³ for Pm10. Onside assessment indicated that Exceedances in above-referred parameters are not due to construction activities of the road. Main cause/reasons for exceeding values of PM _{2.5} and PM ₁₀ in in the road, are high vehicular movements and human activities such as biomass burning, naturally blowing sand particles, heaping and use of different type of building construction materials on roadsides, indiscriminate dumping of waste materials around roadsides etc. and around locations as well as season of winter having atmospheric conditions, mainly, temperature inversions, not allowing adequate dispersions of particulate matter in air
	Noise	Noise level monitoring	Noise level monitoring	Noise level monitoring	Noise levels was

Contract Package & Road	Components of The Environment	October to December 2018	April -June 2018	January to March 018	October to December 2017
		was conducted 4 locations in the month of December 2018 in dates, 26 th , and 27 th December. No exceedance was reported for National Noise Quality Levels for commercial areas	was conducted 7 locations in the month of June 2018 in dates 2 nd & 3 rd June, No exceedance was reported for National Noise Quality Levels for commercial areas.	was not carried out during this quarter	monitored for 37 locations in the month of December 2017, in dates 3 rd , 4 th , 5 th , 6 th & 7 th December. No significant Exceedances was reported w.r.t National level values for industrial and commercial areas, however exceedances were reported for residential areas and silence zone areas locations. Day level ranges from 60.1dB (A) to 72.6 dB (A) and Night-time 50.1dB(A) to 60.1 dB(A) - These exceedances in noise levels for residential and salience zone areas were due to existing heavy traffic, high speed, heavy honking high voltage transmission lines, not due to any construction activities
	Water (Groundwater -Drinking water)	Groundwater quality was monitored for 1 location in the month of December 2018, in the date 25 th December. Test results are in compliance with IS-10500:2012.	Groundwater quality was monitored for 2 location in the month of June 2018, in the date 3 rd June. Test results are in compliance with IS-10500:2012.	Ground water quality monitoring was not carried out during this quarter	Groundwater quality was monitored for 1 location in the month of December 2017, in the date 9 th December. Test results are in compliance with IS-10500:2012.
	Soil	Soil quality was monitored for 4 locations in the month of December	Soil quality was monitored for 4 locations in the month of June	Soil quality moniyoring was not carried out during this quarter	Soil quality was monitored for 1 location in the month of December 2017, n the

Contract Package & Road	Components of The Environment	October to December 2018	April -June 2018	January to March 018	October to December 2017
		2018, in the date 23 rd December. Test results are in compliance with ICAR Standards.	2018, in the date 3 rd June. Test results are in compliance with ICAR Standards.		date 9 th December. All the parameters are within the permissible limit as per ICAR standard.
Contract Package-04 Bidasar-Nokha	Air	AQ monitoring was conducted for 3 locations in the month of December 2018 in dates 24 th , 25 th , 26 th and 27 th December. No exceedance with NAAQSS (CPCB/RSPCB) was reported for parameters PM _{2.5} , PM ₁₀ , NOx, SOx, CO	AQ monitoring was conducted for 7 locations in the month of June 2018 in dates 7 th , 8 th , 9 th , 10 th , 11 th & 12 June. No exceedance with NAAQSS (CPCB/RSPCB) was reported for parameters PM _{2.5} , PM ₁₀ , NOx, SOx, CO	AQ monitoring was not carried out during this quarter	AQ monitoring was conducted at 38 locations in months of November and December 2017. In dates 29 th , 30 th November and 1 st , 2 nd , 3 rd and 4 th December. Parameters. NOx, SOx, CO, confirmed compliance to NAAQSS (CPCB/RSPCB), however exceedances were reported in PM _{2.5} and PM ₁₀ in exceeds 6 locations. PM _{2.5} ranges from 62.88 to 66.74µg/m ³ & PM ₁₀ ranges from 90.14 to 158.84µg/m ³ . Main cause/reasons for exceeding values of PM _{2.5} and PM ₁₀ are same as given for other roads.
	Noise	Noise level monitoring was conducted 3 locations in the month of December 2018 in dates, 26 th , and 27 th December No exceedance was reported for National Noise Quality Levels for commercial areas	Noise level monitoring was conducted at 7 locations, No exceedance was reported for National Noise Quality Levels for commercial areas.	Noise level monitoring was not carried out during this quarter	Noise quality monitoring was conducted for 38 locations No significant Exceedances was reported w.r.t National level values for industrial and commercial areas, however exceedances were reported for residential areas and

Contract Package & Road	Components of The Environment	October to December 2018	April -June 2018	January to March 018	October to December 2017
					silence zone areas locations. Day level ranges from 60.1dB (A) to 72.6dB (A) and at night ranges from 50.1 dB (A). to 62.4. dB(A). These exceedances in noise levels for residential and salience zone areas were due to existing heavy traffic, high speed, heavy honking, not due to any construction activities
	Water (Groundwater-Drinking Water)	Groundwater quality was monitored for 1 location in the month of December 2018, in the date 25 th December. Test results are in compliance with IS-10500:2012.	Groundwater quality was monitored for 1 location in the month of June 2018, in the date 11 th June. Test results are in compliance with IS-10500:2012.	Groundwater quality monitoring was not carried out during this quarter	Groundwater quality was monitored for 1 location in the month of December 2017, in the date 9 th December. Test results are in compliance with IS-10500:2012.
	Soil	Soil quality was monitored for 2 locations in the month of December 2018, in the date 25 th December. Test results are in compliance with ICAR Standards.	Soil quality was monitored for 3 locations in the month of June 2018, in the date 11 th June. Test results are in compliance with ICAR Standards.	Soil quality monitoring was conducted during this quarter	Soil quality was monitored for 1 location in the month of December 2017, in the date 9 th December. Test results are in compliance with ICAR Standards.
Contract Package-04 Singhana Buhana-Haryana Border	Air	AQ monitoring was conducted for 3 locations in the month of December 2018 in dates 24 th , 25 th , 26 th and 27 th December. No exceedance with NAAQSs (CPCB/RSPCB) was reported for	AQ monitoring was conducted for 6 locations in the month of June 2018 in dates 8 th , 9 th , 10 th , 11 th & 12 th June. No exceedance with NAAQSs (CPCB/RSPCB) was	AQ monitoring was not carried out during this quarter	AQ monitoring was conducted for 24 locations in the month of December 2017, in dates 8 th , 9 th , 10 th & 11 th December. Parameter- NOx, SOx, CO s confirmed compliance to NAAQS

Contract Package & Road	Components of The Environment	October to December 2018	April -June 2018	January to March 018	October to December 2017
		parameters PM _{2.5} , PM ₁₀ , NO _x , SO _x , CO	reported for parameters PM _{2.5} , PM ₁₀ , NO _x , SO _x , CO		(CPCB/RSPCB), however, exceedances were reported in PM _{2.5} and PM ₁₀ at 5 & 9 locations respectively. PM _{2.5} ranges from 62.88 to 68.00 µg/m ³ & PM ₁₀ ranges from 110.74 to 139.74 µg/m ³ . Main cause/reasons for exceeding values of PM _{2.5} and PM ₁₀ , are same as given for other roads.
	Noise	Noise level monitoring was conducted 3 locations in the month of December 2018 in dates, 26 th , and 27 th December. No exceedance was reported for National Noise Quality Levels for commercial areas	Noise level monitoring was conducted for 6 locations in the month of June 2018 in dates 8 th , 9 th , 10 th , 11 th & 12 th June. No exceedance was reported for National Noise Quality Levels for commercial areas.	Noise level monitoring was not carried out during this quarter	Noise quality monitoring was conducted for 25 locations in the month of December 2017, in dates in dates 8 th , 9 th , 10 th & 11 th December. No significant Exceedances was reported w.r.t National level values for industrial and commercial areas, however exceedances were reported for residential areas and silence zone areas locations. Day level ranges from 65.1dB (a) to 56.8dB and at night ranges from 51.49 dB (A). to 70.6. dB(A). These exceedances in noise levels for residential and salience zone areas were due to existing heavy traffic, high speed, heavy

Contract Package & Road	Components of The Environment	October to December 2018	April -June 2018	January to March 018	October to December 2017
					honking, not due to any construction activities
	Water (groundwater-drinking water)	Groundwater quality was monitored for 1 location in the month of December 2018, in the date 25 th December. Test results are in compliance with IS-10500:2012.	Groundwater quality was monitored for 1 location in the month of June 2018, in the date 12 th June. Test results are in compliance with IS-10500:2012.	Groundwater quality monitoring was not carried out during this quarter	Groundwater quality was monitored for 1 location in the month of December 2017, in the date 9 th December. Test results reported are in compliance with IS-10500:2012.
	Soil	Soil quality was monitored for 3 locations in the month of December 2018, in the date 25 th December. Test results are in compliance with ICAR Standards.	Soil quality was monitored for 2 locations in the month of June 2018, in the date 12 th June. Test results are in compliance with ICAR Standards.	Soil quality monitoring was not carried out during this quarter	Soil quality was monitored for 1 location, in the month of December 2019, in the date 9 th December. All the parameters are within the permissible limit as per ICAR standards.

32. **Assessment of unanticipated Impacts:** At this stage, no unanticipated environmental impacts were identified. There are no deviations from the proposed mitigation measures of EMPs for handling the environmental impacts associated with construction activities. The summarized status of EMPs and EMoPs implementation in all four Contract Packages is shown in **Appendix 3**.

33. **EMPs and EMoPs Implementation and Training Programs:** Environmental Specialist (PMC) has conducted EMP Implementation and Monitoring Training Programmes separately for each contract package from 29 January 2018 until 8 February 2018 and on 29 October 2018 for all contract packages in the conference hall, RPWD (PPP), Jaipur. Training programs aimed to enlighten the entire institutional set-up involved in the monitoring of the implementation of EMPs and EMoPs specially environmental focal persons

34. Photographs 1 to 24 in foregoing pages provide compliance to EMPs implementation in Contract Packages 1, 2, 3 and 4.



Photograph 1: Construction Safety signage at 24+600Km Kherli-Pahari Road (Package-1)



Photograph 2: The Project Director (Package-1) is planting sapling outside the construction camp of Khanpur-Aklara Road



Photographs 3: Base Camp of the contractor at Khanpur (Kanwas-Khanpur-Aklara Road) of the Contract Package-1



Photograph 4: Views of EMPs and EMOs Implementation & Monitoring Training Programme held at Khanpur Base Construction camp of the contractor on 29th January 2018



Photograph 5: Safety training at Dandeli construction camp office of The Concessionaire, M/S-Dinesh Chandra R Agarwal Tollways Private Limited, Sindhari (Barmer)-Contract Package-2



Photograph 6: Traffic diversion signage at 30+500 at Barmer Sindhari-Jalore Road (Contract Package-2)



Photograph 7: Traffic diversion & construction safety signage at 38+500 at BarmerSindari-Jalore Road (Contract Package-2)



Photograph 8: Workforce at construction site using PPEs at 39+500 at BarmerSindari-Jalore Road (Contract Package-2)



Photograph 9: The Project Director (CP-2) delivering inaugural address during EMPs and EMoPs training programme at Dandeli construction camp office Contract Package-2



Photograph 10: The Project Manager (Contractor) delivering Welcome Address during EMPs and EMoPs training programme at Dandeli construction camp office of The Concessionaire, M/S-Dinesh Chandra R Agarwal Tollways Private Limited, Sindhari (Barmer)-Contract Package-2



Photograph 11: The Resident Engineer (IE/CSC) delivering Special address during EMPs and EMoPs training programme at Dandeli construction camp office of The Concessionaire, M/S-Dinesh Chandra R Agarwal Tollways Private Limited, Sindhari (Barmer)-Contract Package-2



Photograph 12: A view of participants during EMPs and EMoPs training programme at Dandeli construction camp office of The Concessionaire, M/S-Dinesh Chandra R Agarwal Tollways Private Limited, Sindhari (Barmer)-Contract Package-2



Photograph 13: Rainwater Harvesting structure under construction at 107+680 Km in Nagaur-Mukundgarh Road (Contract Package-3)



Photographs 14: View of the EMPs & EMOPs Implementation and Monitoring Training Programme on 1st February 2018 in Nagaur-Mukundgarh Highways Pvt.Ltd Office in Fatehpur (at Chainage 409+00Km of NH-52)



Photographs 15: Views of the construction camp (Nagaur-Mukundgarh Highways Private Ltd), at Ch-409) NH-59) of Contract Package-3, – Camp is as per EMP provisions



Photograph 16: Roadside construction safety training in the construction camp at Ajeetgarh-Chala Road (Construction Package-4)



Photograph 17: Roadside construction Safety Signage at Ajeetgarh-Chala Road (Construction Package-4)



Photograph 18: Safety Signage at Sikar-Ganeri Road (Construction Package-4)



Photograph 19: Safety signage on Singhana-Buhana Road (Construction Package-4)



Photograph 20: The Project Director (PIU-Contract Package-4) inaugurating the EMPs & EMOPs Implementation and Monitoring Training Programme on 2nd February 2018 in LR-BLC-Gawar Construction Pvt.Ltd Office in Sikar



Photograph 21: View of participants in the EMPs & EMOPs Implementation and Monitoring Training Programme on 2nd February 2018 in LR-BLC-Gawar Construction Pvt.Ltd Office in Sikar



Photographs 22: : View of Refresher Training Programme on the Implementation of Environmental Safeguards -EMPs and EMoPs in Contract Packages of Tranche-1, on 29th October 2018 in The Conference Hall, RPWD (PPP), Jaipur



Photograph 23: Inspection of the slab culvert adequacy for Wildlife Crossing at Ch.22.+950 (Bidasar-Nokha Road, Pkg-4)



Photograph 24: Inspection of the slab culvert adequacy for Wildlife Crossing at 45+930Km (Bidasar-Nokha Road, Pkg-04)

3. Grievance Redressal Committees, Public Consultations and Complaints

35. First Level Grievance Redressal Committee (GRC) has been established at each PIU level (The Project Director of concerned PIU will act as the Chairman). Second-level GRC has been established PMU in RPWD (PPP) in which The Additional Chief Engineer (RPWD-PP) will act as the Chairman. Both environmental and social grievances will be dealt by these committees. Appendix 4 provides the Order issued by the Public Works Department of Rajasthan on the constitution of Grievance Redress Committee. Local public have been involved in the subprojects right from the project design stage. In the present stage of construction also local public, including women groups and vulnerable persons are being consulted on a regular basis. The PMC, IE & AE as well as The BOT (Annuity basis) /EPC contractors are holding consultative meetings, on regular basis, to know their overall perceptions of the project implementation related activities and any complaints and grievances. The public consultations and information disclosure which were held in all contract packages of Tranche-1 during the design and pre-construction stage in all contract packages were listed in along with the brief outcome of the consultations in the IEE. Public consultations, complaints and actions taken thereof, during construction phase, are listed in files/official records of contractors available in construction camps in each sub-projects of contract packages.

36. The subprojects are in advanced stages of implementation (18 months) , construction of sub-projects has been completed in contract packages 2 and 3, in highly advanced stages in Contract Package-04 & in advance stages in The Contract Package-01.. There were no major public complaints received so far regarding any aspects and issues related with environment safeguards. This was based on inspection of the grievance/complaint registers/records during field visits. This was also reconfirmed by Project Directors of the respective contract packages. Complaint registers are being maintained at all campsite offices. Also, there is no history of any major accidents neither at work site nor at construction camps. However, there have been cases of minor injuries or near miss type of incidents, which the contractors are able to address with medical staff and first aid facilities on site. Contractors/concessionaires keep records of incident reports. In addition, regular occupational, health and safety training and awareness programs, as well as Tool Box Meetings (TBMs) are being held for workers and operators to prevent even minor injuries as well as minor accidents.

37. Table 9 and Photographs 25 to 44 provides summarized versions of public consultations and views of same.

Table 9: Public Consultations during Project Implementation

Sl. No.	Name of the Location Village /Road (Contract Package)	Date & Venue of Consultation	Participants	Participants	Responses/Observations/suggestions
1.	Barmer, 00+50Km	16.01.2019	Local Villagers, Concessionaire & contractor's & IE;sEngineers Number of participants - 19, Men only	Local Villagers, Concessionaire & contractor's & IE;sEngineers	<ul style="list-style-type: none"> No complaints by local people about air quality and noise level during construction. Local community and road users suggested for provision of roadside toilets at every 20Km interval along the project highway. Local community percieves socio-economic development in the project area due to likely increase in roadside commercial activities. Other perceived benifits area less fuel consumption, reduction in travel time etc due to improved road conditions. Local community informed that they are aware of wildlife and animal crossing related issues and proposed structures constructed for the same. Local community expressed satisfaction with water sprinkling on road in general, however, felt worried about increased noise levels in market areas due to occasional traffic jams.
2.	Rawatsar, 21+550Km(Barmer- Jalore Road -Contract Package-02)	16.01.2019, Rawatsar	Same as above Number of participants - 17, Men only	Same as above	No complaints. Expressed happiness for the construction bridge at Luni River which will protect road and communities around from impacts of flood and now there will not be any traffic jam due to over flow of Luni river water which was previously there due to low height causeway
4.	Sarnau, 41+200Km Barmer-Jalore Road - Contract Package-02)	16.01.2019, Sarnau	Same as above Number of participants - 17, Men only	Same as above	
5.	Sindhari, 63+500Km Barmer-Jalore Road - Contract Package-02)	17.01.2019	Same as above Number of participants - 17, Men only	Same as above	

Sl. No.	Name of the Location Village /Road (Contract Package)	Date & Venue of Consultation	Participants	Participants	Responses/Observations/suggestions
7.	Jiwana, 97+000Km Barmer-Jalore Road - Contract Package-02)	17.01.2019	Same as above Number of participants -22, Men only	Same as above	None Specific. Similar issues discussed as at Sl. No1
8.	Sayala, 118+500 Km	17.01.2019, Sayala	Same as above Number of participants - 21, Men only	Same as above	
19.	Kanwas (Deoli- Kanwas Road) Contract Packge-01,	Tea Shop at Triple Junction in Kanwas 28.12.2018	Same as above Number of participants - 21, Men	Local Villagers, Concessionaire & contractor's Engineers, FE (IE), ES & JEs (PMC)	<ul style="list-style-type: none"> Local community expressed satisfaction with the ongoing construction of road and no perception of any increase in air and noise pollution due to the construction of the road and further informed that waterlogging problems in village areas around the road will get resolved, once construction of major, minor bridges and culverts get completed. They requested for plantation on either sides of the road. Local community, informed that irrigation water pipelines have got damaged in areas around 13+00 Km and farmers have to purchase water from water suppliers, therefore these water-pipelines are to be re-stored. The Project Manager (BGCCPL) assured local community that water supply pipelines will be re-stored. Local community requested for the removal of construction debris, lying around agricultural fields. Animals undesirably enter into agricultural field by walking over these construction debris. The Project Manager (BGCCPL) assured local community that construction debris will be removed on priority basis

Sl. No.	Name of the Location Village /Road (Contract Package)	Date & Venue of Consultation	Participants	Participants	Responses/Observations/suggestions
11.	Khanpur (Kanwas- Khanpur-Aklara Road)- Contract Package-01	Khanpur Basecamp, 29.12.2018	Local Villagers, Concessionaire & contractor's Engineers, FE (IE), ES & JEs (PMC) Number of participants - 20, Men only	Sarpanch (Khanpur), The Chairman Khanpur Sahkari Samiti, Local Villagers, Concessionaire & Encontractor's Engineers, FE (IE), ES & JEs (PMC)	<ul style="list-style-type: none"> Sarpach of Khanpur, on behalf of local community requested to follow applicable guidelines and maintain the prescribed construction quality/standards. He also brought to the notice that Typhoid broke like an epidemic in 1988-89 due to water-logging in urban areas. So adequate cross and side drains shall be provided to avoid such situation in future. The Chairman, Khanpur Co-operative Society, expressed that the construction of Khanpur Bypass should be started on priority basis since this will significantly improve traffic congestion in Khanpur town.
12.	Rppoangarh-Naraina Contract Package-03	Mamana Village, 28.12.2018	Sarpanch (Khanpur), The Chairman Khanpur Sahkari Samiti, Local Villagers, Concessionaire & Encontractor's Engineers, FE (IE), ES & JEs (PMC) Number of participants - 12, Men only	Villagers & Concessionaire contractor Team	<ul style="list-style-type: none"> There was a demand for drainage improvements, which has been resolved and villagers expressed their happiness with the completion of construction of the road and further told that there is no degradation of air, noise and waer quality and demanded for more and more tree plantations for enhancing quality of the environment.
13.	Mirzapur (Kanwas-Khanpur-Aklara Road) – Contract Package-01	The Construction camp meeting hall, Mirzapur, 29.12.2018	Villagers & Concessionaire contractor Team	Sarpanch (Mirzapur), Local Villagers, Concessionaire & Encontractor's Engineers, FE (IE), ES & JEs (PMC)	<ul style="list-style-type: none"> Sarpanch and local community expressed satisfaction with quality of road construction and have no apprehension about increased air pollution or noise level. Sarpanch and local community requested Project Manager (BGCCPL) that a PMGSY Road, near village is highly damaged and

Sl. No.	Name of the Location Village /Road (Contract Package)	Date & Venue of Consultation	Participants	Participants	Responses/Observations/suggestions
					there very deep potholes on this PMGSY road and we face a lot inconveniences. The Project Manager (BGCCPL) replied that, though this PMGSY Road is out of our scope of works. However, we (BGCCPL) will very soon fill all potholes by GSB material and will strengthen this PMGSY road by putting rollers on it.
14.	Kala-Kheri (Ajeetgarh-Chala) Contract Package-04	Panchyat Building on the LHS of the road at 08+ 150 Km, 29.11..2018	Sarpanch (Mirzapur), Local Villagers, Concessionaire & Encontractor's Engineers, FE (IE), ES & JEs (PMC) Number of participants - 31, Men only	Sarpanch, Panchyat re-presentatives, Local villagers, shop- keepers, contractor team including EPF, TL & SQME(AE) & ES & JEs (PMC)	<ul style="list-style-type: none"> Local communities expressed satisfaction with present quality of air and noise and appreciated that no inconveniences caused during the construction of the road. Local community demanded construction of speed breakers near the main bus stop of the village, because school, hospital, Aganvadi Children Center & RO Water supply plant are located on RHS of the road and local communities have to cross the road many times during the entire day. They also raised the demand for the construction of speed breaker, before and after a religious place and common grazing area around it because animals cross the road and the construction of the speed breakers may prevent accidents and severances to animals. Local communities informed that waterlogging problems have been solved,due to the construction of covered longitudinal drains Local community raised the demand

Sl. No.	Name of the Location Village /Road (Contract Package)	Date & Venue of Consultation	Participants	Participants	Responses/Observations/suggestions
					<p>for the strengthening of a approach road, which exists on LHS of the main road, near main bus stand and told this approach road connects main road with 4-5 villages and should be strengthened.</p> <ul style="list-style-type: none"> • Raised the demand for the installations of Road Side Lights on LHS & RHS of the entire road stretch of the road passing through the village. • Raised the demand for providing either chairs or any other type conformably sitting for waiting of buses etc facilities inside bus-waiting stands constructed. • TL & RE (AE) are requested to make site inspection of above-indicated grievances and issue and submit their report for further action to PD (Contract Package-04). • Accepted that the construction of the road has led to lesser travel time from their village & around areas to major towns, previously it used to take 45 minutes, now it takes only 25 minutes and enhanced access to health care facilities upto Jhunjhunu District has increased, school buses are commuting with experiencing traffic jams and smaller & business opportunities are increasing on either sides of the road.
15.	Badi Dhani (Thoi) Contract Package-04	Shopping Complex Spec of Badi Dhani - Thoi (31+09 Km)	Sarpanch, Panchyat re- presentatives, Local villagers, shop-keepers,	Local villagers, shop- keepers, contractor Team, TL &	<ul style="list-style-type: none"> • Local community expressed their happiness with the completion of construction of the road and further

Sl. No.	Name of the Location Village /Road (Contract Package)	Date & Venue of Consultation	Participants	Participants	Responses/Observations/suggestions
		29.11.2018	contractor team including EPF, TL & SQME(AE) & ES & JEs (PMC) Number of Participants- 32(men only)	SQME(AE) & ES & JEs (PMC)	<p>told that there is no deterioration of air, noise and water quality and demanded for more and more tree plantations for enhancing quality of the environment.</p> <ul style="list-style-type: none"> Local Community raised demands for the construction of speed breakers at following places : <ol style="list-style-type: none"> Sainipura – Near Badi-Dhani bus stand Rampura Turning Before 200-300 meters of the bus stand on LHS & RHS, where Senior Secondary school, hospital are located Local community informed that the road near Power House and Panchyat Bhawan has got seriously damaged and no appropriate repair works have been carried out so far. Local community drew attention towards the quality of the longitudinal covered drains constructed and informed that covers and side-walls of these drains get easily collapsed, even during movement of traffic vehicles around these drains. Local community raised demand that no bus stand has been constructed in their village, however, bus stands have been constructed in all villages across the road. Local community informed that there are pits, which are left unfilled on LHS & RHS of the road stretch

Sl. No.	Name of the Location Village /Road (Contract Package)	Date & Venue of Consultation	Participants	Participants	Responses/Observations/suggestions
					<p>inside the village.</p> <ul style="list-style-type: none"> Local community raised a demand that the newly constructed covered drains should be extended or integrated with Badi-Dhani Sianipura water drain, so that water flowing from Badi-Dhani will get flow out via these newly constructed covered longitudinal drains and there will not be any waterlogging problem in Thoi village. Local community raised a demand that all types of vehicles belonging and coming from, within 10 km radius of the Toll Plaza, should be exempted from paying Toll Taxes. TL & RE (AE) are requested to make site inspection of above-indicated grievances and issue and submit their report for further action to PD (Contract Package-04).
16.	Churu -Bhaleri Road Contract Package-03	Ghantel, 17.11.2018	Local villagers, shop-keepers, contractor Team, TL & SQME(AE) & ES & JEs (PMC) Number of Participants-18 (men only)	Villagers & Concessionaire contractor Team	<ul style="list-style-type: none"> villagers expressed their happiness with the completion of construction of the road and further told that there is no degradation of air, noise and water quality and demanded for more and more tree plantations for enhancing quality of the environment.
17.	Phagalwar Village (Sikar-Ganeri- Jaswantgarh Road Contract Package-04	Shopping complex space on the LHS of the road at 16+300 Km, 15.10.2018	Villagers, contractor Concessionaire Team Number of Participants-28 (men only)	Local villagers, shop-keepers, and contractor Team, AHE (AE) & ES & JEs (PMC)	<ul style="list-style-type: none"> Local communities expressed satisfaction with present quality of air and noise compared to last construction year Raised demands for the construction of service road type of side road facility between the secondary school and the Primary Health

Sl. No.	Name of the Location Village /Road (Contract Package)	Date & Venue of Consultation	Participants	Participants	Responses/Observations/suggestions
					<p>Center, so that communities including school children and communities visiting primary health center and local residents, including shop-keepers may walk safely on these service type of roads and reach to ramps provided upon longitudinal covered drains, which are on heights higher than their floors of their residences, school, hospital and shopping complexes. TL & RE (AE) were requested to make site inspection of the issue and submit their report for further action to PD (Contract Package-04).</p> <ul style="list-style-type: none"> • Demanded for the construction of traffic calming measures, speed breakers in front of school, and near habitations TL & RE (AE) are requested to make site inspection of the issue and submit their report for further action to PD (contract Package-04). TL & RE (AE) are requested to make site inspection of the issue and submit their report for further action to PD (Contract Package-04). • Reported higher concentration of Fluoride in the drinking water. • Accepted that the construction of the road has led to lesser travel time from their village to district HQ Sikar, and improved access to health care facilities and business establishments.
18.	Tanwara (Sikar-Ganeri-Jaswantharh Road)	Meeting space at The Sarpanch of's	Local villagers, shop-keepers, and	Local villagers, shop-keepers &	<ul style="list-style-type: none"> • Villagers expressed their happiness with the completion of construction

Sl. No.	Name of the Location Village /Road (Contract Package)	Date & Venue of Consultation	Participants	Participants	Responses/Observations/suggestions
	Contract Package-04	residence, Tanwara (56+00KM) 15.10.2018	contractor Team, AHE (AE) & ES & JEs (PMC) Number of Participants- 15(men only)	contractor Team, AHE (AE) & ES & JEs (PMC)	<p>of the road and informed that there is no deterioration of air, noise and water quality and demanded for more and more tree plantations..</p> <ul style="list-style-type: none"> Few villagers raised demand for construction of cross-drainage structure and ramps at Tanwara-Todarsar crossing. The Project Manager (Concessionaire) assured these villagers that these works will certainly be constructed. TL & RE (AE) are requested to make site inspection of the issue and submit their report for further action to PD (Contract Package-04).
19.	Jaswantgarh (Sikar-Ganeri-Jaswantgarh Road), - Contract Package-04	Roadsite local community member at around, between 73 and 74 Km 15.10.2018	Local villagers, shop-keepers & contractor Team, AHE (AE) & ES & JEs (PMC) Number of Participants- 26(men only)	Local villagers, & contractor Team, ES & JEs (PMC)	<ul style="list-style-type: none"> Local Villagers raised grievances of disruption of local piped water supplies due to dismantling of existing bitumen course and construction of roadside drains. ES (PMC), after understanding seriousness of public inconveniences immediately instructed The Project Manager (Contractor) to immediately provide a solution to water supply disruptions by installing pipes in 200 meters distance, about which local communities told that once pipes are re-connected within this 200 mts, the water supply for the entire area will be re-instated. The Project Manager (Contractor) assured that this 200 mts pipe will be re-installed as being demanded by the local community. TL & RE (AE) are requested to make site inspection of the issue and

Sl. No.	Name of the Location Village /Road (Contract Package)	Date & Venue of Consultation	Participants	Participants	Responses/Observations/suggestions
					submit their report for further action to PD (contract Package-04) who was also made about public inconveniences and strictly instructed The Project Manager (Concessionaire) to immediately implement the solution being suggested by the local community..
20.	Bamboo Village (Bidasar-Nojha Road) - Contract Package-04	Panchyat Office o LHS of the road, at 22+400 km 16.10.2018, Panchyat Ghar, Bamboo	Local villagers, & contractor Team, ES & JEs (PMC) Number of Participants- 18 (men only)	,Sarpanch of the village Panchyat, Local villagers, shop- keepers & contractor Team, ES & JEs (PMC)	<ul style="list-style-type: none"> Expressed satisfaction with air and noise quality status during construction of the road in the village area. Reported excess of Fluoride in drinking water and continued negligence of PHED officials. Raised demand for the construction /extension of BC course of the road upto the gate of a public school, located at RHS of the road, on opposite end of the Panchayat Office. The Project Manager (Concessionaire) nodded his agreement to fulfil this demand and assured Sarpanch and villagers that he will be completing this task in due course of time. Sarpanch demanded immediate repair of the internal roads of the adjoining villages which served as diversion route during construction. ES & JEs (PMC) noted this issue and shared with the Team Leader (AE) during a brief meeting with him in his Sikar office. TL & RE (AE) were requested to inspect the quality of these internal roads and submit report regarding wear and tear of

Sl. No.	Name of the Location Village /Road (Contract Package)	Date & Venue of Consultation	Participants	Participants	Responses/Observations/suggestions
					internal roads due to traffic diversion
21.	Jaslasar Village (Bidasr- Nokha Road) - Contract Package-04	Sarpanch Residence, Jaslasar Village (53+00 Km), 16.10.2018	,Sarpanch of the village Panchyat, Local villagers, shop-keepers & contractor Team, ES & JEs (PMC) Number of Participants- 21 (men only)	Local villagers, shop- keepers & contractor Team, ES & JEs (PMC)	<ul style="list-style-type: none"> Expressed satisfaction with air and noise quality status during construction of the road in the village area. Discussed in detail about the issue of water logging in the village in areas around RHS and LHS of the road and are lying below embankment heights and also expressed satisfaction with engineering solutions being provided by the contractor in response to their memorandums submitted to PD, TL (IE) and PM (Contractor).
22.	Tanwara (Sikar-Ganeri- Jaswantharh Road) Contract Package-04	22.09.2018	Local villagers, shop- keepers & contractor Team, ES & JEs (PMC) Number of Participants- 27(men only)	Local villagers, shop- keepers Concessionaire 7 contractor Team	<ul style="list-style-type: none"> Villagers expressed their happiness with the completion of construction of the road and further told that there is no deterioration of air, noise and water quality and demanded for more and more tree plantations for enhancing quality of the environment.
23.	Babo village (Bidsar- Nokha Road) Contract Package-04	22.09.2018	Local villagers, shop- keepers Concessionaire and contractor Team Number of Participants- 22 (men only)	Same as above	
24.	Ganeri (Nagaur—Tarnau – Munukdgarh Road) Contract Package-04	22.09.2018	Same as above Participants- 18 (men only)	Local villagers, shop- keepers Concessionaire 7 contractor Team	<ul style="list-style-type: none"> Villagers expressed their happiness with the the completion of construction of the road and further told that there is no degradation of air, noise and waer quality and demanded for more and more tree plantations for enhancing quality of

Sl. No.	Name of the Location Village /Road (Contract Package)	Date & Venue of Consultation	Participants	Participants	Responses/Observations/suggestions
					the environment.
25.	Panwari (Kanwas- Khanpur-Aklera Road) Contract Package-01	08.09.2018	Local villagers, shop- keepers Concessionaire, contractor Team Number of Participants- 24 (men only)	Local villagers, shop- keepers, Concessionaire & contractor Team	<ul style="list-style-type: none"> Villagers expressed their satisfaction with the ongoing construction of the road and further told that there is no degradation of air, noise and waer quality and demanded for more and more tree plantations for enhancing quality of the environment.
26.	Maruwa (Roopangarh-Naeaina) Contract Package-03	22.08.2018	Local villagers, shop- keepers, Concessionaire & contractor Team Number of Participants- 24 (Men Only)	Affected villagers, the local residents, roadside residents and	<ul style="list-style-type: none"> People expressed their happiness that the road constructed It will lead to socio-economic development of the village. Traffic related Accidents can be minimized. compensation for the land loss if any. Villagers raised demands for traffic calming measures, more plantations on road sides, land for funeral activities.
27.	Bali & Shrishela (On Sanderao-Mundra Road) Contract Package-02	Village, 13.06.2018	Affected villagers, the local residents, roadside residents and impacted families and the ADB Mission team members. The Project Director and PIU Engineers of Contract Package-03, Team Leader, Environmental and Social specialists (PMC), Team Leader (IE) and his team, TheConcessionaire andcontractor's Team including Environmental	Sarpanch & villagers of Bali & Shrishela, Resident Engineer, AQME & AHE (IE), DPMs (Contractors) and roadside residents	<p>Following resolutions were passed by all participants:</p> <ul style="list-style-type: none"> Water sprinkling should be carried out, wherever, construction activities are going on for the suppression of dust emissions. Villagers were made aware regarding road safety measures being implemented in construction activities and the role of these safety measures in the prevention of road accidents. The Concessionaire and The Contractor organized site camps for hearingand resolving apprehensions, grievances of local

Sl. No.	Name of the Location Village /Road (Contract Package)	Date & Venue of Consultation	Participants	Participants	Responses/Observations/suggestions
			Focal person of the Contractor Number of Participants- 75 (48 men & 27 women)		<p>communities regarding aspects and issues of environment and society (specially land acquisition related disputes). Saplings were distributed among villagers for doing plantations and were made aware regarding adverse impact of polythene on environment. All villagers present drew a resolution that they will not be using polyethene in day to day life from now onwards.</p> <ul style="list-style-type: none"> A health awareness campaign was organized, wherein villagers were enlightened about public health issues, impacts of water polluted on human health, to stop open defecation. One and all present in the consultation, including villagers drew a resolution practices of open defecation, will now be completely stopped.
28.	Dandeli	5.06.2018 (World Environment Day	<p>Sarpanch & villagers of Bali & Shrishela, Resident Engineer, AQME & AHE (IE), DPMs (Contractors) and roadside residents</p> <p>Number of Participants- 20 (24 men & 6 women)</p>	Villagers and Resident Engineer, AQME & AHE (IE), DPMs (Contractors) and roadside residents	<ul style="list-style-type: none"> Local people appreciated the initiatives of avenue plantation along the project road.
29.	Sirana (On Barmer- Jalore Road) Contract Package-02	20.04.2018	Villagers Engineer, AQME & AHE (IE), DPMs (Contractors) and roadside residents	Sarpanch & villagers of Sirana, Resident Engineer, AQME & AHE (IE), PM &	<ul style="list-style-type: none"> Awareness on road safety, occupational and public health was organized.

Sl. No.	Name of the Location Village /Road (Contract Package)	Date & Venue of Consultation	Participants	Participants	Responses/Observations/suggestions
				DPMs (Contractors) and roadside residents	
30.	Ammbaba(Nagaur— Tarnau - Munukdgarh) Contract Package-02	Village, 07.02.2018	Sarpanch & villagers AQME & AHE (IE), PM & DPMs (Contractors) Participants- 24 (20 men & 4 women)	Villagers & Concessionaire contractor Team	<ul style="list-style-type: none"> There was a demand for drainage improvements, which has been resolved and villagers expressed their happiness with the completion of construction of the road and further told that there is no degradation of air, noise and waer quality and demanded for more and more tree plantations for enhancing quality of the environment.
31.	Dandeli (Barmer-Jalore Road) Contract Package-02	Dandeli, 08.02.2018	Villagers & Concessionaire contractor Team Number of Participants- 30 (25 men & 5 women)	Affected villages, the local residents, roadside residents and probable impacted families and the feasibility study team members.	<ul style="list-style-type: none"> The participants were delighted to hear about the up gradation of road to 2-lane with paved shoulders. They expressed their satisfaction with efforts being made and implemented by the contractor under supervision of AE and PIU for the conservation and protection of environment. Local communities were made aware and educated that there should not be stagnant dirty water around roads & their homes etc., so that mosquitoes breeding, and vector borne disease may not get spread. Local communities were trained about roof-top rainwater harvesting methods to conserve water for future domestic usage.
32..	Saranu-Manji (Barmer-Jalore Road) Contract Package-02	Village, 15.12.2017	Affected villages, the local residents, roadside residents and probable impacted families and the	Sarpanch & villagers of Saranu-Manji, Resident Engineer & AQME (IE), DPMs (Contractors) and	<p>Following resolutions were passed by all participants:</p> <ol style="list-style-type: none"> Water sprinkling should be carried out, wherever, construction activities are going

Sl. No.	Name of the Location Village /Road (Contract Package)	Date & Venue of Consultation	Participants	Participants	Responses/Observations/suggestions
			feasibility study team members. Number of Participants- 23 (19 men & 4 women)	roadside residents	<p>on for the suppression of dust emissions.</p> <p>ii. Villagers to be made aware regarding road safety measures being implemented and its importances in avoiding accidents.</p> <p>iii. The Concessionaire/Contractor to organize awareness camps about process for hearing of objections/complaints/grievances and its redressal.</p> <p>iv. Saplings to be distributed among villagers for doing plantations and made aware regarding adverse impacts of polythene on environment. All villagers passed a resolution that they will not be using polyethene in day to day life. A health awareness campaign was organized, wherein villagers were enlightened about public health issues, impacts of water pollution on human health, to stop open defecation. One and all present in the consultation, including villagers drew a resolution practices of open defecation, will now be completely stopped.</p>

Photographs Illustrating Public Consultations along Sub-project Roads



Photograph 25: Public Consultations at 00+50 Km (Barmer -Jalore Road on 16.01.2019)



Photograph 26: Public Consultations at Sindhari (63+650 Km- Barmer -Jalore Road)



Photograph 27: View of public consultations at Jiwana (97+000 Km), Barmer-Jalore Road



Photograph 28: View of public consultations at Sayla at 118+500 Km, Barmer-Jalore Road



Photograph 29: Public Consultations at Khanpur Base Camp (Kanwas-Khanpur-Aklara Road



Photographs 30: Public Consultation at Mirzapur camp of Kanwas-Khanpur-Aklara Road on 29.12.2018



Photograph 31: View of Public Consultation At 8+150 Km, in Panchyat Building, Kala-kheri Village on Singhana-Buhana Road on 29.11.2018



Photograph 32: Public Consultation at 31+09 Km in Badi-Dhani -Thoi village in Pkg-04 Ajeetgarh-Chala Road on 29.11.2018



Photograph 33: Public Consultation in Panchayat Office in Bamboo village (Bidasar-Nokha Road) in the date 16.10.2018



Photograph 34: Public Consultation in the Sarpanch residence at Jaslasar village (Bidasar-Nokha Road, Pkg-04) in the date 16.10.2018



Photograph 35: Public Consultation Sikar-Ganeri -Jaswantgarh Road at Fagalwar Village
Pkg-04 15.10.2018



Photograph 36: Public Consultation at Sarpanch residence meeting place, Tanwara Village
(Sikar-Ganeri-Jaswantgarh Road -Pkg-04) in the date 15.10.2018



Photograph 37 to 40: Views of Public Consultations by RPWD (PPP), ADB Mission, PMC Team, Concessionaire Team & IE Team in Maruwa Village in Rooangarh- Naraina Road (Contract Package-03) on 22nd August 2018



Photograph 38



Photograph 39



Photograph 40



Photograph 41: View of Public Consultations in Bidsar-Nokha Road (contract Package-04) on 22.09.2018



Photograph 42: View of public consultation in Ganeri (Nagaur-Munukdgarh Road Road-Contract Package-03) on 22.09.2018



Photograph 43: View of public consultation in Contract Package-02 in the construction camp -Dandeli (Barmer-Jalore Road) on 08.02.2018

सड़क और स्थान की जानकारी और महत्वपूर्ण पर्यावरणीय मुद्दा	उत्तर
सड़क का नाम ?	बीकानेर से जिला
स्थान का नाम और खेती ?	उपग्रह के अनुसार सड़क और 2.5 + 0.50
निर्माण कार्य से वायु, ध्वनी, प्रदूषण का स्तर में कोई वृद्धि हुई है ?	नहीं
क्या निर्माण कार्य से जल प्रदूषण या किसी जल निकाय को कोई नुकसान हुआ है ?	नहीं
क्या निर्माण कार्य को समय कोई हर्षितना पड़ी है ?	नहीं
क्या यातायात मोड़ पर निर्माण सुरक्षा संकेत लग चुके और पर्याप्त थे ?	हाँ पर्याप्त हैं ।
निर्माण कार्य के दौरान कोई सार्वजनिक असुविधा का कारण है ?	कोई असुविधा नहीं हुई
अब तक निर्माण क्रॉस ड्रेनेज संरचना क्या है । और पर्याप्त रूप से निर्माण कार्य प्रस्तावित हुआ है ?	सही है ।
सड़क परियोजना को समाप्त होने पर क्या-क्या लाभ होगा ?	बाधण के कारणों से बड़ी होती है, जल का विकास होगा । जहाँ पर डामे हैं, उसे सिखा हुआ होगी ।
किसी प्रकार कि उम्मीद व सुझाव यातायात को सुधार के लिए सड़क को आसपास ?	रफ्तार, पक्का रास्ता, बीकानेर से जिला, जिला से बीकानेर, जिला से बीकानेर, जिला से बीकानेर

उपस्थित 12
माहिदास (सहस्र)
अधीन बीकानेर
अधीन बीकानेर
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अधीन बीकानेर

Photograph 44: View of public consultation in Contract Package-02 in village Saranu-Manji Barmer-Jalore Road) on 15.12.2017

4. **Institutional Capacity and Arrangements for the Implementation and Monitoring of EMPs and EMoPs:**

38. All required institutional arrangements, for the implementation and monitoring of EMPs and EMoPs in roads of all four contract packages have been well established and functional as per directions given in EARF and detailed out in IEE. First Level Grievance Redressal Committee has been established at each PIU level (The Project Director of concerned PIU will act as the Chairman). Second level Grievance Redressal Committee has been established PMU in RPWD (PPP) in which the Additional Chief Engineer (RPWD-PP) will act as the Chairman. Both environmental and social grievances will be dealt by these committees. Key Features of institutional arrangements are as follows:

39. **Project Management Unit (PMU):** PPP Division of Rajasthan PWD is the project management unit and responsible for the overall compliance ADB Safeguard Policy Statement 2009 and the applicable laws and rules under the Ministry of Environment, Forest and Climate Change. The PMU has appointed an Executive Engineer as Safeguard Officer-Environment (SOE), who regularly coordinates with the project directors (PIUs) of all four contract packages, Team Leaders/Resident engineers and Environmental Specialists (AE/IEs), Project Managers and EFPs (contractors), Team Leader and Deputy Team Leader (PMC), as well as with Environmental Experts (ADB) to ensure that project implementation is complying with the environmental assessment review framework (EARF), environmental management plans (EMPs) and environmental monitoring plans (EMOPS) in all roads of four contract packages.

40. **Project implementation units (PIU):** Project Directors (PDs) are responsible for supervising implementation of the environmental management plans (EMPs) and environmental monitoring plans (EMOPS) by contractors.

41. **Project Management Consultant (PMC).** Project Management Consultant (PMC) has an Environmental Specialist who supports the project management unit (PMU) and PIUs in the monitoring of the implementation of EMPs and EMoPs in all roads of four contract packages. Environmental Specialist (PMC) co-ordinates with PMU, PIUs, TL/RE, Environmental Specialists (AEs/IEs), as well as with Project Managers and EFPs (Contractors) on issues pertaining the implementation of EMPs and EMoPs, besides preparing monthly, quarterly and annual monitoring reports.

42. **Authority Engineers/Independent Engineers (AEs/IEs):** The RPWD (PPP) has mobilized IEs who have appointed on intermittent basis environmental focal persons (EFP) who review monthly, quarterly and annual implementation reports being submitted by EFPs (contractors); AE does not have any EFP; and

43. **Need for Capacity Augmentation of IEs/AE:** Independent engineer has an environmental sub-professional for 3 months input which is apparently inadequate to oversee the effective implementation of EMPs. Further, there is no provision of any environmental expert for EPC contract. It was agreed by RPWD and ADB that input of environment person of IEs will be increased and an environment expert for EPC package will be included in the AE team.

44. **Independent Consultant-Environment (RPWD-PPP):** Independent Environmental Consultant (RPWD-PPP) is also involved in the preparation of environmental safeguards documents in Tranche 1 to ensure lessons are carried to the succeeding tranches by providing initial guidance to the PMC on the preparation of the IEE and review of revised EMPs and EMoPs.

45. **Contractors:** The implementation of EMPs and EMOPs on site during construction is largely the responsibility of contractors, with training and capacity building, advisory and monitoring roles served by the AEs/IEs, PMC, and PIU. Contractors have mobilized Environmental Focal Persons (EFPs) to implement all mitigation measures in the EMPs and activities in the EMOPs and to prepare and submit monthly, quarterly, and annual self-monitoring reports to the PIU and PMU with guidance from the PMC.

D. Recommendations for the EARF

46. Compliance monitoring was a bit of a challenge in Tranche 1 with it done mostly by the PMC with assistance from the environmental specialists of the IEs. The AE has no provision for environmental specialist and so EMP compliance monitoring was mostly done by the PMC for the annuity model. Thus, it is recommended that for subsequent tranches, the role of the AEs/IEs be included in the institutional arrangement stipulated in the EARF. The inputs of the environment specialist for both AEs and IEs are also recommended to be increased to 6 months.

IV. NON-COMPLIANCES AND CORRECTIVE MEASURES

47. No major non-compliance was observed related to EMP implementation. No formal/informal complaints were received by local people related to environmental degradation or any other safeguard issues. EMoP is also largely being implemented consistent with the approved IEE and prescribed protocols with minor non-compliance during initial quarter of physical work commencement (Oct-Dec 2017) wherein contractor of package-1 did not conduct pollution monitoring.

48. Tree cutting permissions have been granted for all four construction packages. Stage-1 (in principle) forest clearance has been accorded for the road sections requiring diversion of forest land. Concessionaires of Contractor Packages 01, 02, 03 and The Contractor of Contract Package-04, have obtained required CTEs and CTOs from RSPCB, except one CTO for HMP established in Chamola Construction of the Contract Package-01 which is in advanced stages of processing with RSPCB.

V. CONCLUSION AND RECOMMENDATIONS

49. RSHIP Tranche 1 is classified as environment Category B in accordance with the ADB's SPS 2009 warranting an IEE. A consolidated IEE with road specific EMPs and EMOPs were prepared and disclosed. All provisions of EMPs/EMOPs were integrated in bidding documents. Being an MFF arrangement of financing, the EARF was prepared to serve as a guide on procedures for complying with environment safeguards requirements according to the ADB SPS 2009 and environmental policies of the Government of India for subprojects that will be taken up under subsequent tranches. There is no deviation in scope of project interventions hence no updates of IEE is required to date. No unanticipated impacts has been experienced so far or envisaged in future.

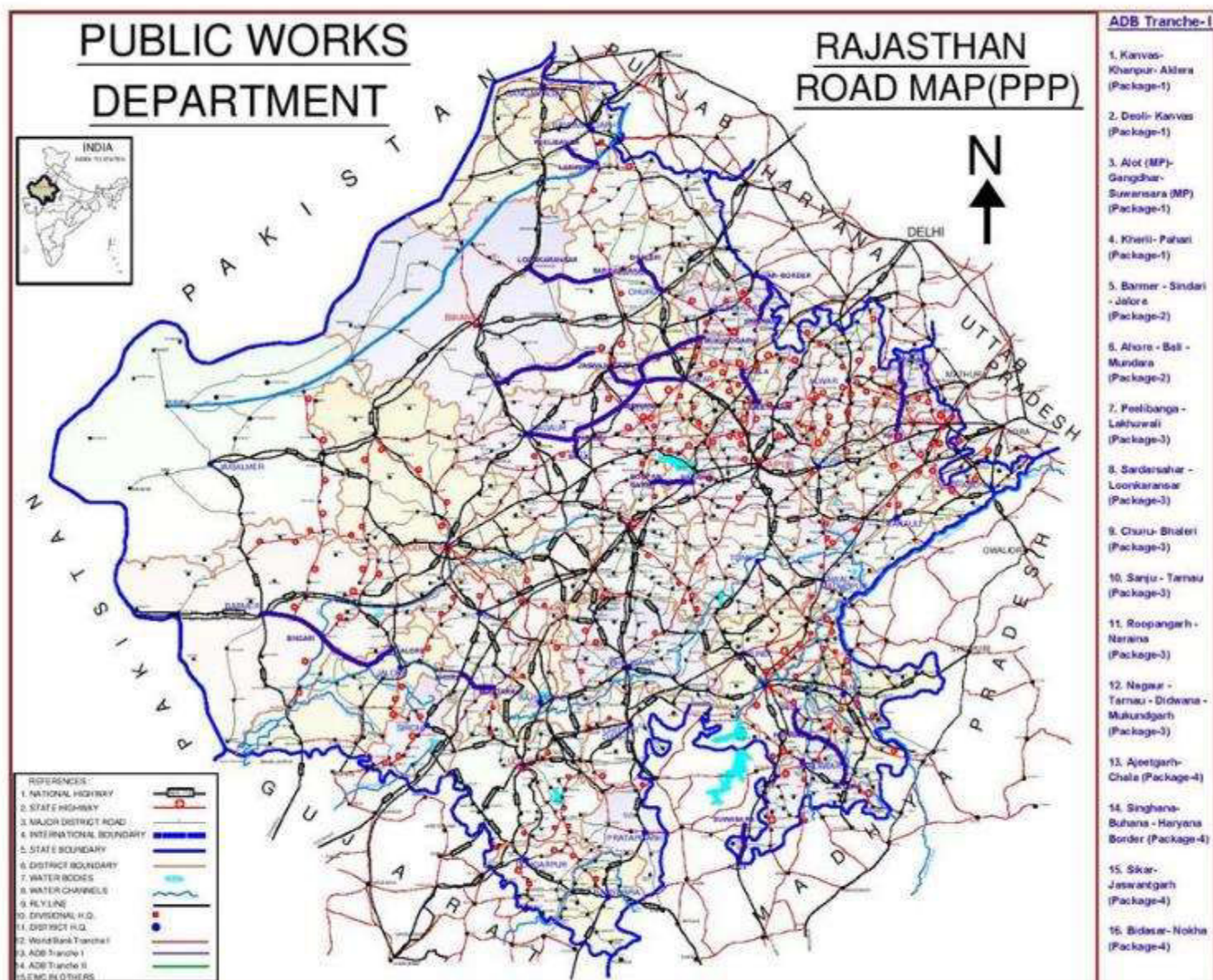
50. Institutional arrangement for implementing EMPs is operational. As outlined in IEE and EARF, RPWD has appointed a Safeguards Officer – Environment of Executive Engineer rank at HQ to manage overall compliance of the project with requirements of GOI and ADB. He is being supported by an environmental specialist (consultant) to ensure lessons are carried to the succeeding tranches by providing initial guidance to the PMC. The PMC has an environment specialist to supervise, guide and train the contractor on implementation of the EMP. All contractors/concessionaires team comprise an environment focal person to

ensure implementation of EMP/EMoP. Since the project is being executed on annuity and EPC models, independent engineers and authority engineers are looking after construction supervision. There is a position of environmental support staff in the IEs with 3-month input in the team. The AE notably has no provision for environment specialist as key personnel in the team. RPWD in consultation with ADB needs to review this arrangement and ensure that environment safeguards personnel with adequate inputs are included in AE/IE team for effective implementation of EMP.

51. First Level Grievance Redressal Committee (GRC) has been established at each PIU level and Second level GRC has been established PMU in RPWD (PPP). Both environmental and social grievances are being dealt by these committees.

52. With the above findings, it is concluded that environmental performance of the Tranche 1 is generally satisfactory. No significant environmental risk, impacts and liabilities were identified in any road in all four contract packages in Tranche-1. However, non-conformances related to delay in securing statutory clearances should be addressed immediately. Key recommendations include (i) follow ups for processing of pending CTE/CTOs of Package-1 and Package-2 and (ii) improvement in (a) general house-keeping/hygiene and living conditions of workers in the construction camps; (b) dust suppression measures/sprinkling along built-up stretches; (c) debris disposal and construction waste storage and disposal; (d) expediting avenue/additional plantations; and (e) wildlife mitigation measures such as coordination with forest department for the provision of rescue vans, installation of cautionary, and informatory sign boards among others.

Appendix 1: Map of Tranche 1 Roads under RSHIP



Appendix 2: Detailed Project Undertaking for Packages 1, 2, 3 and 4 Contract Package-01

BG (RAJASTHAN) HIGHWAY PRIVATE LIMITED

CIN:-U45500DL2017PTC311100

Regd Office:- 4th Floor, Vikas Surya Shopping Mall, Plot No. 18,

Mangalam Palace, Sector-8, Rohini, New Delhi-110085

Contact No:- 011-27999999, 27940111 | Fax:- 011-27940222 | E-mail Id:-bgrajasthan@gmail.com

Ref No.BG (Rajasthan)/2018/1088

Date:27.08.2018

To, The Team Leader

Theme Engineering Services Pvt. Ltd.,
"Srinath Saffire Home", House No. 88,
120 Ft. Devil Arab Road, Kota-324001

Sub.: RSHIP Package-I: Development and maintenance of Kanwas-Khanpur-Alkera Section of SH-74, Deoli-Kanwas Section of SH-74A, Alot (MP) Gangdhar-Suwansara (MP) Section of SH-19C and Kherli-Pahari Section of SH-22 (Total Length 175.36 Km) under Design, Build, Operate/Maintain and transfer on Annuity mode ("Project")- **Reg: Undertaking regarding obtaining the requisite CTEs, CTOs, NOC from CGWA & EC for Borrow Area**

Ref. (i) Concession Agreement dated 07.02.2017 for subject Project
(ii) ACE's letter No. 770 dated 24.08.2018
(iii) Your letter No.Theme/IE-Kota-Raj/ADB/RSHIP-1/416 dated 27.08.2018

Dear Sir,

With reference to the aforesaid letters and subject meeting of ADB Mission held on dated 21.08.2018 and 23.08.2018, it is submitted that all efforts and aggressive follow-up is in place by Concessionaire to obtain the requisite Statutory Clearances and NOCs etc. It is to mention that we have already submitted the Statutory Clearances and NOCs obtained partially and the balance are under process and progress.

Further, as discussed and desired in the above said meeting and with reference to above letter under Ref {ii} and {iii}, we undertake to obtain the requisite Statutory Clearances and NOCs as per following schedule:

- a) CTEs by 15.09.2018
- b) CTOs by 30.09.2018
- c) NOCs from CGWA by 30.09.2018
- d) NOC / STP / Environmental Clearance (EC) for Borrow Areas by 30.09.2018

It is submitted that the Concessionaire's best and sincere efforts are in place to obtain the requisite Statutory Clearances and NOCs. However, partial balance is due to procedural delays and prevailing stringent rules of State Government, for which your needful and kind support may get required.

Thanking you and assuring you the best of services and attention always,

Yours faithfully,
For & on behalf of

For BG(Rajasthan) Highway Private Limited


(Shyam B Rai)
Authorized Representative



Copy to:

1. **Additional Chief Engineer**, PPP-Division, PWD, Civil Line, Jacob Road, Jaipur
2. **The Project Director**, PPP, PWD, C/O of Garden Superintendent PWD, Near Mayur Talkies, Nayapura Circle, Kota

Contract Package-02

Phone +91 94141 18381 E-mail barmer@draipi.com drabarmer@gmail.com		Dineshchandra Tollways Pvt. Ltd. Infrastructure Developer Project office Samro Ku Bas, New Colony, Opposite Street to Govt. Hospital SINDHARI-344011 Dist. Barmer(Rajasthan)
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Letter no: DTPL/SH16/IE/2018/343 27 - August - 2018

To
Team Leader
 TPF GETINSA EUROESTUDIOS, S.L.
 In Association with SterlingIndotech Consultants Pvt. Ltd.
 303-304, Shri Shrimal Apartment,
 Sarabhas Near SBI Bank, Jalore.

Sub: RSHIP Package-02: Development and Maintenance of Barmer-Sindari-Jalore section of SH-16 and Ahore-Bali-Mundra (Sanderap to Mundra) section of SH-16 (Total length: 178 Km) under Design, Build, Operate/ Maintain and Transfer on Annuity Mode – Undertaking regarding NOCs.

Ref: PPP/PWD/Rajasthan/24.08.2018/ Letter No. 770

Dear Sir,


With reference to the above, it is informed that we have applied for NOC's with the Rajasthan Pollution Control Board and the same are under due process with Concern Authority.

Therefore we hereby under take that we will be submitting all the NOC's viz Consent to Establish (CTE) by 15.09.2018 and Consent to Operate (CTO), GWCA and Environment Clearness (ECs) for borrow areas for Project Highway Tranche-01 Package-02 by 30/09/2018.

This is for your information.

Thanking you and assuring you of our best services at all times.

For Dineshchandra Tollways Pvt. Ltd.


 R.K.P.


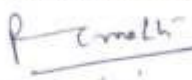
{Authorized Signatory}

Encl: As Above

CC:

1. Project Director (Jalore), PPP Division, PWD, Rajasthan.
2. ACE, PPP Division, PWD, Rajasthan.

Contract Package-03

	NAGOUR MUKUNDGARH HIGHWAYS PRIVATE LIMITED
Ref: NMHPL/RSHIP-ADB-03/2018/558	Dated: 25.08.2018
<p>To, The Independent Engineer MSV International Inc. in association with ARMENGE Engineering and Management Consultants Pvt. Ltd. Chairaniva Villa, Laxmangarh-332311, Dist: Sikar, Rajasthan</p>	
<p>Sub: RSHIP-ADB Package-03 : Development and Maintenance of Pelibanga-Lakhuwali section of MDR-103, Sardarshahar-Loonkaransar section of SH-6 A, Churu-Bhaleri section of 69, Sanju-Tarnau section of SH-60, Roopangarh-Naraina section of SH-100 and Nagaur-TarnauDidwana-Mukundgarh section of SH-8,19,60,82 A & 83 under Build, operate, Maintain and Transfer on Annuity Mode – Undertaking for submission of Consent to Operate of HMP for Highway no 01 - Reg.</p>	
<p>Ref: ACE-PPP, PWD Jaipur office letter No 770 dated 24.08.2018</p>	
<p>Dear Sir,</p> <p>In compliance to ACE-PPP-PWD office letter dated 24.08.2018, it is to intimate that we have already obtained and submitted required clearances for the RSHIP package -3 except consent to operate for Hot Mix Plant on Highway no 01 (Pelibanga-Lakhuwali) from Rajasthan State Pollution Control Board which is pending at RSPCB and shall be obtained shortly and submitted to you on or before 30th September 2018. A undertaking in this respect is attached herewith for your record.</p> <p>Submitted for your kind information.</p> <p>Thanking you and assuring our best services at all times.</p> <p>For NagaurMukundgarh Highways Pvt. Ltd.</p> <p style="text-align: center;">  (R C Mehta) Authorised Signatory </p> <p>Copy to followings for information:</p> <ol style="list-style-type: none"> 1. Additional Chief Engineer (PPP), PWD Rajasthan, Jaipur 2. PD cum SE, PWD-PPP, PIU, Laxmangarh 	
<p>Registered Office : 1st Floor, Plot No. 11, B-1, LSC, Vasant Kunj New Delhi-110 070, Ph: 011-40111200 E-mail: info@grinfra.com CIN: U45309DL2017PTC312406</p>	<p>Head Office : G R House, Hiran Magri, Sector-11, UDAIPUR-313 002 (Raj.) Ph: +91-294-2487370, 2483033, Fax : +91-294-2487749 Website: www.grinfra.com Ph: +91-294-2487370, 2483033, Fax : +91-294-2487749 Website: www.grinfra.com</p>

Contract Package-04**LR BLC – GAWAR
(JOINT VENTURE)**

"DSS - 378",
Sector: 16-17,
Hisar - 125 001 (Haryana)
Phone: 01662-250361, 246117
Fax: 01662-248885
E-mail: pkalraggawar.in & tenderaggawar.in

No. GCL/GGN/RAJ/ 437

Date:-27th August 2018.

To,
Team Leader
MSV International INC.
Armenge Engineering and Management Consultants Pvt. Ltd.
Sikar, Rajasthan


Subject :- Development and Maintenance of Ajeetgarh-Chala Section of SH-13 ,Sikar-Ganeri-Jaswantgarh section SH-20 & 20A, Bidasar-Nokha section of SH-20 and Singhana-Buhana-Haryana Border section of SH-13B, Total length :233.955 Km. in the state of Rajasthan on Engineering, Procurement & Construction (EPC) Mode. **Undertaking regarding NOCs.**

Ref: - 1. PPP/SKR/ADB-04/2018/252 on 24.08.2018.
2. Your Letter No MSVARMENGE/RSHIPPackage 4/2018/304 Dated 25.08.2018.

Dear Sir,

With reference to the above, it is to inform that we have applied for NOC's with the Rajasthan Pollution Control Board and are in process and due to the administrative procedures it may take some time. Therefore we hereby undertake that we will be submitting all the NOC's viz Consent to Establish (CTE), Consent to Operate (CTO's), GWCA and Environment clearness (EC's) for borrow areas for all the Project Highways 1,2,3 & 4 by 15/10/2018.
This is for your information.

Thanking you and assuring the best of services at all the times.



Pardeep Beniwal
Project Manager
For LR BLC-Gawar (JV)

CC:-Project Director, PPP (PWD) Sikar, Rajasthan.

Appendix 3: Status of EMPs Implementation of Tranche-1 Roads under RSHIP up to 28 February 2019

Environmental issues / impacts	Mitigation / Management Actions Proposed in the EMPs	Status of Implementation
Design and Pre-construction Stage		
1. Alignment/Pavement		
1.1 Pavement damage and inadequate drainage provisions	<ul style="list-style-type: none"> ▪ CBR value of sub grade as per IRC guidelines ▪ Bottom of crust shall be at least 600mm above HFL to prevent any capillary action due to black cotton/expansive/cohesive soil ▪ Raised embankment and provision of roadside drainage to prevent damage to pavement due to water logging on the road and also inconvenience caused to ▪ Provision of adequate no. of cross drainage structures. ▪ Increased (vent and height) in waterway of existing structures. ▪ Roadside drains have been proposed with suitable outfalls. ▪ Additional culverts and bridges ▪ Causeway and submerged bridges to be replaced with high level bridges 	<ul style="list-style-type: none"> • Implemented
1.2 Safety along the proposed alignment	<ul style="list-style-type: none"> ▪ Vertical and horizontal geometrics in consistent to IRC/MORTH guidelines ▪ Provision of crash barriers at high embankments. ▪ Speed breakers in habitat areas, schools, junction and curves to regulate speed. ▪ Provision of retro-reflective warning signboards near school, hospital, religious places and forests ▪ Safety kerb at all bridge s ▪ Informatory signage on approach to school, ▪ Ambulance and medical aid posts ▪ Checking for over loading at toll plazas ▪ Speed restrictions in built up sections curve locations etc 	<ul style="list-style-type: none"> • Implemented
2. Natural Hazards and Climate Change risks		
2.1 Damage to pavement integrity like Rutting, embrittlement, softening and migration of liquid asphalt. Thermal expansion in bridge expansion joints and paved surfaces	<ul style="list-style-type: none"> ▪ Asphalt binder specifications based on viscosity-grade specifications as per IS 73-2013 guidelines and IS 15462 2004 for rubber modified binder and polymer modified binders. 	<ul style="list-style-type: none"> • Implemented

Environmental issues / impacts	Mitigation / Management Actions Proposed in the EMPs	Status of Implementation
2.2 Flooding/Water-Logging	<ul style="list-style-type: none"> ▪ Adequate number of CD structures. Additional culverts also proposed. ▪ CD structures designed for 50year return period ▪ Water ways of bridges and culverts have been increased. ▪ Roadside drains also provided ▪ Embankment height raised along low lying/ potential water logged areas ▪ Improvement in existing culverts/ Bridges to increase their carrying capacity. 	<ul style="list-style-type: none"> • Implemented
2.2 Earthquake	Relevant IS codes shall be adopted in designing the structures to sustain the magnitude of earthquake corresponding to Seismic zone of the project area	<ul style="list-style-type: none"> • Implemented
2.3 Drought	<ul style="list-style-type: none"> ▪ The design of foundations and sub-structures shall conform to IRC guidelines and MORTH clause ▪ Ensure water availability for compaction work and consolidation of sub-structure 	<ul style="list-style-type: none"> • Implemented
2.4 Forest Fires	<ul style="list-style-type: none"> ▪ Measures to avoid accident followed by fuel accumulation ▪ Removal of maintenance slash or management by controlled burning. ▪ Plant fire-resistant species in RoW ▪ Thinning slashing during non-dry season 	<ul style="list-style-type: none"> • Not Applicable so far
3. Loss of Land and Assets		
3.1 livelihood loss to affected persons	<ul style="list-style-type: none"> ▪ Road improvement work to be accommodated within available ROW to the extent possible. ▪ Minimize resettlement impact due to heavily congested built-up section ▪ Social Impact Assessment and Resettlement Plan to be undertaken as per national policy and ADB' guidelines. • Complete all necessary land and property acquisition procedures prior to the commencement of civil work. ▪ Adhere to the Land Acquisition procedures in accordance to RP's Entitlement Framework. ▪ Compensation and assistance as per project Resettlement Plan ▪ Income restoration as per RP ▪ Preference in employment and petty contracts during construction to Aps 	<ul style="list-style-type: none"> • Being implemented. Refer to Social Monitoring and RAP Implementation Progress report

Environmental issues / impacts	Mitigation / Management Actions Proposed in the EMPs	Status of Implementation
	<ul style="list-style-type: none"> Constitute GRC as per RP 	
4. Diversion of Forest Land and Cutting of Trees		
4.1 Need for cutting of trees and diversion of forest land	<ul style="list-style-type: none"> Geometric adjustments to minimize tree cutting and diversion of forest land Obtain tree cutting permission from forest department Provision for mandatory compensatory afforestation (1:2) for deposit of payment to Forestry Department Provision for additional compensatory plantation on 1: 3 basis to be implemented by concessionaire 	<ul style="list-style-type: none"> Being implemented Tree cutting permissions have been obtained for all four roads of the Contract Package-1, for two roads in Contract Package-02, For Package -3 Trees cutting [permissions have been obtained for four roads- Peelibanga - Lakhuwali, Sardarsahar-Lunkaransar, Churu-Bhaleri, Nagaur-Tarnau-Deedwana-Mukundgarh. No permission is required because adequate Row is available in Sanju- Tarnau,, Roopangarh-Naraina For Package-4 -Trees cutting permissions have been obtained for Ajeetgarh-Chhala. Permissions not required in Bidasar-Nokha road, Permission obtained for Singhana-Buhana-Haryana Border Road. Permission obtained for Sikar-Ganeri-Jaswantgarh road FC Obtained for 142.06Ha area in the road-Nagaur-Tarnau-Deedwana-Mukundgarh (196.000), wherein, Stage-1 Clearance has been obtained and NPV/CA amount has been submitted to RO (MOEFCC), Lucknow.Stage-II Stage-1 FC obtained for Sikar-Ganeri-Jaswantgarh SH-20 & 20A (75.13 Km) - for 4.15 Ha. From RO, MOEFCC Lucknow-
5.Wildlife Movement		
5.1 Road design causing accidents of wild animals and disruption in their movement	<ul style="list-style-type: none"> Provision of rumble strip, cautionary and informatory sign boards near potential wildlife accident locations Speed restriction in the sections where wildlife movement is reported Expansion of existing pipe culverts to slab culverts in areas 	<ul style="list-style-type: none"> Being implemented The construction of structures completed in Barmer-Jalore Road -- 9+515 (Box Culvert),18+980(Box

Environmental issues / impacts	Mitigation / Management Actions Proposed in the EMPs	Status of Implementation
	<p>where wildlife movement is reported</p> <ul style="list-style-type: none"> ▪ Live fencings for species ▪ Solar Street lighting at vulnerable areas 	<p>Culvert),22+200(Box Culvert),26+013(Box Culvert),33+250(Box Culvert),38+280(Box Culvert),44+395(Minor Bridge),49+710(Minor Bridge),54+787(Minor Bridge),55+100(Minor Bridge),59+200(Box Culvert),60+400(Box Culvert). Signages installation on either sides is under progress</p> <ul style="list-style-type: none"> • The construction structures completed in Bidsar-Nokha Road- Slab culverts have been completed 3+140Km, 9+071Km, 14+885Km, 15+571Km, 20+417Km, 20+086Km, 90% constriction is completed in 22 +950Km, 24+086 Km, 28+890Km, 38+870Km, 45+93 Km, 51+183Km, 58+880Km, 74+214 Km, construction works are to be started in 75+416Km, 77+530Km, 80+680Km. Signages boards prepared and to be installed soon on either sides of the road. • The construction of structures is under progress I Kanwas-Khanpur-Aklara Road- Minor bridges are to be constructed at chainages 00+785 Km and 0.890Km along with signages, Minor bridge construction is in progress at chainage 8.960 Km (signages will be provided at both sides, fencing on both sides upto 100 mts), Major bridge constructed at Kalisindh River (at Ch-14+440Km), Slab Culvert 30.202 KM and Minor bridge at 20.+507 Km along with signage at either sides upto 100

Environmental issues / impacts	Mitigation / Management Actions Proposed in the EMPs	Status of Implementation
		<p>mts (work to be started), Slab culvert at 41.896 Km completed (signage are to be provided at both sides of the road), Pipe culverts are to be constructed at 46.890 Km and 46.210 Km along with signages and fencing upto 100mts on both sides of the road, Hume Pipe culverts (HPCs) construction completed at 54.685 Km & 52.520 Km, Slab culverts are to be constructed at 58.520 Km and 58.920 Km along with rumble strip, signage at the end change on both sides and fencing upto 2100 mts on both sides, Minor bridges are to be constructed 64.02 KM & 64+597 Km along with rumble strip, signage at the end change on both sides, slab culverts are to be constructed at 61+470KM, 62+690Km, 74+820 Km, 74+120 Km, 74+570 Km, Minor bridge at 72+787 Km (to be constructed), Slab Culvert at 73.564 (to be constructed), Pipe Culverts are to be constructed at 74+120 Km & 74+ 570 Km and Minor bridges are to be constructed at 68+852 Km & 69+391Km, all afore-referred structures ensuring safe crossings for wildlife movements are to be provided with signages and rumble strips on either sides of the road.</p>
6. Shifting of Utilities		

Environmental issues / impacts	Mitigation / Management Actions Proposed in the EMPs	Status of Implementation
6.1 Disruption of utility services to local community	<ul style="list-style-type: none"> All telephone and electrical poles/wires and underground cables should be shifted before start of construction Necessary permission and payments should be made to relevant utility service agencies to allow quick shifting and restoration of utility services Local people must be informed through appropriate means about the time of shifting of utility structures and potential disruption of services if any 	<ul style="list-style-type: none"> Inventories of affected public utilities for all roads has been finalized. Detailed Cost Estimates from Utility Owning Agencies have been received & reviewed and have been submitted to Authority for Approval. Authority has given approvals to estimates of Contract 1, 2, and 3. Approval for contract package-4 is process. Utilities shifting works are under progress. Local people are informed.
B. Construction Stage		
1.0 Preparatory activities		
1.1 Preparatory activities	<ul style="list-style-type: none"> Submit appointment letter and resume of the Contractor's Environmental Focal Person (EFP) to PMU EFP will engage PMC Environmental Specialist and PMU Safeguard Officer-Environment to a meeting to discuss in detail the EMP, seek clarification and recommend corresponding revisions if necessary EFC will prepare Contractors Environmental Implementation Plan based on the approved EMP, EMOP, and agreements reach during the meeting with PMC-ES and PMU-SOE Request PMC-ES copy of monthly monitoring formats and establish deadlines for submission. EFP will submit for PMC-ES approval an action plan to secure all permits and approvals needed to be secured during construction stage which include but not limited to: i) operation of crushers and hot mix plants, ii) transport and storage of hazardous materials (e.g. fuel, lubricants, explosives), iii) waste disposal sites, iv) temporary storage location, iv) water use, and v) emission compliance of all vehicles. Arrangements to link with government health programs on hygiene, sanitation, and prevention of communicable diseases will also be included in the action plan. EFP will submit for approval of PMC-ES the construction camp layout before its establishment. 	<ul style="list-style-type: none"> Being implemented EFPs for each Contract Package were found present during EMP implementation & monitoring Training programs, during sites visits, review meetings and are available on phones and emails and send EMPs implementation checklists, reports required from time to time.
1.2 Site induction	<ul style="list-style-type: none"> No works will be initiated by the contractor until the site induction training is carried out by the CSC Site induction training includes but not limited to: i) discussion 	Complied. Environmental Specialist (PMC) has conducted one day detailed training programmes on EMPs and EMOPs

Environmental issues / impacts	Mitigation / Management Actions Proposed in the EMPs	Status of Implementation
	and review of EMP and EMoP detailing how specific environmental risks associated with their Scope of Work will be managed legal compliance, inspection and audits, and progress tracking and reporting; ii) environmental training and awareness needs shall be determined and documented via a training needs analysis prior to commencement; iii) Health and Safety Awareness Course, which details general environmental awareness and specific performance requirements expected on site; and iv) GRM.	Implementation & Monitoring in following dates and venues for each Contract Packages: <ul style="list-style-type: none"> • 29th January 2018 – Brij Gopal Construction Company Pvt.Ltd Office at Khanpur at Highway no 1 -Kanvas-Khanpur-Aklara Road\ • 1st February 2018 – The Concessionaire Office of Nagaur - Mukundgarh Highways Private Limited (409 Km), NH-52, Fatehpur. • 2nd February 2018 – The Concessionaire Office of M/s LR-BLC-Gawar (JV)-SIKAR. • 8th February 2018–At Dandeli construction camp office of The Concessionaire, M/S-Dinesh Chandra R Agarwal Tollways Private Limited,Sindhari (Barmer) • 29th October 2018, Refresher Training on EMPs Implementation, in the Conference Hall, RPWD (PPP), Jaipur
2. Air Quality		
2.1 Dust Generation due to construction activities and transport, storage and handling of construction materials	<ul style="list-style-type: none"> ▪ Concessionaire to submit location and layout plan for storage areas of construction materials agreed by CSC ▪ Transport, loading and unloading of loose and fine materials through covered vehicles. ▪ Paved approach roads. ▪ Storage areas to be located downwind of the habitation area. ▪ Water spraying on earthworks, unpaved haulage roads and other dust prone areas. ▪ Provision of PPEs to workers. 	<ul style="list-style-type: none"> • Being implemented • Water sprinkling is being carried out to suppress dust emissions, especially around settlement areas • PPEs, specially nasal masks, sun-glasses are provide to the etire workforce.
2.2 Emission of air pollutants (HC,SO ₂ ,NO _x ,CO etc) from vehicles due to traffic congestion and use of equipment and machinery	<ul style="list-style-type: none"> ▪ Regular maintenance of machinery and equipment. ▪ Batching, asphalt mixing plants and crushers at downwind (1km) direction from the nearest settlement. ▪ Only crushers licensed by the PCB shall be used ▪ DG sets with stacks of adequate height and use of low sulphur diesel as fuel. ▪ LPG should be used as fuel source in construction camps 	<ul style="list-style-type: none"> • Being implemented • Ambient Air Quality Monitoring has been conducted for all roads during the quarters January to March 2018 & April to June 2018, October to December 2018 in Contract Packages 1 and 3. Test results are in compliance with

Environmental issues / impacts	Mitigation / Management Actions Proposed in the EMPs	Status of Implementation
	<p>instead of wood</p> <ul style="list-style-type: none"> Ambient air quality monitoring 	<p>National Ambient Air Quality Standards/</p> <ul style="list-style-type: none"> Ambient Air Quality Monitoring has been conducted for all roads during the quarters October to December 2017, April to June 2018 & October to December 2018 in Contract Packages - 4 & 3. Test results are in compliance with National Ambient Air Quality Standard during the quarter April to June 2018, however, exceedances in PM2.5 and PM10 was reported for selected locations in all four roads of Contract Package-04 for the test results of October to December 2017 quarter. The exceedances in three locations in PM2.5 and P<10 was due to winter weather pf wider and other natural reasons, not due to the construction activities. Mitigation measures were implemented. Ambient Air Quality Monitoring has been conducted for all roads during the quarter April to June 2018 & October to December 2018 in Contract Packages - 2. Test results are in compliance with National Ambient Air Quality Standard during the quarter April to June 2018
3.0 Noise		
<p>3.1 Disturbance to local residents and sensitive receptors due to excessive noise from construction activities and operation of equipment and machinery</p>	<ul style="list-style-type: none"> Contractor to prepare traffic management and dust suppression plan duly approved by RPWD All equipment to be timely serviced and properly maintained. Construction equipment and machinery to be fitted with silencers and maintained properly. Only IS approved equipment shall be used for construction activities. Timing of noisy construction activities shall be done during night time and weekend near schools, Implement noisy operations intermittently to reduce the 	<ul style="list-style-type: none"> Noise level monitoring for all roads of contract packages 1 and 3 has been conducted during quarters, January to March 2018, April to June 2018 and October to December quarters. Test results are in compliance with National Noise level standards. Noise level monitoring for all roads of contract packages-2 has been conducted during quarter, April to June & October to December 2018 quarters.

Environmental issues / impacts	Mitigation / Management Actions Proposed in the EMPs	Status of Implementation
	<p>total noise generated</p> <ul style="list-style-type: none"> Manage existing traffic to avoid traffic jams and accumulation of noise beyond standards. Restrict construction near residential, built up and forest areas construction today light hours. Honking restrictions near sensitive areas PPEs to workers Noise monitoring as per EMoP. 	<p>Test results are in compliance with National Noise level standards.</p> <ul style="list-style-type: none"> Noise Quality Monitoring has been conducted for all roads during the quarters October to December 2017 & April to June 2018 and October to December 2018 in Contract Package - 4. Test results are in compliance with National Noise Quality Standard during the quarter April to June 2018, however, noise level standards are within levels for silence zones (sensitive receptors- educational entities & hospitals etc) for selected locations in all four roads for the test results of October to December 2017 & October to December 2018 quarter. The Mitigation measures were implemented. These remedial measures for noise pollution prevention and control are being implemented
4.0 Land and Soil		
4.1 Landuse Change and Loss of productive / topsoil	<ul style="list-style-type: none"> Non-agricultural areas to be used as borrow areas to the extent possible. If using agricultural land, top soil to be preserved and laid over either on the embankment slope for growing vegetation to protect soil erosion. 	<ul style="list-style-type: none"> Being implemented
4.2 Slope failure and Soil erosion due to Construction activities, earthwork, and cut and fill, stockpiles etc.	<ul style="list-style-type: none"> Bio-turfing of embankments to protect slopes. Slope protection by providing frames, drystone pitching, masonry retaining walls, planting of grass and trees. Side slopes of all cut and fill areas will be graded and covered with stone pitching, grass and shrub as per design specifications. Care should be taken that the slope gradient shall not be greater than 2:1. The earth stock piles to be provided with gentle slopes to soil erosion. 	<p>Raincut, gullies etc were visible, after first spell of monsoon rainfall, in shoulders and embankment slopes of all roads of all contract packages. TL (PMC), during site visits to contract packages 1, 3 and 4 on 28th June, 29th and 30th June 2018, TL & ES (PMC) has advised TLs (IE/AE) & Project Managers (contractors) to re-grade the shoulders and embankments and apply appropriate slope stability</p>

Environmental issues / impacts	Mitigation / Management Actions Proposed in the EMPs	Status of Implementation
		measures as per applicable clauses of sub-section 408 of the section 499 (and embankment slopes as per applicable clauses (sub-sections of 305, 306, 307 of the Section 300) of Specifications for Roads and Bridges of MoRTH, Published by IRC. Suggested corrective actions have been implemented.
4.3 Borrow area management	<ul style="list-style-type: none"> ▪ Obtain EC from SEIAA before opening any new borrow area. ▪ Comply to EC conditions of SEIAA ▪ Non-productive, barren lands, upland shall be used for borrowing earth with the necessary permissions/consents. ▪ Depths of borrow pits to be regulated and sides not steeper than 25%. ▪ Topsoil to be stockpiled and protected for use at the rehabilitation stage. ▪ Transportation of earth materials through covered vehicles. ▪ Follow IRC recommended practice for borrow pits (IRC 10: 1961) for identification of location, its operation and rehabilitation ▪ Borrow areas not to be dug continuously. ▪ To the extent borrow areas shall be sited away from habitated areas. ▪ Borrow areas shall be leveled with salvaged material or other filling materials which do not pose contamination of soil. Else, it shall be converted into fish pond. 	<ul style="list-style-type: none"> • Being implemented • Short-Term Permits (STPs) have issued by District Mining Departments. • Adequate ordinary earth is available from big humps of soil, existing on significant number of locations, on LHS and RHS of all roads in contract packages 2, 3 and 4.
4.4 Quarry Operations	<ul style="list-style-type: none"> ▪ Aggregates will be sourced from existing licensed quarries. ▪ Copies of consent/ approval / rehabilitation plan for a new quarry or use of existing source will be submitted to RPWD. ▪ The contractor will develop a Quarry Redevelopment plan, as per the Mining Rules of the state and submit a copy of the approval to EA. ▪ Obtain environmental clearance from SEIAA in case of opening new quarry 	<ul style="list-style-type: none"> • These measures are being implemented • Aggregates are being outsourced from existing approved sources.
4.5 Compaction of soil and impact on quarry haul roads due to movement of vehicles and equipment	<ul style="list-style-type: none"> ▪ Construction vehicles, machinery, and equipment to be stationed in the designated ROW to avoid compaction. ▪ Approach roads/haulage roads shall be designed along the barren and hard soil area to reduce the compaction. ▪ Transportation of quarry material to the dumping site through 	<ul style="list-style-type: none"> • These measures are being implemented

Environmental issues / impacts	Mitigation / Management Actions Proposed in the EMPs	Status of Implementation
	<p>heavy vehicles shall be done through existing major roads to the extent possible to restrict wear and tear to the village/minor roads.</p> <ul style="list-style-type: none"> Land taken for construction camp and other temporary facility shall be restored to its original conditions 	
4.6 Contamination of soil due to leakage/ spillage of oil, bituminous and non-bituminous debris generated from demolition and road construction	<ul style="list-style-type: none"> Construction vehicles and equipment will be maintained and refueled in such a fashion that oil/diesel spillage does not contaminate the soil. Fuel storage and refueling sites to be kept away from drainage channels. Unusable debris shall be dumped in ditches and low lying areas. To avoid soil contamination Oil-Interceptors shall be provided at wash down and refueling areas. Waste oil and oil soaked cotton/ cloth shall be stored in containers labeled 'Waste Oil' and 'Hazardous' sold off to MoEF/SPCB authorized vendors Non-bituminous wastes to be dumped in borrow pits with the concurrence of landowner and covered with a layer of topsoil conserved from opening the pit. Bituminous wastes will be disposed off in an identified dumping site approved by the State Pollution Control Board 	<ul style="list-style-type: none"> These measures are being implemented No incident of soil contamination observed so far.
5.0 Water Resources		
5.1 Sourcing of water during Construction	<ul style="list-style-type: none"> Requisite permission shall be obtained for abstraction of groundwater from Central Groundwater Authority. Arrangements shall be made by contractor that the water availability and supply to nearby communities remain unaffected. Water intensive activities not to be undertaken during summer season. Provision of water harvesting structure to augment groundwater condition in the area 	<ul style="list-style-type: none"> Permissions from CGWA are to be obtained Water requirements, for construction activities of roads, are being arranged and managed from local level municipal supplies and authorized tubewell owners located in nearby areas around roads. No local level community levels sources and supplies are negatively impacted. Agreements Letters with local water suppliers, have been submitted from Contract Packages 2, 3 & 4.
5.2 Disposal of water during construction	<ul style="list-style-type: none"> Provisions shall be made to connect road side drains with existing nearby natural drains. 	<ul style="list-style-type: none"> These measures are being implemented

Environmental issues / impacts	Mitigation / Management Actions Proposed in the EMPs	Status of Implementation
5.3 Alteration in surface water hydrology	<ul style="list-style-type: none"> ▪ Existing drainage system to be maintained and further enhanced. ▪ Provision shall be made for adequate size and number of cross drainage structures esp. in the areas where land is sloping towards road alignment. ▪ Road level shall be raised above HFL level wherever road level is lesser than HFL. ▪ Culverts reconstruction shall be done during lean flow period. In some cases these minor channels may be diverted for a very short period (15-30 days) and will be bring back to its original course immediately after construction. 	<ul style="list-style-type: none"> • These measures are being implemented
5.4 Siltation in water bodies due to construction activities /earthwork	<ul style="list-style-type: none"> ▪ Embankment slopes to be modified suitably to restrict the soil debris entering water bodies. ▪ Provision of Silt fencing shall be made at water bodies. ▪ Silt/sediment should be collected and stockpiled for possible reuse as surfacing of slopes where they have to be re-vegetated. ▪ Earthworks and stone works to be prevented from impeding natural flow of rivers, streams and water canals or existing drainage system. ▪ Retaining walls at water bodies /ponds to avoid siltation near ponds 	<ul style="list-style-type: none"> • Shall be implemented as & when situations arise. • No siltation in any water body has been observed and reported so far.
5.5 Deterioration in Surface water quality due to leakage from vehicles and equipments and waste from construction camps.	<ul style="list-style-type: none"> ▪ No vehicles or equipment should be parked or refueled near water-bodies, so as to avoid contamination from fuel and lubricants. ▪ Oil and grease traps and fuelling platforms to be provided at re-fuelling locations. ▪ All chemicals and oil shall be stored away from water and concreted platform with catchment pit for spills collection. ▪ All equipment operators, drivers, and warehouse personnel will be trained in immediate response for spill containment and eventual clean-up. Readily available, simple to understand and preferably written in the local language emergency response procedure, including reporting, will be provided by the contractors. ▪ Construction camp to be sited away from water bodies. ▪ Wastes must be collected, stored and taken to approve disposal site only. • Water quality shall be monitored 	<ul style="list-style-type: none"> • Most of these measures are being implemented • No construction camps have been sited near any water body. • Bio-degradable wastes (food materials etc.) are given to animals at the local levels and non-biodegradable wastes are being handed over to local level recyclers. • Water Quality monitoring has been conducted for two roads Kanwas-Khanpur-Aklara and Deoli-Kanwas during October to December 2018 and for one road (Kherli-Pahari) in Contract Packages 1 during April to June 2018 quarter and for all four roads during January to March 2018 quarter in the

Environmental issues / impacts	Mitigation / Management Actions Proposed in the EMPs	Status of Implementation
		<p>contract package-1. Test results are in compliance with IS-10500:2012 Drinking Water Quality standards.</p> <ul style="list-style-type: none"> • Water Quality monitoring has been conducted for all six roads in Contract Packages 3 during quarters, October to December 2018, April to June 2018 quarter and January to March 2018. Test results are in compliance with IS-10500:2012 Drinking Water Quality standards. • Water Quality monitoring has been conducted for both roads in Contract Packages 2 during quarter, October to December 2018, April to June 2018. Test results are in compliance with IS-10500:2012 Drinking Water Quality standards • Water Quality monitoring has been conducted for all four roads in Contract Packages -4 during quarters, October to December 2018, April to June 2018 r and October to December 2017. Test results are in compliance with IS-10500:2012 Drinking Water Quality standards
6.Flora and Fauna		
6.1 Vegetation loss due to site preparation and construction activities	<ul style="list-style-type: none"> ▪ Restrict tree cutting upto toe line considering safety to road users. ▪ Roadside trees to be removed with prior approval of competent authority. ▪ Mandatory compensatory plantation at 1:2 basis by Forestry Department – <i>Shall be implemented during advance stages of construction.</i> ▪ Additional plantation on 1:3 basis as per the IRC guidelines to be carried out by concessionaire- <i>Shall be implemented during advance stages of construction</i> ▪ Regular maintenance trees planted- <i>Shall be implemented during advance stages of construction</i> 	<ul style="list-style-type: none"> • These measures are being implemented since the onset of monsoon 2018. Onsite inspections will be carried out during October to December 2018 quarter. • Contractors have been strictly instructed to seriously supervise the operation and maintenance of saplings being planted, so that these saplings may flourish properly during the monsoon period.

Environmental issues / impacts	Mitigation / Management Actions Proposed in the EMPs	Status of Implementation
	<ul style="list-style-type: none"> ▪ Provision of LPG in construction camp as fuel source to avoid tree cutting. • Plantation of trees on both sides of the road where technically feasible. Trees should be offset 1m back from the ultimate edge of the roadway to prevent safety hazard and provide adequate sight distance- <i>Shall be implemented during advance stages of construction.</i> ▪ Integrate vegetation management (IVM) with the carriage way completely clear of vegetation.- <i>Shall be implemented during advance stages of construction</i> • Controlled use of pesticides/ fertilizers- <i>Shall be implemented during advance stages of construction</i> 	
7.0. Construction Camps		
7.1 Impact associated with location	<ul style="list-style-type: none"> ▪ All camps should be established with prior permission from PCB. Camps to maintain minimum distance from following: # 500 m from habitation # 500 m from forest areas where possible # 500 m from water bodies where possible # 500 m from through traffic route # 500 m from identified wildlife crossing areas 	<ul style="list-style-type: none"> • Implemented
7.2 Worker's Health in construction camp	<ul style="list-style-type: none"> ▪ The location, layout and basic facility provision of each labor camp will be submitted to CSC and approved by EA. The contractor will maintain necessary living accommodation and ancillary facilities in hygienic manner. ▪ Adequate water and sanitary latrines with septic tanks with soak pits shall be provided. ▪ Preventive medical facilities in camp ▪ Waste disposal facilities such as dust bins must be provided in the camps and regular disposal of waste. The Contractor will take all precautions to protect the workers from insect and pest to reduce the risk to health. This includes the use of insecticides which should comply with local regulations. ▪ No liquor or prohibited drugs will be imported to, sell, give and barter to the workers of host community. ▪ Awareness raising to immigrant workers/local community on communicable and sexually transmitted diseases. 	<ul style="list-style-type: none"> • Implemented and the consistently in further implementation will be ensured in all stages.
8.0 Management of Construction Waste/Debris		
8.1 Selection of Dumping Sites	<ul style="list-style-type: none"> ▪ Contractor to submit a waste/spoil disposal plan and get it approved by CSC and EA. 	<ul style="list-style-type: none"> • These measures are being implemented

Environmental issues / impacts	Mitigation / Management Actions Proposed in the EMPs	Status of Implementation
	<ul style="list-style-type: none"> ▪ Create controlled dumping sites with a non-permeable lining incorporated in the pit design to avoid leachate seepage into the soil, which may later affect ground water quality ▪ Unproductive/wastelands shall be selected for dumping sites away from residential areas and water bodies ▪ Dumping sites must be having adequate capacity equal to the amount of debris generated. ▪ Public perception and consent from the village Panchayats has to be obtained before finalizing the location. 	
8.2 Reuse and disposal of construction and dismantled waste	<ul style="list-style-type: none"> ▪ The existing bitumen surface shall be utilized for paving of cross roads, access roads, and paving works in construction sites and camps, temporary traffic diversions, and haulage routes. ▪ All excavated materials from roadway, shoulders, verges, drains, cross drainage will be used for backfilling embankments, filling pits, and landscaping. ▪ Unusable and non-bituminous debris materials should be suitably disposed off at pre-designated disposal locations, with approval of the concerned authority. ▪ The bituminous wastes shall be disposed in secure landfill sites only in environmentally accepted manner. For removal of debris, wastes and its disposal, MORTH guidelines should be followed. ▪ Unusable and surplus materials, as determined by the Project Engineer, will be removed and disposed off-site. 	<ul style="list-style-type: none"> • These measures are being implemented
9.0 Traffic Management and Safety		
9.1 Management of existing traffic and safety	<ul style="list-style-type: none"> ▪ Traffic Management Plan shall be submitted by the contractor and approved by the CSC. ▪ The traffic control plans shall contain details of diversions; traffic safety arrangements during construction; safety measures for night time traffic and precautions for transportation of hazardous materials. Timing and scheduling to be done so that transportation of dangerous goods is done during least number of people and other vehicles on the road. ▪ The Contractor will ensure that the diversion/detour is always maintained in running condition, particularly during the monsoon to avoid disruption to traffic flow. ▪ On stretches where it is not possible to pass the traffic on the 	<ul style="list-style-type: none"> • These measures are being implemented

Environmental issues / impacts	Mitigation / Management Actions Proposed in the EMPs	Status of Implementation
	<p>part width of existing carriageway, temporary paved diversions will be constructed.</p> <ul style="list-style-type: none"> ▪ Restriction of construction activity to only one side of the existing road ▪ The contractor shall inform local community of changes to traffic routes, and pedestrian access arrangements with assistance from "Engineer". ▪ Use of adequate signage's to ensure traffic management and safety. Conduct of regular safety audit on safety measures. 	
9.2 Pedestrians, animal movement	<ul style="list-style-type: none"> ▪ Temporary access and diversion, with proper drainage facilities. ▪ Access to the schools, temples and other public places must be maintained when construction takes place near them. ▪ Fencing wherever animal movement is expected. ▪ Large number of box culverts has been proposed. All structures having vertical clearance above 2m and not catering to perennial flow of water may serve as underpass for animals 	<ul style="list-style-type: none"> • Being implemented, as & when situations arise
9.3 Safety of Workers and accident risk from construction activities	<ul style="list-style-type: none"> ▪ Contractors to adopt and maintain safe working practices. ▪ Usage of fluorescent and retro refractory signage, in local language at the construction sites ▪ Training to workers on safety procedures and precautions. ▪ Mandatory appointment of safety officer. ▪ All regulations regarding safe scaffolding, ladders, working platforms, gangway, stair wells, excavations, trenches and safe means of entry and egress shall be complied with. ▪ Provision of PPEs to workers. ▪ Provision of a readily available first aid unit including an adequate supply of dressing materials. ▪ The contractor will not employ any person below the age of 18years ▪ Use of hazardous material should be minimized and/or restricted. ▪ Emergency plan (to be approved by engineer) shall be prepared to respond to any accidents or emergencies. 	<ul style="list-style-type: none"> • These measures are being implemented
9.4 Accident risk to local community	<ul style="list-style-type: none"> ▪ Restrict access to construction sites only to authorized personnel. 	<ul style="list-style-type: none"> • These measures are being implemented, as and when situations arises.

Environmental issues / impacts	Mitigation / Management Actions Proposed in the EMPs	Status of Implementation
	<ul style="list-style-type: none"> ▪ Physical separation must be provided for movement of vehicular and human traffic. ▪ Adequate signage must be provided for safe traffic movement ▪ Provision of temporary diversions and awareness to locals before opening new construction fronts. 	
10 Site restoration and rehabilitation		
10.1 Clean-up Operations, Restoration and Rehabilitation	<ul style="list-style-type: none"> • Contractor will prepare site restoration plans, which will be approved by the 'Engineer'. • The clean-up and restoration operations are to be implemented by the contractor prior to demobilization. • All construction zones including river-beds, culverts, road-side areas, camps, hot mix plant sites, crushers, batching plant sites and any other area used/affected by the project will be left clean and tidy, to the satisfaction of the Environmental officer. • All the opened borrow areas will be rehabilitated and 'Engineer' will certify 	<ul style="list-style-type: none"> • Shall Implemented during completion of roads and during the post construction stages of all roads. • Roads of the Contract Package-03, have been completed . The Project Manager (Concessionaire) and EFP has submitted Post-construction EMP implementation checklists for each road of the Contract Package-03.

Appendix 4: Order for the Constitution of Project Level Grievance Redress Committee

Government of Rajasthan
Public Works Department

No. F7 (143) SHA/PPP/2015/D- 903

Dated: 20/9/18

Order

In compliance of order even number dated 23.08.2018 the PPP Division of this Department hereby constitutes project level combined grievance redressal committees.

The first level Grievance Redressal Committee shall have the following members:-

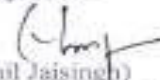
1. Project Director of the concerned PIU as Chairperson
2. Executive Engineer/ Assistant Engineer of the concerned PIU-Member secretary.

The second level Grievance Redressal Committee shall have the following members:-

1. Addl. Chief Engineer PPP Division PWD Jaipur - Chairman.
2. Superintending Engineer (ADB/WB), PMU - Member Secretary.
3. Local member of repute & standing in the society - Member, (shall be nominated by Secretary PWD, Govt. of Rajasthan, Jaipur).

This bears the approval of competent authority.

By Order



(Sunil Jaisingh)

Deputy Secretary (Works)

Copy for information and necessary action:-

1. P.S. to CE (NH).
2. SE-I/SE-II, PPP Division, PWD Rajasthan, Jaipur.
3. Project Director, PPP Division, PWD, Jaipur, Alwar, Jalore, Laxmangarh, Jodhpur, Sikar, Kota & Hanumangarh.
- ✓ 4. EE, Concerned PPP Division, PWD Rajasthan, Jaipur.

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