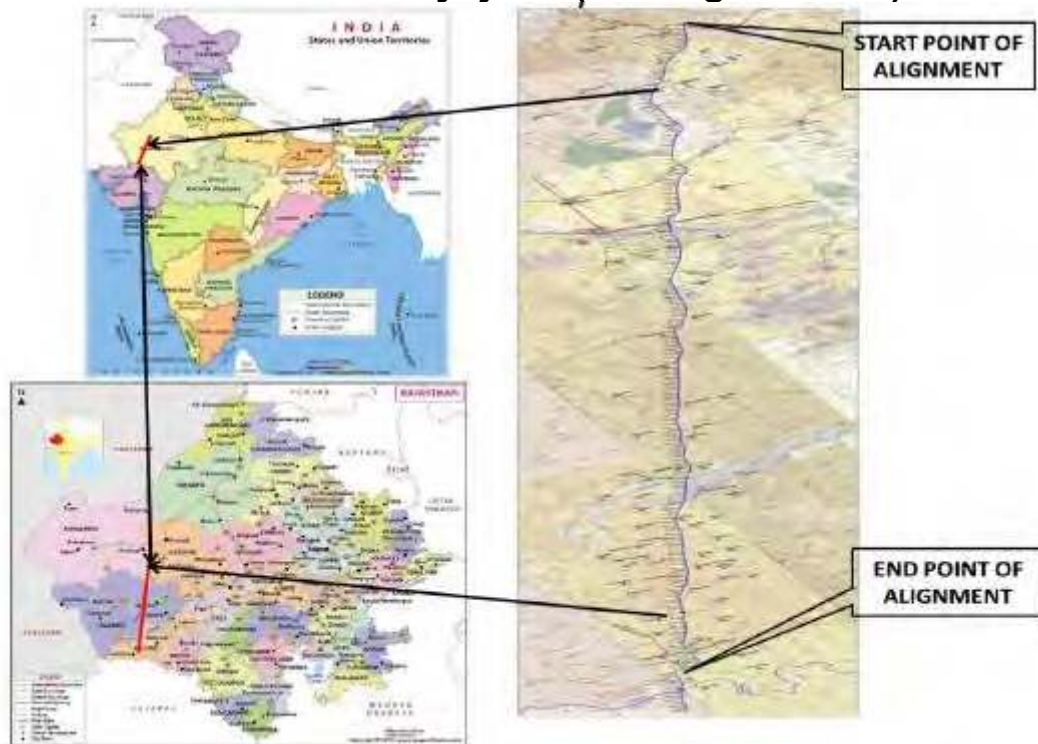


FINAL ENVIRONMENTAL IMPACT ASSESSMENT REPORT & ENVIRONMENTAL MANAGEMENT PLAN

For

**Construction of 4/6 lane Access Control National Highway No. 754K
from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat
Border near Sanchore (District-Jalore) in the state of Rajasthan under
Bharatmala Pariyojana (Package 7/Lot-4).**



Project Proponent:

**NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways, Government of India)**

Environmental Consultant:



ENVIRO INFRA SOLUTIONS PVT. LTD.

**Accredited by NABET (Quality Council of India)
for EIA studies as 'A' Category Consultant**

Ph.: 0120-4151183 Email: eis@enviroinfrasolutions.com

Website: www.enviroinfrasolutions.com

March 2019



Table of Contents

Section No.	Contents	Page No.
EXECUTIVE SUMMARY		i to xiv
CHAPTER-1: INTRODUCTION		
1.1	Project Background	1-1
1.2	Identification of Project and Project Proponent	1-1
1.3	Brief Description of the Project and its Importance to the Country	1-1
1.3.1	Salient features of the project	1-2
1.4	Scope of the EIA/EMP Study (As per TOR)	1-4
1.5	Objectives of the Consultancy Services	1-5
1.6	Policies, Legal and Administrative Framework	1-6
1.7	Structure of the Report	1-9
1.8	TOR approved by MoEF&CC and its Compliance	1-10
CHAPTER-2: PROJECT DESCRIPTION		
2.1	Introduction	2-1
2.2	Description of the Project & Brief about the Project	2-1
2.3	Land Requirement for the proposed project	2-5
2.4	Water Requirement for the proposed project	2-5
2.5	Traffic Survey and Analysis	2-5
2.6	Traffic Management Plan	2-20
2.7	Details of the Structures proposed along the Proposed Alignment	2-21
2.7.1	Details of the proposed bridges	2-21
2.7.2	Details of the proposed major/minor Junctions	2-23
2.7.3	Details of the proposed ROBs	2-23
2.7.4	Details of proposed Interchanges	2-23
2.7.5	Details of vehicular, light and pedestrian underpasses	2-24
2.7.6	Details of the Proposed Box Culverts	2-27
2.8	Typical cross section	2-34
2.9	Details of affected religious structures	2-34
2.10	Cost estimates	2-35
CHAPTER - 3: ANALYSIS OF ALTERNATIVES		
3.1	Introduction	3-1

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

3.2	Selection of Alternative	3-1
3.3	With and Without Project Scenario	3-17
CHAPTER-4: DESCRIPTION OF ENVIRONMENT		
4.1	Preparation of Questionnaires for Environmental Parameters	4-1
4.1.1	Field Observation on Questionnaire	4-1
4.1.2	Screening, Testing & Monitoring of Physical Environmental Factors	4-1
4.1.3	Secondary Available Data	4-5
4.2	Analyses, Compilation And Preparation of Report	4-6
4.3	Baseline Environmental Conditions	4-7
4.3.1	Physical/Natural Environment	4-7
4.3.2	Geographical Location of the project expressway	4-7
4.3.3	Land Use and Terrain	4-7
4.3.4	Climate and Micro-Meteorological Parameters	4-38
4.3.5	Natural Hazards and Vulnerability of the sub project area	4-42
4.3.5.1	Seismic profile of the area	4-42
4.4	Geology of the project district	4-43
4.4.1	Introduction	4-43
4.4.2	Field study and Sampling locations	4-45
4.4.2.1	Soil Quality along the study area	4-47
4.5	Air Environment	4-49
4.5.1	Ambient Air monitoring locations	4-50
4.5.2	Analysis of Ambient Air Quality along the study area	4-52
4.6	Noise Environment	4-55
4.6.1	Noise Monitoring locations	4-55
4.6.2	Analysis of Noise monitoring along the study area	4-58
4.7	Water Environment	4-59
4.7.1	Water Bodies within RoW	4-59
4.7.2	Water Bodies within 500m of RoW	4-60
4.7.3	Hydrology for the study area	4-61
4.7.4	Water Quality of the study area	4-64
4.7.4.1	Water Sampling Locations	4-64
4.7.4.2	Ground Water Quality along the Study Area	4-66

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

4.7.4.3	Surface Water Quality along the study area	4-68
4.8	Biological environment	4-69
4.8.1	Methodology for the study	4-70
4.8.2	Forest and Grassland Types in the Project Area	4-70
4.8.3	Wetlands along the study area	4-71
4.8.4	Taxonomic Diversity: Flora	4-71
4.8.4.1	Economically-Important Plant Species	4-71
4.8.5	Taxonomic Diversity: Fauna	4-72
4.8.5.1	Aquatic Ecology	4-72
4.8.6	Tree cutting	4-73
4.9	Socio-Economic profile of the project areas	4-73
4.9.1	Introduction	4-73
4.9.2	Project Influence Districts	4-73
4.9.3	Demographic and Socio Economic Characteristics	4-75
4.9.3.1	Population	4-75
4.9.3.2	Socio- economic characteristics of the population area	4-75
4.9.3.3	Population Growth and Urbanization	4-76
4.9.3.4	State's Economy	4-76
4.9.3.5	Sectoral Composition of State Income	4-76
4.9.3.6	The Per Capita Income	4-77
4.9.3.7	Growth Trends- State Income	4-77
4.9.3.8	Work Participation Ratio	4-78
4.9.3.9	Economic Classification of Workers	4-78
4.9.4	Agriculture and Allied Activities	4-78
4.9.5	Industry	4-79
CHAPTER-5: ANTICIPATED ENVIRONMENTAL IMPACTS & MITIGATION MEASURES		
5.1	Introduction	5-1
5.2	Potential Impacts on Soil	5-1
5.2.1	Loss of Productive Soil	5-1
5.2.2	Erosion	5-1
5.2.3	Contamination of Soil	5-2
5.3	Impacts on Water Resources	5-3

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchore (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

5.3.1	Modification of the Surface Water Flow	5-3
5.3.2	Modification of the Groundwater Flow	5-3
5.3.3	Rainwater Harvesting	5-3
5.3.4	Use of Local Water Supply	5-4
5.3.5	Water Quality Degradation	5-4
5.4	Impact on Ambient Air Quality	5-4
5.4.1	Impacts During Construction Phase	5-5
5.4.1.1	Use of Fly Ash	5-5
5.4.1.2	Borrow Area Soil	5-5
5.4.1.3	Coarse aggregates (stone) and Fine Aggregate (Sand) Materials	5-6
5.4.1.4	Bitumen	5-6
5.4.1.5	Cement	5-6
5.4.1.6	Steel	5-6
5.4.1.7	Sand	5-6
5.4.2	Impacts During Operation Phase	5-8
5.4.2.1	Prediction of Impact on Ambient Air Quality	5-8
5.5	Impact On Noise Levels	5-12
5.5.1	Prediction of Noise Impact on Noise Level	5-13
5.5.2	Prediction of Impact on Ambient Air Quality	5-17
5.6	Impact on Flora, Fauna and Ecosystem	5-17
5.6.1	Cumulative Impact of Proposed Project on Chinkara Gazelle, Demoiselle Crane (Kurj), Peacock	5-18
5.6.2	Removal of trees	5-19
5.6.3	Removal of Herbal Cover	5-19
5.6.4	Conservation and Mitigation Measures	5-19
5.6.4.1	Integrated Eco-friendly designs	5-21
5.6.4.2	Impact of Noise, Light and Power lines on Wild animals	5-23
5.7	Impact on Protected Monuments and Cultural Heritage Sites	5-23
5.8	Impacts on Social Environment	5-23
5.9	Impacts on Road Safety and Public Health	5-24
5.10	Mitigation Measures	5-24
5.10.1	Soil	5-24
5.10.2	Water Resources	5-25

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchore (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

5.10.3	Ambient Air Quality	5-25
5.10.4	Noise Levels	5-26
5.10.5	Human Health and Safety	5-27
5.10.6	Measures Taken For Pedestrian Safety	5-27
5.11	Biological Characteristics	5-27
5.12	Summary of Environmental Impact Assessment	5-30
CHAPTER-6: ENVIRONMENTAL MONITORING PROGRAMME		
6.1	Environment Monitoring Programme	6-1
6.2	Environmental Monitoring Cost	6-4
CHAPTER-7: ADDITIONAL STUDIES		
7.1	Introduction	7-1
7.2	Public Consultation	7-1
7.2.1	Introduction	7-1
7.2.2	Methodology Followed For Public Consultation	7-1
7.2.3	Public Consultation Process	7-2
7.2.4	Key Issues	7-3
7.2.5	Consultation during design	7-3
7.2.6	Consultation Session	7-3
7.2.7	Continued Consultation	7-7
7.3	Public Hearing	7-9
7.4	Social Impact Assessment (SIA) Study in the Project	7-9
7.4.1	Methodology	7-9
7.4.1.1	Approaches to Study	7-9
7.4.2	Policy, Legal and Administrative Framework	7-10
7.4.2.1	Institutional Setting	7-10
7.4.2.2	Policy, Legal and Administration Framework	7-10
7.4.3	Project Profile	7-10
7.4.3.1	Right of Way	7-10
7.4.3.2	Terrain & Land Use	7-10
7.4.3.3	Settlement Section	7-10
7.4.4	Project Affected Households (PAHs) & Project Affected Population (PAPs)	7-11
7.4.5	Land Acquisition	7-11

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchore (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

7.4.6	Public Consultation	7-11
7.4.7	Potential Impacts	7-12
7.4.7.1	Impact of Land Acquisition	7-12
7.4.7.2	Loss of Land	7-12
7.4.7.3	Loss of Farm Produce	7-12
7.4.7.4	Loss of Residential and Commercial Structures	7-12
7.4.7.5	Loss of Public Infrastructure	7-12
7.4.7.6	Loss of Income	7-12
7.4.7.7	Increase in Employment Opportunities	7-12
7.4.8	Mitigation and Enhancement Measures	7-13
7.4.9	R&R Budget	7-13
7.4.10	Project Impact Zone	7-13
7.4.10.1	Socio-economic profiling	7-13
7.4.11	Conclusions	7-14
7.5	Census And Socio-Economic Survey	7-14
7.5.1	Survey of Project Affected families	7-14
7.5.1.1	Project Affected Persons	7-14
7.5.1.2	Ownership category	7-15
7.5.2	Socio-Economic Characteristics PAFs and PAPs	7-16
7.5.2.1	Type of Family	7-16
7.5.2.2	Project affected families	7-16
7.5.3	Education Status	7-16
7.5.4	Sex Ratio	7-17
7.5.5	Religious Status	7-17
7.5.6	Occupational Pattern	7-17
7.5.7	Income Category	7-17
7.5.8	Common Property Resources	7-18
7.5.9	Social Stratification	7-18
7.6	Land Acquisition	7-18
7.6.1	Introduction	7-18
7.6.2	Land Acquisition: Legal Framework	7-18
7.6.3	Land Acquisition Planning For Subproject	7-19
7.6.4	Impact on Structures	7-20



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

7.6.5	Type of Land Being Acquired For the Project	7-20
7.6.6	Impact of Land Acquisition	7-20
7.6.6.1	Loss of Land (Private and Government)	7-20
7.6.6.1.1	Loss of Farm Produce	7-21
7.6.6.1.2	Loss of Residential Houses	7-21
7.6.6.1.3	Loss of Income	7-21
7.7	Mitigation & Enhancement Measures	7-21
7.7.1	Introduction	7-21
7.7.2	Mitigation Measures Proposed	7-21
7.7.2.1	General	7-21
7.7.2.2	Land Acquisition- Mitigation Measures	7-22
7.7.3	Enhancement Opportunities	7-22
7.7.4	Proposed Action Plan	7-22
7.7.5	Implementation of RAP	7-23
7.7.5.1	Stages of RAP Implementation: A Methodological Framework	7-23
7.7.5.1.1	Training and Capacity Building of Project Staff	7-23
7.7.5.1.2	Focus Group Discussion, Awareness Campaign and Dissemination of Information	7-23
7.7.5.1.3	Rehabilitation of Affected Families and Restoration of Income and Livelihood	7-23
7.8	Institutional Framework & Grievance Redressal Mechanism	7-24
7.8.1	Introduction	7-24
7.8.2	Central Level Institutional Arrangement	7-26
7.8.3	State Level Institutional Arrangement	7-27
7.8.4	Sub-Project Level Institutional Arrangements	7-27
7.8.5	Coordination with Other Agencies and Organizations	7-28
7.8.6	Role of Other Agencies	7-29
7.8.7	Grievance Redressal Mechanism (GRM)	7-29
7.8.8	Suggestions and Complaint Handling Mechanism (SCHM)	7-31
7.8.9	Information Campaign	7-31
7.9	Gender Issues And Women Participation	7-31
7.9.1	General	7-31
7.9.2	Impact on Women	7-32
7.9.3	Participation of Women in Project	7-33

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchore (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

7.9.4	Impact of Developmental Activities on Women	7-33
7.9.5	Women Involvement in Development Process through Empowerment	7-33
7.9.6	Involvement of Women in Construction Activities	7-35
7.9.7	Specific Provisions in the Construction Camp for Women	7-35
7.9.7.1	Temporary Housing	7-35
7.9.7.2	Health Centre	7-35
7.9.7.3	Day Crèche Facility	7-35
7.9.7.4	Proper scheduling for Construction work	7-36
7.9.7.5	Educational Facilities	7-36
7.9.7.6	Special Measures for Controlling STD/AIDS	7-36
7.9.7.7	Control on Child Labour	7-36
7.9.7.8	Engaging woman Inspector of Works	7-36
7.10	R&R Budget	7-37
7.10.1	Introduction	7-37
7.10.2	Cost of Land and other Replacement Value	7-37
7.10.3	Compensation for Structures	7-37
7.10.4	Provision for development of Community Structures	7-37
7.10.5	Budget	7-37
7.11	Conclusion	7-39
7.12	Road Side Safety Measures	7-39
CHAPTER-8: PROJECT BENEFITS		
8.1	Introduction	8-1
8.2	Environmental Benefits from the Project	8-1
8.3	Socio-economic Benefit of the Project	8-2
8.4	Other Tangible Benefits	8-2
8.5	Road Safety	8-2
8.6	Reduction in Vehicle Operating Cost	8-3
8.7	Indirect Benefits	8-3
CHAPTER-9: ENVIRONMENTAL MANAGEMENT PLAN		
9.1	Introduction	9-1
9.2	Enhancement of Natural Environment	9-1
9.2.1	Plantation of Trees, Shrubs and Herbs along the proposed expressway	9-1

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

9.2.2	Enhancement of Water Bodies	9-2
9.3	Conservation Status and Biodiversity Management	9-2
9.3.1	Threats to Biodiversity in the Project Site	9-2
9.4	Physical Environment	9-3
9.4.1	Construction of Bus Stops	9-3
9.4.2	Developing Truck Stoppage Complex	9-3
9.4.3	Enhancement of Major Road Intersections	9-3
9.4.4	Enhancement of Cultural Properties	9-3
9.4.5	Enhancement of Quarries and Borrow Areas	9-4
9.5	Environment Management Action Plan	9-6
9.6	Green Belt Development Plan	9-20
9.6.1	Plantation operations and practices for Greenbelt and open space replantation	9-21
9.7	Environmental Management Plan Budget	9-22
CHAPTER-10: DISCLOSURE OF CONSULTANTS ENGAGED		
10.1	Introduction to Firm	10-1
10.2	Area of Expertise	10-2
10.3	Brief Resume of Team Members	10-2
10.4	QCI/ NABET ACCREDITATION CERTIFICATE	10-3
10.5	Brief About the Laboratory	10-4
10.6	Declaration By Experts Contributing To The EIA	10-6



LIST OF TABLES

Table No.	Description of Tables	Page No
1.1	Salient features of the proposed project	1-2
1.2	Summary of Relevant Environmental Acts and Guidelines	1-6
1.3	Compliance of ToR	1-11
2.1	Details of Toll Plaza	2-2
2.2	Design Service Volume for Expressway in Plain & Rolling Terrain (in PCUs per day for LOS B	2-4
2.3	Water requirement for the Project	2-5
2.4	Details of Homogenous Section	2-6
2.5	Traffic Count Locations	2-6
2.6	Vehicle Classification and PCU Factors	2-8
2.7	Summary of Average Daily Traffic	2-9
2.8	Summary of Composition of Traffic in %	2-14
2.9	The Summary of Average Annual Daily Traffic	2-17
2.10	Percentage of total vehicles surveyed	2-20
2.10(a)	Details of major bridges have been proposed	2-21
2.10(b)	Details of Minor bridges	2-22
2.11	Details of the proposed Interchanges	2-23
2.11(a)	Details of proposed VUP	2-24
2.11(b)	Details of proposed LVUP	2-25
2.11(c)	Details of proposed SVUP	2-26
2.12	A summary of the total culverts	2-28
2.13	Details of the affected religious structures	2-35
2.14	Abstract of Cost	2-35
3.1	Details of alternatives studied	3-2
3.2	'With' and 'Without' Project Scenario	3-3
4.1	Techniques used for Ambient Air Quality Monitoring	4-3
4.2	Standard Classification of Soil	4-4
4.3	Ambient Noise Standards	4-5
4.4	Secondary data collective from sources	4-5
4.5	Land use/ Land cover of Project Area	4-8
4.6	Meteorological Data Parameters at Barmer IMD station	4-40
4.7	Soil Sampling Locations	4-45
4.8	Soil Analysis along the proposed project	4-48
4.9	Air Monitoring Locations	4-50
4.10	Value of the AAQ along the proposed project location	4-53
4.11	Noise level Monitoring Locations	4-56
4.12	Ambient Noise Quality along the project road	4-58
4.13	Details of Rivers/canals crossing along the proposed alignment	4-59
4.14	Details of water bodies falling within 500m of project alignment	4-60
4.15	Details of water sampling locations	4-64
4.16	Ground Water Quality along the proposed project locations	4-67

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

4.17	Surface Water Quality along the proposed project locations	4-68
4.18	Economically-important plant species recorded in the project area, 2018	4-71
4.19	Aquatic plants and phytoplankton species reported during pre-monsoon, 2018	4-72
4.20	Demographic Profile	4-75
4.21	Growth pattern of Net State Domestic Product (NSDP) in Rajasthan for the period 1980-81 to 2011-12	4-77
4.22	Total Workers Main and Marginal	4-78
4.23	Percentage Distribution of Total Workers by category	4-78
4.24	District wise Registered MSME in Rajasthan	4-80
5.1	Impacts on Soil	5-2
5.4	Details of Fine aggregate (Sand) quarries	5-8
5.2 (a)	Air Modeling Result for NH-125, Deogarh (Predicted Conc. of CO)	5-9
5.2(b)	Air Modeling Result for SH-28, Kelankot (Predicted Conc. of CO)	5-10
5.2 ©	Air Modeling Result for NH-25, Patau (Predicted Conc. of CO)	5-10
5.2(d)	Air Modeling Result for NH-325, Muthali (Predicted Conc. of CO)	5-10
5.3	Source of the Noise pollution and its impact	5-12
5.4	Noise level predictions for the receptors at the homogenous intersections	5-14
5.5	Details of potential impacts and mitigation measures for biological Environment	5-28
5.6	Summary of Environmental Impact Assessment and its Mitigation Measures	5-31
6.1	Environmental Monitoring Plan	6-2
6.2	Environmental Monitoring Cost	6-3
7.1	Public Consultations issues	7-4
7.2	Addressal of General Issues and Concerns under the Project	7-7
7.3	Project Affected Villages falling Under Impact Zone	7-13
7.4	Distribution of usage of structures	7-15
7.5	Classification of project affected structures	7-15
7.6	Ownership	7-15
7.7	Type of Family	7-16
7.8	Number of Project Affected Families	7-16
7.9	Educational Status of the titleholders PAFs	7-16
7.10	Sex Ratio of PAPs	7-17
7.11	Religious Status of PAPs	7-17
7.12	Occupation of PAFs	7-17
7.13	District-wise Distribution of PAPs as per income slabs	7-17
7.14	Common Property Details	7-18
7.15	Social Stratification	7-18
7.16	Type of the Land Being Acquired for the Subproject	7-20
7.17	Total Government & Private Land to Be Acquired	7-21
7.18	Affected Women Headed household	7-32
7.19	Estimated budget for R&R Activities	7-38
9.1	Environmental Management Action Plan	9-8

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

9.2	Suitable plant species for green belt along the project	9-21
9.3	Environmental Management Plan Budget	9-24

LIST OF FIGURES

Fig. No.	Description of Figures	Page No.
1.1	Location of the Proposed Project Expressway	1-4
2.1	Traffic Location Plan (TVC, Axle Load Survey & O-D Survey)	2-7
2.2	Daily Variation of Traffic in Vehicles & PCU at 52+000 KM	2-11
2.3	Daily Variation of Traffic in Vehicles & PCU at 128+000 KM	2-11
2.4	Daily Variation of Traffic in Vehicles & PCU at 115+200 KM	2-12
2.5	Daily Variation of Traffic in Vehicles & PCU at 25+000 KM	2-12
2.6	Daily Variation of Traffic in Vehicles & PCU at 177+000 KM	2-12
2.7	Daily Variation of Traffic in Vehicles & PCU at 208+000 KM	2-13
2.8	Traffic Composition at 52+000 KM	2-15
2.9	Traffic Composition at 128+000 KM	2-15
2.10	Traffic Composition at 115+200 KM	2-15
2.11	Traffic Composition at 25+000 KM	2-16
2.12	Traffic Composition at 177+000 KM	2-16
2.13	Traffic Composition at 208+000 KM	2-16
2.14	Traffic Composition at 283+000 KM	2-16
2.15	Work Zone Safety during Construction	2-21
3.1	Details of alternative alignments	3-3
4.1	Land use of the proposed expressway (500 m buffer zone)	4-9
4.1(i) to 4.1(xxviii)	Land use of the study area (stretch 1 to stretch 28)	4-10 to 4-37
4.2	Wind Rose Diagram for Barmer District	4-41
4.3	Seismic Zone of India	4-42
4.4	Seismic zone map of Rajasthan (Rajasthan Earthquake Hazard Risk Zonation Map)	4-43
4.5	Map showing soil sampling locations	4-47
4.6	Map showing the ambient air quality monitoring locations	4-52
4.7	Chart showing concentration of PM 10, PM 2.5, SO ₂ , NO _x , CO at various locations	4-54 to 4-55
4.8	Map showing the ambient noise monitoring locations	4-58
4.9	Noise level along the proposed project location	4-59
4.10	Depth to water level in Barmer District, Year 2011	4-62
4.11	Depth to water level in Jodhpur District, Year 2012	4-62
4.12	Depth to water level in Jalore District, Year 2012	4-63
4.13	Map showing Ground water and Surface water sampling locations	4-66
4.14	Forest cover map of Rajasthan showing the project area	4-69
4.15	Sectoral composition of state income	4-77
4.16	Change in crop pattern (1990-91 & 2010-11)	4-79
5.1	Typical rain water harvesting structure	5-4
5.2	Location Map for Raw Material	5-7
5.3(a) to 5.3 (e)	Contour map showing noise levels due to total traffic outcome at the homogenous intersections of 2018, 2022, 2026, 2030 and 2034 years	5-15 to 5-17

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

5.4	Suggestive engineering devices for wildlife management (WII 2016) Top-underpass, Middle-Box culvert; Lower-Pipe culvert	5-22
5.5	Suggestive engineering devices for wildlife management (WII 2016) Top-fish passage; Bottom-fencing along roadside near eco-sensitive zone or National Park	5-23
7.1	Photographs during Public Consultation	7-8
7.2	Institutional Arrangement for RAP Implementation	7-25
7.3	Grievance Redressal Mechanism	7-30

LIST OF ANNEXURES

Annexure – I	Copy of Approved TOR
Annexure – II	Ground Survey Map in 1:2000
Annexure – III	Detail of TCS
Annexure – IV	NABET/QCI Certificate of Environment Consultant
Annexure – V	NABL/MoEF&CC Certificate of Laboratory
Annexure - VI	Notification regarding project
Annexure - VII	Details of Public Hearing
Annexure - VIII	Year wise breakup of CER (Corporate Environment Responsibility)



EXECUTIVE SUMMARY

1. INTRODUCTION

The National Highways Authority of India (NHAI) has been entrusted by Ministry of Roads Transport & Highways, Government of India with the assignment of preparation of feasibility study / Detailed project report and implementation of road stretches selected for Amritsar to Jamnagar Corridor under Bharatmala Pariyojana to 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchore (District-Jalore) (Length=208.242 Km).

M/s. K & J Projects Pvt. Ltd, have been appointed as Consultants by NHAI to carry out the preparation of Feasibility study / Detailed Project Report of road stretches selected of Bharat Mala Scheme – Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchore (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4). Further, K & J Projects Pvt. Ltd has assigned Enviro Infra Solutions Pvt. Ltd. a NABET accredited consultant to prepare the Environmental Impact Assessment report including Environmental Management Plan.

2. BRIEF ABOUT THE PROJECT AND ITS LOCATION

Project road is mostly green field alignment project and proposed for 4/6 lane expressway. The proposed project takes off from design Ch. -1+142 from NH125 near existing km 52+000 between Dhandhaniya Sasan and Agolai towns (Jodhpur district) and ends at Rajasthan-Gujarat Border (Design Ch.207+100) near Sanchore (District-Jalore) in the state of Rajasthan. The proposed access controlled expressway project has been envisaged through an area which shall have the advantage of simultaneous development as well as shall result in a shorter distance to travel.

The salient features of the proposed project have been presented below:

Salient features of the project

1.	Project Road	Construction of 4/6 lane Access Control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchore (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).
2.	Type of PPP	EPC
3.	Location of the proposed project	The proposed project expressway takes from design Ch. -1+142 at NH125 near existing km 52+000 between Dhandhaniya Sasan and Agolai towns (Jodhpur district) and ends at Rajasthan-Gujarat Border (Design Ch.207+100) near Sanchore (District-Jalore) in the state of Rajasthan.

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchore (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

4.	No. of affected villages by Land acquisition	77 villages
5.	Total Length of the proposed project	208.242 km.
6.	Total Area of Land Acquisition	Total Land Acquisition: 1730.16Ha., Private Land: 1,641.441* Ha., Government Land: 75.50* Ha., Forest Land: 13.219*Ha.
7.	Terrain	Mostly plain and some areas in rolling.
8.	Seismic Zone	Zone II and Zone III.
9.	Geographical Location	Start Location : 26°19'12.53"N, 72°35'48.83"E End Location: 24°39'51.63"N, 71°44'46.86"E
10.	Proposed Bridges	Major Bridges - 10 No. and Minor Bridges - 20 No.
11.	Proposed Underpasses / Flyover including Pedestrian underpass	Vehicular Underpass: 26 SVUP: 85 LVUP: 34 Flyovers: Nil
12.	Culverts (Widening / Reconstruction / New)	282 + 40 additional
13.	Right of Way	70 m
14.	Design Speed	100 km/hr for plain terrain and 100 km/hr for rolling terrain
15.	Carriageway	3.50 m Lane width
16.	Embankment	3 m to 5 m (average)
17.	Proposed Toll Plazas	9 Ramp toll plaza (4 Nos at each interchange except at 2 location on Ch. 0+000 & 42+877 where only 2nos of toll is proposed on entry and exit)
18.	Safety Measure	Crash Barriers
19.	Lighting	Lighting including High Masts at Toll plazas, interchanges, major bridges / ROB's and Amenities and Truck Parking Areas
20.	No of Structures Affected	370
21.	Total Cost (Civil)	4043 Crores
Environmental & Social Features		
22.	Forest Land Diversion	13.219* Ha.
23.	Wells	179Nos
24.	Ponds	No pond is impacted
25.	Existing trees within ROW of 70m	Out of approx. 15360 trees which area falling in ROW approx. 5909 trees are falling in carriage way which are likely to be impacted. Total impacted trees will be finalized after joint survey with forest and revenue dept.
26.	Compensatory plantation	1,24,800 nos of trees shall be planted (3 rows plantation on either sides)
27.	Green belt development	As per IRC SP 21:2009 /MoRTH Code/Guidelines
28.	Cropping pattern	Kharif and Rabi crops are grown in Project area. Paddy is the main crop in the project area.
29.	No. of project affected persons	Total PAFs –2238

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

	(PAFs) & (PAPs)	Total PAPs – 11190
30.	Resettlement Action Plan (RAP) including Land Acquisition Budget	2396.24 Crores

* The 3D of Jalore district is not finished yet, it is under process

3. ANALYSIS OF ALTERNATIVES

Two alternative alignments have been considered:

- i) Parallel Existing Alignment-SH-28.
- ii) Construction of new 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan

Keeping in view of having less/minor effect on environmental and social components, alignment (ii) has been fixed and it seems more feasible as the length is less as compared to the other option. It also provides better alternative from Jodhpur to Jalore district. It also provides quicker alternative to traffic coming from Amritsar (Punjab) and going towards Jamnagar (Gujarat)/Kandla.

NHAI is the implementing authority of the fixed alignment.

4. DESCRIPTION OF ENVIRONMENT

Study Area: The base-line data has been collected for Core Zone (Corridor of Impact (COI)), an area covering 500 m on both side of the proposed alignment and 10 km buffer zone for prominent environmental attributes like ambient air quality, noise level, water quality and soil profile. Primary and Secondary data has also been collected for other environmental attributes for the preparation of EIA/EMP report. The baseline study for the project was conducted during April 2018 to June 2018.

Baseline Study: The findings of the baseline environmental status on land (topography, geology, soil quality, land use pattern), meteorology (Temperature, Relative Humidity, rainfall, wind speed, wind rose), air (ambient air quality- PM₁₀, PM_{2.5}, SO₂, NO_x and CO), water (surface & ground water), noise level, ecological environment (terrestrial and aquatic flora & fauna), socio-economic conditions (demographic profile and households condition) were presented and interpreted with reference to environmental standards.

- **Meteorology:** The project area experiences arid type of climate. Climatically, the year in Rajasthan can be divided into three major conventional seasons as follows:
 - The Hot- Weather Season (March to end of June)
 - Monsoon Season (End of June to September)
 - The Cold- Weather Season (October to February)

As the project area lies in the desert area, extremes of heat in summer and cold in winter are the characteristic of the desert. Both day and night temperatures increase gradually and reach their maximum in May and June respectively. The temperature varies from 49°C in summer to



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

1°C in winter. Normal rainfall of Jodhpur as per IMD is 314mm, while as per 44 year (1970-2014) annual rainfall data, average annual rainfall of the district is 373.7 mm. The main rainfall months are July and August in which about 68% of rainfall occurs. The annual maximum potential evapotranspiration in the Barmer district is 1850 mm and it is highest (260 mm) in the month of May and lowest (77 mm) in the month of December while the average rainfall in Jalore district in 2016 year is 469 mm. The nearest IMD meteorological from the project location is Barmer.

- **Air Environment:** Ambient air quality monitoring has been done at 15 locations. Specific station-wise Ambient Air Quality (AAQ) data for PM₁₀, PM_{2.5}, SO₂, NO_x and CO as recorded during the study period i.e. from April to June 2018. All the parameters have been analyzed and show that all the parameters are well below the National ambient air quality standards, 2009.
- **Water Environment:** The development of any region is based on the availability of sufficient water resources, as developmental activities require water for irrigation, domestic and other purposes. The water resources in the area broadly fall into following categories:
 - **Surface Water resources: Canal and Ponds.**
 - **Ground Water resources: Hand pump and Borewell**
 - **Surface water:** Surface water sampling has been taken for three locations. The pH varies from 6.9 to 7.45, TDS varies from 282.97 to 477.98, BOD varies from 6.0 to 24.2 mg/l, COD varies from 23.1 to 80 mg/l, Total coliform varies from 317 to 1840 mpn/100ml and Faecal Coliform varies from 547 to 1110 mpn/100ml.
 - **Ground water:** Ground water sampling has been taken for five locations. The pH varies from 7.28 to 8.29, TDS varies from 2265.40 to 2422.70, Conductivity varies from 3485.23 to 3727.23 uS/cm and Hardness varies from 799.90 to 896.60 mg/l.
- **Noise Environment**

Ambient noise level monitoring has been done at 15 locations. The hourly recorded noise level at various locations in the study area shows fluctuations because of change in traffic movement, construction activities and other man-made sources. The equivalent values of noise levels varies from 42.6 to 62.4 dB (A) during daytime which are within the prescribed norms of CPCB. Whereas during the night time 37.8 to 53.2 dB (A).
- **Soil Environment**

Soil sampling has been done at 15 locations. The soil pH ranges from 6.44 to 6.88, thereby indicating the soils are neutral. The texture of the soil is sandy loam. Soils are good in available nitrogen content, medium in available phosphorus and medium in potassium content.



ECOLOGICAL ENVIRONMENT

The major forest types found along the study area are: Tropical dry deciduous forest and Depositional saline plains with grassland, Saline-alkaline scrubs. The natural vegetation present within the study area is in the form of shrubs, herbs, grasses and climbers with fewer naturally growing trees. The dominant tree/shrub species present along the study area are *Acacia leucophloea*, *A. nilotica*, *A. tortilis*, *Azadhirachta indica*, *Prosopis cineraria*, *Ficus bengalensis*, *F. religiosa*, *Zizyphus jujube*, *Z. xylopara*, *Salvadora oleoides* etc.. The major grasses present along the study area are *Capparis decidua*, *Calotropis procera*, *Calligonum polygonoides*, *Cyperus arenarius*, *Desmostachiya bipinnata*, *Panicum turgidum*, *Dactyloctenium* spp., *Aristida* spp., *Lasiurus indicus*, *Tribulus* spp. *Cassia tora* etc.

The proposed alignment does not pass through any Wildlife Sanctuary/National Park and its eco sensitive zone. The common faunal species recorded/observed in the project area includes: *Sus scrofa* (wild boar), *Boselaphus tragocamelus* (Blue bull), *Gazella bennettii* (chinkara gazelle), *Meriones hurrianae* (Indian desert gerbil), *Lepus nigricollis dayanus* (hare), *Funambulus pennant* (squirrel) and *Hystrix indica indica* (porcupine), *felis chaus* (jungle cat) etc.

The common bird species recorded/observed were *Alcedo atthis* (Common Kingfisher), *Pavo cristatus* (Indian Peafowl), *Coturnix coturnix* (Common Quail), *Eudynamys scolopaceus* (Asian Koel), *Grus virgo* (Demoiselle crane), *Columba livia* (Rock Pigeon), *Streptopelia senegalensis* (Laughing Dove), *Ardea alba* (Great Egret), *Accipiter badius* (Shikra), *Tyto alba* (Barn Owl), *Merops orientalis* (Green Bee-eater), *Passer domesticus* (House Sparrow) etc.

SOCIO ECONOMIC ENVIRONMENT

The primary purpose of socio-economic analysis is to provide an overview of the State's, socio-economic status and the relative status of the Project Influence Area (PIA) within the State.

The proposed project passes through three districts of Rajasthan i.e. Jodhpur, Barmer and Jalore. The demographic profile and socio-economic status of the people in the project affected districts and state as per census 2011 are as follows

Table 4.31: Demographic Profile

	Rajasthan	Jodhpur	Barmer	Jalore
Total Population	6,85,48,437	36,87,165	26,03,751	18,28,730
Rural Population	5,15,00,352	24,22,551	24,21,914	16,76,975
Urban Population	1,70,48,085	12,64,614	1,81,837	1,51,755
Male	3,55,50,997	19,23,928	13,69,022	9,36,634
Female	3,29,97,440	17,63,237	12,34,729	8,92,096
Gender Ratio	928	916	902	952
SC Population	1,22,21,593	6,08,024	4,36,414	3,57,196
% SC	17.83	16.49	16.76	19.53
ST Population	92,38,534	1,18,924	1,76,257	1,78,719
% ST	13.48	3.23	6.77	9.77
Density of Population (per sq. km)	200	161	92	172

(Source: Census of India, 2011)



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

5. IMPACTS AND MITIGATION MEASURES

The potential impact and their mitigation measures have been presented below :

S. No.	Parameters	Potential Impact	Mitigation Measures Suggested
1.	Topography and Soil	• Cut and fill operations during road construction	• The alignment passes through plain/rolling terrain and no substantial cut and fill operations are planned.
		• Borrow earth	• Borrow soil will be procure from approved quarry. • IRC guidelines will be followed during excavation
		• Quarries	• Operational and government licensed quarry have been identified, which will be used to procure the material
2.	Air environment	• Generation of Dust	• Sprinkling of water • Earth handling site • Borrow area • Road construction site • Air pollution control at stone crusher • PPE for workers • Stone crushing units environment compliance • Regulation of construction timings near sensitive receptors and settlements
		• Gaseous Pollution	• Vehicles and machineries will be regularly maintained to conform to the emission standards. • Asphalt mixing sites should be 1 km away from residential area and 10 km away from National Park. • Asphalt plant will be equipped with pollution control equipment • Use of PPE by workers engaged in construction and application of asphalt mix on road surface. • Responsibility of contractors and supervising officers to ensure that the workers use the PPE
3.	Noise environment	• Noise level may likely to increase during construction phase	• Properly maintained equipment to be used • Noise levels of machineries used shall conform to relevant standard prescribed in Environment (Protection) Rules, 1986. • Ear plugs and muffs will be used by workers as per requirement during construction



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

S. No.	Parameters	Potential Impact	Mitigation Measures Suggested
			activities. • Regulation of timing of construction work generating noise pollution near the residential areas
4.	Water environment	• Drainage pattern 05 Canal, 8 Nalas and 11 Rivers will be impacted due to the proposed expressway.	• Provision of proper drainage through culverts along the project road. • All the water bodies will be crossed by bridges and structures without affecting their original course and flow • Stabilization and turfing of slopes along the water bodies.
		• Siltation of water bodies	• Silt fencing around water bodies during construction to avoid silt laden runoff entering water body • Turfing or pitching of embankments of water bodies affected will be done where possible to prevent erosion that causes siltation. • No solid waste will be dumped in or near the water bodies or rivers.
		• Flooding due to siltation of drainages channel	• Excavated earth and other construction materials should be stored away from water bodies
		• Water for construction	• Water source would be selected so that local availability is not affected
		• Rainwater harvesting	• Rainwater harvesting drains will be provided along the road side
		• Contamination from wastes	• Provision of septic tanks to prevent any untreated sewage discharge from construction workers camps • Oil interceptors at construction machine maintenance yards
		• Contamination from fuel and wastes	• Vehicle maintenance will be carried out in a confined area, away from water sources, and it will be ensured that used oil or lubricants are not disposed to water courses
		• Sanitation and water use in construction camps	• Construction camp will be organized in a planned manner. • Proper sanitation facilities will be provided including toilets. • Camps will have separate water supply facilities so that local water sources are not affected
5.	Land environment	• Loss of topsoil	• Topsoil on stripping shall be removed and stockpiled on sides to be used on the side slopes, for top cover of borrow areas and for plantation in pits



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

S. No.	Parameters	Potential Impact	Mitigation Measures Suggested
		• Loss of topsoil from borrowing	Arable lands will be avoided for earth borrowing. If needed, topsoil will be separated and refilled after excavation
		• Borrowing of fill materials	Excavation from pre-selected locations. After excavation, the borrow pits will be dressed to match with the surrounding.
		Loss of Land • As per available data, it is observed that total land acquisition is 1730.16 Ha.	The compensation to project affected persons will be paid as per the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013, National Highways Act (NH Act), 1956 and relevant Acts and guidelines of Government of India.
		Loss of structures So far as the type of dwelling structures is concerned 370 nos. Structures coming under within alignment.	
		Loss of Common Property Resources (CPRs) A total of 221 CPRs (well, temple, water tank) fall within proposed alignment.	
6.	Ecological resources	• Loss of trees	Approx. 5909 no. of trees are falling in carriage way and are likely to be impacted. At least, thrice numbers of trees for each tree to be cut will be planted as a part of compensatory afforestation. Green belt development along proposed expressway. Plantation of about 1,24,800 trees (three row plantations along proposed expressway) proposed. Shrub plantation and grass carpeting in median is also proposed.
7.	Impacts on wildlife	• Loss of Habitat and Defragmentation	• Plantation will be done along the road sides to compensate the loss of vegetation • The strips of vegetation will be planted on either side of the linear clearing to provide attractive corridors for animals movement.



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

S. No.	Parameters	Potential Impact	Mitigation Measures Suggested
		Degradation of Habitat Quality	- Precautions will be taken to avoid leakage of chemicals, any hazardous materials due to construction activities. - Labour camps will be located far from habitat of any fauna - Invasive alien species will be removed from time to time
		Noise Induced physiological and Behavioural Changes	- Dense vegetation along the road side may be provided for attenuation of noise. - Silence zone will be marked and provided with sign boards to alert drivers - Noise buffers using diversity of tree species, with a range of foliage shapes and sizes, combination of shrubs and trees and evergreen species will be provided. - Noise wall will be provided
		Impacts of Headlights Glare on Wildlife	Hedges along both sides of roads will be provided to lower the intensity of lights
		- Avoidance of Road by Animals - To avoid Injury and Mortality of animals	- Animal underpasses are proposed to be constructed for animals to cross the road. - Different types of underpasses like Box culverts, pipe culverts, and culverts with furniture will be constructed for passage of herpetofauna, amphibians etc. - Fences will be provided in combination with underpasses to direct animals away from the roads. - Vegetation or other habitat features (rocks, fallen timber) will be placed, planted or allowed to regrow so that animals are directed to preferred crossing locations. - The plantation and lighting systems along the roads should be made less attractive to birds to avoid collision of birds with vehicles.
		Reduce access to saltlicks and waterholes	- Creation or improvement of water bodies will be done so that the animals have access to water. - Plantation along the water body will be done to attract the animals towards it. - The saltlicks areas will be protected from reach of human beings.
		Discontinuity of Canopy	Canopy bridge can be provided across the road in sanctuary area for movement of arboreals.



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

S. No.	Parameters	Potential Impact	Mitigation Measures Suggested
			The width of the linear clearing may be kept small in the area having dense canopy to maintain the continuity above the clearing.
		Disruption of Processes that maintain regional wildlife populations	- The breeding sites of animals/amphibians, nesting sites of birds, thermoregulation surface sites of snakes will be avoided for any type of construction. - Construction/modification of ponds will be done to provide breeding sites to amphibians. - The construction of strips of surfaces (next to road where high mortality of snakes are reported) that may attract snakes for thermoregulation will be done.
		Increased Human Pressure and Human-Wildlife Conflict	- Caution signs will be provided to alert drivers about wildlife - Speed limit will be restricted in and around sanctuary area to avoid any collision of animal. - Parking shall be restricted to avoid any encounter of humans with animals. - Temporary warning signs may be provided to warn drivers during specific time like breeding periods of animals or animal movement. - Animal Detection Systems may be provided for detection of any animal near road. - Poachers will be warned through sign boards
8.	Public health and occupational safety	Safety to public	Signs will be posted on road before construction areas informing public about the work and safety provisions.
		Restriction to Access	Safe and convenient passage for vehicles, pedestrians and live stocks will be arranged during construction work
		Occupational safety for workers	Contractor will arrange all safety measures for workers as per factories act.
		Occupational safety for asphalt plant workers	All worker employed on mixing asphaltic material, cement, lime mortars, concrete etc. will be provided with protective footwear and protective goggles



6. ENVIRONMENTAL MONITORING PROGRAMME

The Environmental Monitoring Programs are also suggested to provide information on which management decisions may be taken during construction and operational phase. The objective of this program is to evaluate the efficiency of mitigation and enhancement measures, updating the actions & impacts of baseline data and adaptation of additional mitigation measures. Total cost for environment monitoring plan is Rs 4,60,08,000.

7. ADDITIONAL STUDIES

Public Consultation & Public Hearing

The public consultations were carried out in nearby villages of the project corridors. These consultations were taken up by environmental and social experts. Details are incorporated in EIA/EMP report.

The public hearing has been successfully conducted on 22.01.19 in Jalore District, 28.01.2019 in Jodhpur district, and 13.02.2019 in Barmer district as per EIA Notification 2006 and its subsequent amendment. The proceedings of the public hearing are enclosed in Annexure VII.

Social Impact Assessment

The proposed project passes through three districts of Rajasthan i.e. Jodhpur, Barmer and Jalore. There are 370 structures recorded within the corridor of impact the proposed expressway. However, the proposed project will definitely have some positive impact on the socio-economic environment of the people of surrounding villages experiencing development in the area in specific and state and nation as a whole. The demographic profile and socio-economic status of the people in the project affected districts are presented in EIA/EMP report.

Road Safety Features

The proposed road would act as the prime artery for the economic flow to this region. It will enhance economic development, provide employment opportunities to locals, strengthen tourist development, ensure road safety and provide better transportation facilities and other facilities such as way side amenities.

The proposed project is mostly green field access control expressway. However, provision of diversions with direction signs, speed breakers and other safety requirements followed as per IRC & MoRTH guidelines. Provision for accident emergency assistance and medical care to accident victims have also been considered as road safety measures.

8. PROJECT BENEFITS

The proposed expressway will provide better, fast, safe and smooth connectivity for the commuters of Rajasthan state and especially in Jodhpur, Barmer and Jalore region. Smooth and fast-moving traffic will cause only lower emissions thereby reducing pollution levels. Accident rates are also expected to come down substantially. Development of the proposed project road will improve the local agriculture and enable farmers to realize better value for their products as well as attract more investment to that region, thus boost economy of the area, state and nation as a whole. The vehicle operating and maintenance cost is expected to go



down substantially. The proposed road alignment will also include general amenities like bus bays, truck lay byes, rest areas, service road at built-up locations, pedestrian and cattle underpasses, landscaping and tree plantation, traffic aid post, emergency telecom system, emergency medical aid post, street light at built ups etc. and thus overall facilities to the road users shall improve. People will have increased access to better social and health infrastructure and other services located outside the project area. This will in turn lead to overall improvement of the quality of life of the people residing in the project zone in terms of their economic, social and health status. Growth of local tourism and resultant boost to local economy is also expected due to proposed project.

9. ENVIRONMENTAL MANAGEMENT PLAN (EMP)

The Environmental Management Plan is prepared for avoidance, mitigation and management of the negative impacts of the project. It also covers remedial measures require to be taken EMP includes the list of all the project related activities, their impacts at different stages of project during pre-construction phase / design phase, construction phase and operational phase on environment and remedial measures to be undertaken to mitigate these impacts.

Total cost for environment management plan (including environmental monitoring plan) for the project is **approx. 33.8 Cr.**

10. FINDINGS & CONCLUSION

The EIA/EMP report was prepared after thorough interaction with the engineering section of the consultants so that the negative impacts on the environment and human population could be avoided as far as possible. Some of the important findings of the study are as follows: -

1. There will be insignificant loss of bio-diversity as no rare plant or animal species are going to be affected by the present project.
2. The alignment is not passing through any Sanctuary or National Park.
3. Precautionary measures such as underpass, pipe culverts and chain link fences etc. have been suggested to mitigate the likely impacts if any wild life present in Project area.
4. No monuments protected by the Archaeological Survey of India (ASI) are located within the ROW of expressway.
5. The most important factors, which need continuous attention and assessment during the construction phase, are the ambient air quality, the water quality and the noise level. The ambient air quality of the study area is good. Noise levels in the area, particularly at crossing points and in the urban settlement, exceed the limits.
6. Approximately 5909 numbers of trees are recorded in carriage way out of total 15360 trees which are coming in ROW of the proposed expressway. However, avenue plantation and compensatory afforestation will enhance the environmental condition of the area.

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchore (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

7. There are 370 structures recorded within the corridor of impact the proposed expressway. However, the proposed project will definitely have some positive impact on the socio-economic environment of the people of surrounding villages experiencing development in the area in specific and state and nation as a whole.

CHAPTER -1

(INTRODUCTION)



CHAPTER-1: INTRODUCTION

1.1 PROJECT BACKGROUND

The National Highways Authority of India (NHAI) has entrusted M/s. K & J Projects Pvt. Ltd. with the assignment of preparation of feasibility study / Detailed project report and implementation of road stretches selected for Amritsar to Jamnagar Corridor under Bharatmala Pariyojana to 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) (Length=208.242 Km) in the state of Rajasthan. M/s. K & J Projects Pvt. Ltd. has assigned Enviro Infra Solutions Pvt. Ltd. a NABET accredited consultant for the preparation of the EIA/EMP report for the construction of above mentioned Road (208.242 km) in the state of Rajasthan. The proposed project is the construction of new 4/6 lane expressway and it is a part of an exclusive transport corridor from Punjab to Gujarat which provides better connectivity to Jodhpur, Barmer and Jalore districts of Rajasthan State.

1.2 IDENTIFICATION OF PROJECT AND PROJECT PROPONENT

The proposed expressway is planned to connect Amritsar from Jamnagar. The proposed expressway is passing through four states i.e Punjab, Haryana, Rajasthan and Gujarat. The proposed expressway is classified as National Highway number- 754K vide MoRTH, Gazette notification no.-1655 dated 08 May, 2018 attached as **Annexure VI**. The proposed Expressway is mostly green field project and proposed for 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) having a total length of 208.242 Kms. The proposed project takes off from design Ch. -1+142 from NH125 near existing km 52+000 between Dhandhaniya Sasan and Agolai towns (Jodhpur district) and ends at Rajasthan-Gujarat Border (Design Ch.207+100) near Sanchoe (District-Jalore) in the state of Rajasthan. The proposed expressway will pass through Jodhpur, Barmer and Jalore districts in the state of Rajasthan.

Proposed expressway traverses from 26°19'12.53"N, 72°35'48.83"E and 24°39'51.63"N, 71°44'46.86"E. The project proponent is National Highways Authority of India (Ministry of Road Transport & Highways (MORT&H), Government of India.) Project Implementation Unit, Jodhpur, Rajasthan.

1.3 BRIEF DESCRIPTION OF THE PROJECT AND ITS IMPORTANCE TO THE COUNTRY

The proposed expressway is mostly green field project and proposed for 4/6 lane expressway from Dhadhaniya Sasan to Sanchoe having a total length of 208.242 km. The proposed project expressway takes from design Ch. -1+142 at NH125 near existing km 52+000 between Dhandhaniya Sasan and Agolai towns (Jodhpur district) and ends at Rajasthan-Gujarat Border (Design Ch.207+100) near Sanchoe (District-Jalore) in the state of Rajasthan. The location of proposed project has been shown in Figure 1.1.

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchore (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

1.3.1 Salient features of the project

The salient features of the proposed project have been presented in **Table 1.1**.

Table 1.1: Salient features of the proposed project

1.	Project Road	Construction of 4/6 lane Access Control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchore (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).
2.	Type of PPP	EPC
3.	Location of the proposed project	The proposed project expressway takes from design Ch. -1+142 at NH125 near existing km 52+000 between Dhandhaniya Sasan and Agolai towns (Jodhpur district) and ends at Rajasthan-Gujarat Border (Design Ch.207+100) near Sanchore (District-Jalore) in the state of Rajasthan.
4.	No. of affected villages by Land acquisition	77 villages
5.	Total Length of the proposed project	208.242 km.
6.	Total Area of Land Acquisition	Total Land Acquisition: 1730.16Ha. Private Land: 1,641.441* Ha. Government Land: 75.50* Ha. Forest Land: 13.219* Ha.
7.	Terrain	Mostly plain and some areas in rolling.
8.	Seismic Zone	Zone II and Zone III.
9.	Geographical Location	Start Location : 26°19'12.53"N, 72°35'48.83"E End Location: 24°39'51.63"N, 71°44'46.86"E
10.	Proposed Bridges	Major Bridges - 10 No. Minor Bridges - 20 No.
11.	Proposed Underpasses / Flyover including Pedestrian underpass	Vehicular Underpass: 26 SVUP: 85 LVUP: 34 Flyovers: Nil
12.	Culverts (Widening / Reconstruction / New)	282 + 40 additional
13.	Right of Way	70 m
14.	Design Speed	100 km/hr for plain terrain and 100 km/hr for rolling terrain
15.	Carriageway	3.5 m Lane width
16.	Embankment	3 m to 5 m (average)
17.	Proposed Toll Plazas	9 Ramp toll plaza (4 Nos at each interchange)

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

		except at 2 location on Ch. 0+000 & 42+877 where only 2nos of toll is proposed on entry and exit)
18.	Safety Measure	Crash Barriers
19.	Lighting	Lighting including High Masts at Toll plazas, interchanges, major bridges / ROB's and Amenities and Truck Parking Areas
20.	No of Structures Affected	370
21.	Total Cost (Civil)	4043 Crores
Environmental & Social Features		
22.	Forest Land Diversion	13.219* Ha.
23.	Wells	179Nos
24.	Ponds	No pond is impacted
25.	Existing trees within ROW of 70m	Out of approx. 15360 trees which are falling in ROW approx. 5909 trees are falling in carriage way which are likely to be impacted. Total impacted trees will be finalized after joint survey with forest and revenue dept.
26.	Compensatory plantation	1,24,800 nos of trees shall be planted (3 rows plantation on either sides)
27.	Green belt development	As per IRC SP 21:2009 /MoRTH Code/Guidelines
28.	Cropping pattern	Kharif and Rabi crops are grown in Project area. Paddy is the main crop in the project area.
29.	No. of project affected persons (PAFs) & (PAPs)	Total PAFs –2238 Total PAPs – 11190
30.	Resettlement Action Plan (RAP) including Land Acquisition Budget	2396.24 Crores

*** The 3D of Jalore district is not finished yet, it is under process**

The proposed expressway is part of an exclusive transport corridor from Punjab to Gujarat, which starts from Dhadhaniya Sasan (Jodhpur district) and ends at Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan. The proposed alignment is of 208.242 km stretch which lies in West region of Rajasthan.

The proposed access controlled expressway project with new alignment has been envisaged through an area which shall have the advantage of simultaneous development as well as shall result in a shorter distance to travel. The junctions with existing road will be planned in the form of interchanges and flyover to ensure uninterrupted flow of traffic.

The proposed expressway would act as the prime artery for the economic flow to this region. It will enhance economic development, provide employment opportunities to locals, strengthen tourist development, ensure road safety and provide better transportation facilities and other facilities such as way side amenities. Vehicle operating cost will also be reduced due to improved road quality. The compensatory plantation and road side plantation shall further improve the air quality of the region.

Construction of 4/6 lane Access Control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchore (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

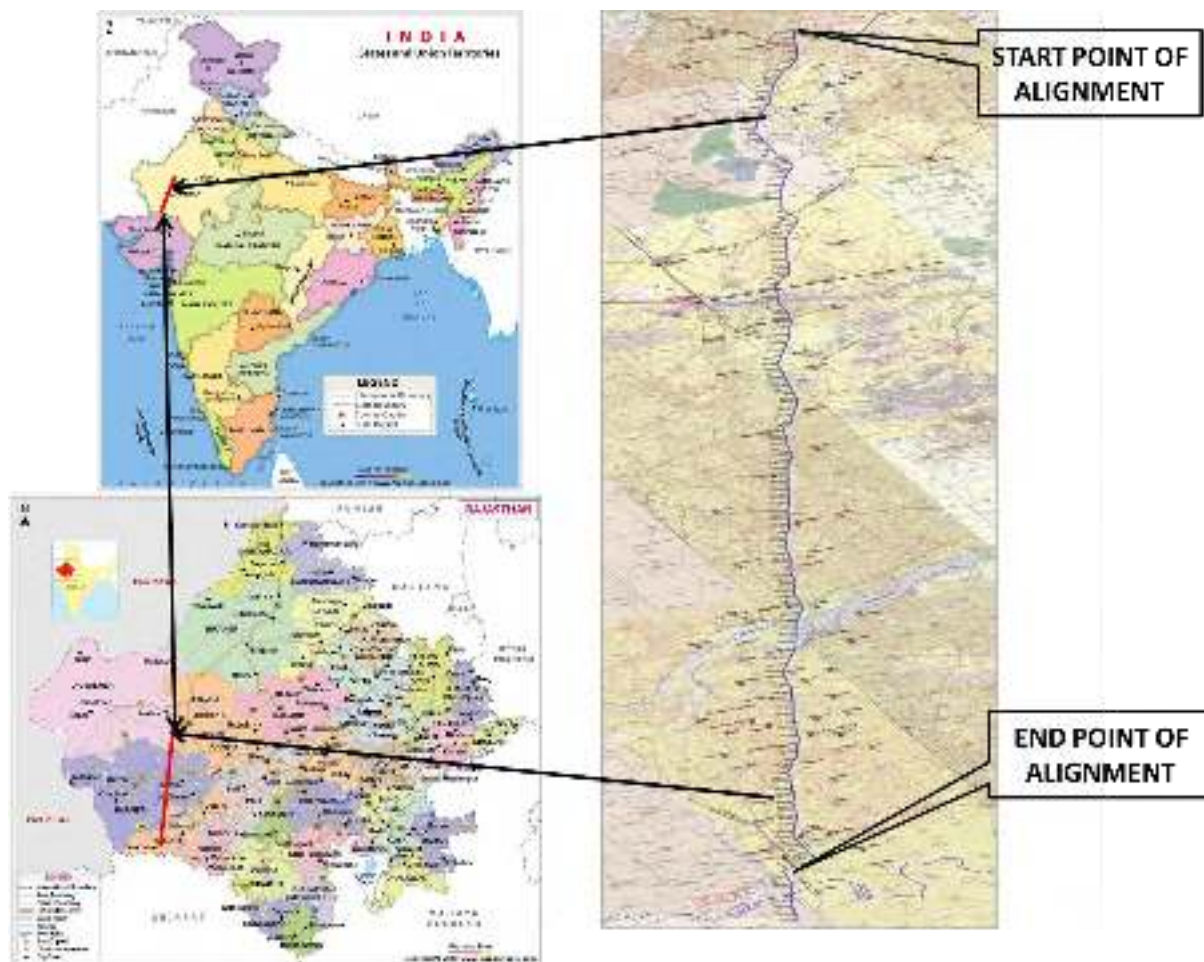


Figure 1.1: Location of the Proposed Project Expressway

1.4 SCOPE OF THE EIA/EMP STUDY (AS PER TOR)

The Ministry of Environment, Forest and Climate Change (MoEF&CC), Government of India, in its Notification S.O. 1533 dated September 14, 2006 has made it mandatory to obtain Environmental Clearance (EC) for any expansion, widening or construction of a new road project before its implementation. As a requirement for seeking Environmental Clearance (EC), the consultants are required to prepare the detailed Environmental Impact Assessment (EIA) report and the Environmental Management Plan (EMP) for getting environmental clearances from the Ministry of Environment, Forest and Climate Change (MoEF&CC). The ToR was obtained for the proposed project vide (10-51/2018-1A.III) dated 12.09.2018 and EIA has been prepared as per the approved ToR (Copy of the Approved ToR is attached as **Annexure-I**).

The scope of the EIA/EMP study is: -

- To establish present environmental condition along the project corridor through available data/information supported by field studies.



- Screening, scoping and consultations with public, experts in various fields, non-government organization (NGOs), etc.
- Review of policies and legal framework.
- Identification of the potential impacts during pre-construction, construction and operation phases.
- Developing mitigation measures to sustain and maintain the environmental scenario.
- Providing compensatory developments wherever necessary, including plans for highway side tree plantation.
- Designing the Environmental Management Plan.
- Suggesting the Environmental Enhancement and its monitoring Scheme.

1.5 OBJECTIVES OF THE CONSULTANCY SERVICES

The main objectives of the Consultancy service are: -

- To establish the inception report of an expressway corridor between Dhadhaniya Sasan to Sanchoe on the basis of technical, economical and financial viability of the project in the first stage and thereafter prepare feasibility cum preliminary design report for construction of the expressway along the selected highway including Environmental Clearance through its NABET accredited EIA consultant.
- To plan the Expressway as a fully access controlled facility taking into account the requirements of highway design, pavement design and provision of service roads, underpasses for both vehicles and pedestrians, rehabilitation and widening of existing structures and provision for new bridges/ structures and cost estimates vis-a-vis investment and financial return through toll revenues.
- To suggest appropriate measures for mitigating the effects of property and community severance and circulation of the local traffic.
- To ensure that the drainage pattern of the area is not disturbed and natural environment, human habitation and heritage sites are fully protected.
- To integrate safety in design, construction and operation of the express-way. Infrastructure for user amenities, operation and maintenance, incident management and user information system will be an integral part of the study.
- To develop the express-way in EPC Model.

Construction of 4/6 lane Access Control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

1.6 POLICIES, LEGAL AND ADMINISTRATIVE FRAMEWORK

Statutory permissions and clearances required during construction and operation of the project are summarized in **Table 1.2**.

Table 1.2: Summary of Relevant Environmental Acts and Guidelines

Sl. No	Act/Rules	Year	Objective	Applicable Yes/No	Reason for applicability	Authority
1.	Environmental (Protection) Act	1986	To protect and improve overall environment	Yes	As all environmental notifications, rules and schedules are issued under this act	MoEF&CC GoI, Forests & Env. Dept., GoR, CPCB, RSPCB
2.	Environmental Impact Assessment (EIA) Notification	2006	To provide environmental clearance to new development activities following environmental impact assessment	Yes	The project attracts the conditions of EIA Notification 2006 and further amendments	MoEF&CC
3.	Forest (Conservation) Act	1980	To check deforestation by restricting conversion of forested areas into non-forested areas	Yes	There is RF along the project alignment.	Forest Department GoR
4.	Water (Prevention and Control of Pollution) Act and Cess Act of 1977 as amended in 1988	1974	To control water pollution by controlling emission & Water pollutants as per the prescribed standards	Yes	This act will be applicable during construction, for establishments of hot mix plant, stone crusher, construction camp, workers' camp, etc.	RSPCB
5.	Air (Prevention and Control of Pollution) Act as amended in 1987	1981	To control air pollution by controlling emission and air pollutants according to prescribed standards	Yes	This act will be applicable during construction; for obtaining NOC for establishment of hot mix plant, workers' camp, stone crusher, construction camp, etc.	RSPCB
6.	Noise Pollution (Regulation and Control) rules	2000	Noise pollution regulation and controls	Yes	This act will be applicable as vehicular noise on project routes required to assess for future years and necessary protection	RSPCB

Construction of 4/6 lane Access Control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

					measure need to be considered in design.	
7.	Ancient Monuments and Archaeological. Sites and Remains (Amendment and Validation) Act, 2010	2010	Conservation of Cultural and Historical remains found in India	No	The project route is not close to any Ancient Monument, declared protected under the act.	Archaeological Dept. Gol, Dept. of Archaeology, GoR,
8.	Notification for use of fly ash	2016	Promoting the utilization of fly ash in the manufacture of building materials and in construction activity within a specified radius of 300 kilometers from coal or lignite based thermal power plants	Yes	Fly ash will be used as per MoEFCC notification, 2016. Fly ash is available at JSW Barmer Power Station and Giral Lignite Power Plant which is close to the proposed project and is located within 300 km. Approx. 3.7 Mcm amount of fly ash is proposed to be used for the construction of the proposed project as per availability.	MoEF&CC
9.	The Explosives Act (& Rules)	1884	An Act to regulate the manufacture, possession, use, sale, transport, import and export of Explosives	Yes	For transporting and storing diesel, bitumen etc.	RSPCB
10.	Public Liability Insurance Act	1991	Insurance for the purpose of providing immediate relief to the persons affected by accident occurring while handling any hazardous substance and for matters connected therewith or incidental thereto	Yes	Contractor need to stock hazardous material like diesel, Bitumen, Emulsions etc. safely	RSPCB
11.	Coastal Regulation Zone	2011	To regulate activities in the coastal zone to protect ecologically sensitive areas	No	The proposed expressway does not pass along CRZ	MoEF&CC
12.	Hazardous and Other Wastes (Management and Transboundary Movement) Rules	2016	Storage, handling, transportation and disposal of hazardous waste	Yes	Storage and handling of hazardous waste during construction	RSPCB

Construction of 4/6 lane Access Control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

13.	Solid Waste Management Rules	2016	Management and handling of solid waste	Yes	For disposal of solid waste generated during construction	RSPCB
14.	Construction and Demolition Waste Management Rules	2016	Management of construction and demolition waste	Yes	For disposal of solid waste generated due to construction and demolition	RSPCB
15.	Batteries (Management & Handling) Amendment Rules	2010	Management and handling of used lead batteries	Yes	Safe disposal of used lead batteries	RSPCB
16.	E-Waste (Management) Rules	2016	Effective mechanism to regulate generation, collection, storage, transport, import, export, recycling, treatment and disposal of e-wastes	Yes	Handling of e-waste	RSPCB
17.	Central Motor Vehicles Act	1988	To control vehicular air and noise pollution.	Yes	This rule will be applicable to road users and construction machinery	Motor Vehicle Department
18.	Minor Mineral and concession Rules	1960	For opening new quarry	Yes	Regulate use of minor minerals like stone, soil, river, sand etc.	District Collector
19.	The Mining Act	1952	The mining act has been notified for safe and sound mining activity	Yes	The construction of proposed expressway will require aggregates. These will be procured through mining from quarries	Department of mining, GoR
20.	National Forest Policy (Revised)	1988	To maintain ecological stability through preservation and restoration of biological diversity	Yes	This policy will not be applicable.	Forest Department Gol and GoR
21.	The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act	2013	Set out rules for fair compensation and acquisition of land	Yes	This act will be applicable as there will be acquisition of land for widening, geometric improvements and bypasses	Revenue Department State Government
22.	The National	1956	For Land Acquisition	Yes	This act will be	NHAI

Construction of 4/6 lane Access Control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

	Highway Act				applicable as there will be acquisition of land for widening, geometric improvements and bypasses	Revenue Department, GoR

RSPCB: Rajasthan State Pollution Control Board
GoR: Government of Rajasthan

1.7 STRUCTURE OF THE REPORT

The report consists of ten Chapters and the content is briefly described in this section

Chapter 1: Introduction

This chapter contains the general information about the project, scope of the EIA/EMP study and the policies, legal and administrative framework and identification of the project proponent.

Chapter 2: Project Description

This chapter contains the description of the project, such as, the type of project, need for the project, project location, highway alignment, utilities, implementation schedule and the road side safety measures.

Chapter 3: Analysis of Alternatives

This chapter contains the details of various alternatives in respect of both location of site and technologies to be deployed. Alternatives have been compared in terms of their potential environmental impacts, capital and recurrent costs, suitability under local conditions, and institutional training and monitoring requirements.

Chapter 4: Description of Environment

The methodology for assessing various baseline environmental components in the study area prior to the commencement of the project has been identified in this chapter. The various parameters of present environmental status are identified under different aspects, which include location and regional setting of the area, topographical aspect which include land use, land cover and soil quality of the study area. Drainage aspect consists of surface and ground water quality. Meteorological aspect contains all the climatic factors and ambient air quality of the study area. Ecological environment describes the flora and fauna of the region. Human aspect includes the demography features, socio-economic environment and infrastructure facilities of the area.

Chapter 5: Anticipated Environmental Impact and Mitigation Measures

This chapter contains the anticipated impact on the environment and mitigation measures. The method of assessment of impact including studies carried out, modeling techniques adopted to assess the impact where pertinent shall be elaborated in this chapter. It gives the details of the



impact on the baseline parameters, both during the construction and operational phases and mitigation measures to be implemented by the proponent.

Chapter 6: Environmental Monitoring Programme

This chapter covers the planned Environmental Monitoring Program. It includes the technical aspects of monitoring the effectiveness of mitigation measures and the cost for the Environmental Monitoring.

Chapter 7: Additional Studies

This chapter covers the details of the additional studies, required in addition to those specified in the approved TOR by MoEF&CC and which are necessary to cater to more specific issues applicable to the particular project.

Chapter 8: Project Benefits

This chapter covers the benefits accruing to the locality, neighborhood, region and nation as a whole. It brings out the details of benefits by way of improvement in the physical infrastructure, social infrastructure, employment potential and other tangible benefits.

Chapter 9: Environmental Management Plan

This chapter comprehensively presents the Environmental Management Plan (EMP), which includes the administrative and technical setup, summary matrix of EMP, green belt development plan, the cost involved to implement the EMP, both during the construction and operational phases.

Chapter 10: Disclosure of Consultants Engaged

This chapter should include the names of the consultants engaged along with a brief resume and nature of consultancy rendered.

1.8 TOR APPROVED BY MOEF&CC AND ITS COMPLIANCE

The EIA/EMP report has been prepared in conformity with all issues brought out in the detailed ToR issued by MoEF&CC vide letter No. 10-51/2018-1A.III dated 12.09.2018. The copy of the approved ToR has been attached as **Annexure-I**. The brief issues involved and their compliance have been presented in **Table 1.3**:

Table 1.3: Compliance of ToR

Sr. No.	ToR Points	Reference of Compliance
A. Specific Conditions		
i.	Cumulative Impact Assessment to be carried out along the entire length of corridor including other parts of it, if any.	The overall impact will be completed after completion of all section of project corridor.
ii.	Water bodies along proposed alignment needs to be surveyed for their conservation	The details of all the water bodies within the corridor have been presented in section



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

	and sustainability. Each water body should be clearly identified with its size, any important and threatened species associated with it, its usage by local community along with shape file of each of water body. Impact of proposed project on these water bodies to be identified along with mitigation measures. Emphasis should be given to avoid alignment passing through/over water bodies.	4.7.1 in chapter-4. The mitigation measures have been given in section 5.3 of chapter 5.
iii.	Source of water availability to be ascertained for construction and domestic need. Necessary permissions to be obtained from State Authority/ CGWA, if any.	The peak water requirement is 19000 KLD during construction stage and will be extracted from local surface water resources after taking necessary permission.
iv.	Certificate from the Chief Wildlife Wardens of the state(s) concerned stating that no protected area/animal corridor is situated within the 10 km range of the proposed alignment.	The NOC from Chief Wildlife Wardens of the states is under process.
v.	Fund allocation for Corporate Environment Responsibility (CER) shall be made as per Ministry's O.M. No. 22-65/2017-1A.111dated 1st May, 2018 for various activities therein. The detailed report shall be submitted to this Ministry and its concerned regional office within 3 months.	The cost for Fund allocation for Corporate Environment Responsibility (CER) as per the mentioned notification has been calculated and attached as annexure VIII.
B. General Conditions		
i.	A brief description of the project, project name, nature, size, its importance to the region/state and the country shall be submitted	The details have been shown in section 1.3 at Page No. 1-1 of Chapter 1.
ii.	In case the project involves diversion of forests land, guidelines under OM dated 20.03.2013 shall be followed and necessary action be taken accordingly	The proposal for forest clearance is under process.
iii.	Details of any litigation(s) pending against the project and/or any directions or orders passed by any court of law/any statutory authority against the project to be detailed out	There is no litigation against the project with any court.
iv.	Detailed alignment plan, with details such as nature of terrain (plain, rolling, hilly), land use pattern, habitation, cropping pattern, forest area, environmentally sensitive areas, mangroves, notified industrial areas, sand dunes, sea, rivers, lakes, details of villages, tehsil, districts and states, latitude and longitude for important locations falling on the alignment by employing remote	The nature of the terrain is mostly plain. The land use pattern along the project area has been present in section 4.3.3 at Page No. 4-7 of Chapter 4.

Construction of 4/6 lane Access Control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

	sensing techniques followed by "ground truthing" and also through secondary data sources shall be submitted	
v.	Describe various alternatives considered, procedures and criteria adopted for selection of the final alternative with reasons	The details of the alternatives considered have been presented in Chapter 3 at Page No 3-1.
vi.	Land use map of the study area to a scale of 1: 25,000 based on recent satellite imagery delineating the crop lands (both single and double crop), agricultural plantations, fallow lands, waste lands, water bodies, built-up areas, forest area and other surface features such as railway tracks, ports, airports, roads, and major industries etc. along with detailed ground survey map on 1:2000 scale showing the existing features falling within the right of way namely trees, structures including archaeological & religious, monuments etc. if any, shall be submitted.	The land use map of the study area of 1: 25,000 is shown in Figure 4.1 and the stretch wise land use has been presented from 4.1 (a) to 4.1 (f) at Page No 4-9to 4-15 of Chapter 4. The ground survey map of 1:2000 is enclosed as Annexure II .
vii.	If the proposed route is passing through any hilly area, the measures for ensuring stability of slopes and proposed measures to control soil erosion from embankment shall be examined and submitted.	The proposed expressway lies mostly in plain terrain. The details of the measures for ensuring stability of slopes and to control soil erosion from embankment have been presented in Chapter 2.
viii.	If the proposed route involves tunneling, the details of the tunnel and locations of tunneling with geological structural fraction should be provided. In case the road passes through a flood plain of a river, the details of micro-drainage, flood passages and information on flood periodicity at least of the last 50 years in the area shall be examined and submitted.	There is no provision of tunnel in the proposed expressway. 80 nos. of culverts, 3 nos. of major bridges and 20 nos. minor of bridges are proposed for maintaining the existing drainage pattern. The proposed alignment does not pass through any flood prone area.
ix.	If the project is passing through / located within the notified ecologically sensitive zone (ESZ) around a notified National Park/ Wildlife Sanctuary or in the absence of notified ESZ, within 10 km from the boundary of notified National Park/ Wildlife Sanctuary, the project proponent may simultaneously apply for the clearance for the standing committee of NBWL. The EC for such project would be subject to obtaining the clearance from the standing committee of NBWL.	The proposed alignment does not pass through Wildlife Sanctuary/National Park and its eco sensitive zone.
x.	Study regarding the animal bypasses/underpasses etc. across the habitation areas shall be carried out.	The details of vehicular, light and small vehicular underpasses are presented in section 2.7.5 in Chapter 2.



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

	Adequate cattle pass for the movement of agriculture material shall be provided at the stretches passing through habitation areas. Underpasses shall be provided for the movement of Wild animals.	
xi.	Study regarding in line with the recent guidelines prepared by Wildlife Institute of India for linear infrastructure with strong emphasis on animal movement and identifying crossing areas and mitigation measures to avoid wildlife mortality.	The details have been presented in Section 5.6.4.1 at Page No. 5-21 Chapter 5.
xii.	The information shall be provided about the details of the trees to be cut including their species and whether it also involves any protected or endangered species. Measures taken to reduce the number of the trees to be removed should be explained in detail. The details of compensatory plantation shall be submitted. The possibilities of relocating the existing trees shall be explored.	Out of approx. 15360 trees which are falling in ROW approx. 5909 trees are falling in carriage way which are likely to be impacted. Total impacted trees will be finalized after joint survey with forest and revenue dept. The some of major species are Khejri, Kikkar, Babool, Neem, Sangri, Kikkar etc. The proposed project does not involve the cutting of any endangered species. The details of the compensatory plantation have been covered in EMP.
xiii.	Necessary green belt shall be provided on both sides of the highway with proper central verge and cost provision should be made for regular maintenance.	The green belt Development Plan has been presented in Section 9.6 at Page No. 9-20 of Chapter 9. The cost for regular maintenance has been covered in EMP budget.
xiv.	If the proposed route is passing through a city or town, with houses and human habitation on either side of the road, the necessity for provision of bypasses/ diversions/ under passes shall be examined and submitted. The proposal should also indicate the location of wayside amenities, which should include petrol stations/service centers, rest areas including public conveyance, etc	The alignment of the expressway is proposed in mostly green field and the houses and human habitation are falling away from the alignment.
xv.	Details about measures taken for the pedestrian safety and construction of underpasses and foot-over bridges along with flyovers and interchanges shall be submitted	The proposed expressway is access control for pedestrian. However, footpaths and stairs are proposed at all rail over bridges (ROB). The details have been presented in Chapter 2.
xvi.	The possibility that the proposed project will adversely affect road traffic in the surrounding areas (e.g. by causing increases in traffic congestion and traffic accidents) shall be addressed	The project will enhance traffic movement and the design of the proposed expressway will address safety concerns and reduce accidents.
xvii.	The details of use of fly ash in the road construction, if the project road is located within the 100 km from the Thermal Power Plant shall be examined and submitted.	Fly ash will be used as per MoEFCC notification, 2016. Fly ash is available at JSW Barmer Power Station and Giral Lignite Power Plant which is close to the proposed project

Construction of 4/6 lane Access Control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

		and is located within 300 km. Approx. 3.7 Mcm amount of fly ash is proposed to be used for the construction of the proposed project as per availability.
xviii.	The possibilities of utilizing debris/waste materials available in and around the project area shall be explored	The waste generated during the construction shall be used under subgrade.
xix.	The details on compliance with respect to Research Track Notification of Ministry of Road, Transport and Highways shall be submitted.	Followed the IRC and MoRTH guidelines.
xx.	The details of sand quarry and borrow area as per OM No.2-30/2012-IA-111 dated 18.12.2012 on 'Rationalization of procedure for Environmental Clearance for Highway Projects involving borrow areas for soil and earth" as modified vide OM of even No. dated March 19,2013, shall be examined and submitted.	The details of the sand quarry have been presented in sections 5.4.1.2, 5.4.1.3, and 5.4.1.7 from Page No. 5-5 to Page No. 5-7 of Chapter 5.
xxi.	Climate and meteorology (max and min temperature, relative humidity, rainfall, frequency of tropical cyclones and snow fall); the nearest IMD meteorological station from which climatological data have been obtained to be indicated	The details have been presented in section 4.3.4 of Chapter 4.
xxii.	The air quality monitoring shall be carried out as per the notification issued on 16 th November 2009. Input data used for Noise and Air quality modelling shall be clearly delineated	The air quality monitoring has been carried as per the mentioned notification of MoEF&CC regarding EIA and for the modeling, the details for Air modeling for homogenous sections has been presented in Section 5.4.2.1 of Chapter 5.
xxiii.	The project activities during construction and operation phases, which will affect the noise levels and the potential for increased noise resulting from this project, shall be identified. Discuss the effect of noise levels on nearby habitations during the construction and operational phases of the proposed highway. Identify noise reduction measures and traffic management strategies to be deployed for reducing the negative impact if any. Prediction of noise levels shall be done by using mathematical modeling at different representative locations.	The impact on the noise levels during construction and operation phase has been presented in section 5.5 at page No. 5-12 of Chapter 5. The Noise modeling has been presented in section 5.5.1 from Page No. 5-12 to Page No. 5-16 of Chapter 5.
xxiv.	The impact during construction activities due to generation of fugitive dust from crusher units, air emissions from hot mix plants and vehicles used for transportation of materials and prediction of impact on	The details have been presented in section 5.4 of Chapter 5.

Construction of 4/6 lane Access Control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

	ambient air quality using appropriate mathematical model, description of model, input requirement and reference of derivation, distribution of major pollutants and presentation in tabular form for easy interpretation shall be examined and carried out	
xxv.	The details about the protection to existing habitations from dust, noise, odour etc. during construction stage shall be examined and submitted	The details have been present in Table 5.9 of Chapter 5.10
xxvi.	If the proposed route involves cutting of earth, the details of area to be cut, depth of cut, locations, soil type, volume and quantity of earth and other materials to be removed with location of disposal/ dump sites along with necessary permission	The details have been presented in section 5.4.1.2 to 5.4.1.7 of Chapter 5.
xxvii.	If the proposed route is passing through low lying areas, details of filling materials and initial and final levels after filling above MSL, shall be examined and submitted	Selected borrow pit soil used for embankment fill with slope protection.
xxviii.	The water bodies including the seasonal ones within the corridor of impacts along with their status, volumetric capacity, quality and likely impacts on them due to the project along with the mitigation measures, shall be examined and submitted	The details of all the water bodies within the corridor have been presented in section 4.7 in chapter-4. The mitigation measures have been given in section 5.3 of chapter 5.
xxix.	The details of water quantity required and source of water including water requirement during the construction stage with supporting data and also classification of ground water based on the CGWA classification, shall be examined and submitted	The peak water requirement is 19000 KLD during construction stage and will be extracted from local surface water resources.
xxx.	The details of measures taken during constructions of bridges across rivers/ canals/major or minor drains keeping in view the flooding of the rivers and the life span of the existing bridges shall be examined and submitted. Provision of speed breakers, safety signals, service lanes and foot paths shall be examined at appropriate locations throughout the proposed road to avoid accidents	10 nos of major bridges and 20 nos of minor bridges have been proposed. The details provision of speed breakers, safety signals, service lanes and foot paths to avoid accidents has been presented in chapter 2. Provision of diversions with direction signs and other safety requirements followed as per IRC & MoRTH guidelines.
xxxi.	If there will be any change in the drainage pattern after the proposed activity, details of changes shall be examined and submitted	The details have been given in section 5.3 of chapter-5.
xxxii.	Rain water harvesting pit shall be at least 3 - 5 m above the highest ground water table.	Rainwater harvesting shall be proposed as per IRC-SP-58 and the details has been

Construction of 4/6 lane Access Control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

	Provisions shall be made for oil and grease removal from surface runoff.	presented in section 5.3.3 of Chapter 5.
xxiii.	If there is a possibility that the construction/widening of road may cause an impact such as destruction of forest, poaching or reduction in wetland areas, examine the impact and submit details	The impact on the Flora, Fauna and Ecosystem due to the construction of the expressway and its mitigation measures has been presented in section 5.6 of Chapter 5.
xxiv.	The details of road safety, signage, service roads, vehicular under passes, accident prone zones and the mitigation measures, shall be submitted	The proposed expressway is access control. However, provision of diversions with direction signs, speed breakers and other safety requirements followed as per IRC & MoRTH guidelines.
xxv.	IRC guidelines shall be followed for widening & up gradation of roads	Complied.
xxvi.	The details of social impact assessment due to the proposed construction of the road, shall be submitted	The details of the Social Impact Assessment have been presented in section 7.4 of Chapter 7
xxvii.	Examine the road design standards, safety equipment specifications and Management System training to ensure that design details take account of safety concerns and submit the traffic management plan	All relevant guideline has been followed for designing the expressway as per traffic, pedestrian and accident safety. The details of the traffic Management plan has been presented in Section 2.6 of Chapter 2.
xxviii.	Accident data and geographic distribution shall be reviewed and analyzed to predict and identify trends - in case of expansion of the existing highway and provide Post accident emergency assistance and medical care to accident victims	Proposed expressway is mostly green field. However, provision for accident emergency assistance and medical care to accident victims has been considered as road safety measures.
xxix.	If the proposed project involves any land reclamation, details shall be provided of the activity for which land is to be reclaimed and the area of land to be reclaimed	The proposed project does not involve any land reclamation.
xl.	Details of the properties, houses, business activities etc. likely to be affected by land acquisition and an estimation of their financial losses, shall be submitted	The details have been presented in section 7.5.1 of Chapter 7
xli.	Detailed R&R plan with data on the existing socio-economic status of the population in the study area and broad plan for resettlement of the displaced population, site for the resettlement colony, alternative livelihood concerns/employment and rehabilitation of the displaced people, civil and housing amenities being offered, etc and the schedule of the implementation of the specific project, shall be submitted.	The details of the socio-economic profile of the study area have been presented in section 4.9 of Chapter 4. The R&R plan & policy has been presented in section 7.10 at Page No. 7-35 Chapter 7
xlii.	The environment management and monitoring plan for construction and operation phases of the project shall be	The cost of the environmental management plan has been presented in Table 9.5 of Chapter 9.

Construction of 4/6 lane Access Control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

	submitted. A copy of your corporate policy on environment management and sustainable development shall also be submitted.	
xliii.	Estimated cost of the project including that of environment management plan (both capital and recurring) and source of funding. Also, the mode of execution of the project, viz, EPC, BOT, etc, shall be submitted.	The Environment Management Plan Budget has been given in section 9.7 of chapter 9 and Total civil cost of the project is given in section 2.10 of chapter 2. The mode of execution of the project is EPC Model.
xliv.	A copy of your CSR policy and plan for meeting the expenditure to address the issues raised during Public Hearing, shall be submitted.	There is no provision of CSR as per NHAI Laws and Regulations.
xliv.	Details of blasting if any, methodology/technique adopted, applicable regulations/permissions, timing of blasting, mitigation measures proposed keeping in view mating season of wildlife.	There is no blasting required for this project. The conservation and mitigation measures for wildlife have been present at section 5.6.4 at Page No. 5-18 to Page No. 5-25 of Chapter 5.
xlvi.	In case of river/ creek crossing, details of the proposed bridges connecting on either bank, the design and traffic circulation at this junction with simulation studies	The details have been presented in Chapter 2.
xlvi.	Details to ensure free flow of water in case the alignment passes through water bodies/river/streams etc.	The proposed project shall provide bridges over the water bodies. The details of water bodies within RoW have been given section 4.7 of chapter 4.
xlviii.	In case of bye passes, the details of access control from the nearby habitation/habitation which may come up after the establishment of road.	Proposed expressway is access control and bypassing all major habitations between Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore).
xlix.	Bridge design in eco sensitive area /mountains be examined keeping in view the rock classification hydrology etc	The proposed project does not pass through the eco sensitive zone/mountain
i.	Details of litigation pending against the project, if any, with direction/order passed by any Court of Law against the Project should be given.	There is no litigation pending against the project in any court.
ii.	The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out	The cost of the project has been presented in section 2.10 of Chapter 2 and environmental management plan Budget has been presented in Table 9.7 of Chapter 9.
iii.	In case of alignment passing through coastal zones, following documents are required to furnished along with EIA/EMP report: a. HTLILTL map prepared by authorized agencies superimposed with alignment and recommendation of Coastal Zone Management	The proposed project does not pass through the coastal zones.

Construction of 4/6 lane Access Control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

	Authority. b. Details of CRZ-I (I) areas, mangroves required to be removed for the project along with the compensatory afforestation, area and location with budget. c. Details of road on stilt in CRZ-I areas, design details to ensure free tidal flow. d. Details of Labour camps, machinery location	
liii.	Any further clarification on carrying out the above studies including anticipated impacts due to the project and mitigative measure, project proponent can refer to the model ToR available on Ministry website "http://moef.nic.in/Manual/Highways".	Complied.

CHAPTER -2

(PROJECT DESCRIPTION)



CHAPTER-2: PROJECT DESCRIPTION

2.1 INTRODUCTION

The Ministry of Road Transport and Highways (MoRTH), a Ministry of the Government of India, is the apex body for formulation and administration of the rules, regulations and laws relating to road transport and transport research, in order to increase the mobility and efficiency of the road transport system in India.

The Ministry of Road Transport and Highways (MoRTH) / National Highways Authority of India (NHAI) have decided to develop new national highways with access control, Inter Corridors and Feeder Routes to improve the efficiency of freight movement in India under Bharatmala Pariyojana. The proposed highway is planned to connect Amritsar from Jamnagar which is passing through four states i.e. Punjab, Haryana, Rajasthan and Gujarat.

Proposed project expressway is mostly Green field alignment project and proposed for 4/6 lane expressway. The proposed expressway starts from design Ch. -1+142 from NH125 near existing km 52+000 between Dhandhaniya Sasan and Agolai towns (Jodhpur district) and ends at Rajasthan-Gujarat Border (Design Ch.207+100) near Sanchore (District-Jalore) in the state of Rajasthan. The alignment falls in the semi – deserted region of Rajasthan with major part of agricultural and barren lands with major undulations. The proposed access controlled expressway project has been envisaged through an area which shall have the advantage of simultaneous development as well as shall result in a shorter distance to travel. The Project falls under category ‘A’ as per the MoEF&CC Notification dated Sep. 14, 2006 and its subsequent amendments.

2.2 NEED OF THE PROJECT & BRIEF ABOUT THE PROJECT

2.2.1 Need of the Project

The proposed expressway is part of an exclusive transport corridor being planned between Punjab and Gujarat by Government of India. The proposed access controlled expressway project with new alignment has been envisaged through an area which shall have the advantage of simultaneous development as well as shall result in a shorter distance to travel. The proposed expressway would act as the prime artery for the economic flow to this region. It will enhance economic development, provide employment opportunities to locals, strengthen tourist development, ensure road safety, and provide better transportation facilities and other facilities such as way side amenities. Vehicle operating cost will also be reduced due to improved road quality.

The brief about the project has been presented in **Table 2.1**.

2.2.2 Proposed Pavement & Overlay

The expressway is designed by both flexible and concrete pavement options. The flexible pavement is adopted for proposed ramp roads and slip roads – 20 years Design in accordance with IRC:37-2012. Rigid Pavement is designed for New Construction of Expressway for 30 years design life with granular sub-base (GSB), base as DLC and PQC Slab (M-40 grade PCC) in accordance with IRC:58-2015 or granular layers and bituminous surfacing (VG-40 bitumen) - 20 years Design in accordance with IRC:37-2012.



2.2.3 Traffic Control, Road Marking, Traffic Signs and Safety Measures

Indian Road Congress (IRC) codes are followed in proposing and designing road safety features. Pavement markings are done for traffic lane line, edge lines and hatching. The marking shall be with hot applied thermoplastics materials. The pavement markings shall be reinforced with raised RR pavement markers and shall be provided for median and shoulder edge longitudinal lines and hatch markings. Highway lightings including high masts shall be provided at intersections in order to improve the night time visibility. All the urban locations as well grade separated structure locations shall be provided lighting arrangements.

2.2.4 Proposal for Truck Lay byes/Parking cum Rest Area

As per the detailed field surveys and reconnaissance, truck lay byes and bus stop have been proposed. The rest area will provide common facilities like petrol pump, first aid medical facilities, police office, restaurant and vehicle parking etc. For petrol pump, the guidelines issued by OISD of Ministry of Petroleum shall be followed. The facilities shall be planned at approximately 50 km interval.

2.2.5 Toll Plazas and Weighing Stations

The DPR Consultant has proposed 9 ramp toll plazas (4 Nos at each interchange except at 2 locations on Ch. 0+000 & 42+877 where only 2nos of toll is proposed on entry and exit) are proposed at interchanges of the expressway. The details of Toll Plaza are given in Table 2.1 below.

Table 2.1: Details of Toll Plaza

Chainage	Location	Direction (Entry: to highway, Exit: from Highway)	Minimum No. of toll lanes (Normal + ETC + Extra Wide)
0+000	At NH-125 on Dhandniya Sasan - Agolai Double Trumpet	Exit	2+1+1
		Entry	2+1+1
19+713	At MDR-21 on Meghawas - Madli Dumbbell interchange	Exit	2+1+1
		Entry	2+1+1
		Exit	2+1+1
		Entry	2+1+1
42+877	At NH-25 on Patau - SarawadiPurohitan Double Trumpet	Exit	2+1+1
		Entry	2+1+1
75+458	At NH-325 on Balotra - Muthli Dumbbell interchange	Exit	2+1+1
		Entry	2+1+1
		Exit	2+1+1
		Entry	2+1+1
115+444	At SH-16 on	Exit	2+1+1



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

Chainage	Location	Direction (Entry: to highway, Exit: from Highway)	Minimum No. of toll lanes (Normal + ETC + Extra Wide)
	Sirana - Jeewana Dumbbell interchange	Entry	2+1+1
		Exit	2+1+1
		Entry	2+1+1
136+785	At MDR-16 on Bagoda - Harmoo Dumbbell interchange	Exit	2+1+1
		Entry	2+1+1
		Exit	2+1+1
		Entry	2+1+1
166+773	On Deora - BijrolKhera Dumbbell interchange	Exit	2+1+1
		Entry	2+1+1
		Exit	2+1+1
		Entry	2+1+1
193+244	At SH-11 on Sanchore - Hadetar Dumbbell interchange	Exit	2+1+1
		Entry	2+1+1
		Exit	2+1+1
		Entry	2+1+1
200+585	At NH-68 on Sanchore – Gardali Dumbbell interchange	Exit	2+1+1
		Entry	2+1+1
		Exit	2+1+1
		Entry	2+1+1

Weighing stations shall be located near toll plazas so that overloaded vehicles can be easily identified and suitably penalized / unloaded before being allowed to proceed further. The type of weighing system suitable for the project shall be brought out giving merits of each type of the state-of-the art and basis of recommendations for the chosen system.

2.2.6 Standards and Specifications Adopted

Geometric design standards are adopted as per requirement. The proposed expressway lies in mostly plain area with minor undulation terrain. The geometric design is prepared based on **IRC: SP: 99-2013**.

“Manual of Specifications and Standards for Expressways” besides adopting relevant standards from IRC: SP:23 - Vertical Curves for Highways, IRC:38 - Guidelines for Design of Horizontal Curves for Highways and Design Tables and IRC:73-Geometric Design Standard of Rural (Non-Urban) Highway.

Following is the list of IRC standards which are followed:

- IRC: SP:99-2013- Manual of Specifications and Standards for Expressways
- IRC:35-2015- Code of Practice for Road Markings (Second Revision)



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

- IRC:67-2012- Code of Practice for Road Signs (Third Revision)
- IRC:79-1981- Recommended Practice for Road delineators
- IRC:93-1985- Guidelines on Design and Installation of Road Traffic Signals
- IRC: SP:37-2010- Guidelines for Evaluation of Load Carrying Capacity of Bridges (First Revision)
- IRC:37-2012- Guidelines for the Design of Flexible Pavements
- IRC:102-1988- Traffic Studies for Planning Bypasses Around Towns
- IRC:56-2011- Recommended Practices for Treatment of Embankment and Roadside Slopes for Erosion Control (First Revision)
- IRC:73-1980 - Geometric Design Standards for Rural (Non-Urban) Highways
- IRC:106-1990- Guidelines for Capacity of Urban Roads in Plain Areas
- IRC:64-1990- Guidelines for Capacity of Roads in Rural Areas (First Revision)
- IRC: 38:1988- Guidelines for Design of Horizontal Curves for Highways and Design Tables (First Revision)
- IRC: SP:23-1983- Vertical Curves for Highways

2.2.7 Geometric Design Standards for 6-lane Expressway

2.2.7.1 General

The design of the road geometry for the assigned project shall cover the following main principles, which form the basis of desirable standard of highway design.

- Road safety and the smooth flow of traffic are of prime concern in the design. The selection of optimum design standards reduces the possibility of undesirability of the facility to be provided.
- Both horizontal and vertical geometry shall be accorded due importance as per selected standards. It shall not be compromised unless it becomes formidable to accept for the particular situation.
- Consistent Design shall be adopted and abrupt changes in the design speed to be avoided.
- The proposed design will minimise the total transportation cost, including initial construction costs, costs for the maintenance of the facility and the costs borne by the road users.
“Ruling” standards are adopted and “Minimum” standards are allowed only where serious restrictions are imposed by technical or economic considerations.

2.2.7.2 Warrant for 4/6 Laning

Rural expressways shall be designed for Level of Service-B for the purpose of design and future augmentation of the Project Expressway. The design service volume for level of service- B for plain/rolling terrain shall be 1300 PCU/hr/lane. The design service volume can be determined as per MORTH Guidelines for Expressways. The design service volume per day depends on the peak hour flow and is presented in **Table 2.2**.

Table 2.2: Design Service Volume for Expressway in Plain & Rolling Terrain (in PCUs per day for LOS B

Design Service Volume in PCUs per day for LOS B	
4-lane	6-lane



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

86,000 for Peak hour flow (6%)	1,30,000 for Peak hour flow (6%)
65,000 for Peak hour flow (8%)	98,000 for Peak hour flow (8%)

2.3 LAND REQUIREMENT FOR THE PROPOSED PROJECT

The proposed RoW is 70m. The total land requirement for the project is 1730.16 ha. out of which 1641.441* ha is private and 75.50* ha is government land and 13.219* is Govt. land. Most of the private land is agricultural.

2.4 WATER REQUIREMENT FOR THE PROPOSED PROJECT

The peak water requirement for the project will be 19000 KLD during construction stage. The water requirement shall be extracted from local surface water/ground water sources after taking necessary permission. The breakup of the water requirement has been presented in Table 2.3.

Table 2.3: Water requirement for the Project

Purpose	Peak (KLD)	Source
Road making	15,200	Local Surface Water Resources/Ground Water Source
Dust suppression	3200	
Others (including drinking and domestic purposes)	600	
Total	19000	

2.5 TRAFFIC SURVEY AND ANALYSIS

2.5.1 General

Traffic surveys have been carried out on the project road in order to identify present and likely future traffic scenarios so as to propose suitable measures and to evolve appropriate design methods. The primary objectives of these traffic surveys are to establish and assess the characteristics of traffic movement on the project road, pavement design, capacity augmentation proposals, junction improvement etc.

2.5.2 Objectives of Traffic Study

The objective of traffic study is to provide basic input for the following part:

- Finding out the present level of traffic flow and its various characteristics (through Classified Traffic Volume Count)
- Capacity assessment based on demand forecasting for next 30 years.
- Identifications of zone of influence of the project stretch as per O-D Survey and Commodity Movement Characteristics survey.
- Axle Load Survey to determine the Vehicle Damage Factor (V.D.F) as input to design.
- Provision of service road to ascertain the need of segregation of local traffic in congested areas on the basis of traffic data.
- Pavement design.
- Signal design.
- Deriving Growth Factor for Traffic demand Forecasting
- Location and sizing of truck terminal.



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

- Study of possible location & design of toll plaza.
- Development of wayside amenities.
- Deriving EIRR / Cost Benefit and Sensitivity Analysis.
- Environmental Impact Assessment and deciding mitigation measures.
- Investment Appraisal.

2.5.3 Homogeneous Section

The 208.242 kms long project road is divided into eight Homogeneous sections [HS]. The start & end km, length of HS in each is as below.

Table 2.4: Details of Homogenous Section

Sr. No.	Section		Proposed Length (km)	Homogeneous Section	Start at	End at
	From (km.)	To (km.)				
1	-1.142	21.000	22.142	HS 1	Near Dhandniya Sasan	Near Baniyawas
2	21.000	48.000	27.000	HS 2	Near Baniyawas	Near Patau Khurd
3	48.000	72.000	24.000	HS 3	Near Patau Khurd	Near Asotra
4	72.000	97.000	25.000	HS 4	Near Asotra	Near Mithura
5	97.000	125.000	28.000	HS 5	Near Mithura	Near Alwara
6	125.000	150.000	25.000	HS 6	Near Alwara	Near Gaonri
7	150.000	180.000	30.000	HS 7	Near Gaonri	Near Hariyali
8	180.000	207.100	27.100	HS 8	Near Hariyali	RJ/GJ Border (Near Bantara)
	Total (Km.)		208.242			

2.5.4 Traffic Survey Locations & Schedule

Classified traffic volume count shall be carried out using ATCC systems or equivalent technologies for 7 days (continuous, direction-wise) at the selected survey stations.

Table 2.5: Traffic Count Locations

Sr. No	Type of Survey	Location		Remarks
1	Classified Traffic Volume Count	52+000	Deogarh	NH-125
		128+000	Kelankot	SH-28
		177+000	Balotra	SH-28
		208+000	Bhukan	SH-28
		283+600	Sanchore	SH-28
		115+200	Patau	NH-25
		25+000	Muthali	NH-325
		52+000	Deogarh	NH-125
		128+000	Kelankot	SH-28

Construction of 4/6 lane Access Control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchore (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

2	Axle Load Survey	177+000	Balotra	SH-28
		208+000	Bhukan	SH-28
		283+600	Sanchore	SH-28
		115+200	Patau	NH-25
		25+000	Muthali	NH-325
3	O-D Survey	52+000	Deogarh	NH-125
		128+000	Kelankot	SH-28
		177+000	Balotra	SH-28
		208+000	Bhukan	SH-28
		283+600	Sanchore	SH-28
		115+200	Patau	NH-25
		25+000	Muthali	NH-325



Figure 2.1: Traffic Location Plan (TVC, Axle Load Survey & O-D Survey)

2.5.5 Vehicle Classification System

The vehicle classification used in the survey along with their PCU values, as suggested in IRC: 64 – 1990, are presented in the following **Table 2.6**.



Table 2.6: Vehicle Classification and PCU Factors

Vehicle Type	PCU Factor	Vehicle Type	PCU Factor
Fast Moving Vehicle (FMV)		Slow Moving Vehicle (SMV)	
Two Wheeler	0.5	Cycle	0.5
Three Wheeler	1.0	Cycle Rickshaw	2.0
Car/ Jeep/ Van/ Taxi	1.0	Bullock Cart	8.0
Mini Bus	1.5	Horse Drawn Cart	4.0
Full Bus	3.0	Cycle	0.5
LCV	1.5	Cycle Rickshaw	2.0
2-Axle Truck	3.0		
3-Axle Truck	4.5		
Article/ Semi Artic Truck	4.5		
Tractor with Trailer	4.5		
Tractor without Trailer	1.5		

2.5.6 Traffic Analysis

The traffic volume data collected at the selected location (for seven continuous days) was averaged out to arrive at the average daily traffic (ADT) on the project road. Table given below shows day wise variation of total traffic at all locations. The summary of ADT in terms of no. of vehicles and PCU are given in following Tables and Total Tollable traffic in terms of ADT is also given for CH 52+000, CH 128+000, CH 177+000, CH 208+000, CH 283+600, CH 115+200, CH 25+000 Trafficcounts.

➤ Average Daily Traffic (ADT)

The Summary of Average Daily Traffic in Vehicles and PCU are presented in below table.

Construction of 4/6 lane Access Control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

Table 2.7: Summary of Average Daily Traffic

ADT	(NH-125)		(SH-28)		(NH-25)		(NH-325)		(SH-28)		(SH-28)		(SH-28)	
Type of Vehicle	52+000 (ADT)		128+000 (ADT)		115+200 (ADT)		25+000 (ADT)		177+000 (ADT)		208+000 (ADT)		283+600 (ADT)	
	Number	PCU	Number	PCU	Number	PCU	Number	PCU	Number	PCU	Number	PCU	Number	PCU
Car, jeep & van	2079	2079	453	453	1699	1699	1144	1144	1484	1484	798	798	651	651
Taxi (Yellow board)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Shared Taxi/Chakda	4	4	0	0	7	7	5	5	9	9	1	1	2	2
Mini Bus	21	31	2	3	14	22	16	24	9	14	5	7	10	15
School/ Institution Bus	2	2	0	0	3	4	0	0	0	0	0	1	0	0
Bus (Govt)	80	239	19	56	49	147	41	122	33	99	21	63	9	27
Bus (Pvt)	153	459	22	65	42	126	44	132	88	265	55	164	69	206
3 Axle Buses(Govt & Pvt)	1	2	0	1	0	1	1	3	0	0	0	1	0	0
LMV	453	453	102	102	200	200	182	182	297	297	152	152	132	132
LCV (4 Wheels)	16	16	5	5	33	33	5	5	6	6	1	1	1	1
LCV (6 Wheels)	59	89	32	48	84	127	15	23	76	114	46	69	46	68
2 Axle	168	503	103	310	172	516	38	114	156	468	88	264	57	170
3 Axle	90	270	115	344	199	596	52	157	232	696	147	442	148	443
MAV (4 to 6 Axles)	111	500	1122	5050	1014	4565	35	158	2118	9530	2081	9364	2323	10452
MAV (7++ Axles)	0	0	0	0	0	0	0	1	0	0	0	0	0	0
JCB/HCM	1	3	0	1	0	1	0	1	1	5	0	0	0	1
Auto (Goods)	5	5	2	2	2	2	10	10	9	9	2	2	2	2
Auto (Passenger)	44	44	6	6	9	9	73	73	139	139	23	23	13	13
2 wheeler	1184	592	296	148	342	171	1162	581	2529	1265	670	335	418	209
Without Trailer	7	10	4	6	3	5	2	3	10	15	3	4	3	5

Construction of 4/6 lane Access Control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

ADT	(NH-125)		(SH-28)		(NH-25)		(NH-325)		(SH-28)		(SH-28)		(SH-28)	
Type of Vehicle	52+000 (ADT)		128+000 (ADT)		115+200 (ADT)		25+000 (ADT)		177+000 (ADT)		208+000 (ADT)		283+600 (ADT)	
	Number	PCU	Number	PCU	Number	PCU	Number	PCU	Number	PCU	Number	PCU	Number	PCU
With Trailer	48	217	18	80	4	17	17	75	96	432	17	77	21	96
Cycle	4	2	0	0	1	1	1	0	4	2	2	1	0	0
Cycle Rickshaw	0	0	0	0	0	0	0	0	1	1	0	0	0	0
Animal Drawn	2	15	0	0	0	1	0	1	3	21	2	13	0	0
Car	1	1	0	0	1	1	1	1	1	1	0	0	0	0
Mini Bus	4	7	0	0	1	2	2	3	0	0	0	0	1	1
Bus	1	2	0	0	0	0	0	0	0	1	0	0	0	0
LCV	4	6	0	0	0	0	0	0	0	0	0	0	0	0
Truck	31	94	0	0	1	2	0	0	0	0	0	1	0	0
Total Passenger Vehicles	3567	3452	798	733	2165	2186	2485	2083	4292	3275	1574	1393	1171	1123
Total Goods Vehicles	903	1838	1481	5862	1704	6039	338	650	2895	11125	2516	10293	2708	11269
Total Slow Moving Vehicles	61	244	22	85	8	23	19	79	113	471	23	95	25	101
Total Toll Exempted Vehicles	42	110	0	1	3	5	3	4	1	2	1	2	1	2
Total Vehicles	4572	5644	2301	6680	3880	8253	2845	2816	7302	14874	4114	11783	3905	12495



➤ Daily Variation of Traffic

The location wise daily variation of traffic both in terms of total vehicles & PCU is presented in Fig. 2.2 to 2.8 below.

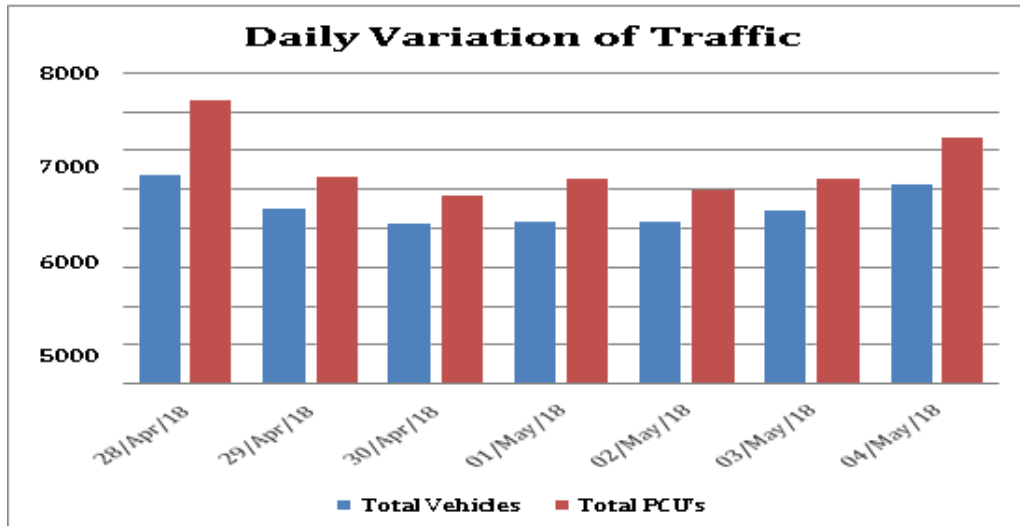


Figure 2.2: Daily Variation of Traffic in Vehicles & PCU at 52+000 KM

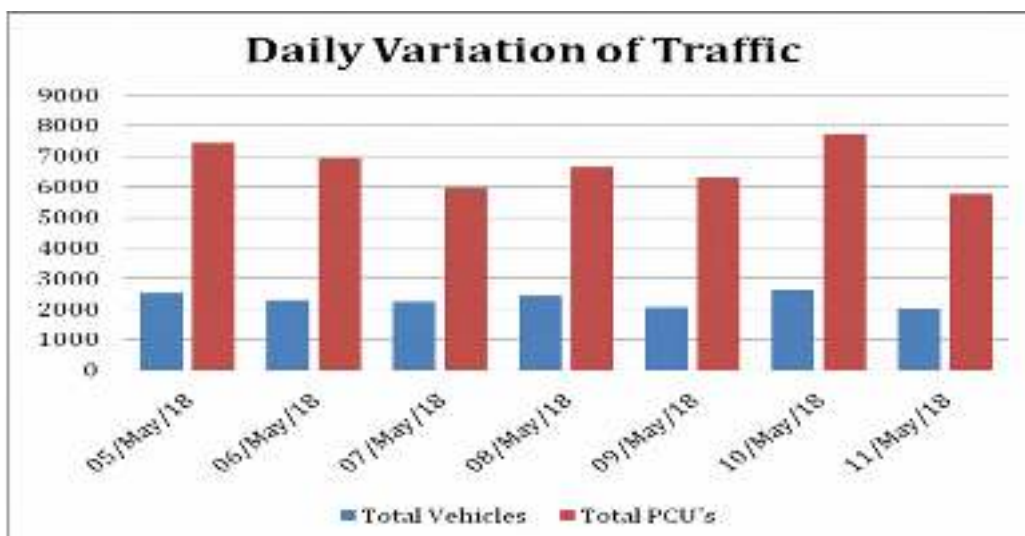


Figure 2.3: Daily Variation of Traffic in Vehicles & PCU at 128+000 KM



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

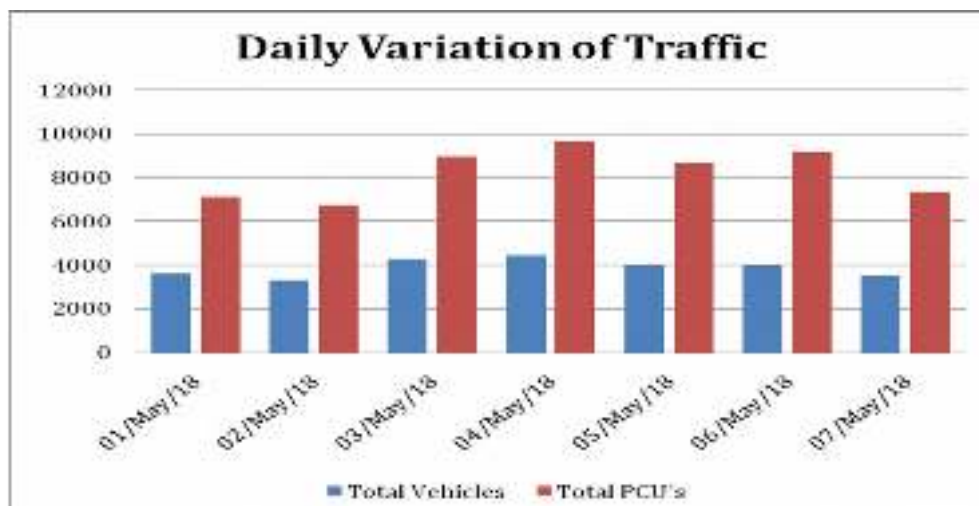


Figure 2.4: Daily Variation of Traffic in Vehicles & PCU at 115+200 KM

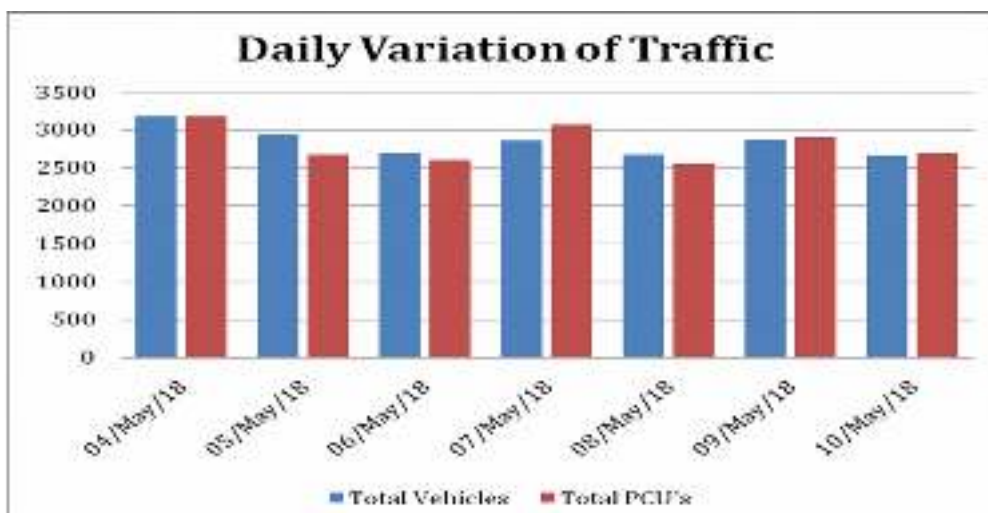


Figure 2.5: Daily Variation of Traffic in Vehicles & PCU at 25+000 KM

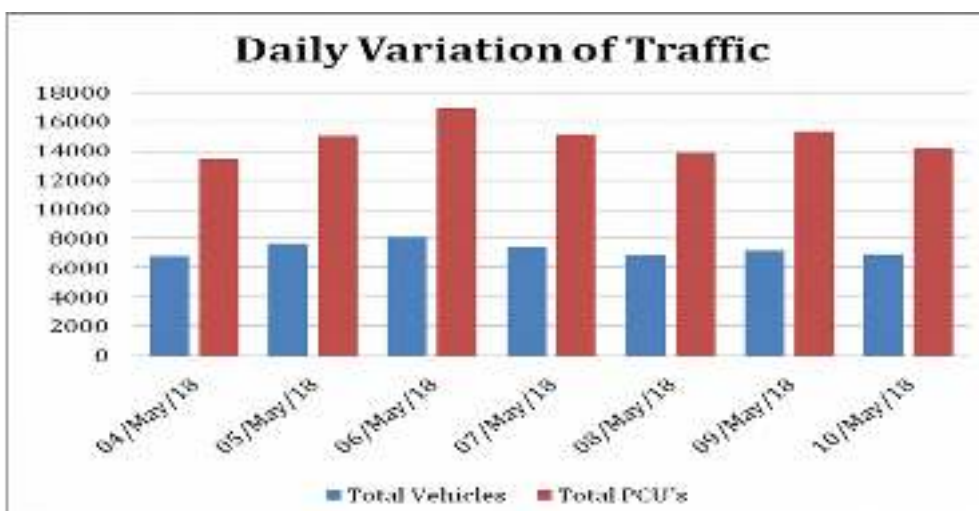


Figure 2.6: Daily Variation of Traffic in Vehicles & PCU at 177+000 KM



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

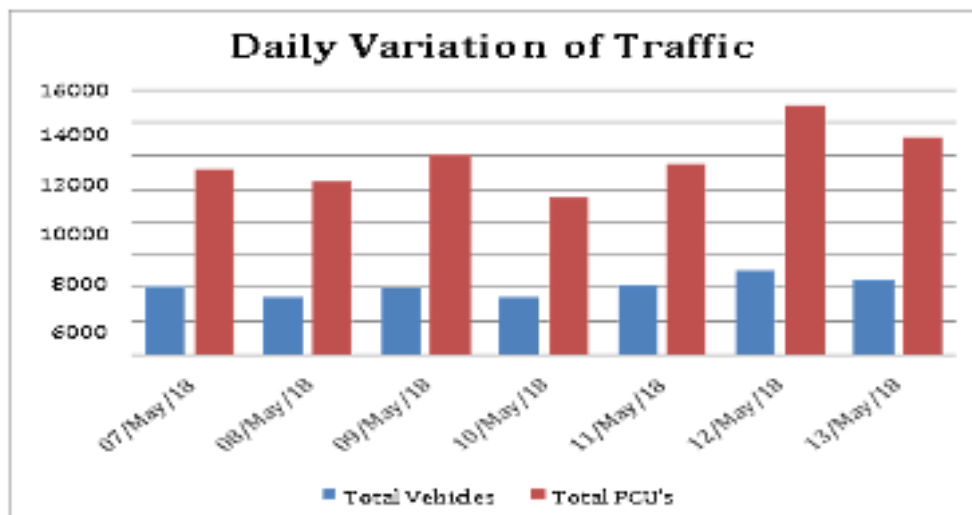


Figure 2.7: Daily Variation of Traffic in Vehicles & PCU at 208+000 KM

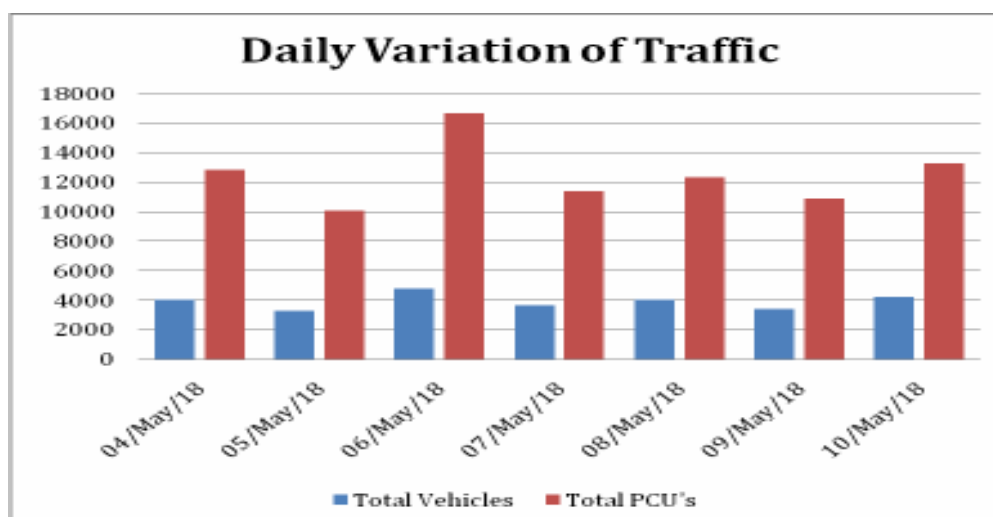


Figure 2.8: Daily Variation of Traffic in Vehicles & PCU at 283+600 KM

➤ **Composition of traffic**

Analysis was carried out to find the composition of traffic in terms of fast and slow moving traffic and in terms of various types of vehicles. The observed vehicular compositions are shown in figure 2.8 to Table 2.14 below.

Construction of 4/6 lane Access Control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchores (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

Table 2.8: Summary of Composition of Traffic in %

Type of Vehicle	52+000 KM		128+000 KM		115+200 KM		25+000 KM		177+000 KM		208+000 KM		283+600 KM	
	Number	PCU	Number	PCU	Number	PCU	Number	PCU	Number	PCU	Number	PCU	Number	PCU
Two Wheeler	25.90	10.49	12.87	2.22	8.82	2.07	40.85	20.64	34.64	8.50	16.30	2.85	10.69	1.67
Auto Passenger	0.97	0.78	0.27	0.09	0.24	0.11	2.55	2.58	1.90	0.93	0.56	0.20	0.33	0.10
Car / Jeep / Van/Taxi	45.56	36.91	19.68	6.78	43.95	20.67	40.39	40.81	20.45	10.04	19.41	6.78	16.72	5.23
Buses	5.59	12.99	1.86	1.88	2.80	3.64	3.56	9.95	1.79	2.54	1.98	2.01	2.25	1.99
Goods Vehicles	19.73	32.52	64.35	87.73	43.90	73.16	11.87	23.07	39.64	74.77	61.17	87.36	69.34	90.18
HCM/EME	0.01	0.05	0.01	0.02	0.01	0.02	0.01	0.02	0.01	0.03	0.00	0.00	0.00	0.01
Tractors & Trailers	1.20	4.02	0.93	1.28	0.17	0.26	0.65	2.75	1.45	3.00	0.48	0.69	0.63	0.81
Non-Motorized Vehicles	0.13	0.30	0.01	0.00	0.03	0.02	0.03	0.05	0.10	0.16	0.08	0.11	0.00	0.00
Toll Exempted Vehicles	0.92	1.95	0.02	0.01	0.08	0.06	0.10	0.14	0.02	0.02	0.02	0.01	0.04	0.02
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

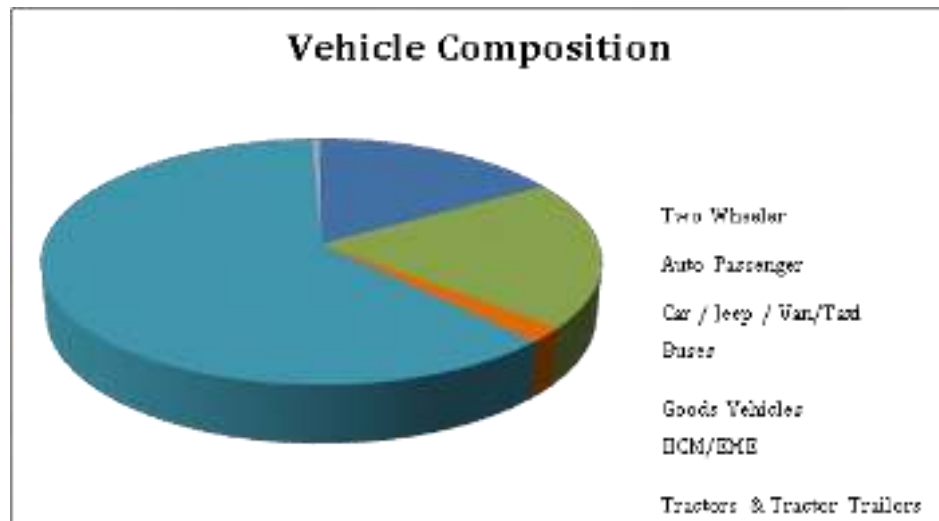


Figure 2.8: Traffic Composition at 52+000 KM

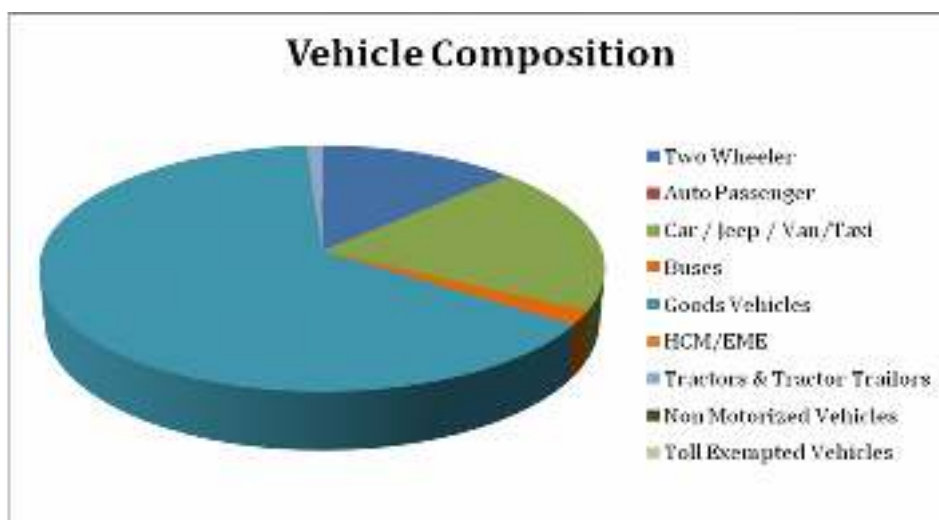


Figure 2.9: Traffic Composition at 128+000 KM

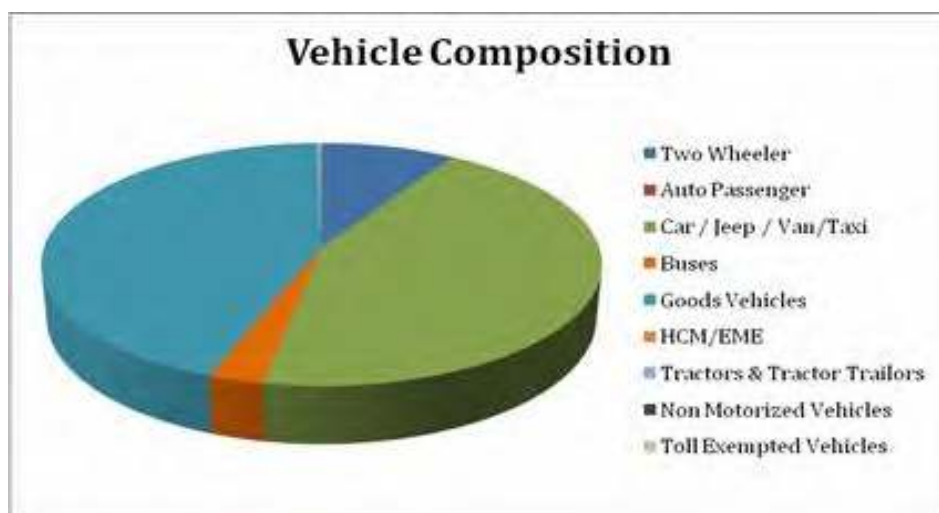


Figure 2.10: Traffic Composition at 115+200 KM



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

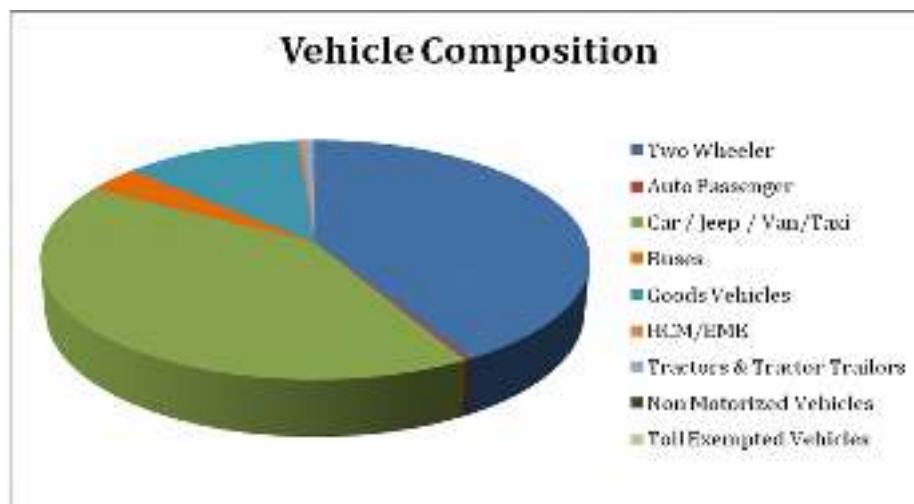


Figure 2.11: Traffic Composition at 25+000 KM

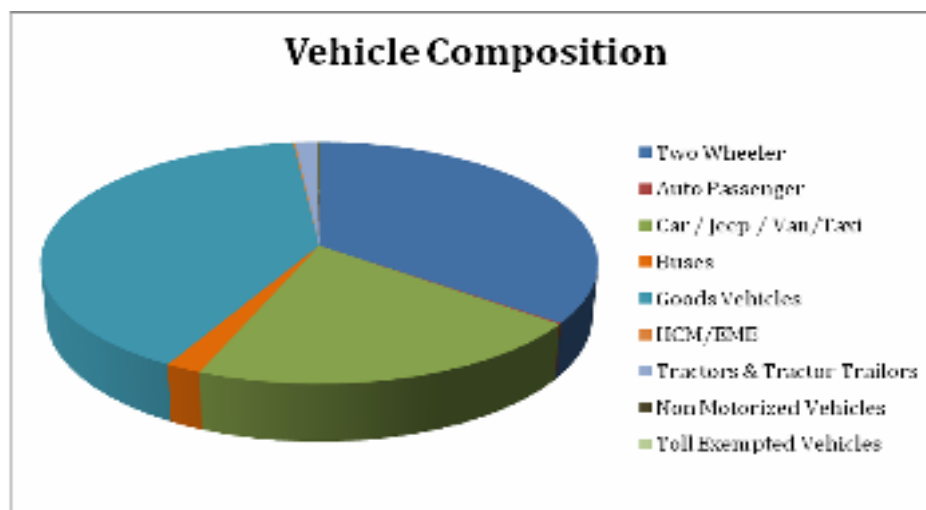


Figure 2.12: Traffic Composition at 177+000 KM

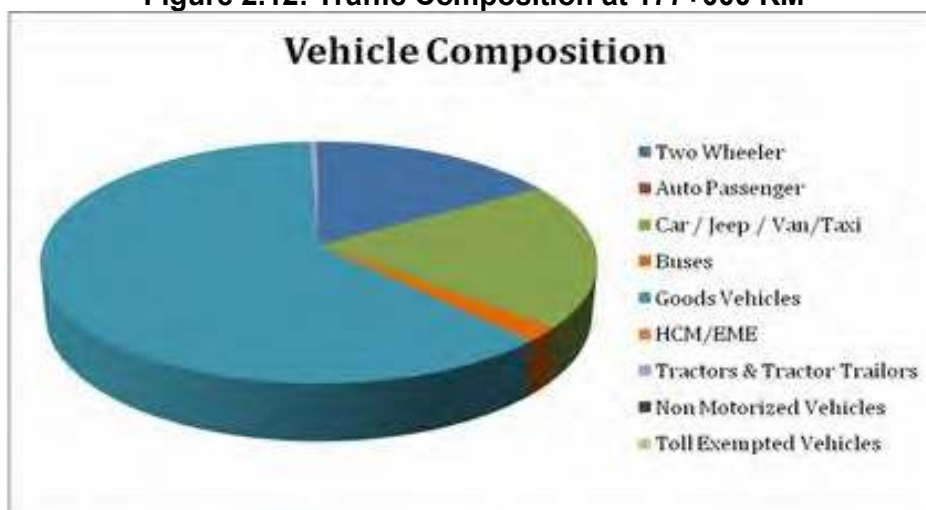


Figure 2.13: Traffic Composition at 208+000 KM

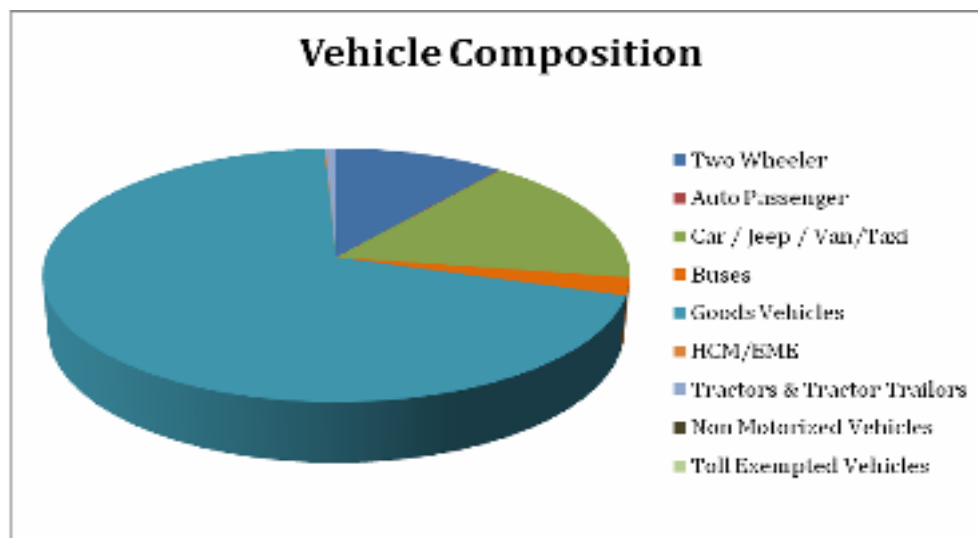


Figure 2.14: Traffic Composition at 283+000 KM

2.5.7 Annual Average Daily Traffic (AADT)

The traffic plying on any road generally varies over different periods of the year depending on the cycle of different socio-economic activities in the regions through which it generates or terminates. Therefore, in order to have a more realistic picture of the traffic on the project road, it is required to assess its seasonal variation to estimate the annual average daily traffic (AADT). As per Clause 6.2 IRC SP: 19:2001, the ADT (Average Daily Traffic) shall be converted into AADT (Annual Average Daily Traffic) applying seasonal correction factor. The ADT observed during the survey duration is multiplied by a seasonal correction factor (SCF) to derive an AADT. The seasonal correction factor is generally derived from secondary data sources such as sales of fuel at different filling stations along the project highway etc.

For the project road under consideration, the seasonal correction factor is adopted as 1.00 as per calculation, to assess AADT & the Table 2.9 below shows summary of AADT for the project road.



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

Table 2.9: The Summary of Average Annual Daily Traffic

ADT	(NH-125)		(SH-28)		(NH-25)		(NH-325)		(SH-28)		(SH-28)		(SH-28)	
Type of Vehicle	52+000 (ADT)		128+000 (ADT)		115+200 (ADT)		25+000 (ADT)		177+000 (ADT)		208+000 (ADT)		283+600 (ADT)	
	Number	PCU	Number	PCU	Number	PCU	Number	PCU	Number	PCU	Number	PCU	Number	PCU
Car, jeep & van	2079	2079	453	453	1699	1699	1144	1144	1484	1484	798	798	651	651
Taxi (Yellow board)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Shared Taxi/Chakda	4	4	0	0	7	7	5	5	9	9	1	1	2	2
Mini Bus	21	31	2	3	14	22	16	24	9	14	5	7	10	15
School/ Institution Bus	2	2	0	0	3	4	0	0	0	0	0	1	0	0
Bus (Govt)	80	239	19	56	49	147	41	122	33	99	21	63	9	27
Bus (Pvt)	153	459	22	65	42	126	44	132	88	265	55	164	69	206
3 Axle Buses(Govt & Pvt)	1	2	0	1	0	1	1	3	0	0	0	1	0	0
LMV	453	453	102	102	200	200	182	182	297	297	152	152	132	132
LCV (4 Wheels)	16	16	5	5	33	33	5	5	6	6	1	1	1	1
LCV (6 Wheels)	59	89	32	48	84	127	15	23	76	114	46	69	46	68
2 Axle	168	503	103	310	172	516	38	114	156	468	88	264	57	170
3 Axle	90	270	115	344	199	596	52	157	232	696	147	442	148	443
MAV (4 to 6 Axles)	111	500	1122	5050	1014	4565	35	158	2118	9530	2081	9364	2323	10452
MAV (7++ Axles)	0	0	0	0	0	0	0	1	0	0	0	0	0	0
JCB/HCM	1	3	0	1	0	1	0	1	1	5	0	0	0	1
Auto (Goods)	5	5	2	2	2	2	10	10	9	9	2	2	2	2
Auto (Passenger)	44	44	6	6	9	9	73	73	139	139	23	23	13	13
2 wheeler	1184	592	296	148	342	171	1162	581	2529	1265	670	335	418	209
Without Trailer	7	10	4	6	3	5	2	3	10	15	3	4	3	5

Construction of 4/6 lane Access Control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

ADT	(NH-125)		(SH-28)		(NH-25)		(NH-325)		(SH-28)		(SH-28)		(SH-28)	
Type of Vehicle	52+000 (ADT)		128+000 (ADT)		115+200 (ADT)		25+000 (ADT)		177+000 (ADT)		208+000 (ADT)		283+600 (ADT)	
	Number	PCU	Number	PCU	Number	PCU	Number	PCU	Number	PCU	Number	PCU	Number	PCU
With Trailer	48	217	18	80	4	17	17	75	96	432	17	77	21	96
Cycle	4	2	0	0	1	1	1	0	4	2	2	1	0	0
Cycle Rickshaw	0	0	0	0	0	0	0	0	1	1	0	0	0	0
Animal Drawn	2	15	0	0	0	1	0	1	3	21	2	13	0	0
Car	1	1	0	0	1	1	1	1	1	1	0	0	0	0
Mini Bus	4	7	0	0	1	2	2	3	0	0	0	0	1	1
Bus	1	2	0	0	0	0	0	0	0	1	0	0	0	0
LCV	4	6	0	0	0	0	0	0	0	0	0	0	0	0
Truck	31	94	0	0	1	2	0	0	0	0	0	1	0	0
Total Passenger Vehicles	3567	3452	798	733	2165	2186	2485	2083	4292	3275	1574	1393	1171	1123
Total Goods Vehicles	903	1838	1481	5862	1704	6039	338	650	2895	11125	2516	10293	2708	11269
Total Slow Moving Vehicles	61	244	22	85	8	23	19	79	113	471	23	95	25	101
Total Toll Exempted Vehicles	42	110	0	1	3	5	3	4	1	2	1	2	1	2
Total Vehicles	4572	5644	2301	6680	3880	8253	2845	2816	7302	14874	4114	11783	3905	12495



2.5.8 Origin Destination Survey

During the OD survey all the relevant information was collected from the vehicle operators in pre-designed format by stopping vehicles at random sample basis. The collected data includes vehicle number, origin and destination place, commodity carried, distance travelled, no. of trips in a month, willingness to pay toll etc. The % of goods and passenger vehicles are survey are shown in below Table 2.10.

Table 2.10: Percentage of total vehicles surveyed

Vehicle Type	L1	L 2	L 3	L 4	L 5	L 6	L 7
	52+000 KM	128+000 KM	115+200 KM	25+000 KM	177+000 KM	208+000 KM	283+600 KM
Car	29.80	37.32	30.80	32.28	36.14	32.76	39.52
Mini Bus	38.78	85.71	120.00	52.17	23.53	-	31.58
Govt. Bus	33.87	33.93	55.56	43.40	48.84	40.00	15.00
Private Bus	27.46	50.00	32.50	28.17	55.00	29.76	31.58
LMV	19.60	28.85	25.35	22.73	29.02	40.22	22.22
LCV-4 w	60.42	42.86	37.50	38.46	68.42	-	-
LCV-6 W	46.03	39.62	45.26	45.00	49.62	40.43	39.02
2 Axle	47.71	41.20	35.83	58.33	54.69	47.20	41.98
3 Axle	50.61	34.36	30.68	59.42	64.91	46.61	45.02
4-6 Axle	44.57	30.92	36.54	50.00	35.21	31.70	32.36

2.6 TRAFFIC MANAGEMENT PLAN

The overall traffic management plan is designed and intended to specify adequate safety measures in advance against identified hazards and stipulated implementation of the said safety measures to ensure safe movement of traffic during the construction operations of 4/6 lane Access Control National Highway No. 754K from Dhadhaniya Sasan to Rajasthan-Gujarat Border near Sanchoe. The objective of safety standards is to provide safe travel to the drivers of vehicles plying on the Project Highway at all times of the day, throughout the year and provide protection to the Project workers when they are on the work. This overall traffic management plan delineates the safety standards in terms of Construction zones, Signs and Safety measures in work zones and during normal operations.

Road safety features, including Traffic Signs, Road Markings, Road lighting & Crash Barriers are proposed and designed as per relevant IRC codes and standards. During construction it is usual that the operating traffic will be affected to some extent and nearby public and commuting transportation will suffer the inconvenience, additional time, cost and distance. Contractor shall at all-time carry out construction work on the road in manner creating least interference to the free flow of traffic as per the approved Traffic Management Plan.

➤ Traffic Management Practices

The traffic management strategies include the following fundamental principles:



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

- i. Making the traffic safety an integral and high priority element of the project.
- ii. Avoid inhibiting traffic as much as possible.
- iii. Guide Drivers in a clear and positive way.
- iv. Routine inspection of traffic control element and traffic operations
- v. Protection to Project workers on work site

IRC SP55 is the guideline to be followed for circulating traffic during construction. Following picture gives the work zone safety criteria during construction.

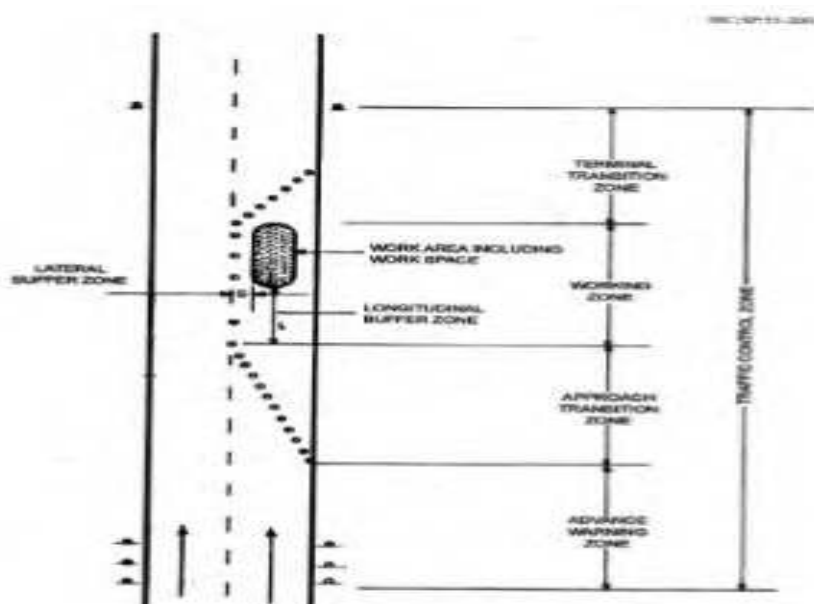


Figure 2.15: Work Zone Safety during Construction

2.7 DETAILS OF THE STRUCTURES PROPOSED ALONG THE PROPOSED ALIGNMENT

2.7.1 Details of the proposed bridges

There are 10 major bridges and 20 minor bridges that have been proposed on the canals/River crossing the proposed alignment. The details of the bridges falling along the proposed alignment have been presented in Table 2.10(a) and 2.10(b):

Table 2.10(a): Details of major bridges have been proposed

S. No.	Design Chainage	Type	Span Arrangement (no.s x length x height)	Outer width
1.	64+420	Major Bridge	27 X 30.0	2 X 13.75
2.	80+220	Major Bridge	3 X 20.0	2 X 13.75
3.	85+185	Major Bridge	6 X 20.0	2 X 13.75
4.	141+600	Major Bridge	20 X 30.0	2 X 13.75
5.	142+500	Major Bridge	14 X 30.0	2 X 13.75

Construction of 4/6 lane Access Control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

6.	144+625	Major Bridge	14 X 30.0	2 X 13.75
7.	147+050	Major Bridge	30 X 30.0	2 X 13.75
8.	152+375	Major Bridge	5 X 20.0	2 X 13.75
9.	163+290	Major Bridge	3 X 30.00	2 X 13.75
10.	206+928	Major Bridge	3 X 20.0	2 X 13.75

Table 2.10 (b): Details of Minor bridges

S. No.	Design Chainage			
		Type	Span Arrangement (no.s x length x height)	Outer width
1.	19+200	Minor Bridge	1 X 20.0	2 X 14.50
2.	19+300	Box Bridge	1 X 8.0	2 X 14.50
3.	21+425	Box Bridge	1 X 8.0	2 X 14.50
4.	21+590	Minor Bridge	1 X 20.0	2 X 14.50
5.	27+210	Box Bridge	2 X 8.0	2 X 14.50
6.	30+600	Box Bridge	1 X 8.0	2 X 14.50
7.	44+200	Minor Bridge	2 X 20.0	2 X 14.50
8.	68+030	Box Bridge	1 X 8.0	2 X 14.50
9.	83+020	Minor Bridge	1 X 20.0	2 X 14.50
10.	84+200	Minor Bridge	1 X 20.0	2 X 14.50
11.	88+015	Minor Bridge	1 X 20.0	2 X 14.50
12.	89+200	Minor Bridge	1 X 30.0	2 X 14.50
13.	149+125	Minor Bridge	2 X 20.0	2 X 14.50
14.	176+278	Minor Bridge	1 X 30.0	2 X 14.50
15.	182+123	Minor Bridge	1 X 20.0	2 X 14.50
16.	185+700	BOX BRIDGE	2 X 6.0	2 X 14.50
17.	187+560	Minor Bridge	1 X 20.0	2 X 14.50
18.	190+850	Minor Bridge	1 X 20.0	2 X 14.50
19.	193+500	Minor Bridge	1 X 30.0	2 X 14.50
20.	198+855	Minor Bridge	1 X 20.0	2 X 14.50

The length of the bridge at all these locations has been finalized based on the extent of the water spread as seen from the site and verified by the topo survey. These have been compared with earlier proposal and accordingly span arrangement has been fixed.

At all these locations, the depth of flow is shallow as enquired from the local. All the existing bridge at these locations has wide and shallow depth of flow and HFL has never been found to be more than 2.5m from the bed level. The formation level at all these bridges has been kept accordingly to accommodate the water depth, clearance and depth of super structure.



2.7.2 Details of the proposed major/minor Junctions

The proposed access controlled expressway project with new alignment has been envisaged through an area which shall have the advantage of simultaneous development as well as shall result in a shorter distance to travel. The junctions with proposed road will be planned in the form of interchanges and flyover to ensure uninterrupted flow of traffic.

2.7.3 Details of the proposed ROBs

The expressway is an access controlled facility and all other road crossings therefore will be provided with a flyover/vehicular underpass with no access to the expressway. Similarly ROB are proposed at railway crossings. There is only one ROB proposed at Ch. 62.234.

2.7.4 Details of proposed Interchanges

The efficiency, safety, speed, cost of operation and capacity of expressway is influenced by the design of the interchanges. Interchanges are required for uninterrupted transfer of traffic from one road to another. The design of interchanges is required for the maximum capacity of roads to accommodate the coming & leaving traffic and level-of-service without interrupting the Expressway users. The details of the proposed interchanges have been presented in **Table 2.11**.

Table 2.11: Details of the proposed Interchanges

S. No.	Design Chainage	Proposal		
		Type	Span Arrangement (nos. x length x height)	Outer width
1.	0+000	Grade Separator at Interchange	2 X 20.0 X 5.50	2 X 14.50
2.	19+713	Grade Separator at Interchange	2 X 20.0 X 5.50	2 X 14.50
3.	43+917	Grade Separator at Interchange	2 X 20.0 X 5.50	2 X 14.50
4.	75+458	Grade Separator at Interchange	2 x 20.00 x 5.50	2 X 14.50
5.	115+444	Grade Separator at Interchange	2 x 20.0 x 5.50	2 X 14.50
6.	136+785	Grade Separator at Interchange	2 x 20.00 x 5.50	2 X 14.50
7.	166+773	Grade Separator at Interchange	2 x 20.00 x 5.50	2 X 14.50
8.	193+248	Grade Separator at Interchange	2 x 20.00 x 5.50	2 X 14.50
9.	200+585	Grade Separator at Interchange	2 x 20.00 x 5.50	2 X 14.50



2.7.5 Details of vehicular, light and pedestrian underpasses

Light vehicular underpasses are proposed for the pedestrian Underpass facility. The details of the proposed VUP, LVUP and SVUP have been presented in Table 2.11(a), 2.11(b) and 2.11(c).

Table 2.11(a): Details of proposed VUP

S. No.	Design Chainage	Proposal		
		Type	Span Arrangement (nos. x length x height)	Outer width
1.	2+750	VUP	1 X 20.0 X 5.50	2 X 14.50
2.	17+020	VUP	1 X 20.0 X 5.50	2 X 14.50
3.	19+713	VUP	2 X 20.0 X 5.50	2 X 14.50
4.	31+200	VUP	1 X 20.0 X 5.50	2 X 14.50
5.	49+863	VUP	1 X 20.0 X 5.50	2 X 14.50
6.	51+485	VUP	1 X 20.0 X 5.50	2 X 14.50
7.	55+826	VUP	1 X 20.0 X 5.50	2 X 14.50
8.	75+458	VUP	2 x 20.00 x 5.50	2 X 14.50
9.	78+477	VUP	1 X 20.0 X 5.50	2 X 14.50
10.	92+806	VUP	1 X 20.0 X 5.50	2 X 14.50
11.	97+923	VUP	1 X 20.0 X 5.50	2 X 14.50
12.	105+383	VUP	1 X 20.0 X 5.50	2 X 14.50
13.	106+150	VUP	1 X 20.0 X 5.50	2 X 14.50
14.	115+444	VUP	2 X 20.0 X 5.50	2 X 14.50
15.	122+160	VUP	1 X 20.0 X 5.50	2 X 14.50
16.	136+785	VUP	2 x 20.00 x 5.50	2 X 14.50
17.	140+040	VUP	1 X 20.0 X 5.50	2 X 14.50
18.	150+650	VUP	1 X 20.0 X 5.50	2 X 14.50
19.	153+630	VUP	1 X 20.0 X 5.50	2 X 14.50
20.	166+773	VUP	2 x 20.00 x 5.50	2 X 14.50
21.	187+023	VUP	1 X 20.0 X 5.50	2 X 14.50
22.	188+550	VUP	1 X 20.0 X 5.50	2 X 14.50
23.	193+248	VUP	2 x 20.0 x 5.50	2 X 14.50
24.	199+720	VUP	1 X 20.0 X 5.50	2 X 14.50
25.	200+600	VUP	2 X 20.0 X 5.50	2 X 14.50
26.	201+926	VUP	1 X 20.0 X 5.50	2 X 14.50

Construction of 4/6 lane Access Control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

Table 2.11(b): Details of proposed LVUP

S. No.	Design Chainage	Proposal		
		Type	Span Arrangement (nos. x length x height)	Outer width
1.	2+305	LVUP	1 X 12.0 X 4.50	2 X 14.50
2.	7+825	LVUP	1 X 12.0 X 4.50	2 X 14.50
3.	23+852	LVUP	1 X 12.0 X 4.50	2 X 14.50
4.	33+973	LVUP	1 X 12.0 X 4.50	2 X 14.50
5.	39+950	LVUP	1 X 12.0 X 4.50	2 X 14.50
6.	41+300	LVUP	1 X 12.0 X 4.50	2 X 14.50
7.	58+670	LVUP	1 X 12.0 X 4.50	2 X 14.50
8.	65+235	LVUP	1 X 12.0 X 4.50	2 X 14.50
9.	66+158	LVUP	1 X 12.0 X 4.50	2 X 14.50
10.	69+321	LVUP	1 X 12.0 X 4.50	2 X 14.50
11.	81+360	LVUP	1 X 12.0 X 4.50	2 X 14.50
12.	90+577	LVUP	1 X 12.0 X 4.50	2 X 14.50
13.	107+600	LVUP	1 X 12.0 X 4.50	2 X 14.50
14.	118+642	LVUP	1 X 12.0 X 4.50	2 X 14.50
15.	126+034	LVUP	1 X 12.0 X 4.50	2 X 14.50
16.	144+049	LVUP	1 X 12.0 X 4.50	2 X 14.50
17.	147+695	LVUP	1 X 12.0 X 4.50	2 X 14.50
18.	149+713	LVUP	1 X 12.0 X 4.50	2 X 14.50
19.	159+022	LVUP	1 X 12.0 X 4.50	2 X 14.50
20.	162+966	LVUP	1 X 12.0 X 4.50	2 X 14.50
21.	164+627	LVUP	1 X 12.0 X 4.50	2 X 14.50
22.	169+395	LVUP	1 X 12.0 X 4.50	2 X 14.50
23.	173+215	LVUP	1 X 12.0 X 4.50	2 X 14.50
24.	173+881	LVUP	1 X 12.0 X 4.50	2 X 14.50
25.	175+245	LVUP	1 X 12.0 X 4.50	2 X 14.50
26.	177+586	LVUP	1 X 12.0 X 4.50	2 X 14.50
27.	182+076	LVUP	1 X 12.0 X 4.50	2 X 14.50
28.	188+019	LVUP	1 X 12.0 X 4.50	2 X 14.50
29.	191+503	LVUP	1 X 12.0 X 4.50	2 X 14.50
30.	192+508	LVUP	1 X 12.0 X 4.50	2 X 14.50
31.	194+308	LVUP	1 X 12.0 X 4.50	2 X 14.50
32.	196+830	LVUP	1 X 12.0 X 4.50	2 X 14.50
33.	201+288	LVUP	1 X 12.0 X 4.50	2 X 14.50
34.	204+790	LVUP	1 X 12.0 X 4.50	2 X 14.50

Construction of 4/6 lane Access Control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

Table 2.11(c): Details of proposed SVUP

Sr. No.	Design Chainage	Proposal		
		Type	Span Arrangement (nos. x length x height)	Outer width
1	3+190	SVUP	1 X 7.0 X 4.50	2 X 14.50
2	5+128	SVUP	1 X 7.0 X 4.50	2 X 14.50
3	6+132	SVUP	1 X 7.0 X 4.50	2 X 14.50
4	9+144	SVUP	1 X 7.0 X 4.50	2 X 14.50
5	10+912	SVUP	1 X 7.0 X 4.50	2 X 14.50
6	11+494	SVUP	1 X 7.0 X 4.50	2 X 14.50
7	14+607	SVUP	1 X 7.0 X 4.50	2 X 14.50
8	21+909	SVUP	1 X 7.0 X 4.50	2 X 14.50
9	22+970	SVUP	1 X 7.0 X 4.50	2 X 14.50
10	24+274	SVUP	1 X 7.0 X 4.50	2 X 14.50
11	28+213	SVUP	1 X 7.0 X 4.50	2 X 14.50
12	32+503	SVUP	1 X 7.0 X 4.50	2 X 14.50
13	36+549	SVUP	1 X 7.0 X 4.50	2 X 14.50
14	44+900	SVUP	1 X 7.0 X 4.50	2 X 14.50
15	47+100	SVUP	1 X 7.0 X 4.50	2 X 14.50
16	50+873	SVUP	1 X 7.0 X 4.50	2 X 14.50
17	52+424	SVUP	1 X 7.0 X 4.50	2 X 14.50
18	55+055	SVUP	1 X 7.0 X 4.50	2 X 14.50
19	57+216	SVUP	1 X 7.0 X 4.50	2 X 14.50
20	59+939	SVUP	1 X 7.0 X 4.50	2 X 14.50
21	65+751	SVUP	1 X 7.0 X 4.50	2 X 14.50
22	67+056	SVUP	1 X 7.0 X 4.50	2 X 14.50
23	68+535	SVUP	1 X 7.0 X 4.50	2 X 14.50
24	68+870	SVUP	1 X 7.0 X 4.50	2 X 14.50
25	70+248	SVUP	1 X 7.0 X 4.50	2 X 14.50
26	71+316	SVUP	1 X 7.0 X 4.50	2 X 14.50
27	75+825	SVUP	1 X 7.0 X 4.50	2 X 14.50
28	76+670	SVUP	1 X 7.0 X 4.50	2 X 14.50
29	78+096	SVUP	1 X 7.0 X 4.50	2 X 14.50
30	79+426	SVUP	1 X 7.0 X 4.50	2 X 14.50
31	80+726	SVUP	1 X 7.0 X 4.50	2 X 14.50
32	81+669	SVUP	1 X 7.0 X 4.50	2 X 14.50
33	87+685	SVUP	1 X 7.0 X 4.50	2 X 14.50
34	88+605	SVUP	1 X 7.0 X 4.50	2 X 14.50
35	91+176	SVUP	1 X 7.0 X 4.50	2 X 14.50
36	94+246	SVUP	1 X 7.0 X 4.50	2 X 14.50
37	95+513	SVUP	1 X 7.0 X 4.50	2 X 14.50
38	96+194	SVUP	1 X 7.0 X 4.50	2 X 14.50
39	96+540	SVUP	1 X 7.0 X 4.50	2 X 14.50
40	99+565	SVUP	1 X 7.0 X 4.50	2 X 14.50
41	100+290	SVUP	1 X 7.0 X 4.50	2 X 14.50
42	100+552	SVUP	1 X 7.0 X 4.50	2 X 14.50
43	101+612	SVUP	1 X 7.0 X 4.50	2 X 14.50

Construction of 4/6 lane Access Control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

44	102+993	SVUP	1 X 7.0 X 4.50	2 X 14.50
45	106+775	SVUP	1 X 7.0 X 4.50	2 X 14.50
46	109+620	SVUP	1 X 7.0 X 4.50	2 X 14.50
47	113+150	SVUP	1 X 7.0 X 4.50	2 X 14.50
48	118+085	SVUP	1 X 7.0 X 4.50	2 X 14.50
49	123+296	SVUP	1 X 7.0 X 4.50	2 X 14.50
50	124+556	SVUP	1 X 7.0 X 4.50	2 X 14.50
51	125+530	SVUP	1 X 7.0 X 4.50	2 X 14.50
52	126+650	SVUP	1 X 7.0 X 4.50	2 X 14.50
53	127+625	SVUP	1 X 7.0 X 4.50	2 X 14.50
54	129+295	SVUP	1 X 7.0 X 4.50	2 X 14.50
55	133+715	SVUP	1 X 7.0 X 4.50	2 X 14.50
56	135+476	SVUP	1 X 7.0 X 4.50	2 X 14.50
57	143+566	SVUP	1 X 7.0 X 4.50	2 X 14.50
58	148+511	SVUP	1 X 7.0 X 4.50	2 X 14.50
59	150+113	SVUP	1 X 7.0 X 4.50	2 X 14.50
60	152+818	SVUP	1 X 7.0 X 4.50	2 X 14.50
61	154+534	SVUP	1 X 7.0 X 4.50	2 X 14.50
62	156+033	SVUP	1 X 7.0 X 4.50	2 X 14.50
63	158+083	SVUP	1 X 7.0 X 4.50	2 X 14.50
64	158+750	SVUP	1 X 7.0 X 4.50	2 X 14.50
65	161+365	SVUP	1 X 7.0 X 4.50	2 X 14.50
66	170+300	SVUP	1 X 7.0 X 4.50	2 X 14.50
67	171+017	SVUP	1 X 7.0 X 4.50	2 X 14.50
68	171+536	SVUP	1 X 7.0 X 4.50	2 X 14.50
69	176+547	SVUP	1 X 7.0 X 4.50	2 X 14.50
70	179+200	SVUP	1 X 7.0 X 4.50	2 X 14.50
71	180+300	SVUP	1 X 7.0 X 4.50	2 X 14.50
72	181+000	SVUP	1 X 7.0 X 4.50	2 X 14.50
73	184+472	SVUP	1 X 7.0 X 4.50	2 X 14.50
74	185+141	SVUP	1 X 7.0 X 4.50	2 X 14.50
75	185+894	SVUP	1 X 7.0 X 4.50	2 X 14.50
76	186+502	SVUP	1 X 7.0 X 4.50	2 X 14.50
77	188+308	SVUP	1 X 7.0 X 4.50	2 X 14.50
78	188+882	SVUP	1 X 7.0 X 4.50	2 X 14.50
79	189+794	SVUP	1 X 7.0 X 4.50	2 X 14.50
80	191+015	SVUP	1 X 7.0 X 4.50	2 X 14.50
81	202+506	SVUP	1 X 7.0 X 4.50	2 X 14.50
82	203+600	SVUP	1 X 7.0 X 4.50	2 X 14.50
83	205+546	SVUP	1 X 7.0 X 4.50	2 X 14.50
84	206+138	SVUP	1 X 7.0 X 4.50	2 X 14.50
85	206+602	SVUP	1 X 7.0 X 4.50	2 X 14.50

2.7.6 Details of the Proposed Box Culverts

There are total 282 + 40 additional nos of culverts proposed for the expressway. A summary of the total culverts is presented in **Table 2.12**.



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

Table 2.12: A summary of the total culverts

S.No.	Design Chainage	Type	Proposal Span Arrangement (no.s x length x height)
1.	-0+500	Box Culvert	1 X 3.0 X 3.0
2.	-0+980	Box Culvert	2 X 3.0 X 3.0
3.	0.500	Box Culvert	1 X 3.0 X 3.0
4.	1+700	Box Culvert	1 X 3.0 X 3.0
5.	4+340	Box Culvert	1 X 3.0 X 3.0
6.	4+900	Box Culvert	1 X 3.0 X 3.0
7.	5+500	Box Culvert	1 X 3.0 X 3.0
8.	6+360	Box Culvert	1 X 3.0 X 3.0
9.	7+000	Box Culvert	1 X 3.0 X 3.0
10.	8+100	Box Culvert	1 X 3.0 X 3.0
11.	8+710	Box Culvert	1 X 3.0 X 3.0
12.	9+500	Box Culvert	1 X 3.0 X 3.0
13.	10+540	Box Culvert	1 X 3.0 X 3.0
14.	11+200	Box Culvert	1 X 3.0 X 3.0
15.	12+240	Box Culvert	1 X 3.0 X 3.0
16.	12+850	Box Culvert	1 X 3.0 X 3.0
17.	13+312	Box Culvert	1 X 3.0 X 3.0
18.	13+378	Box Culvert	1 X 3.0 X 3.0
19.	13+943	Box Culvert	1 X 3.0 X 3.0
20.	14+180	Box Culvert	1 X 3.0 X 3.0
21.	15+260	Box Culvert	1 X 3.0 X 3.0
22.	15+700	Box Culvert	1 X 3.0 X 3.0
23.	16+300	Box Culvert	1 X 3.0 X 3.0
24.	17+840	Box Culvert	1 X 3.0 X 3.0
25.	18+275	Box Culvert	1 X 3.0 X 3.0
26.	19+900	Box Culvert	1 X 3.0 X 3.0
27.	20+500	Box Culvert	1 X 3.0 X 3.0
28.	21+267	Box Culvert	1 X 3.0 X 3.0
29.	22+400	Box Culvert	1 X 3.0 X 3.0
30.	23+400	Box Culvert	1 X 3.0 X 3.0
31.	24+840	Box Culvert	1 X 3.0 X 3.0
32.	25+230	Box Culvert	1 X 3.0 X 3.0
33.	25+840	Box Culvert	1 X 3.0 X 3.0
34.	26+160	Box Culvert	1 X 3.0 X 3.0
35.	26+520	Box Culvert	1 X 3.0 X 3.0
36.	27+600	Box Culvert	1 X 3.0 X 3.0
37.	28+500	Box Culvert	1 X 3.0 X 3.0
38.	29+400	Box Culvert	1 X 3.0 X 3.0
39.	29+660	Box Culvert	1 X 3.0 X 3.0
40.	30+050	Box Culvert	1 X 3.0 X 3.0

Construction of 4/6 lane Access Control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

41.	31+520	Box Culvert	1 X 3.0 X 3.0
42.	32+000	Box Culvert	1 X 3.0 X 3.0
43.	32+800	Box Culvert	1 X 3.0 X 3.0
44.	33+600	Box Culvert	1 X 3.0 X 3.0
45.	34+520	Box Culvert	1 X 3.0 X 3.0
46.	34+900	Box Culvert	1 X 3.0 X 3.0
47.	35+460	Box Culvert	1 X 3.0 X 3.0
48.	35+964	Box Culvert	1 X 3.0 X 3.0
49.	36+217	Box Culvert	1 X 3.0 X 3.0
50.	37+322	Box Culvert	1 X 3.0 X 3.0
51.	37+800	Box Culvert	1 X 3.0 X 3.0
52.	38+132	Box Culvert	1 X 3.0 X 3.0
53.	38+860	Box Culvert	1 X 3.0 X 3.0
54.	39+660	Box Culvert	1 X 3.0 X 3.0
55.	40+520	Box Culvert	1 X 3.0 X 3.0
56.	40+940	Box Culvert	1 X 3.0 X 3.0
57.	41+600	Box Culvert	1 X 3.0 X 3.0
58.	42+265	Box Culvert	1 X 3.0 X 3.0
59.	45+160	Box Culvert	1 X 3.0 X 3.0
60.	45+900	Box Culvert	1 X 3.0 X 3.0
61.	46+350	Box Culvert	1 X 3.0 X 3.0
62.	46+800	Box Culvert	1 X 3.0 X 3.0
63.	47+455	Box Culvert	1 X 3.0 X 3.0
64.	48+420	Box Culvert	1 X 3.0 X 3.0
65.	48+800	Box Culvert	1 X 3.0 X 3.0
66.	49+250	Box Culvert	1 X 3.0 X 3.0
67.	50+179	Box Culvert	1 X 3.0 X 3.0
68.	51+180	Box Culvert	1 X 3.0 X 3.0
69.	51+800	Box Culvert	1 X 3.0 X 3.0
70.	52+200	Box Culvert	1 X 3.0 X 3.0
71.	52+700	Box Culvert	1 X 3.0 X 3.0
72.	53+455	Box Culvert	1 X 3.0 X 3.0
73.	53+900	Box Culvert	1 X 3.0 X 3.0
74.	54+390	Box Culvert	1 X 3.0 X 3.0
75.	54+700	Box Culvert	1 X 3.0 X 3.0
76.	56+488	Box Culvert	1 X 3.0 X 3.0
77.	56+955	Box Culvert	1 X 3.0 X 3.0
78.	57+900	Box Culvert	1 X 3.0 X 3.0
79.	58+200	Box Culvert	1 X 3.0 X 3.0
80.	59+100	Box Culvert	1 X 3.0 X 3.0
81.	59+560	Box Culvert	1 X 3.0 X 3.0
82.	59+760	Box Culvert	1 X 3.0 X 3.0
83.	60+360	Box Culvert	1 X 3.0 X 3.0

Construction of 4/6 lane Access Control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

84.	61+100	Box Culvert	2 X 3.0 X 3.0
85.	61+440	Box Culvert	1 X 3.0 X 3.0
86.	62+680	Box Culvert	1 X 3.0 X 3.0
87.	62+900	Box Culvert	1 X 3.0 X 3.0
88.	63+160	Box Culvert	1 X 3.0 X 3.0
89.	63+650	Box Culvert	1 X 3.0 X 3.0
90.	66+000	Box Culvert	1 X 3.0 X 3.0
91.	66+400	Box Culvert	1 X 3.0 X 3.0
92.	67+300	Box Culvert	1 X 3.0 X 3.0
93.	68+380	Box Culvert	1 X 3.0 X 3.0
94.	68+700	Box Culvert	1 X 4.0 X 4.0
95.	69+000	Box Culvert	1 X 3.0 X 3.0
96.	69+550	Box Culvert	1 X 3.0 X 3.0
97.	70+500	Box Culvert	1 X 3.0 X 3.0
98.	70+819	Box Culvert	1 X 3.0 X 3.0
99.	71+700	Box Culvert	1 X 3.0 X 3.0
100.	72+397	Box Culvert	1 X 3.0 X 3.0
101.	73+160	Box Culvert	1 X 3.0 X 3.0
102.	73+820	Box Culvert	1 X 3.0 X 3.0
103.	74+300	Box Culvert	1 X 3.0 X 3.0
104.	76+225	Box Culvert	1 X 3.0 X 3.0
105.	77+930	Box Culvert	1 X 3.0 X 3.0
106.	78+800	Box Culvert	2 X 3.0 X 3.0
107.	79+700	Box Culvert	1 X 3.0 X 3.0
108.	79+900	Box Culvert	1 X 3.0 X 3.0
109.	81+000	Box Culvert	1 X 3.0 X 3.0
110.	81+950	Box Culvert	1 X 3.0 X 3.0
111.	82+120	Box Culvert	1 X 3.0 X 3.0
112.	82+500	Box Culvert	1 X 3.0 X 3.0
113.	83+550	Box Culvert	1 X 3.0 X 3.0
114.	83+820	Box Culvert	1 X 3.0 X 3.0
115.	85+580	Box Culvert	1 X 3.0 X 3.0
116.	86+260	Box Culvert	1 X 3.0 X 3.0
117.	86+700	Box Culvert	1 X 3.0 X 3.0
118.	87+070	Box Culvert	1 X 3.0 X 3.0
119.	87+540	Box Culvert	1 X 3.0 X 3.0
120.	88+224	Box Culvert	1 X 3.0 X 3.0
121.	88+480	Box Culvert	1 X 3.0 X 3.0
122.	88+780	Box Culvert	1 X 3.0 X 3.0
123.	88+960	Box Culvert	1 X 3.0 X 3.0
124.	89+600	Box Culvert	1 X 3.0 X 3.0
125.	89+880	Box Culvert	1 X 3.0 X 3.0
126.	90+220	Box Culvert	1 X 3.0 X 3.0

Construction of 4/6 lane Access Control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

127.	90+800	Box Culvert	1 X 3.0 X 3.0
128.	91+430	Box Culvert	1 X 4.0 X 4.0
129.	91+729	Box Culvert	1 X 3.0 X 3.0
130.	92+020	Box Culvert	1 X 3.0 X 3.0
131.	92+520	Box Culvert	1 X 3.0 X 3.0
132.	93+500	Box Culvert	1 X 3.0 X 3.0
133.	93+800	Box Culvert	2 X 3.0 X 3.0
134.	94+140	Box Culvert	2 X 3.0 X 3.0
135.	94+500	Box Culvert	2 X 3.0 X 3.0
136.	94+720	Box Culvert	2 X 3.0 X 3.0
137.	94+984	Box Culvert	1 X 3.0 X 3.0
138.	95+880	Box Culvert	1 X 3.0 X 3.0
139.	96+000	Box Culvert	2 X 3.0 X 3.0
140.	96+680	Box Culvert	1 X 3.0 X 3.0
141.	96+995	Box Culvert	1 X 3.0 X 3.0
142.	97+360	Box Culvert	1 X 3.0 X 3.0
143.	97+700	Box Culvert	2 X 3.0 X 3.0
144.	98+260	Box Culvert	1 X 3.0 X 3.0
145.	98+600	Box Culvert	2 X 3.0 X 3.0
146.	99+040	Box Culvert	1 X 3.0 X 3.0
147.	99+460	Box Culvert	2 X 3.0 X 3.0
148.	99+950	Box Culvert	2 X 3.0 X 3.0
149.	101+000	Box Culvert	2 X 3.0 X 3.0
150.	101+800	Box Culvert	1 X 3.0 X 3.0
151.	102+180	Box Culvert	1 X 3.0 X 3.0
152.	102+540	Box Culvert	1 X 3.0 X 3.0
153.	102+740	Box Culvert	1 X 3.0 X 3.0
154.	103+160	Box Culvert	2 X 3.0 X 3.0
155.	103+420	Box Culvert	1 X 3.0 X 3.0
156.	103+660	Box Culvert	1 X 3.0 X 3.0
157.	103+860	Box Culvert	1 X 3.0 X 3.0
158.	104+360	Box Culvert	1 X 3.0 X 3.0
159.	104+600	Box Culvert	1 X 3.0 X 3.0
160.	104+860	Box Culvert	1 X 3.0 X 3.0
161.	107+100	Box Culvert	1 X 3.0 X 3.0
162.	107+840	Box Culvert	1 X 3.0 X 3.0
163.	107+980	Box Culvert	1 X 3.0 X 3.0
164.	108+350	Box Culvert	1 X 3.0 X 3.0
165.	108+700	Box Culvert	1 X 3.0 X 3.0
166.	109+900	Box Culvert	1 X 3.0 X 3.0
167.	110+198	Box Culvert	1 X 3.0 X 3.0
168.	111+300	Box Culvert	1 X 3.0 X 3.0
169.	111+800	Box Culvert	1 X 3.0 X 3.0

Construction of 4/6 lane Access Control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

170.	112+350	Box Culvert	1 X 3.0 X 3.0
171.	112+800	Box Culvert	1 X 3.0 X 3.0
172.	113+380	Box Culvert	1 X 3.0 X 3.0
173.	113+822	Box Culvert	1 X 3.0 X 3.0
174.	114+700	Box Culvert	1 X 3.0 X 3.0
175.	116+400	Box Culvert	1 X 3.0 X 3.0
176.	116+800	Box Culvert	1 X 3.0 X 3.0
177.	117+300	Box Culvert	1 X 3.0 X 3.0
178.	117+596	Box Culvert	1 X 3.0 X 3.0
179.	118+800	Box Culvert	1 X 3.0 X 3.0
180.	119+670	Box Culvert	1 X 3.0 X 3.0
181.	119+775	Box Culvert	1 X 3.0 X 3.0
182.	120+280	Box Culvert	1 X 3.0 X 3.0
183.	121+220	Box Culvert	1 X 3.0 X 3.0
184.	121+780	Box Culvert	1 X 3.0 X 3.0
185.	122+800	Box Culvert	1 X 3.0 X 3.0
186.	123+760	Box Culvert	1 X 3.0 X 3.0
187.	124+126	Box Culvert	1 X 3.0 X 3.0
188.	124+880	Box Culvert	1 X 3.0 X 3.0
189.	125+290	RCC Box	1 X 3.0 X 3.0
190.	125+660	RCC Box	1 X 3.0 X 3.0
191.	128+500	RCC Box	1 X 3.0 X 3.0
192.	128+900	RCC Box	1 X 3.0 X 3.0
193.	129+700	RCC Box	1 X 3.0 X 3.0
194.	130+200	RCC Box	1 X 3.0 X 3.0
195.	130+900	RCC Box	1 X 3.0 X 3.0
196.	131+901	RCC Box	1 X 3.0 X 3.0
197.	132+270	Slab Culvert	1 X 6.0
198.	133+500	RCC Box	1 X 3.0 X 3.0
199.	134+000	RCC Box	1 X 3.0 X 3.0
200.	134+850	RCC Box	1 X 3.0 X 3.0
201.	135+850	RCC Box	1 X 3.0 X 3.0
202.	136+120	RCC Box	1 X 3.0 X 3.0
203.	137+648	RCC Box	1 X 3.0 X 3.0
204.	138+200	RCC Box	1 X 3.0 X 3.0
205.	138+700	RCC Box	1 X 3.0 X 3.0
206.	139+400	RCC Box	1 X 3.0 X 3.0
207.	140+920	RCC Box	1 X 3.0 X 3.0
208.	145+760	RCC Box	1 X 3.0 X 3.0
209.	148+350	RCC Box	1 X 3.0 X 3.0
210.	150+35	RCC Box	1 X 3.0 X 3.0
211.	151+45	RCC Box	1 X 3.0 X 3.0
212.	152	RCC Box	1 X 3+0 X 3.0

Construction of 4/6 lane Access Control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

213.	153+86	RCC Box	1 X 3.0 X 3.0
214.	154+878	RCC Box	1 X 3.0 X 3.0
215.	155+52	RCC Box	1 X 3.0 X 3.0
216.	156+3	RCC Box	1 X 3.0 X 3.0
217.	156+7	RCC Box	1 X 3.0 X 3.0
218.	157+45	RCC Box	1 X 3.0 X 3.0
219.	158+3	RCC Box	1 X 3.0 X 3.0
220.	159+5	RCC Box	1 X 3.0 X 3.0
221.	160	RCC Box	1 X 3.0 X 3.0
222.	160+86	RCC Box	1 X 3.0 X 3.0
223.	161+24	RCC Box	1 X 3.0 X 3.0
224.	161+7	RCC Box	1 X 3.0 X 3.0
225.	162+25	RCC Box	1 X 3.0 X 3.0
226.	162+45	RCC Box	1 X 3.0 X 3.0
227.	162+7	RCC Box	1 X 3.0 X 3.0
228.	163+8	RCC Box	1 X 3.0 X 3.0
229.	164+21	RCC Box	1 X 3.0 X 3.0
230.	164+800	RCC Box	1 X 3.0 X 3.0
231.	165+500	RCC Box	1 X 3.0 X 3.0
232.	166+400	RCC Box	1 X 3.0 X 3.0
233.	167+300	RCC Box	1 X 3.0 X 3.0
234.	167+880	RCC Box	1 X 3.0 X 3.0
235.	168+140	RCC Box	1 X 3.0 X 3.0
236.	168+650	RCC Box	1 X 3.0 X 3.0
237.	169+700	RCC Box	1 X 3.0 X 3.0
238.	170+700	RCC Box	1 X 3.0 X 3.0
239.	171+800	RCC Box	1 X 3.0 X 3.0
240.	172+600	RCC Box	1 X 3.0 X 3.0
241.	172+900	RCC Box	1 X 3.0 X 3.0
242.	174+100	RCC Box	1 X 3.0 X 3.0
243.	174+900	RCC Box	1 X 3.0 X 3.0
244.	175+625	RCC Box	1 X 3.0 X 3.0
245.	177+100	RCC Box	1 X 3.0 X 3.0
246.	178+320	RCC Box	1 X 3.0 X 3.0
247.	178+840	RCC Box	1 X 3.0 X 3.0
248.	179+500	RCC Box	1 X 3.0 X 3.0
249.	179+995	RCC Box	1 X 3.0 X 3.0
250.	181+400	RCC Box	1 X 3.0 X 3.0
251.	182+700	RCC Box	1 X 3.0 X 3.0
252.	183+170	RCC Box	1 X 3.0 X 3.0
253.	183+900	RCC Box	1 X 3.0 X 3.0
254.	185+400	RCC Box	1 X 3.0 X 3.0
255.	186+200	RCC Box	1 X 3.0 X 3.0

Construction of 4/6 lane Access Control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

256.	187+310	RCC Box	2 X 3.0 X 3.0
257.	189+500	RCC Box	1 X 3.0 X 3.0
258.	190+200	RCC Box	1 X 3.0 X 3.0
259.	190+515	RCC Box	1 X 3.0 X 3.0
260.	192+000	RCC Box	1 X 3.0 X 3.0
261.	192+700	RCC Box	1 X 3.0 X 3.0
262.	193+840	RCC Box	1 X 3.0 X 3.0
263.	194+500	RCC Box	1 X 3.0 X 3.0
264.	195+000	RCC Box	1 X 3.0 X 3.0
265.	195+300	RCC Box	1 X 3.0 X 3.0
266.	195+600	RCC Box	1 X 3.0 X 3.0
267.	196+000	RCC Box	1 X 3.0 X 3.0
268.	196+500	RCC Box	1 X 3.0 X 3.0
269.	197+000	RCC Box	1 X 3.0 X 3.0
270.	197+450	Slab Culvert	1 X 6.0
271.	197+844	RCC Box	1 X 3.0 X 3.0
272.	198+200	RCC Box	1 X 3.0 X 3.0
273.	199+100	RCC Box	1 X 3.0 X 3.0
274.	199+450	RCC Box	1 X 3.0 X 3.0
275.	200+000	RCC Box	1 X 3.0 X 3.0
276.	200+300	RCC Box	1 X 3.0 X 3.0
277.	202+200	RCC Box	1 X 3.0 X 3.0
278.	202+900	RCC Box	1 X 3+0 X 3.0
279.	203.100	RCC Box	1 X 3+0 X 3.0
280.	203+800	RCC Box	1 X 3.0 X 3.0
281.	205+900	RCC Box	1 X 3.0 X 3.0
282.	206+350	RCC Box	1 X 3.0 X 3.0

2.8 TYPICAL CROSS SECTION

Cross section requirements for roadways vary according to the capacity and level of service to be provided. Universal standards in the design of roadways are not practical. Each roadway section must be individually analyzed and its cross section determined based on the volume and type of projected traffic, capacity, desired level of service, and available right-of-way. These cross sections are typical for facilities on new location and where right-of-way constraints are not critical. The details of typical Cross section (TCS) of 4/6 lane Access Control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan are attached as **Annexure III**.

2.9 DETAILS OF AFFECTED RELIGIOUS STRUCTURES

During the finalization of the alignment options, efforts were made to save as religious structures as possible from acquisition. Majority of the religious structures in the vicinity of the



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

project corridor has been saved vide the proposed alignment and a summary of the religious structure that has been partially/completely affected still, is presented in **Table 2.13**.

Table 2.13: Details of the affected religious structures

S. No.	Proposed Chainage (Km)	Religious Structures
1.	33+250	Temple
2.	59+700	Temple
3.	76+200	Temple
4.	96+650	Temple
5.	98+150	Temple
6.	113+780	Temple
7.	114+920	Temple
8.	128+350	Temple
9.	143+000	Temple
10.	143+950	Temple

2.10 COST ESTIMATES

The total cost includes Contingencies, Supervision charges, Administrative charges, Quality Control charges, Road Safety cell audit charges and cost of Resettlement and Rehabilitation, Land acquisition cost, Environmental cost and shifting of utilities. The general Abstract of cost is presented in **Table 2.14**.

Table 2.14: Abstract of Cost

S.No.	Description	Amount
1.	Site Clearance and Dismantling	50,387,544.00
2.	Excavation and Earthwork	6,894,249,969.00
3.	Sub-Bases, Bases (Non Bituminous)	5,395,460,966.00
4.	Bases & Surface Courses (Bituminous)	4,576,090,822.00
5.	Construction of Double Trumpet Interchange	790,078,441.00
6.	Cost for Dumbell Interchange	490,588,777.00
7.	Construction of Major Bridges	5,216,788,320.00
8.	Construction of Minor Bridges & Culverts	3,105,838,772.65
9.	Construction of Underpasses	3,015,121,597.00
10.	Construction of RoB	602,480,243.00
11.	Traffic Signs, Markings & Road Appruntenances	3,612,398,587.00
12.	Miscellaneous Works (Rain Water Harvesting, Development of Existing Cross Roads, Utility Pipe Ducts, Etc.)	961,501,900.00
13.	Construction of Boundary Wall	1,409,161,600.00
14.	Way Side Amenities (Rest Areas)	200,000,000.00
15.	Slip Roads For Wayside Amenities	170,460,736.00
16.	Street Light/High Mast	254,186,550.00

Construction of 4/6 lane Access Control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

17.	Horticulture	376,366,662.00
18.	Construction of Toll Plaza Without Atms	624,897,942.00
19.	Cost of Atms	251,582,000.00
20.	Drainage And Protection Works	2,427,220,670.00
21.	Civil Cost of the project (A)	40,424,862,098.65
		4,042.49 Cr
22.	Say	4043 Cr

CHAPTER -3

(ANALYSIS OF ALTERNATIVES)



CHAPTER -3: ANALYSIS OF ALTERNATIVES

3.1 INTRODUCTION

This chapter presents a comparative analysis of various alternatives considered to avoid, prevent or minimize impacts that would be inevitable if technically (based on design speed and geometrics) best-fit alignment is followed. The consideration of alternatives to a proposal is a requirement of the EIA report. During the scoping process, alternatives to a proposal can be generated or refined, either directly or by reference to the key issues identified. A comparative analysis of alternatives will help to determine the best method of achieving project objectives while minimizing environmental impacts. Various alternatives selected for analysis usually includes the 'no project' or 'no action' alternative. The relative impact of each alternative is compared against the baseline environment to select a preferred alternative.

The proposed expressway of of 4/6 lane Access Control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan were considered after finalization of various options such as realignments, bypasses and different construction material options keeping in view objectives of the project, traffic condition, obligatory points, geometric designs, congestions and socioeconomic viability and environmental safety aspects. The discussion in this chapter includes the project with alternatives. The objective of this chapter is to highlight some of the salient issues considered for exercising options.

3.2 SELECTION OF ALTERNATIVE

Two alternative alignments have been considered:

- i) Parallel Existing Alignment-SH-28.
- ii) Construction of new 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan

Keeping in view of having less/minor effect on environmental and social components, alignment (ii) has been fixed and it seems more feasible as the length is less as compared to the other option. It also provides better alternative from Jodhpur to Jalore district. It also provides quicker alternative to traffic coming from Amritsar (Punjab) and going towards Jamnagar (Gujarat)/Kandla. The details of the two alternatives studied have been described in **Table 3.1**.

The map showing the two alignments have been shown in **Figure 3.1**.

Construction of 4/6 lane Access Control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

Table 3.1: Details of alternatives studied

Sr. No.	Parameters / Issues	Option 1 (Parallel Existing Alignment-SH-28)	Option 2 (Greenfield)
1	Length (Km)	252	208.200
2	Total Land acquired (Ha)	1500 ha	1730.16 ha
	Pvt. Land (Ha)	1347	1,641.441*
	Govt. land (Ha)	140	75.50*
	Forest land (Ha)	13	13.219*
3	Area under Protected / important or sensitive of flora or fauna / Wildlife Sanctuary	None	None
4	Area under water bodies (Ha)	02 River, 09 canal crossing	11 River(including distributaries), 05 Canal , 8 Nalas crossing
5	No. of structures	900	370
6	No. of families	3800	2238
7	No. of structure to be constructed	i.) ROB – Nil ii.) LVUP – 36 No's iii.) SVUP – 28 No's iv.) VUP- 24 No's v.) Major Bridge – 8 No's vi.) Minor Bridge– 15 No's	i.)ROB – 1 No's ii.) LVUP – 34 No's iii.)SVUP – 85 No's iv.)VUP- 19 No's v.)Major Bridge – 10 No's vi.)Minor Bridge– 20 No's
8	Connectivity	The site follows the existing alignment from Thob- Pachpadra-Balotra-Sindhri- Ramji ka Gol-Sanchoe with. With proposed bypasses at major districts. The existing alignment does not provide good connectivity as compared to Option-2	The site is approachable by road. Start point is Dhandniya (Jodhpur District), Existing Chainage 52+000 of NH-125 and terminates at RJ/GJ Border near Sanchoe in Jalore District. It provides quicker alternative to traffic coming from Amritsar(PB) and going towards Jamnagar (GJ)
9	Project Cost (Cr.)	6650 approx.	4043 approx.



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

*3D is under process.

Impact Scoring Matrix

Natural Environment						
Attributes	Scoring Criteria		Score	Total Weight of Attribute	Option-1	Option-2
					Score	Score
Topography	Plains	-	0	10	5	0
	Rolling terrain	-	5			
	Flood plains/coastal belt	-	10			
	Hilly/mountainous terrain	Upto 100% of Project Length	10	10	1	1
		Upto 50% of Project Length	5			
		Upto 25% of Project Length	1			
		Nil	0			
	CRZ Area	CRZ -I	10	10	0	0
		CRZ -III	5			
		CRZ -III/IV	1			
		Nil	0			
Vulnerability to natural hazards (as earthquakes, floods, landslides, Tropical cyclone winds, storm surges, tsunami or	Not prone to any Hazard	-	0	5	1	1
	Rare occurrence	-	1			
	Prone to natural disasters/risks	-	3			

Construction of 4/6 lane Access Control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



**NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)**

volcanic eruptions and climate changes etc.)	Highly prone to natural disasters (regular occurrence)	-	5			
Surface water resources	Number (average) of water bodies per km (rivers, canals, reservoirs, lakes and ponds) – Crossings as well as water bodies within RoW.	5 or less	1	5	1	1
		6 to 10	2			
		11 to 15	3			
		16 to 20	4			
		21 or more	5			
Affected Surface Area of Water bodies	Reservoir/Lake/Pond	>1 ha.	10	10	10	0
		Upto 0.5 ha.	5			
		Upto 0.1 ha.	1			
		if No	0			
	Canal/River/Stream	>3 ha.	10	10	10	10
		Upto 1.5 ha.	5			
		Upto 0.3 ha.	1			
		if No	0			
Drainage Conditions	Over-topping and/or water logging within RoW (average number of such instances per km)	2 or less	1	5	5	1
		3 to 4	2			
		5 to 6	3			
		6 to 7	4			
		7 or more	5			
Ground water resources	Availability/Grey/Black	Available	1	5	3	3
		Grey	3			
		Black	5			
Materials Availability	Availability of Boulder/Sand/Earth	Within 50 km	1	5	1	1
		50 to 100 km	2			
		100 to 200 km	3			

Construction of 4/6 lane Access Control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

		More than 200 km	5			
Soil Erosion	Is soil erosion an issue in/along the sub-project road?	No Errosion	0	5	1	1
		To some extent	1			
		Critical	3			
		Very critical	5			
Total		-		80	38	19

Biological Environment						
Attributes	Scoring Criteria		Score	Total Weight of Attribute	Option-1	Option-2
					Score	Score
Protected Areas (PA) under Wildlife Conservation Act	National Park	-	10	10	0	0
	Tiger Habitat	-	10			
	Wildlife Sanctuary/Marine Sanctuary	-	8			
	Conservation Reserve/Biosphere, Wetland	-	6			
	Projects Falls within 10Km Boundary of PA/ Wildlife Corridor in other type of Forests Area	-	2			
	None	-	0			
Forests Area	Reserved Forest	upto 20 ha	1	10	1	0
		upto 40ha	2			
		upto 50 ha	4			
		upto 60 ha	6			

Construction of 4/6 lane Access Control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

		upto 100 ha	8			
		More than 100 ha	10			
	Protected Forest	upto 20 ha	1	10	4	1
		upto 40ha	2			
		upto 50 ha	4			
		upto 60 ha	6			
		upto 100 ha	8			
		More than 100 ha	10			
	Forest Type Area (FCA Applicable), Forest Type Area (FCA Applicable), Government Land Notified under FCA Act as Protected Forest for Management Purpose	upto 20 ha	1	10	4	1
		upto 40ha	2			
		upto 50 ha	4			
		upto 60 ha	6			
		upto 100 ha	8			
		More than 100 ha	10			
Trees	Felling of trees from forest area	Upto 100 Trees/Km	1	10	1	1
		Upto 200 Trees/Km	2			
		Upto 300 Trees/Km	4			
		Upto 400 Trees/Km	6			
		More than 500 Trees/Km	8			

Construction of 4/6 lane Access Control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchores (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

	Local Law applicable for felling of trees Non Forest Land	More than 1000 Trees/Km	10	10	2	1
		upto 50 Trees/Km	1			
		upto 100 Trees/Km	2			
		200 Trees/Km	4			
		Upto 300 Trees/Km	6			
		Upto 400 Trees/Km	8			
		More than 500 Trees/Km	10			
Mangroves	Area	No CRZ	0	10	0	0
		upto 2 ha.	2			
		upto 5ha	5			
		More than 10 ha	10			
	No of Manroves	upto 50 ha	2	10	0	0
		Upto 100 ha	5			
		More than 200 ha	10			
Total	-	-	-	80	12	4

Construction of 4/6 lane Access Control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchores (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

Physical Environment						
Attributes	Scoring Criteria		Score	Total Weight of Attribute	Option-1	Option-2
					Score	Score
Air Quality	Respirable PM10	Upto Permissible limit i.e. 100 µg/m ³	5	5	5	5
		Upto 50 µg/m ³	2			
		Upto 20 µg/m ³	0			
	Respirable PM 2.5	More than Permissible limit i.e. 60 µg/m ³	5	5	5	3
		Upto Permissible limit i.e. 60 µg/m ³	3			
		Upto 30 µg/m ³	2			
		Upto 10 µg/m ³	0			
	SO ₂ /Nox	More than Permissible limit i.e. 80 µg/m ³	5	5	2	0
		Upto 40 µg/m ³	2			
		Upto 20 µg/m ³	0			
	CO (1 Hr. Monitoring)	More than Permissible limit i.e. 4000 µg/m ³	5	5	0	0
		Upto 2000 µg/m ³	2			
		Upto 1000 µg/m ³	0			
	CO (8 Hr. Monitoring)	More than Permissible limit i.e. 2000 µg/m ³	5	5	-	-
		Upto 1000 µg/m ³	2			
		Upto 250 µg/m ³	0			
Ground Water	Limit as per IS 10500:2012	If 4 Parameters are above desirable limit	5	5	5	5

Construction of 4/6 lane Access Control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

		If 2 Parameters are above desirable limit	2			
		All within Permissible Limit	0			
Surface Water	Limits as per IS:2296 Class C Limits	If 4 Parameters are above desirable limit	5	5	0	0
		If 2 Parameters are above desirable limit	2			
		All within Permissible Limit	0			
Noise	Day Time (Ambient Noise) in Residential/Commercial/Silent (Noise Level in dB (A) for continuous 24 hours at 1 hour interval)	More than Permissible Limit i.e.65dB	5	5	5	5
		Upto 50% of Permissible Limit i.e.32dB	2			
		Upto less than 50 % of Permissible Limit	0			
	Night Time (Ambient Noise) in Residential/Commercial/Silent (Noise Level in dB (A) for continuous 24 hours at 1 hour interval)	More than Permissible Limit i.e.55dB	5	5	5	5
		Upto 50% of Permissible Limit i.e.27dB	2			
		Upto less than 50 % of Permissible Limit	0			
Soil		Saline/Highly Alkaline/Highly Acidic	5	5	2	2
		Moderate	2			
		Within 50% of Permissible Limit	0			
Total	-	-		50	29	25



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

Social Environment						
Attributes	Scoring Criteria		Score	Total Weight of Attribute	Option-1	Option-2
					Score	Score
People	No. of Families Affected/Km	>25	5	5	5	5
		Upto 20	4			
		Upto 10	2			
		<5	1			
Agriculture	Affected Area/Km	>2 ha.	10	10	10	10
		Upto 1 ha.	5			
		Upto 0.2 ha.	1			
		if No	0			
Settlements	Total length of settlement sections (both towns and villages) abutting the road corridor	10 km or less	2	10	4	2
		10 to 20 km	4			
		20 to 30 km	6			
		30 to 40 km	8			
		40 km or more	10			
Sensitive Receptors	Number (total) of sensitive receptors within RoW (such as educational and health facilities)	10 or less	1	5	5	1
		11 to 20	2			
		21 to 30	3			
		31 to 40	4			
		41 or more	5			
Drinking water sources	Total number of drinking water sources (wells, hand	10 or less	1	5	5	3
		11 to 20	2			

Construction of 4/6 lane Access Control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



**NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)**

	pumps, community water points/taps etc.) with in RoW	21 to 30	3			
		31 to 40	4			
		41 or more	5			
Religious Structures	Number (total) of religious structures (temples, shrines, mosque, church, gurudwara) with in RoW	10 or less	1	5	5	1
		11 to 20	2			
		21 to 30	3			
		31 to 40	4			
		41 or more	5			
Cultural Heritage Site	Number (total) of cultural properties (protected/ unprotected archeological monuments) within RoW.	2 or less	1	5	2	1
		3 to 5	2			
		6 to 8	3			
		8 to 10	4			
		More than 10	5			
Market Places	Number (total) of weekly market places/haats; grain/fruit/ vegetable/ fish market; cattle market	5 or less	1	5	4	1
		6 to 10	2			
		11 to 15	3			
		16 to 20	4			
		21 or more	5			
Common Property Resources	Number (total) of CPRs (such as pastures/gauchar lands; seating areas of the community; cremation/burial grounds etc.) within/along the RoW	5 or less	2	10	4	2
		6 to 10	4			
		11 to 15	6			
		16 to 20	8			
		21 or more	10			
Total	-	-	-	60	44	26

Construction of 4/6 lane Access Control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

Engineering Aspect						
Attributes	Scoring Criteria		Score	Total Weight of Attribute	Option-1	Option-2
					Score	Score
Road Length, (Km)	Total length of the Road	10 km or less	3	15	15	15
		10 to 20 km	6			
		20 to 30 km	9			
		30 to 40 km	12			
		40 km or more	15			
Geometrical Elements	Horizontal and Vertical (Curvature)	Nil	0	15	15	15
		5 or less	3			
		6 to 10	6			
		11 to 15	9			
		16 to 20	12			
		21 or more	15			
Road Safety		High	5	15	10	5
		Moderate	10			
		Low	15			
Operational	Connectivity /	Better	5	10	7	5

Construction of 4/6 lane Access Control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

	Access	Moderate	7			
		Low	10			
Construction Time		<30 Months	5	10	5	5
		up to 36	7			
		>36 Months	10			
Muck/blasting/ disposal	Cutting/ drilling/ blasting / Disposal	Low	1	5	5	3
		Moderate	3			
		High	5			
Underpass (No.)	VUP/LVUP/SVUP	10 or less	4	10	10	10
		11 to 20	6			
		21 to 30	8			
		31 or more	10			
Interchange	Number (total) of Road Junctions	10 or less	2	10	2	2
		11 to 20	4			
		21 to 30	6			
		31 or more	8			
Railway Crossing	Number (total) of RUB/ROB/At Grade	Nil	0	10	0	4
		2 or less	4			
		3 to 4	6			
		5 to 7	8			
		8 or	10			

Construction of 4/6 lane Access Control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

		more				
Major Bridge	Number (total) of Bridges incl. bridges on Water Bodies	2 or less	4	10	8	10
		3 to 5	6			
		6 to 8	8			
		More than 8	10			
Minor Bridge	Number (total) of Bridges incl. bridges on Water Bodies	5 or less	4	10	10	10
		6 to 10	6			
		11 to 15	8			
		15 or more	10			
Total Cost of Structures	Civil Cost (Crores)	Upto 300	2	5	5	5
		300 to 600	3			
		600 to 1000	4			
		1000 or more	5			
Total Construction Cost	Civil Cost (Crores)	Upto 500	2	5	5	5
		500 to 1000	3			
		1000 to 1500	4			
		1500 or more	5			
Total	-	-	-	130	97	94

Construction of 4/6 lane Access Control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

Scoring Criteria

Scoring Criteria	Total Weight	Option-1	Option-2
		Score	Score
Natural Environment	80	38	19
Biological Environment	80	12	4
Physical Environment	50	29	25
Social Environment	60	44	26
Engineering	130	97	94
Total	400	220	168

Based on above scoring criteria alternative (ii) is found to have less impact on environmental and social component, hence it is follow.

Construction of 4/6 lane Access Control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)



Figure 3.1: Details of alternative alignments



3.3 WITH AND WITHOUT PROJECT SCENARIO

The proposed project will not only develop the surrounding area but will also provide smooth movement of traffic and linking with other roads of the country. Keeping in view, the site conditions and the scope of development of the area, the 'With' and 'Without' project scenarios has been studied. The details of the "With" and "Without" Project has been presented in **Table 3.2**.

Table 3.2: 'With' and 'Without' Project Scenario

With Project		Without Project	
Positive Impacts	Negative Impacts	Positive Impacts	Negative Impacts
• The construction of new expressway will reduce the traffic congestion and wastage of fuel. • Flourish in trade and Commerce. • Providing better level of service in terms of improved riding quality and smooth traffic flow. • Reduction in accident rate • Access to new Employment Opportunities • Employment of local workers for the execution of project • Better access to health care and other social services • Improved quality of life of the local people • Better way side amenities and other facilities like bus bays/shelters, truck lay byes and service roads	• Approx. 1730.16 ha of land shall be acquired • Out of approx. 15360 trees which are coming in ROW approx. 5909 trees are coming in carriage way which are likely to be impacted due to development of green field alignment. • Increase of traffic will lead to air and noise pollution. • Removal of trees and vegetation due to construction of proposed project • Changes in land use pattern along the new green field alignment. • Increase in dust pollution and noise Pollution during Construction period. However, this will be for short term.	• No acquisition of land or properties and hence no displacement of families. • No felling of existing trees and vegetation	• Travel time and fuel consumption level will be more due to bottlenecks • Increased air pollution in the close proximity of the existing roads due to slow moving traffic and congestion • Rise in noise levels due to more traffic congestion on the existing roads • Chances of accidents on existing transport infrastructure will be more in absence of the planned Expressway. • Further deterioration of project road.



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

•Adequate underpasses flyovers for cross over			

Therefore, 'with' project scenario, with its insignificant adverse impacts is more acceptable than the 'without' project scenario, which would mean an aggravation of the existing problems. The potential benefits of the planned expressway are substantial and far reaching both in terms of the geographical spread and time. Hence, it is clear that the implementation of the project will be a definite advantage to Rajasthan and especially Jodhpur, Barmer and Jalore district in order to achieve all-round development of their economy and progress for their people.

The potential impacts on different environmental components would be avoided through good engineering design practices. Appropriate mitigation measures have been suggested where avoidances are not possible in various sections of the environmental assessment report.

Based on the above studies the following observations are there:

- (i) **Alternative (ii)** seems more feasible as the length is less as compare to other option. Also it provide better alternative from Jodhpur to Jalore district and also provides quicker alternative to traffic coming from Amritsar (Punjab) and going towards Jamnagar (Gujarat)/Kandla.
- (ii) Alternative (i) passes through the lot of major built-up areas, which will lead to major R&R, and at the end the project will not be feasible.

Alternative (ii) is found to have less impact on environmental and social component, hence it is follow.

CHAPTER -4

(DESCRIPTION OF THE ENVIRONMENT)



CHAPTER - 4: DESCRIPTION OF ENVIRONMENT

In order to understand the baseline environmental status and impacts due to the proposed construction of expressway, observations were made by field visits. The relevant secondary data were also collected. The methodologies adopted can be classified in the following way:

1. The preparation of questionnaire for environmental surveys.
2. Field observations of these questionnaires including public consultation.
3. Screening, testing and monitoring of environmental factors like Air, Water, Soil and Noise level.
4. Collection of secondary data from various departments.
5. Compilation, analysis and presentation of the report.

4.1 PREPARATION OF QUESTIONNAIRES FOR ENVIRONMENTAL PARAMETERS

Questionnaires were prepared after thoroughly studying the environmental guidelines and conditions of the Ministry of Environmental, Forest and Climate Change (MoEF&CC). Questionnaires for Environmental appraisal for Road / Highway projects by MoEF&CC were also taken into account while preparing Questionnaire. Total four sets of questionnaires were prepared for field survey/data collection. The details of these are as follows:

1. Environmental screening information like national parks, wild life sanctuary, forests, archeological, cultural, religious structures etc. within 10 Kms on both sides of the expressway.
2. Environmental screening survey, effects on environment: views of the community.
3. The survey of features within Right of Way (ROW) on both the sides of the proposed expressway.
4. Wild life/National Park survey questionnaires for villagers, road users etc.

4.1.1 Field Observation on Questionnaire

A team under the leadership of Environmental Expert was constituted to undertake the field survey of the questionnaire. The young workers were apprised of the comprehension of the work emphasis on public consultation.

4.1.2 Screening, Testing & Monitoring of Physical Environmental Factors

The entire stretch of proposed alignment was surveyed and screened. The collection of water samples, soil samples and other data pertaining to air quality and noise were done along the proposed alignment. The samples were analyzed in NABL accredited laboratory.



4.1.2.1 Ambient Air Quality

Ambient air quality is the most significant parameter that is required to quantify the impact on the natural and biophysical environment.

Ambient Air Quality (AAQ) was monitored along the proposed alignment at selected sites. The locations selected were those of the city / town area, the market place and the rural areas. The details of locations and monitoring results are discussed in Chapter – 4. The air quality parameters considered for the study includes Particulate Matter 10 (PM₁₀), Particulate Matter 2.5 (PM_{2.5}), Nitrogen Oxides (NO_x) Sulphur Di-oxide (SO₂), and Carbon monoxide (CO).

a) Particulate Matters (PM₁₀ & PM_{2.5})

PM₁₀ and PM_{2.5} were monitored using a Respirable Dust sampler (RDS) and PM_{2.5} Sampler. A pre-conditioned and weighted glass fiber filter paper is used for PM₁₀ and PTFE filter paper is used for RDS/PM_{2.5} samplers. A known quantity of the air was sucked through the filter paper in a prescribed sampling time. The flow was noted from the manometer. The multiplication of time with rate gave the total quantity of air passed through the filter paper. After sampling, the filter paper was removed, conditioned and weighed finally for getting the concentrations in ambient air.

b) Sulphur Di-Oxides (SO₂)

A known quantity of the air was bubbled through impingers containing tetrachloromercurate. SO₂, formed a disulfiltomercurate complex, which gave a pinkish blue colour with p-roaniline and formaldehyde solution. The intensity of colour produced was proportional to concentration of sulphur dioxide. The measurement was made by using spectrophotometer at the wavelength of 560 nm.

c) Nitrogen Di-Oxides (NO_x)

A known quantity of air was passed through impingers containing sodium hydroxide-sodium arsenite solution. The estimation of NO_x was done calorimetrically using hydrogen peroxide, sulfanilamide, NEDA, etc. The intensity of the colour was measured at 540 nm using a spectrophotometer.

d) Carbon Monoxide (CO)

Monitoring Samples were taken in Tedlar Bag and been tested by Non- dispersive Infrared (NDIR) Spectroscopy method.

4.1.2.1.1 Instrument Used for Sampling

Respirable Dust Samplers APM-250 of Lata Envirotech Services make were installed for monitoring Suspended Particulate Matter (SPM), Respirable fraction (<10 microns) and gaseous pollutants like SO₂ and NO_x. Whereas the concentration Particulate matter 2.5 was monitored by installing Envirotech made APM 50MFC particulate matter sampler.



4.1.2.1.2 Techniques for Ambient Air Quality Monitoring

The techniques used for Ambient Air Quality monitoring have been presented in **Table 4.1**.

Table 4.1: Techniques used for Ambient Air Quality Monitoring

Parameter	Technique	Technical Protocol	NAAQM Standards (24 hrs basis)
Particulate Matter (Size less than 10 μ m) or PM ₁₀ , μ g/m ³ □	Respirable Dust Sampler (Gravimetric method)	IS-5182 (Part-IV)	100
Particulate Matter (Size less than 2.5 μ m) or PM _{2.5} , μ g/m ³ □	PM 2.5 APM 550 Fine Particle Sampler (Gravimetric method)		60
Sulphur Dioxide (SO ₂), μ g/m ³	Improved West and Gaeke Method□	IS-5182 (Part-II)	80
Nitrogen Dioxide (NO ₂), μ g/m ³ □	Jacob and Hochheiser	IS-5182 (Part-IV)	80
Carbon Monoxide (CO), mg/m ³ □	Sample taken in Tedlar Bag and been tested by Non – dispersive Infrared (NDIR) Spectroscopy	IS-5182 (Part-IV)	4

4.1.2.2 Water Quality

Samples of ground water were collected from existing hand pumps, wells and Tube-wells whereas samples of surface water were collected from rivers and available local surface water body like ponds, lakes etc.. The samples were analyzed for parameters necessary to determine water quality (based on IS: 10500 criteria) and those which are relevant from the point of view of environmental impact of the proposed highway project.

4.1.2.3 Soil Quality

For studying soil quality, sampling location was selected to assess the existing soil conditions in and around the project area representing various land use conditions. The sample was collected by ramming a core-cutter into the soil up to 90-cm depth. Soil samples were collected and analyzed for relevant physical and chemical characteristics in order to assess the impact of the proposed project on soil.

4.1.2.3.1 Sampling Frequency and Analysis Methodology

The physical and chemical characteristics of the soil of the study area have been assessed by analyzing various parameters as per the methods described in “Soil Chemical Analysis” (M.L Jackson) and Department of Agriculture and Cooperation. Standard classification of Soil as per Indian Council of Agriculture Research, New Delhi has been presented in **Table 4.2**.



Table 4.2: Standard Classification of Soil

S. No.	Soil Test	Classification
1.	pH	<4.5 Extremely acidic 4.51- 5.50 Very strongly acidic 5.51-6.0 moderately acidic 6.01-6.50 slightly acidic 6.51-7.30 Neutral 7.31-7.80 slightly alkaline 7.81-8.50 moderately alkaline 8.51-9.0 strongly alkaline 9.01 very strongly alkaline
2.	Salinity Electrical Conductivity (mmhos/cm) (1 ppm = 640 mmho/cm)	Upto 1.00 Average 1.01-2.00 harmful to germination 2.01-3.00 harmful to crops (sensitive to salts)
3.	Organic Carbon	Upto 0.2: very less 0.21-0.4: less 0.41-0.5 medium, 0.51-0.8: on an average sufficient 0.81-1.00: sufficient >1.0 more than sufficient
4.	Nitrogen (Kg/ha)	Upto 50 very less 51-100 less 101-150 good 151-300 Better >300 sufficient
5.	Phosphorus (Kg/ha)	Upto 15 very less 16-30 less 31-50 medium, 51-65 on an average sufficient 66-80 sufficient >80 more than sufficient
6.	Potash (Kg/ha)	0-120 very less 120-180 less 181-240 medium 241-300 average 301-360 better >360 more than sufficient

4.1.2.4 Noise Level

Sound Pressure Level (SPL) was measured by a sophisticated sound level meter (Integrating Sound Level Meter Cygnet, Model 2031A). The noise level (Leq) was measured using noise meter at various sites along the entire stretch of expressway during day (6.00 am to 10 pm) and night (10 pm to 6.00 am).

The noise levels is expressed as an equivalent noise level (Leq) which is the measurement duration of sound pressure level as the averaging time. It is calculated as follows:

$$Leq = 10 \log_{10} \left[\sum^n \frac{1}{n10^{n/10}} \right]$$



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

Where, L_i = Instantaneous sound intensity level dB (A)

n = No. of observations

4.1.2.4.1 Noise Standards

The Ambient Noise Quality Standards with respect to noise have been stipulated by Govt. of India vide Gazette Notification dt. 14.02.2000. **Table 4.3** describes the Ambient Noise Standards.

Table 4.3: Ambient Noise Standards

Area Code	Category of Area	Limits in dB (A), L_{eq}	
		Day time	Night time
A	Industrial Area	75	70
B	Commercial Area	65	55
C	Residential Area	55	45
D	Silence Zone*	50	40

*- *Silence zone is defined as an area up to 100 meters around such premises as hospitals, educational institutions and courts. The silence zones are to be declared by the competent authority;*

4.1.3 Secondary Available Data

The secondary data were collected from following sources has been presented in Table 4.4:

1.	General information	District Collector/Gazetteer Office, Jodhpur, Barmer and Jalore
2.	Meteorological data	Indian Meteorological Department
3.	Statistical data	District Statistical Office
4.	Irrigation and hydrogeology data	Central Ground Water Board
5.	General Land use and Cropping Pattern	Agriculture Department
6.	Relief and slope	Survey of India
7.	Rocks and minerals	Geological Survey of India
8.	Industries	District Industries Center
9.	Maps and Topo sheets	Survey of India
10.	Forest Types, Wild life and Bio-diversity	State Forest Department, Government of Rajasthan
12.	Archaeological Data	Archaeological Survey of India



4.2 ANALYSES, COMPILATION AND PREPARATION OF REPORT

The data collected by survey teams were compiled along with the field monitoring studies and secondary data, these were used to identify the environmental problem spots or 'Hot Spots'.

The following analyses were carried out based on compiled information:

1. The levels of environmental parameters were compared with the prescribed limits suggested by Central Pollution Control Board (CPCB). This gave a clear idea that special attention is paid in areas where the level of pollution is higher than desirable. Those stretches, where the pollution level does not exceed the desired limits despite construction of the expressway will be dropped from further study.
2. The sites where the impact is minimum or nearly absent has been identified. This may help in selection of major storage sites during construction work.
3. The mitigation measures have been suggested to reduce the adverse impacts due to the proposed widening and detailed environmental management plan have been prepared covering both the phases i.e. construction and operation of highway.



4.3 BASELINE ENVIRONMENTAL CONDITIONS

4.3.1 Physical/Natural Environment

Baseline environmental data plays a key role in identification of environmental parameters likely to be affected due to the proposed project. This also facilitates the decision maker to assess a particular environmental parameter which needs to be incorporated during the detailed Environmental Assessment study and for further detailed investigation. The scope of this chapter is limited to only those issues, which are of concern in the environmental assessment. With rapid strides in economic development, the need to rationalize the development is imperative. During the process of development, there has been intensive use of natural resources, very often leading to ecological imbalances. In a road project like this involving wide ranging construction activities, conservation of flora, fauna and the ecosystem forms important aspect of overall sustainable development process. The data/ features documented hereunder have been collected through field investigation, interaction with local population and desk research and published data sources.

The environmental baseline data comprise the features present within a strip of 10 km or affected area whichever is more on either side of the proposed alignment. This area is referred to as study area/ project area in the report. It includes environmental features such as forest areas, conservation areas, water bodies (rivers, lakes ponds and reservoirs), industries, wildlife/National parks and, places of historical importance, tourism etc.

4.3.2 Geographical Location of the project expressway

The proposed Expressway is mostly green field project and proposed for 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan having a total length of 208.242 Kms. The proposed project passes through Jodhpur, Barmer and Jalore districts in the state of Rajasthan. The proposed project takes off from design Ch. -1+142 from NH125 near existing km 52+000 between Dhandhaniya Sasan and Agolai towns (Jodhpur district) and ends at Rajasthan-Gujarat Border (Design Ch.207+100) near Sanchoe (District-Jalore) in the state of Rajasthan. The proposed project expressway transverses at 26°19'12.53"N, 72°35'48.83"E and 24°39'51.63"N, 71°44'46.86"E..

4.3.3 Land Use and Terrain

4.3.3.1 Objective

The objectives of the study of land use are:

- To determine the present land use pattern;
- To analyse the impacts on land use due to proposed project in the study area;
- To give recommendations for optimizing the future land use pattern vis-à-vis growth of plant activities in the study area and its associated impacts.



4.3.3.2 Methodology

A hybrid technique has been used i.e. visual interpretation and digital processing has been used for the preparation of land use/ land cover map of present study. Survey of India reference map on 1:50,000 scale have been used for the preparation of base map and geometric correction of satellite data. Ground truth has been carried out to validate the interpretation accuracy and reliability of remotely sensed data, by enabling verification of the interpreted details and by supplementing with the information, which cannot be obtained directly on satellite imagery.

ERDAS 9.2 and Arc GIS 9.3 software was used for digital processing of the spatial data. Digital image processing techniques were applied for the mapping of the land use land cover classes of the provided area from the satellite data.

4.3.3.3 Land Use/Land cover of the study area

The existing land use around the proposed expressway primarily comprises of agricultural land, forest area, barren land, land for cattle grazing, village settlements and village ponds/nallah. The proposed alignment passes mostly through uninhabited area avoiding village establishments.

The land use map for a buffer length of 500m around the proposed project has been prepared to a scale of 1:25000 based on recent satellite imagery. It shows features such as crop lands, agricultural plantations, fallow lands, waste lands, water bodies, built-up areas, forest areas and other surface features such as railway tracks, roads.

Table 4.5 describes the land use of the study area. The land use map based on satellite imagery within 500m buffer length of the proposed project has been shown in **Figure-4.1**.

Table 4.5: Land use/Land cover of Project area

S.No.	Particulars	Area(Ha)	Percentage (%)
1	Water bodies	54.8	0.26
2	Fallow land	80.5	0.39
3	Forest land	58.2	0.28
4	Settlements	31.25	0.15
5	Waste land	1250	6.00
6	Crop land	19349.45	92.92
	Total	20824.2	100

Figure 4.1(i) to 4.1(xxviii) shows the stretch wise project area under different land use/land cover within 500 m buffer length of the project expressway.

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

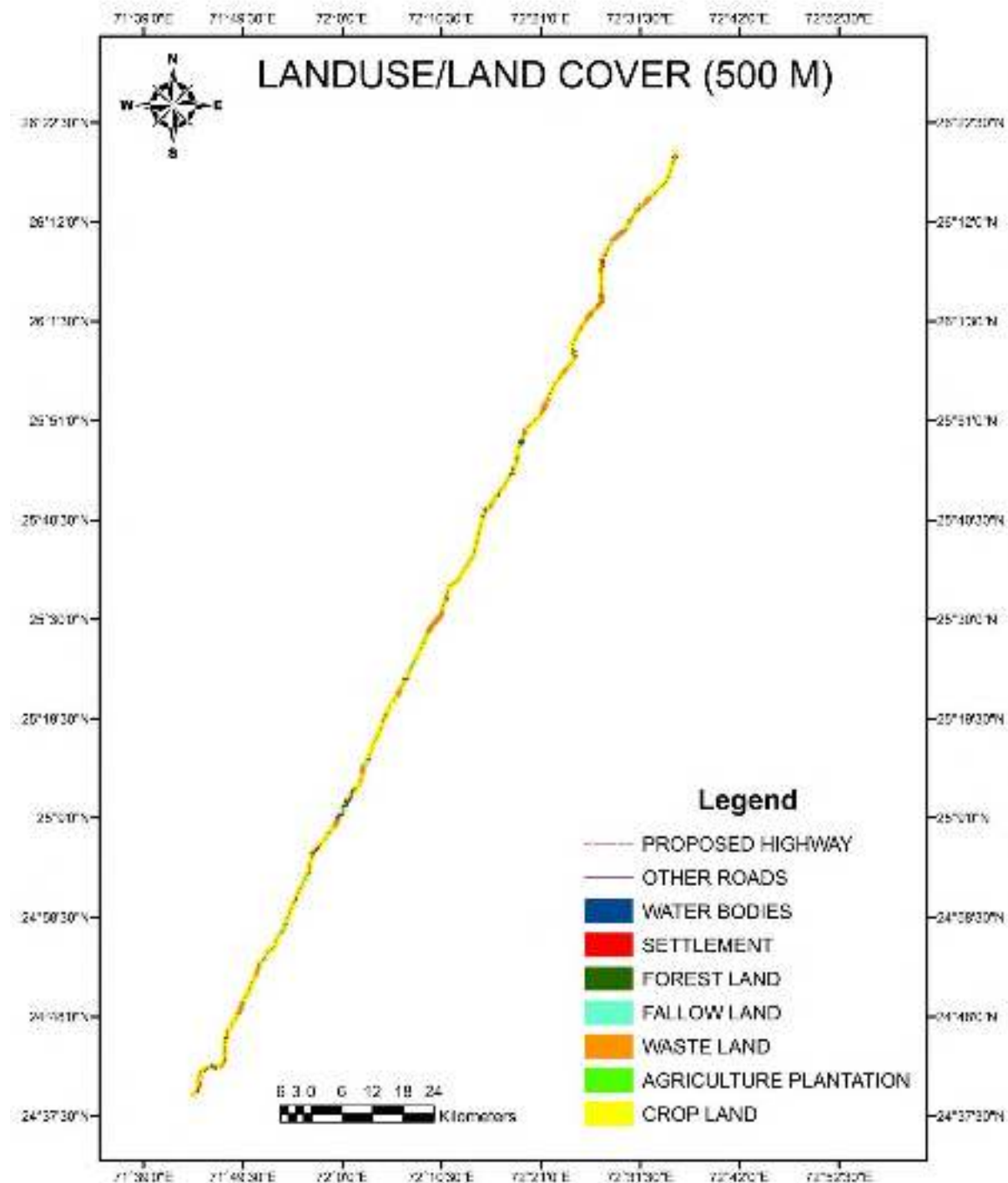


Figure 4.1: Land use of the proposed expressway (500 m buffer zone)

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

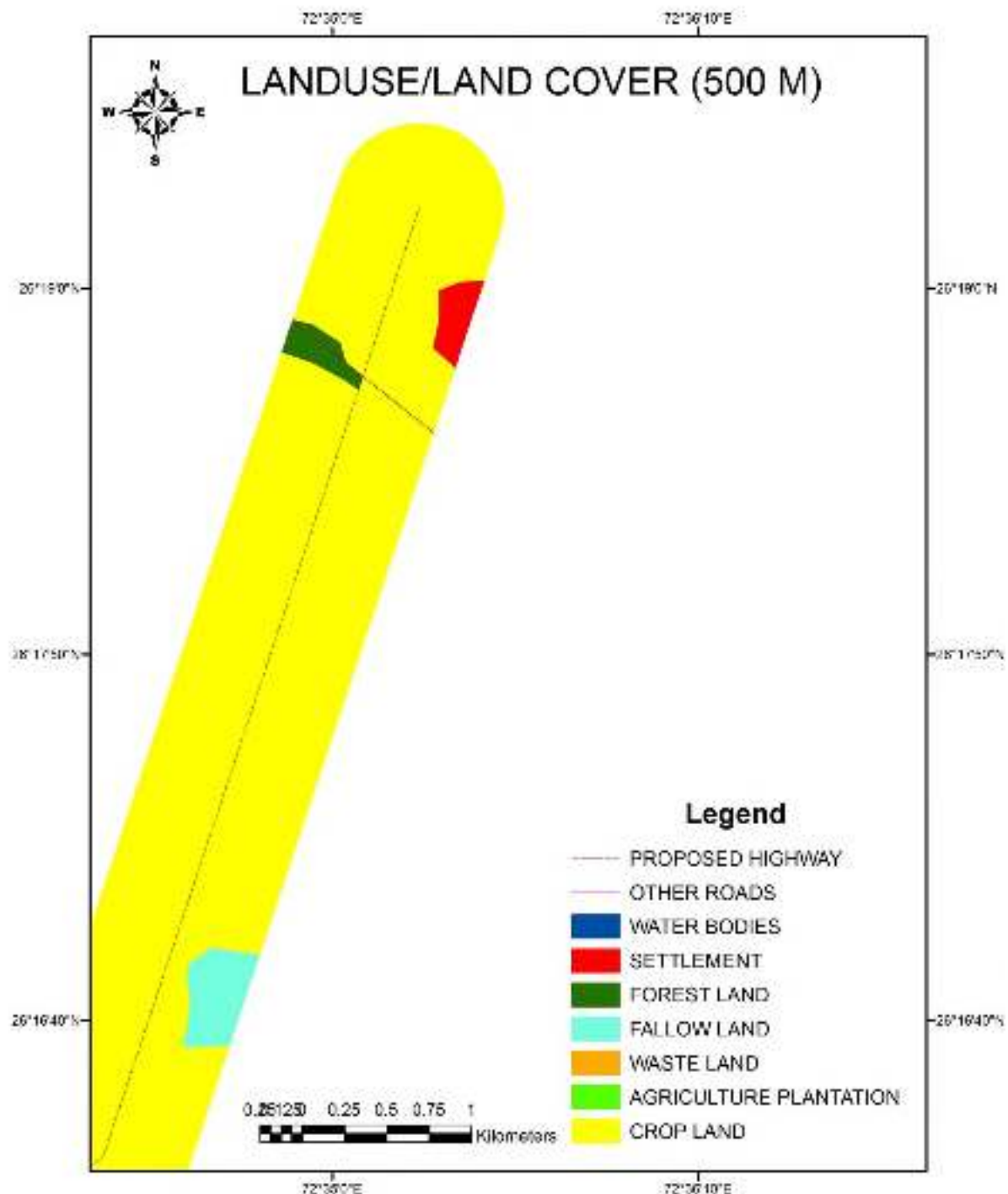


Figure 4.1(i): Land use of the study area (stretch 1 from CH: -1+142 to 6+280)



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

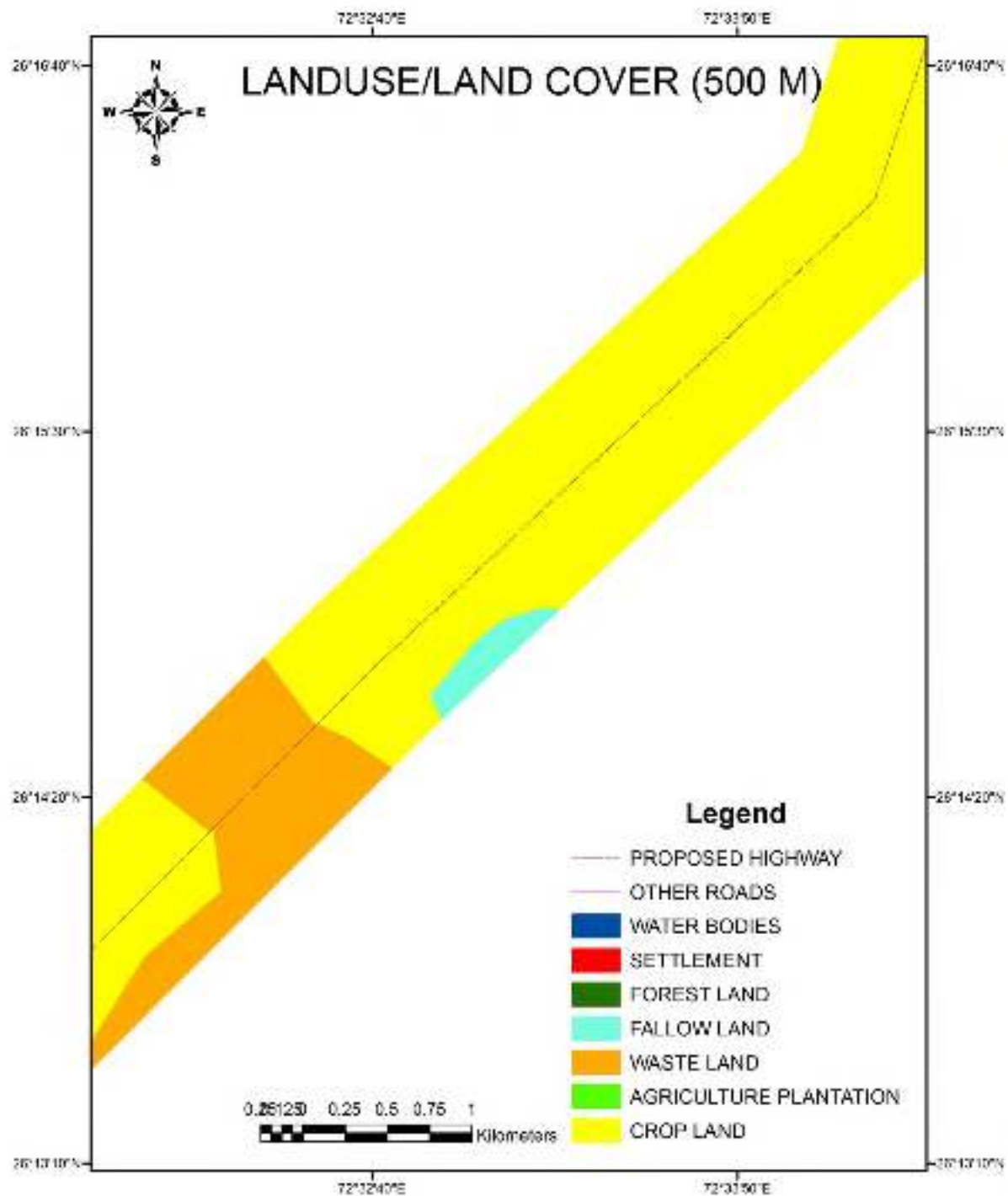


Figure 4.1(ii): Land use of the study area (stretch 2 from CH: 6+280 to 13+700)



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

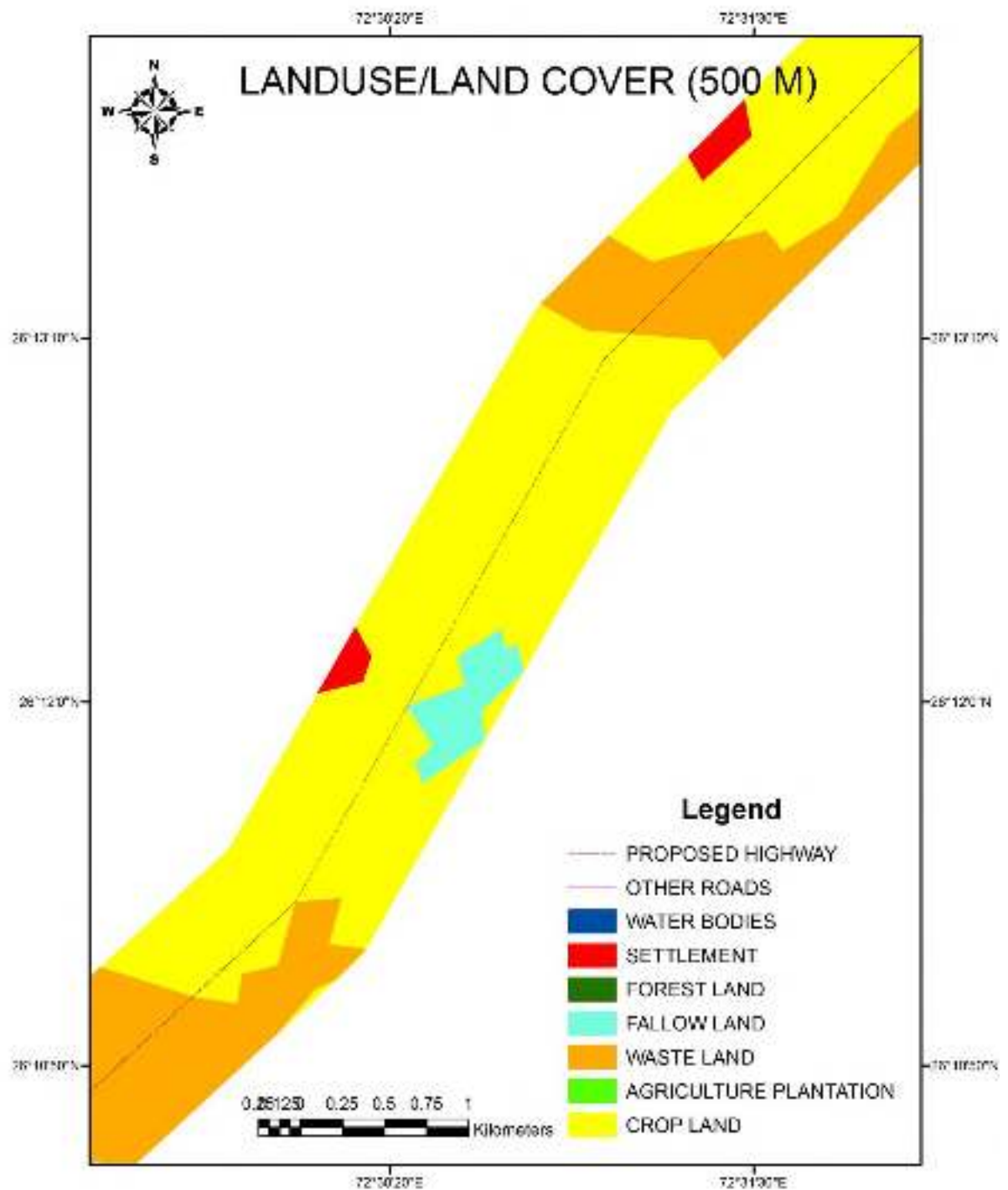


Figure 4.1(iii): Land use of the study area (stretch 3 from CH: 13+700 to 21+118)



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

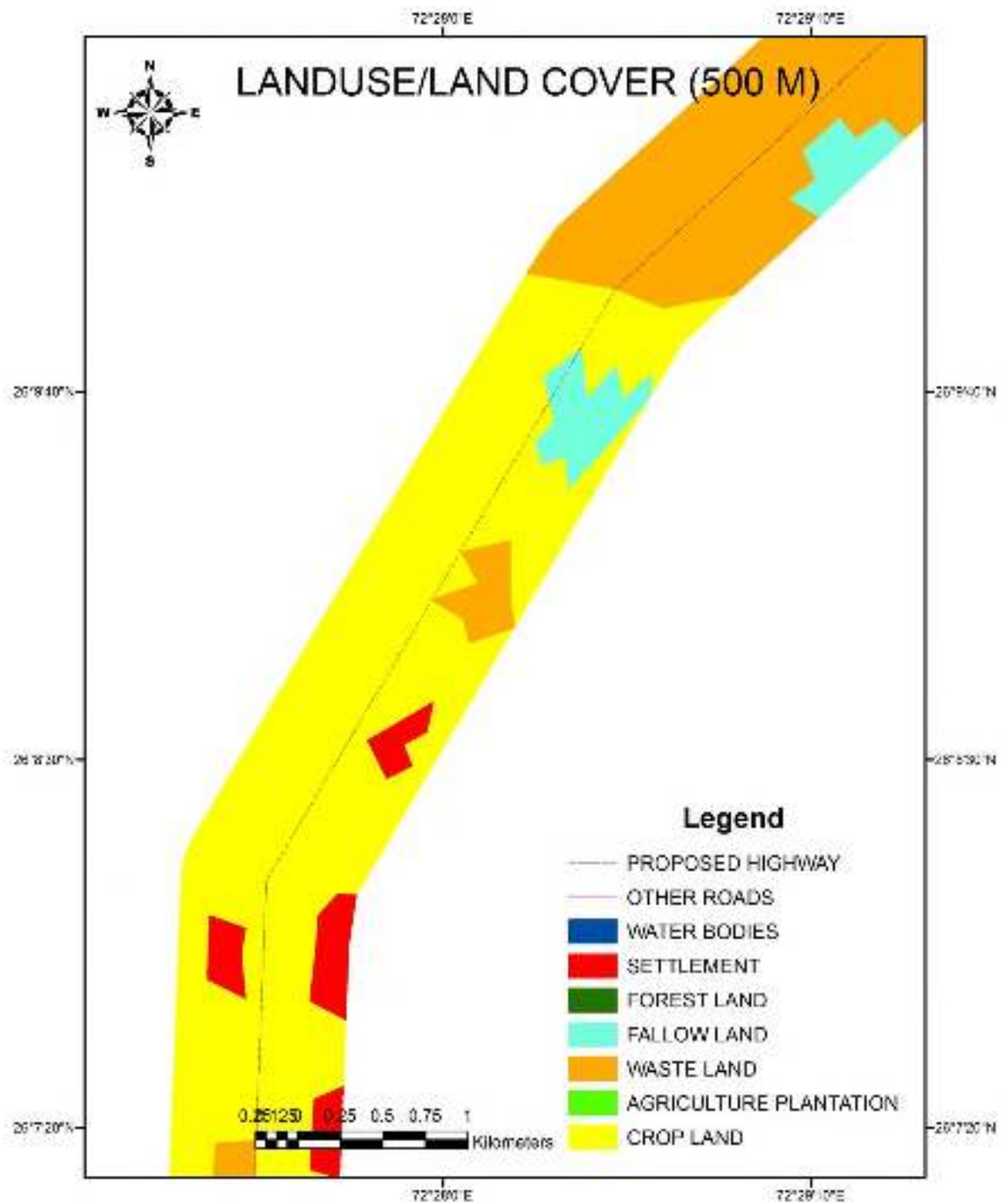


Figure 4.1(iv): Land use of the study area (stretch 4 from CH: 21+118 to 28+538)



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

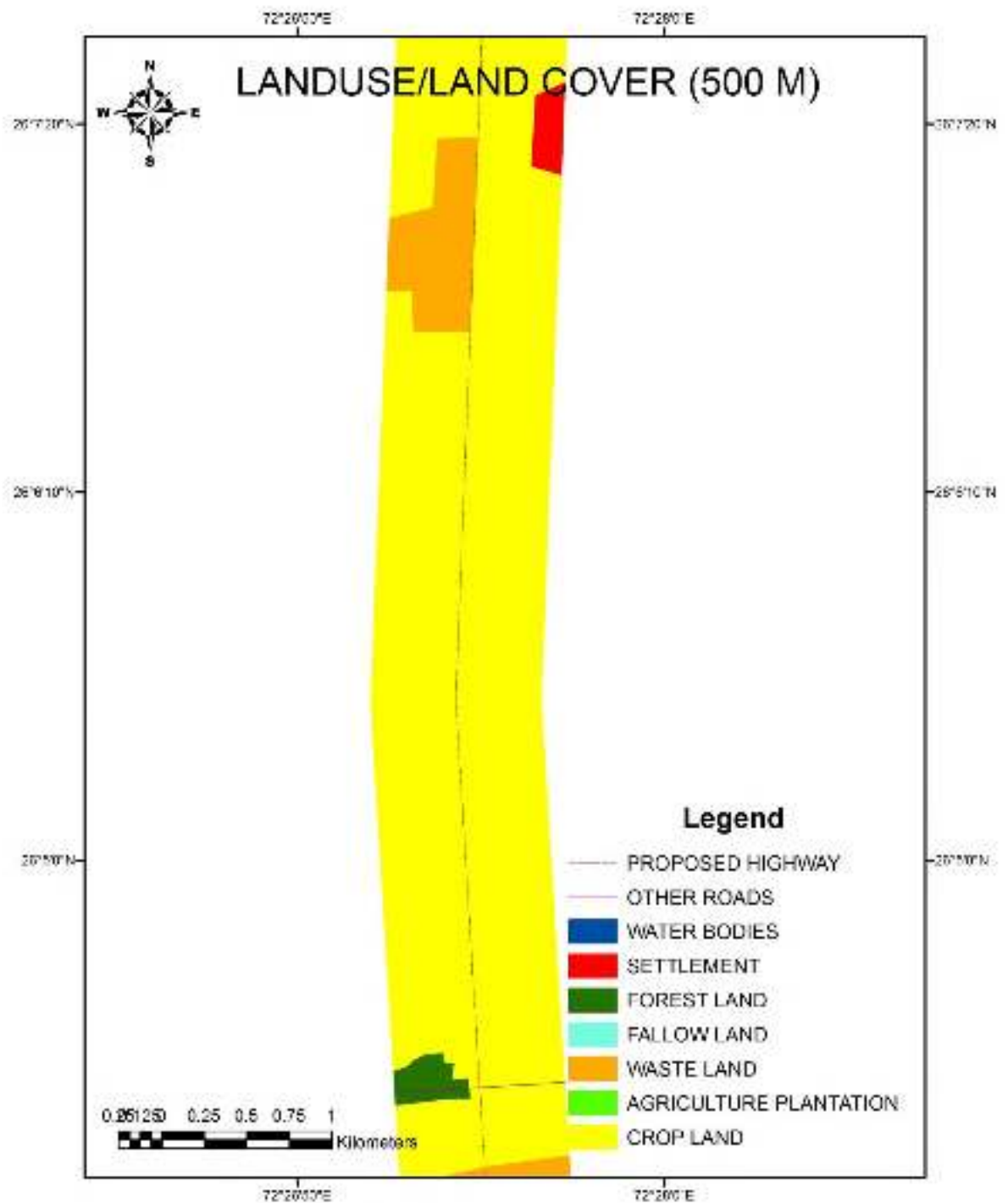


Figure 4.1(v): Land use of the study area (stretch 5 from CH: 28+538 to 35+958)



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

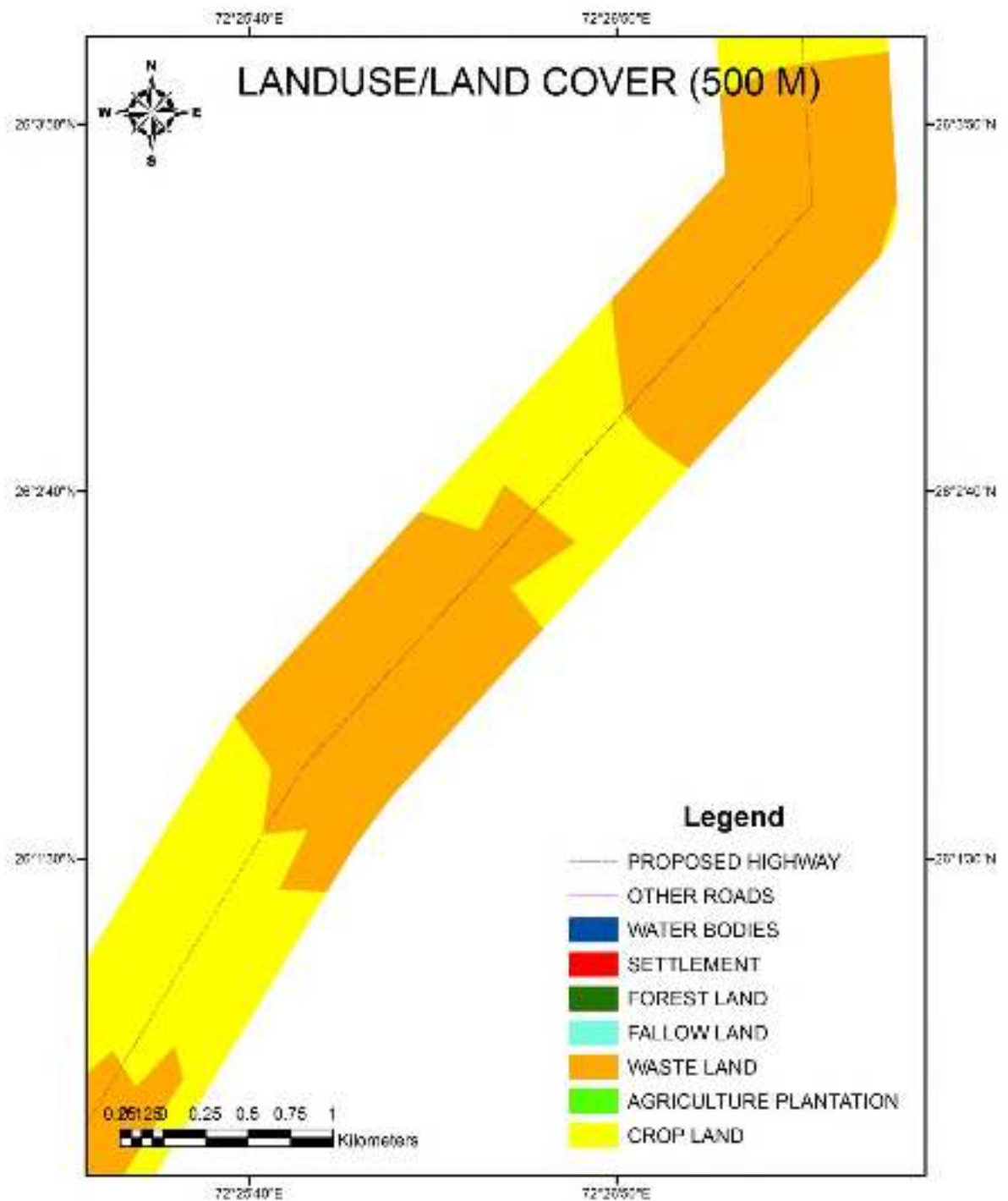


Figure 4.1(vi): Land use of the study area (stretch 6 from CH: 35+958 to 43+378)



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

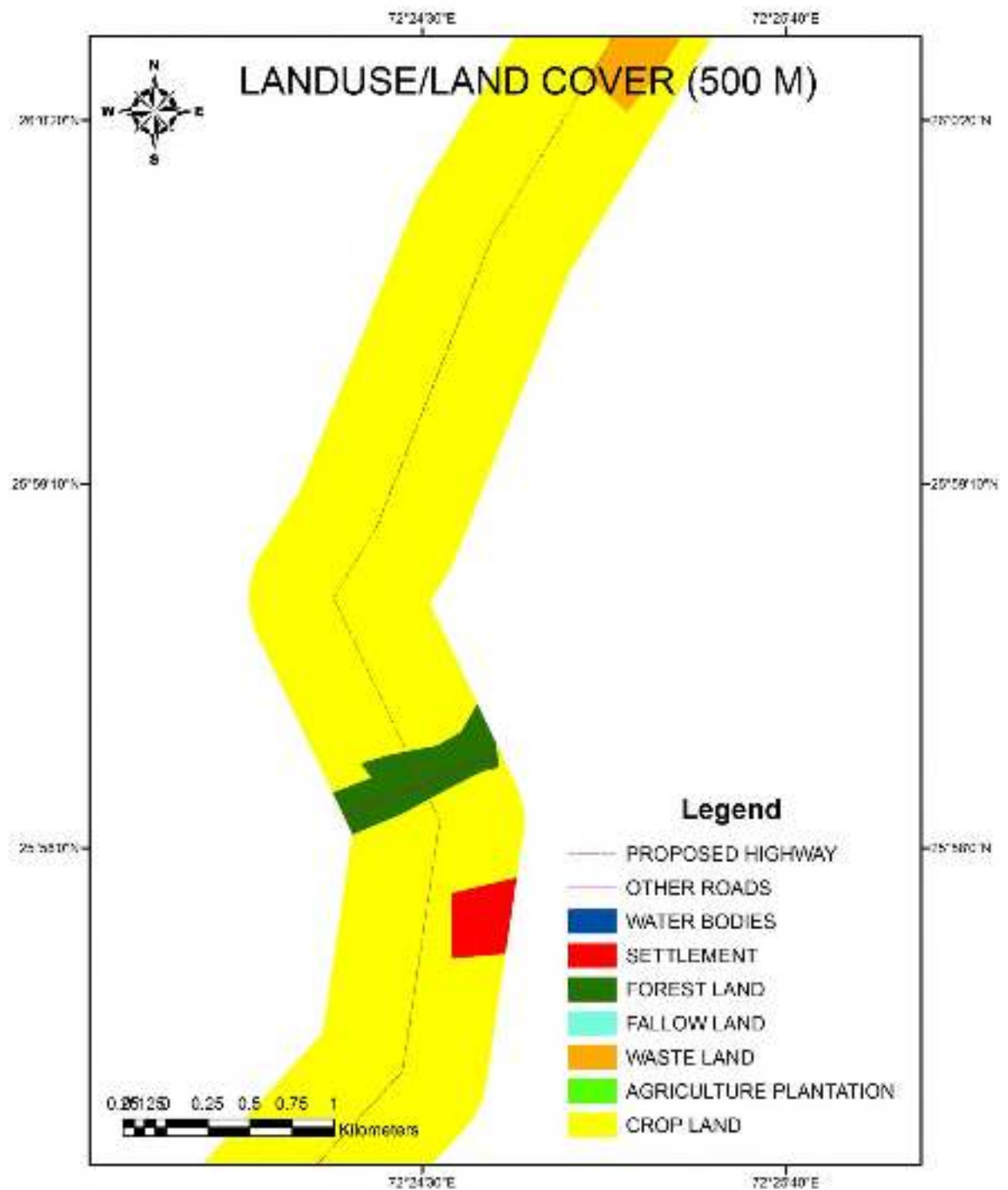


Figure 4.1(vii): Land use of the study area (stretch 7 from CH: 43+378 to 50+798)



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

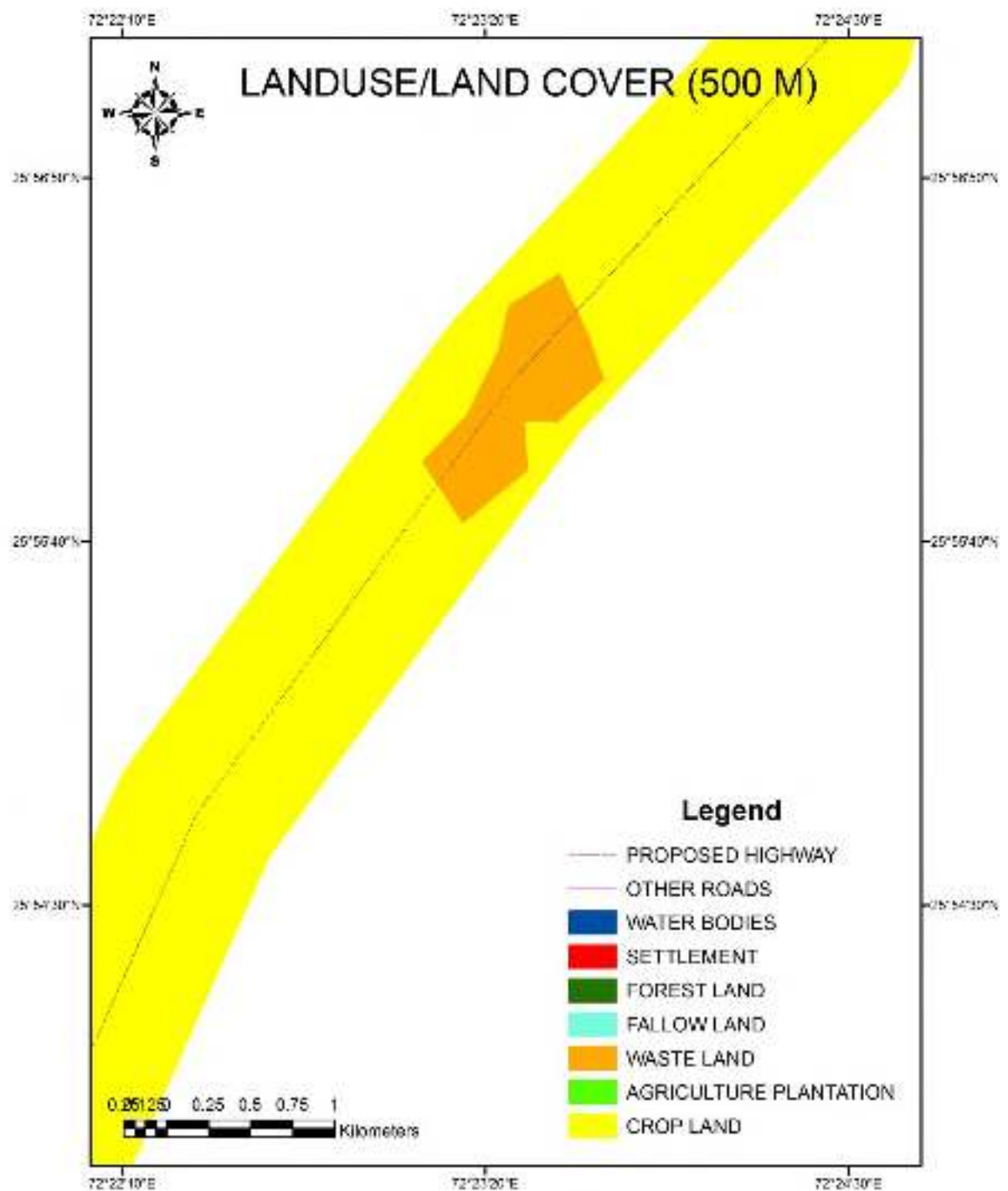


Figure 4.1(viii): Land use of the study area (stretch 8 from CH: 50+798 to 58+218)



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

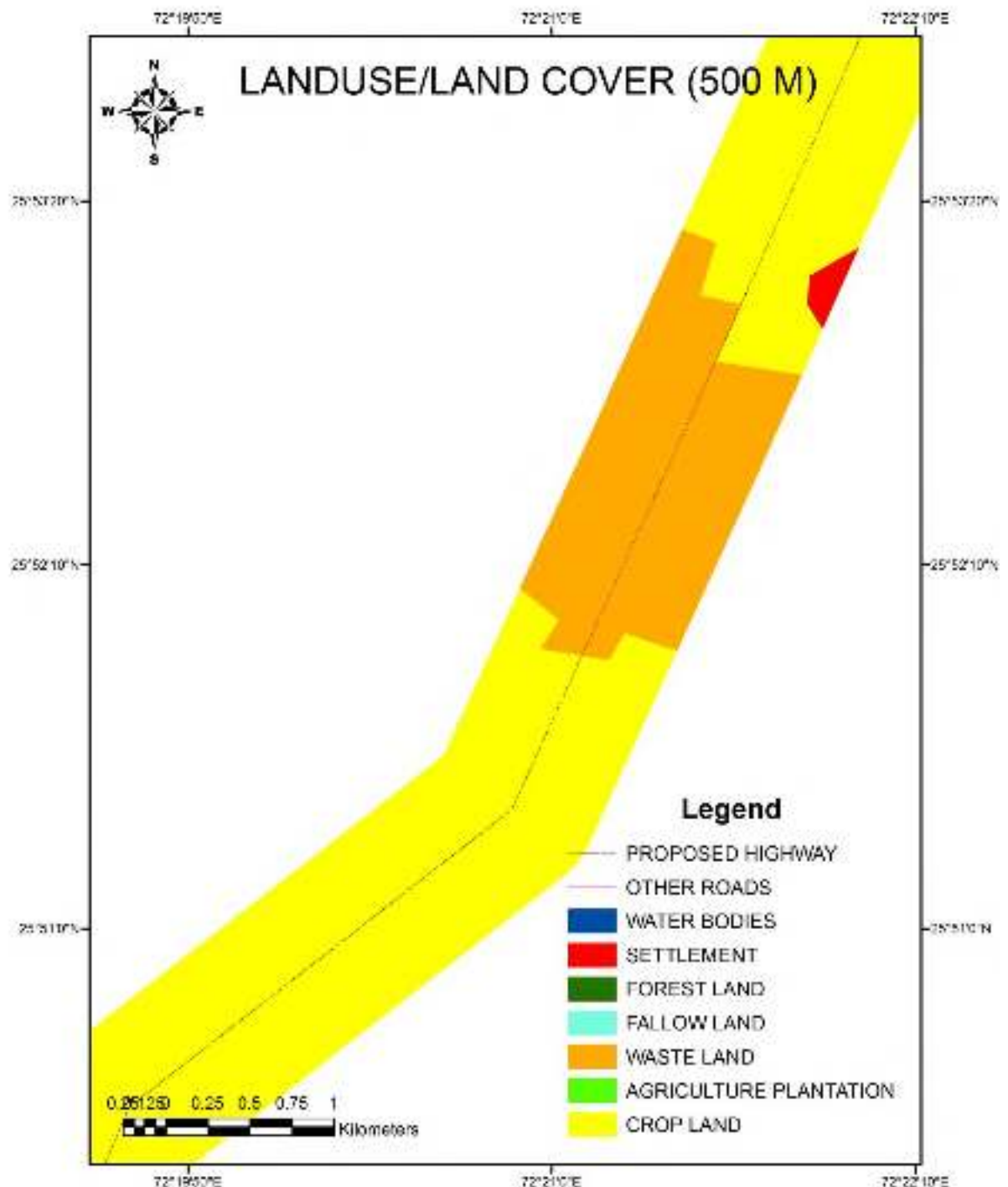


Figure 4.1(ix): Land use of the study area (stretch 9 from CH: 58+218 to 65+638)

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

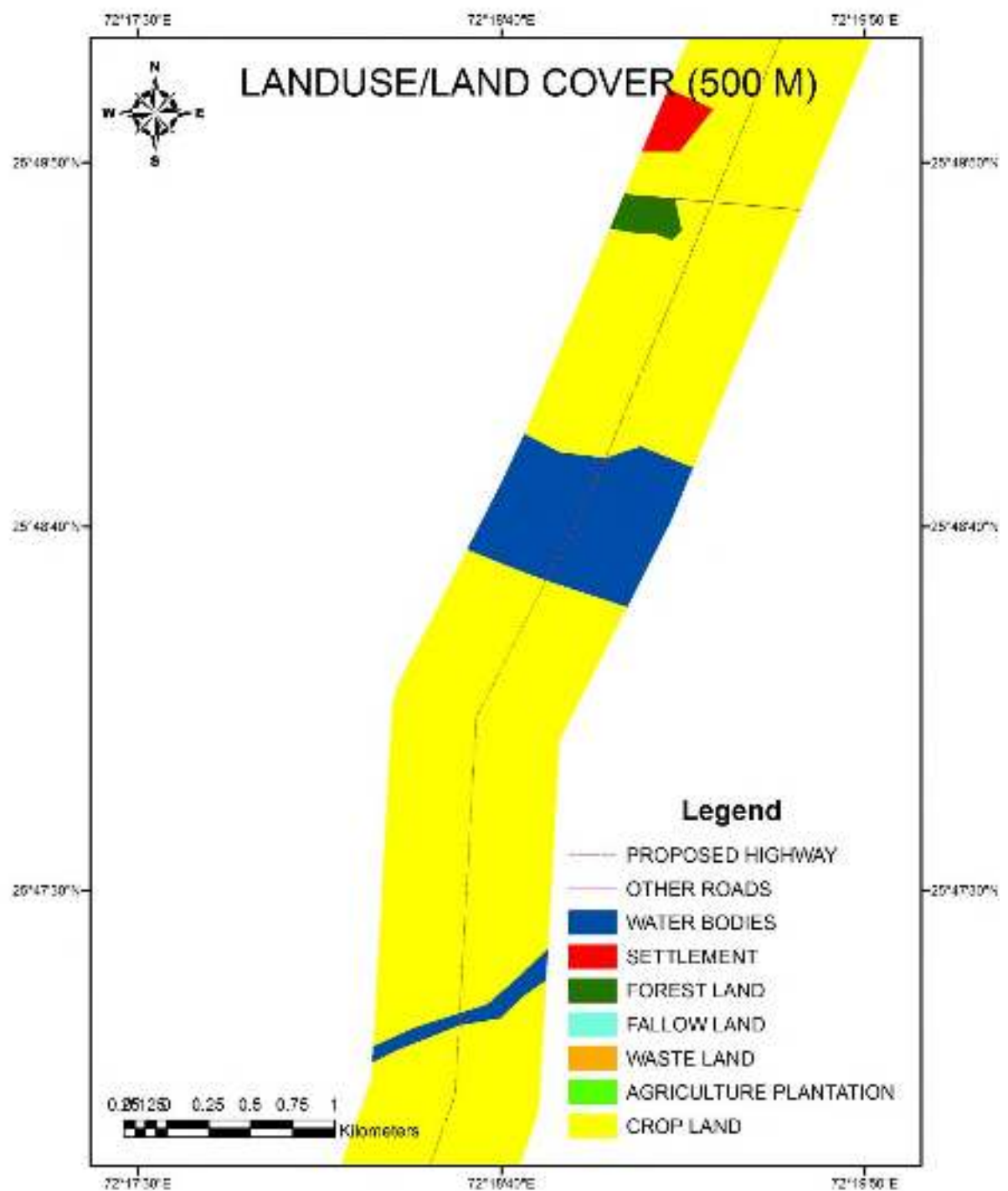


Figure 4.1(x): Land use of the study area (stretch 10 from CH: 65+638 to 73+058)

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

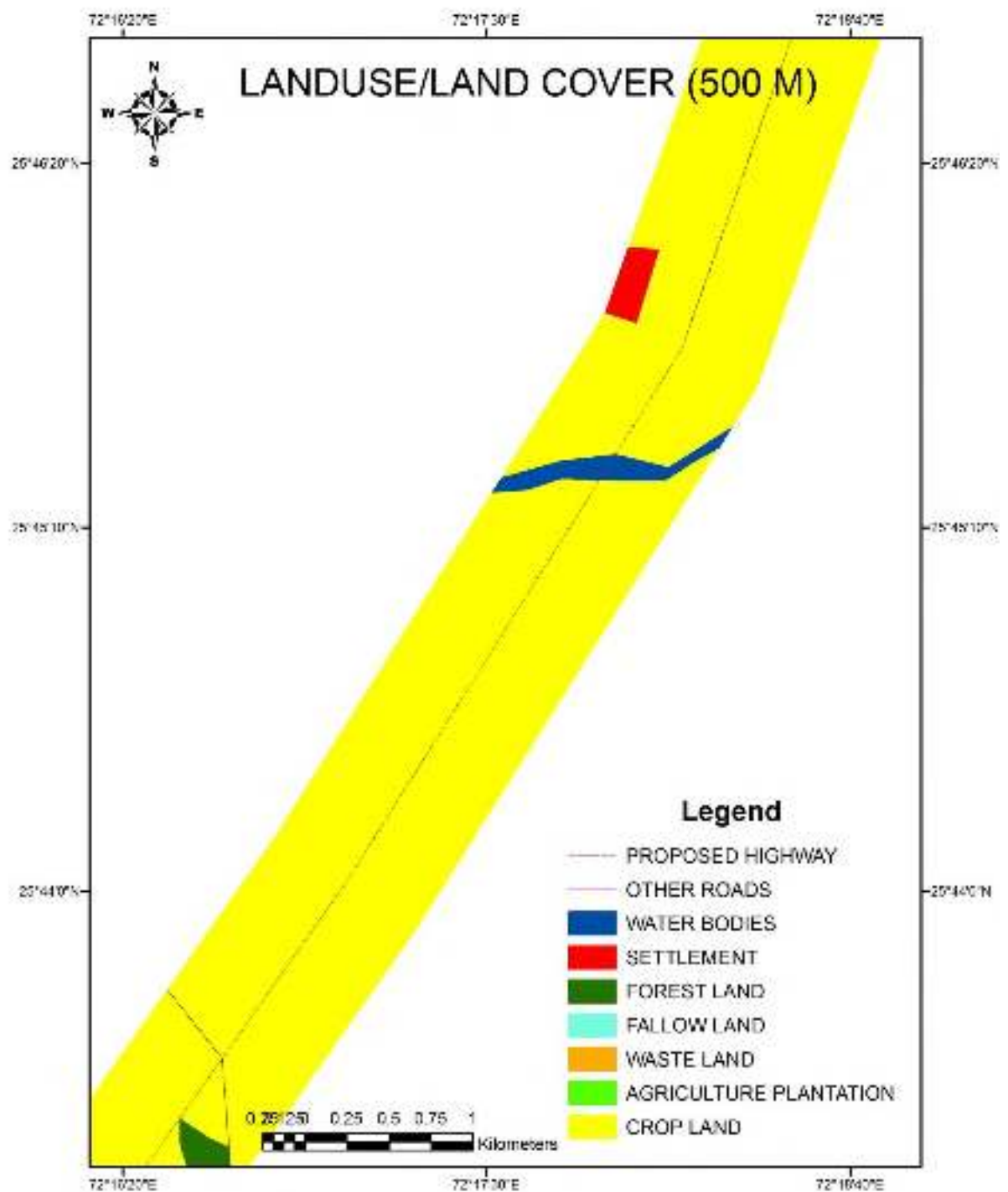


Figure 4.1(xi): Land use of the study area (stretch 11 from CH: 73+058 to 80+478)



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

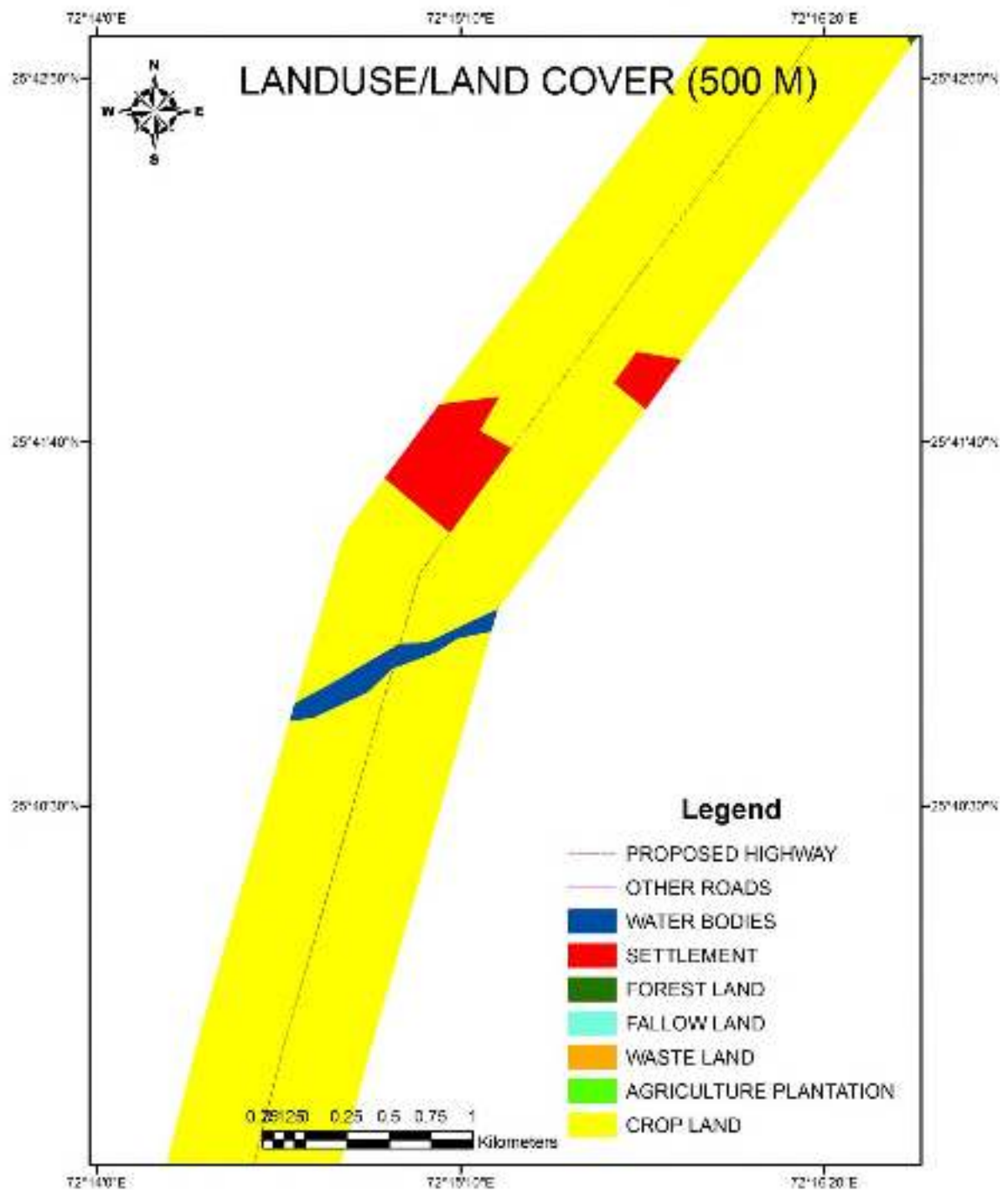


Figure 4.1(xii): Land use of the study area (stretch 12 from CH: 80+478 to 87+900)



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

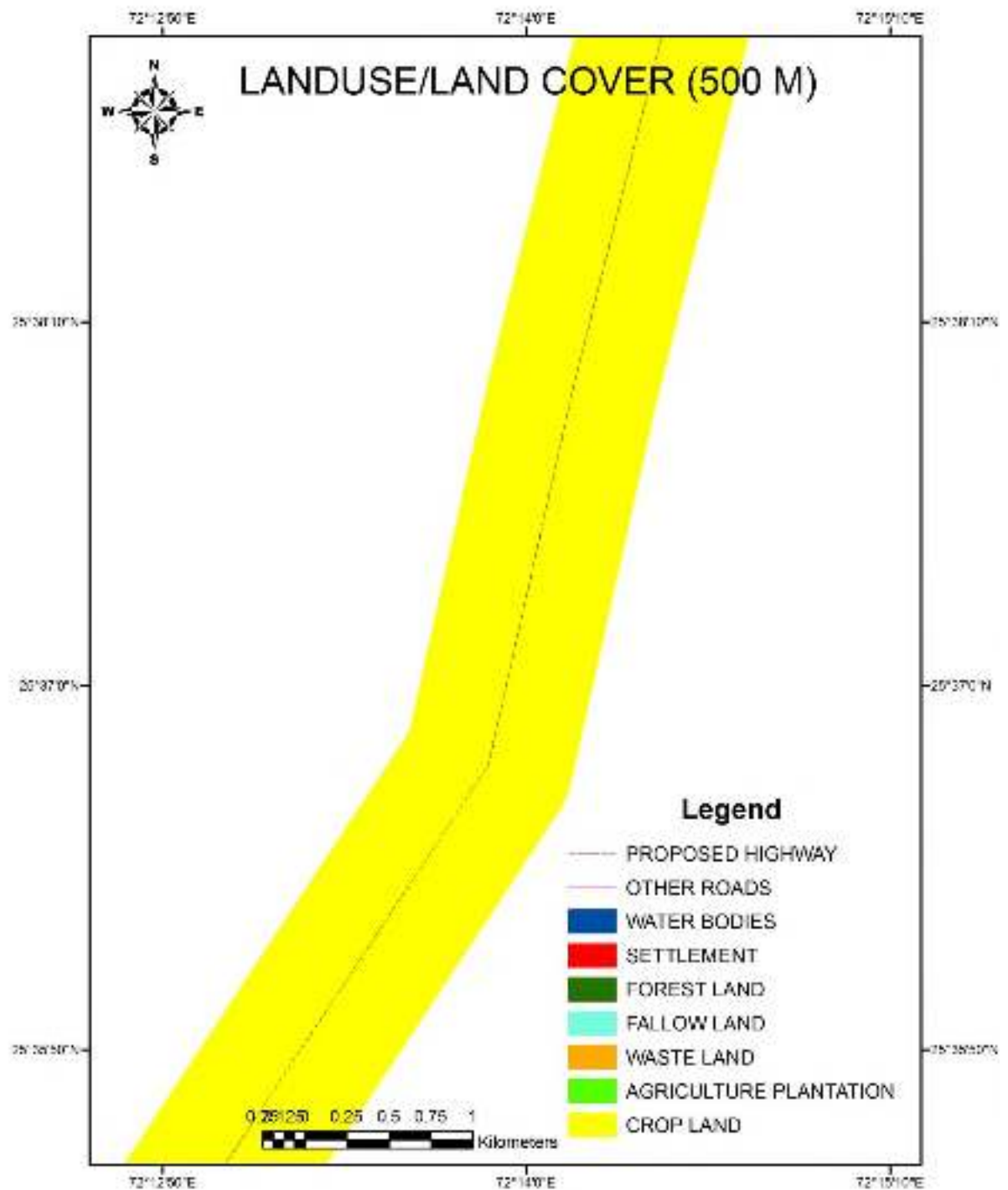


Figure 4.1(xiii): Land use of the study area (stretch 13 from CH: 87+900 to 95+320)



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

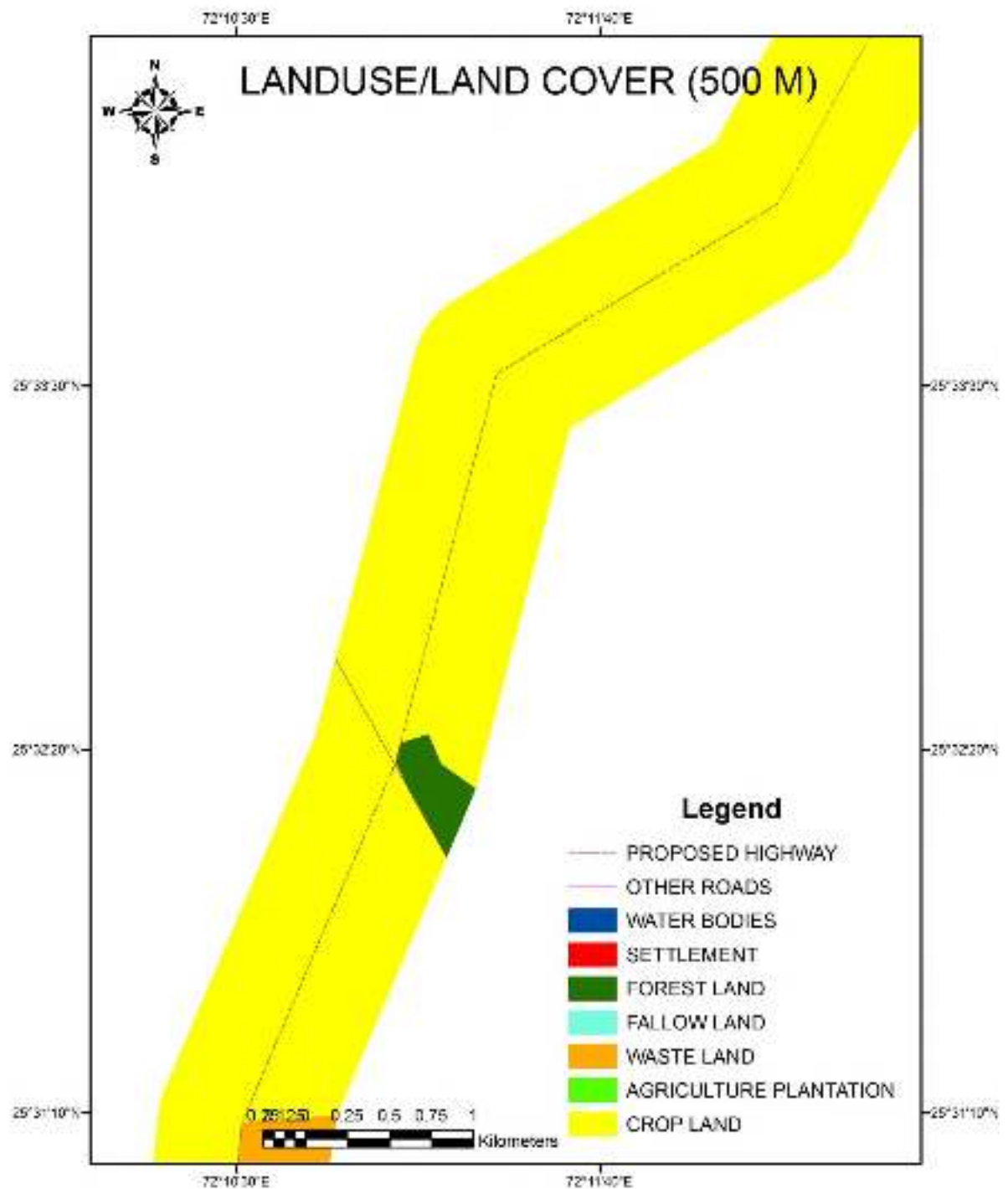


Figure 4.1(xiv): Land use of the study area (stretch 14 from CH: 95+320 to 102+740)



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

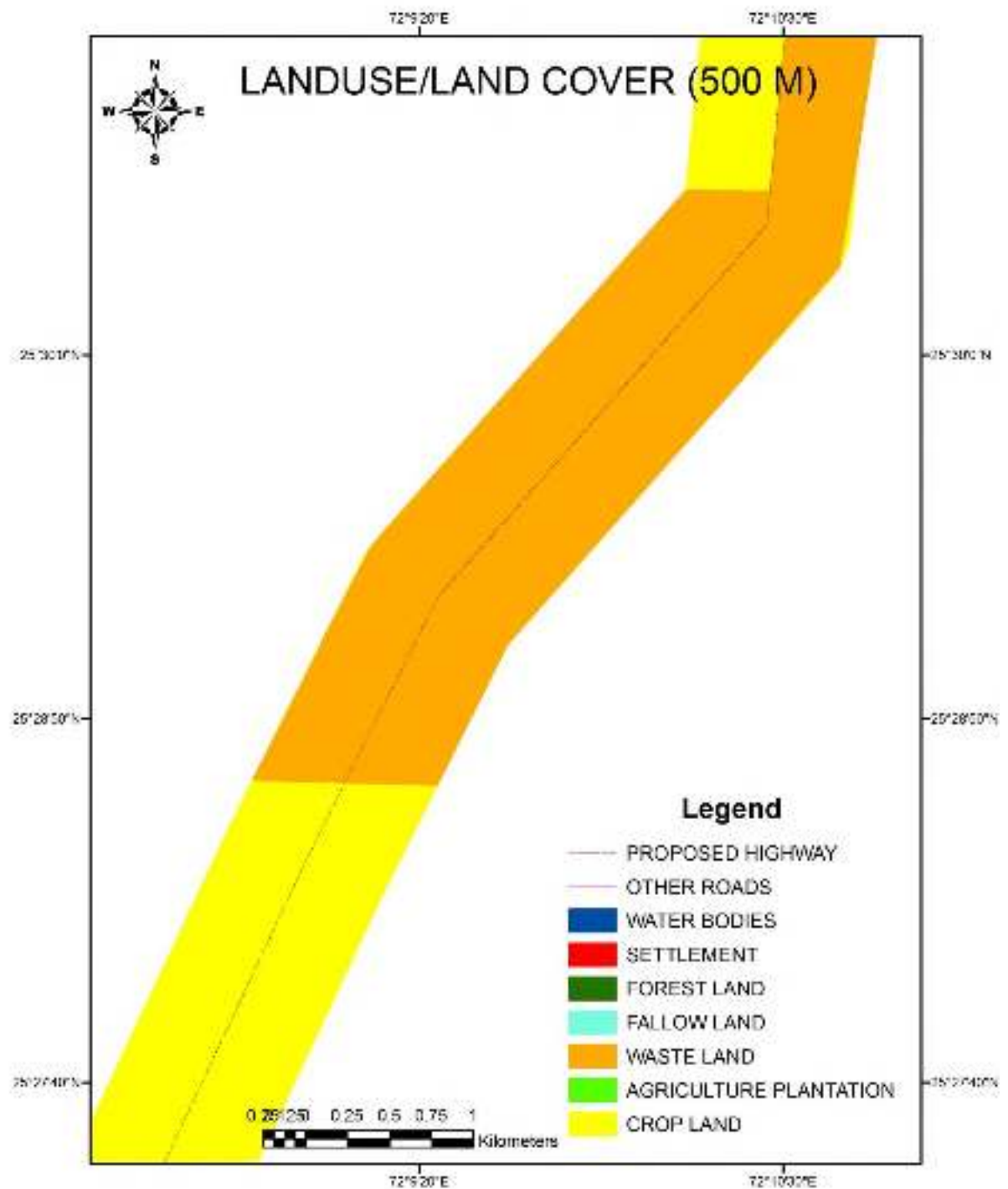


Figure 4.1(xv): Land use of the study area (stretch 15 from CH: 102+740 to 110+160)



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

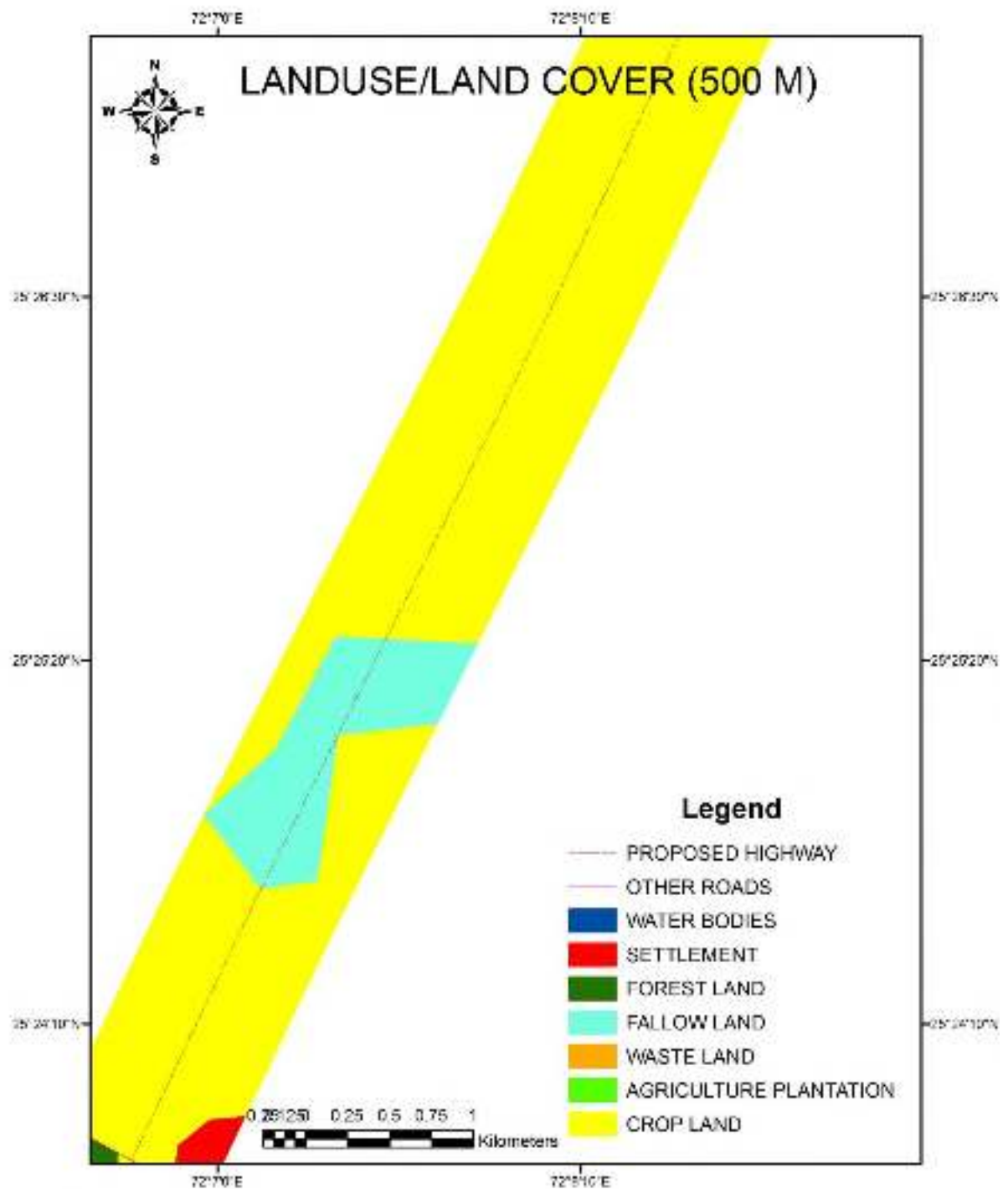


Figure 4.1(xvi): Land use of the study area (stretch 16 from CH: 110+160 to 117+580)

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

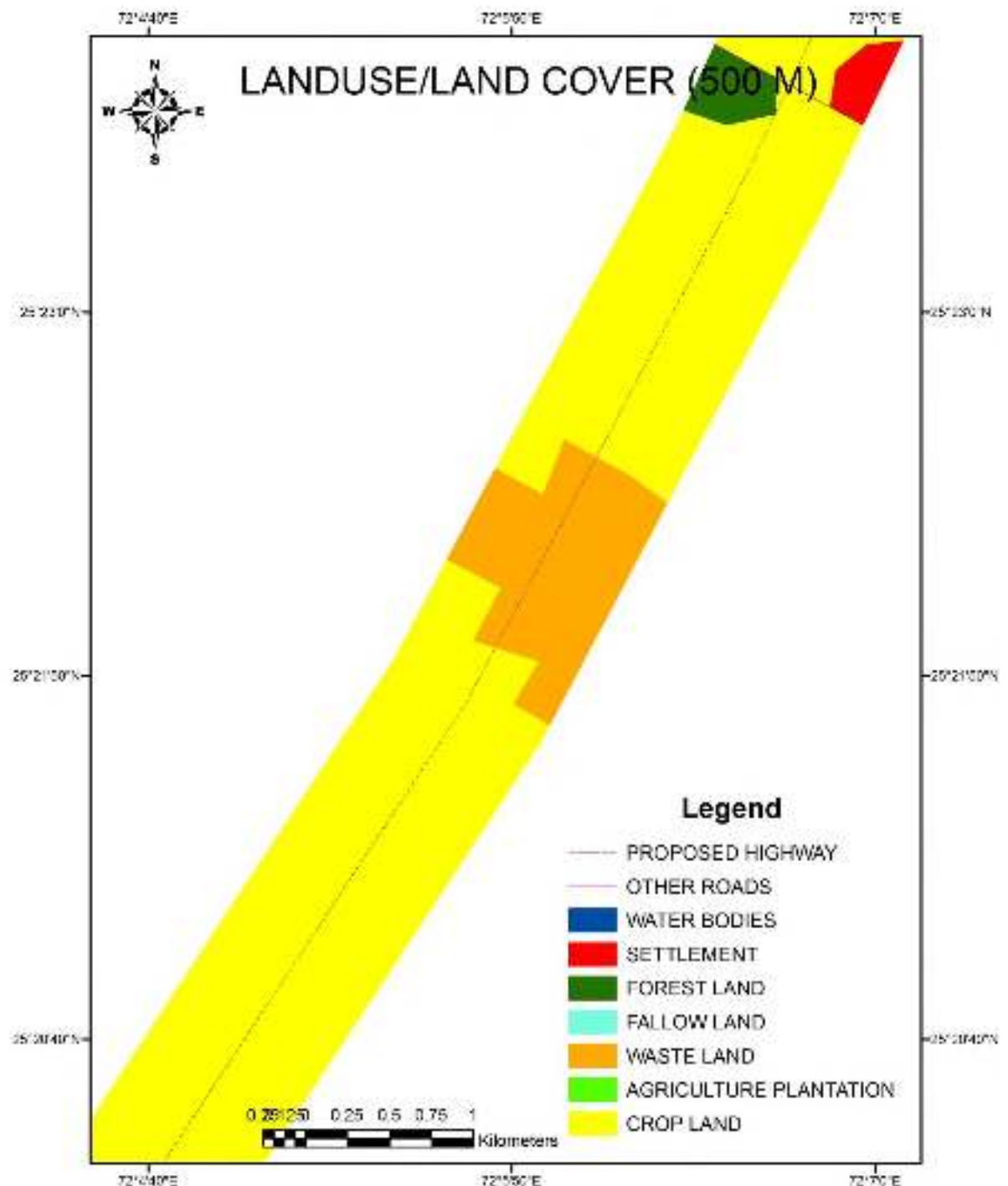


Figure 4.1(xvii): Land use of the study area (stretch 17 from CH: 117+580 to 125+000)



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

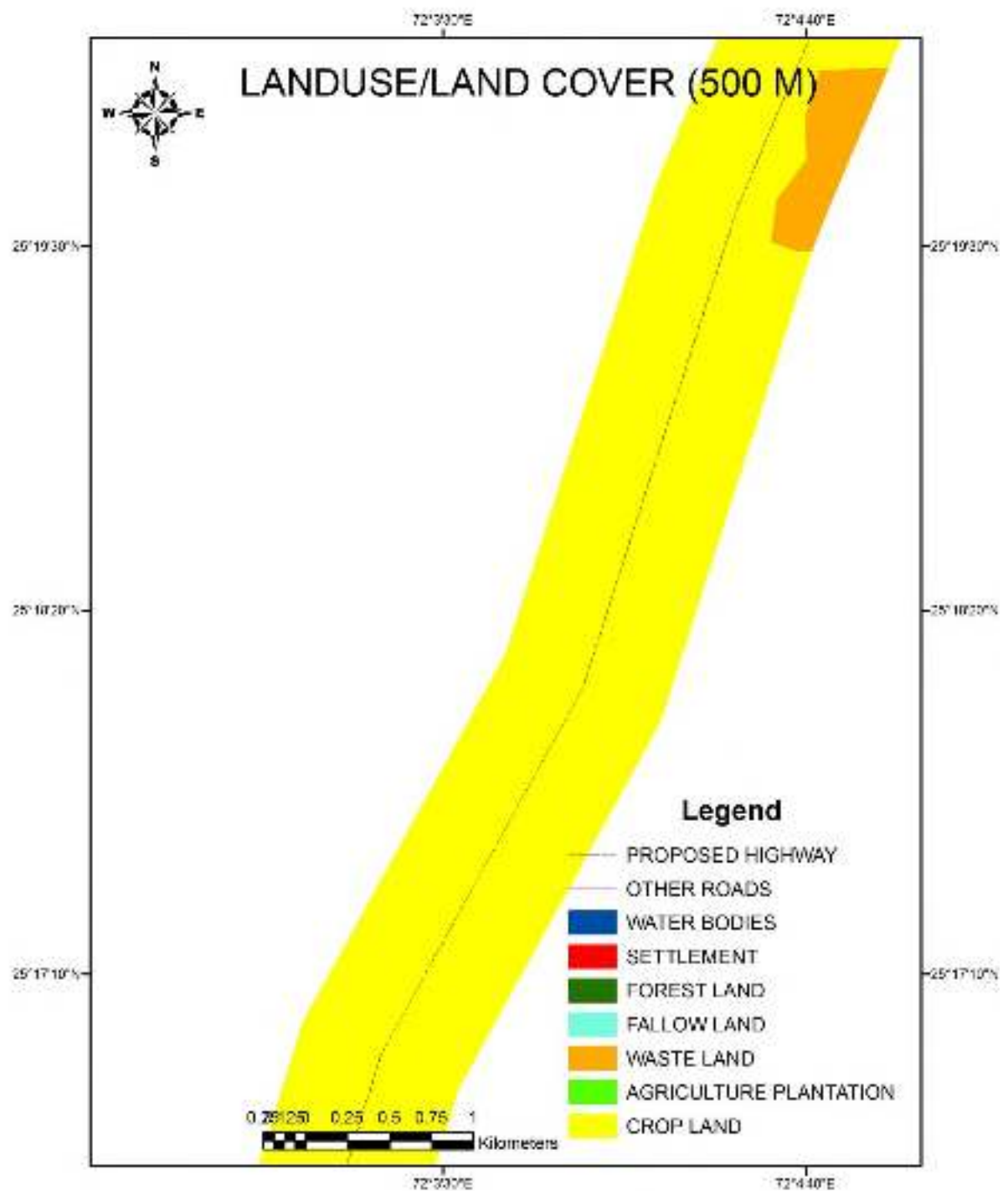


Figure 4.1(xviii): Land use of the study area (stretch 18 from CH: 125+000 to 132+420)



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

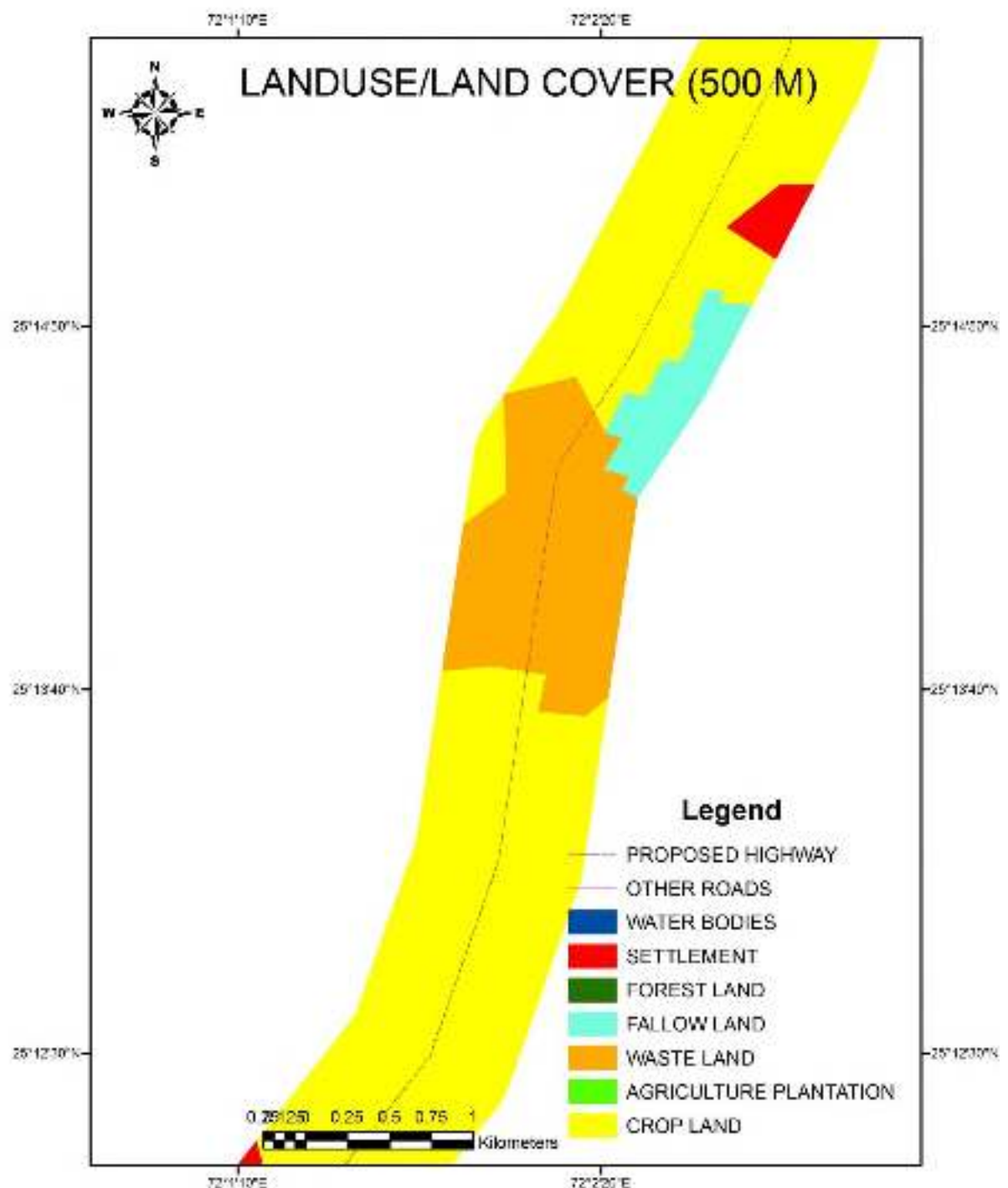


Figure 4.1(xix): Land use of the study area (stretch 19 from CH: 132+420 to 139+840)



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

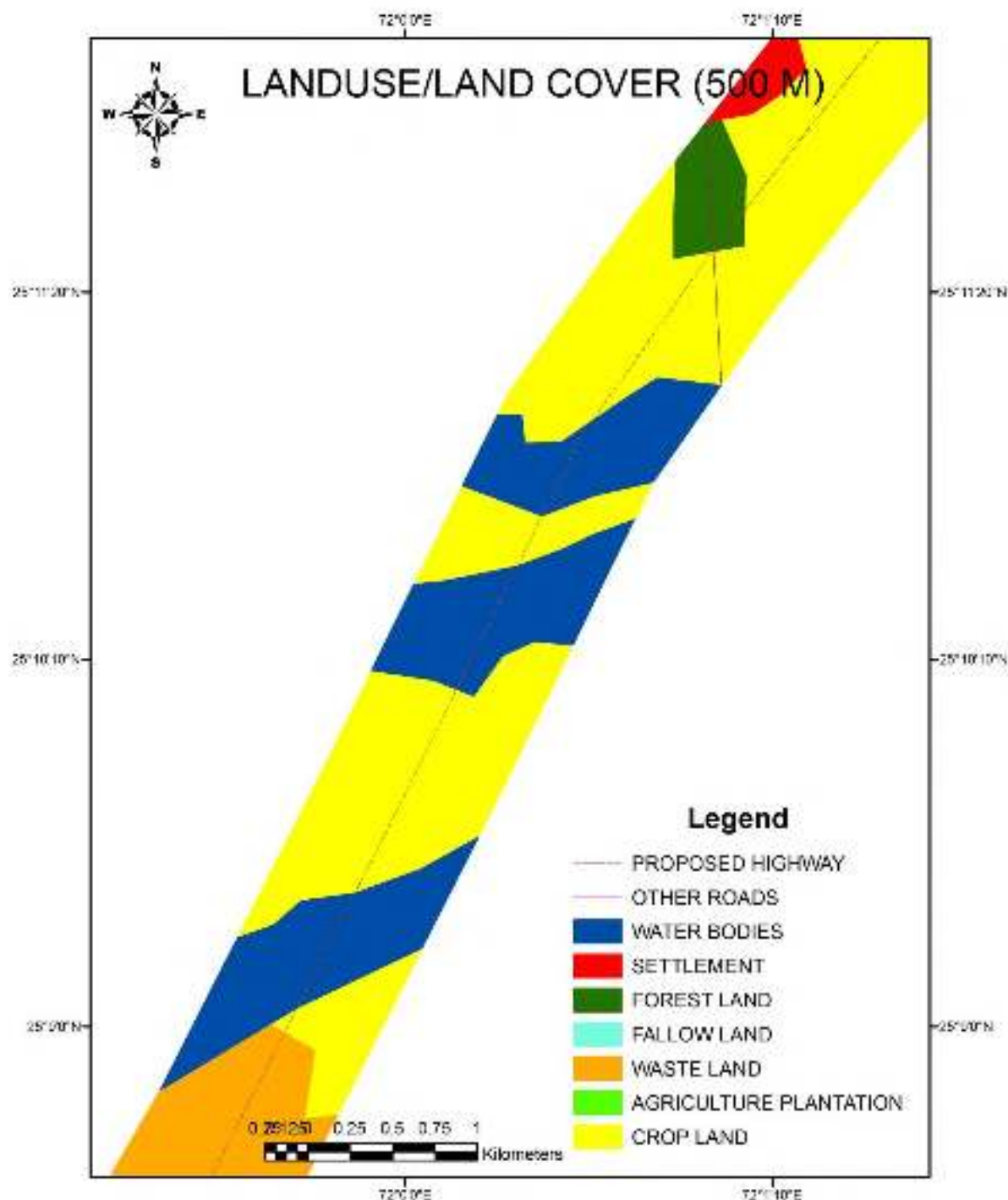


Figure 4.1(xx): Land use of the study area (stretch 20 from CH: 139+840 to 147+260)



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

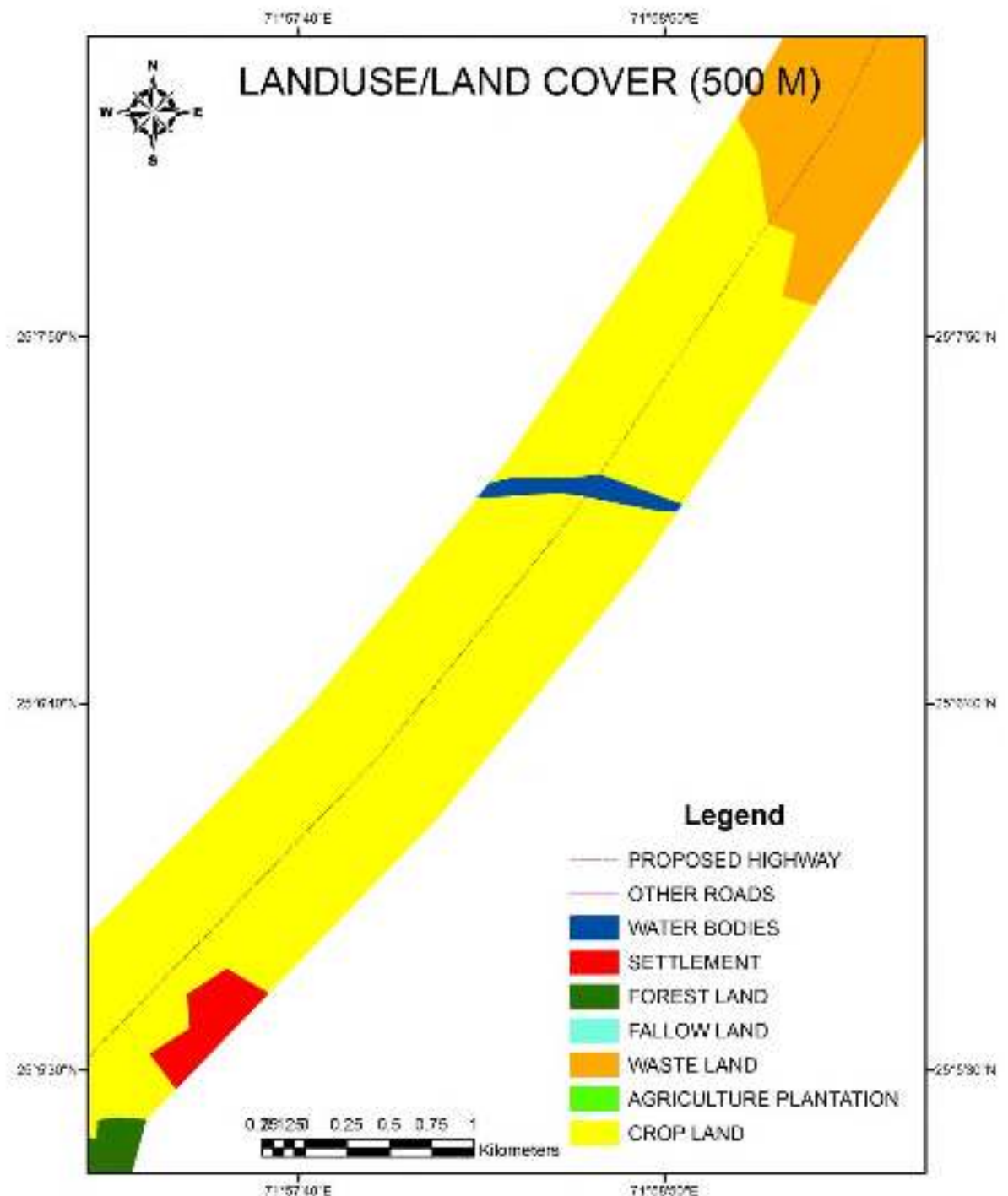


Figure 4.1(xxi): Land use of the study area (stretch 21 from CH: 147+260 to 154+680)



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

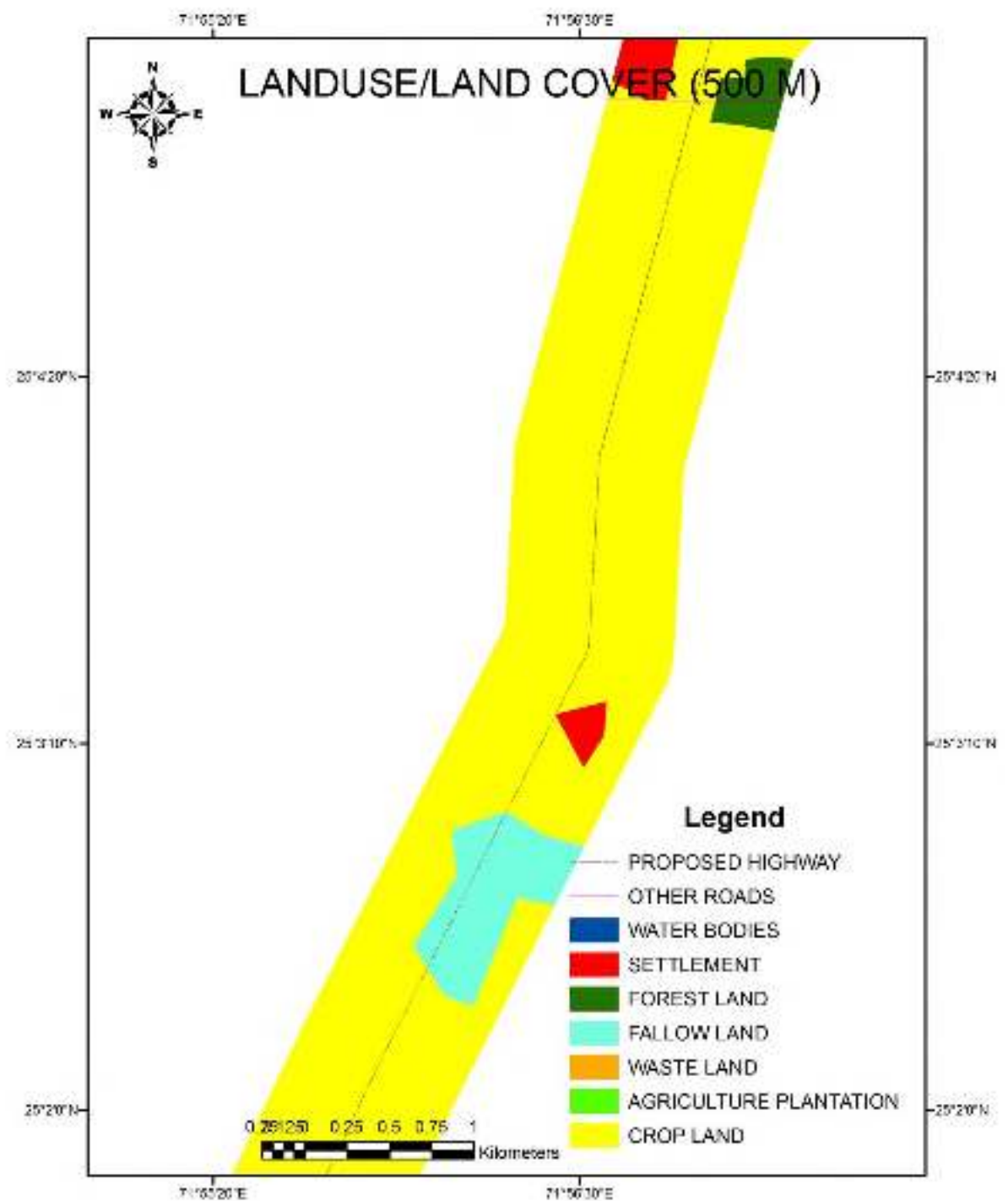


Figure 4.1(xxii): Land use of the study area (stretch 22 from CH: 154+680 to 162+100)



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

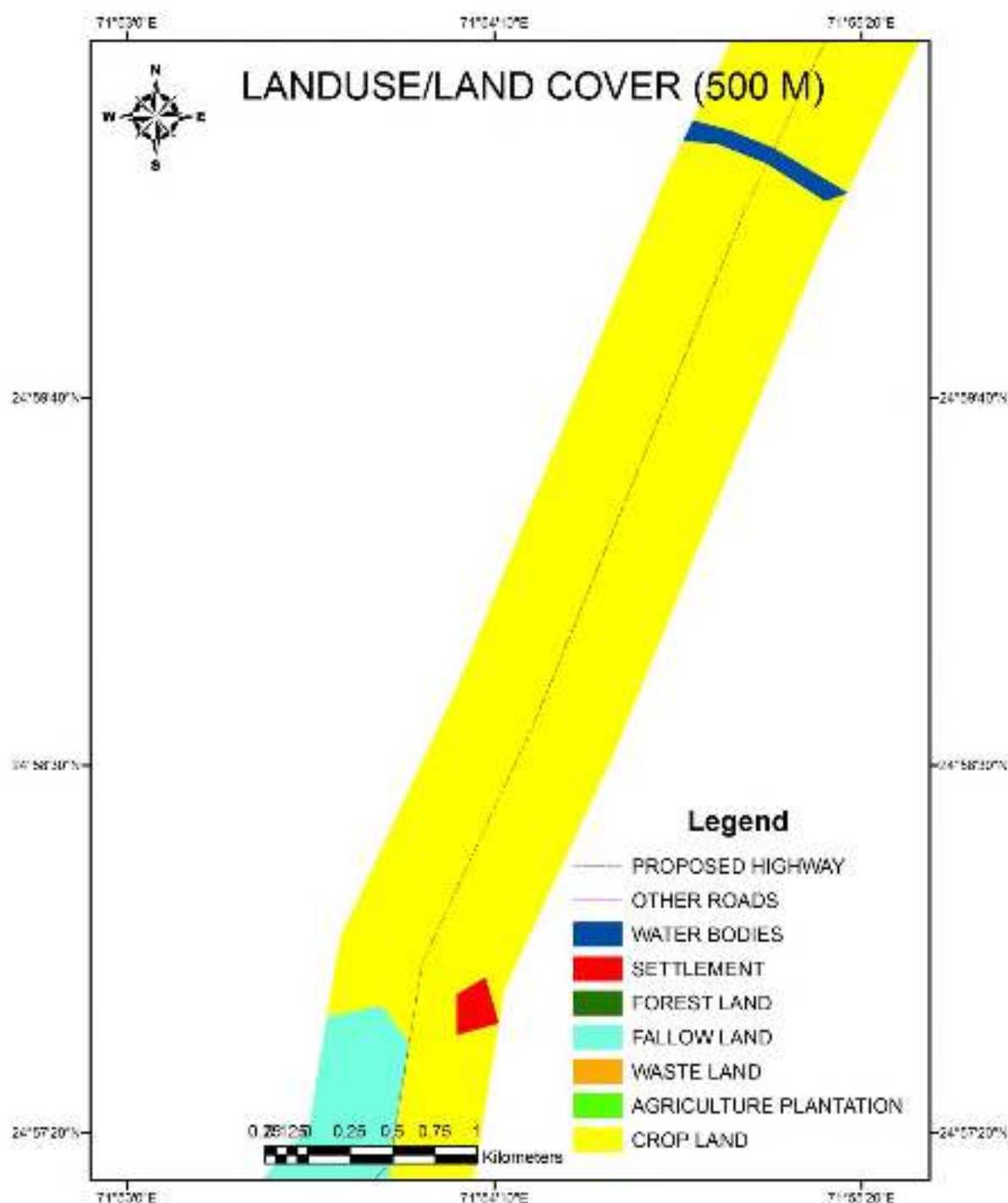


Figure 4.1(xxiii): Land use of the study area (stretch 23 from CH: 162+100 to 169+520)



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

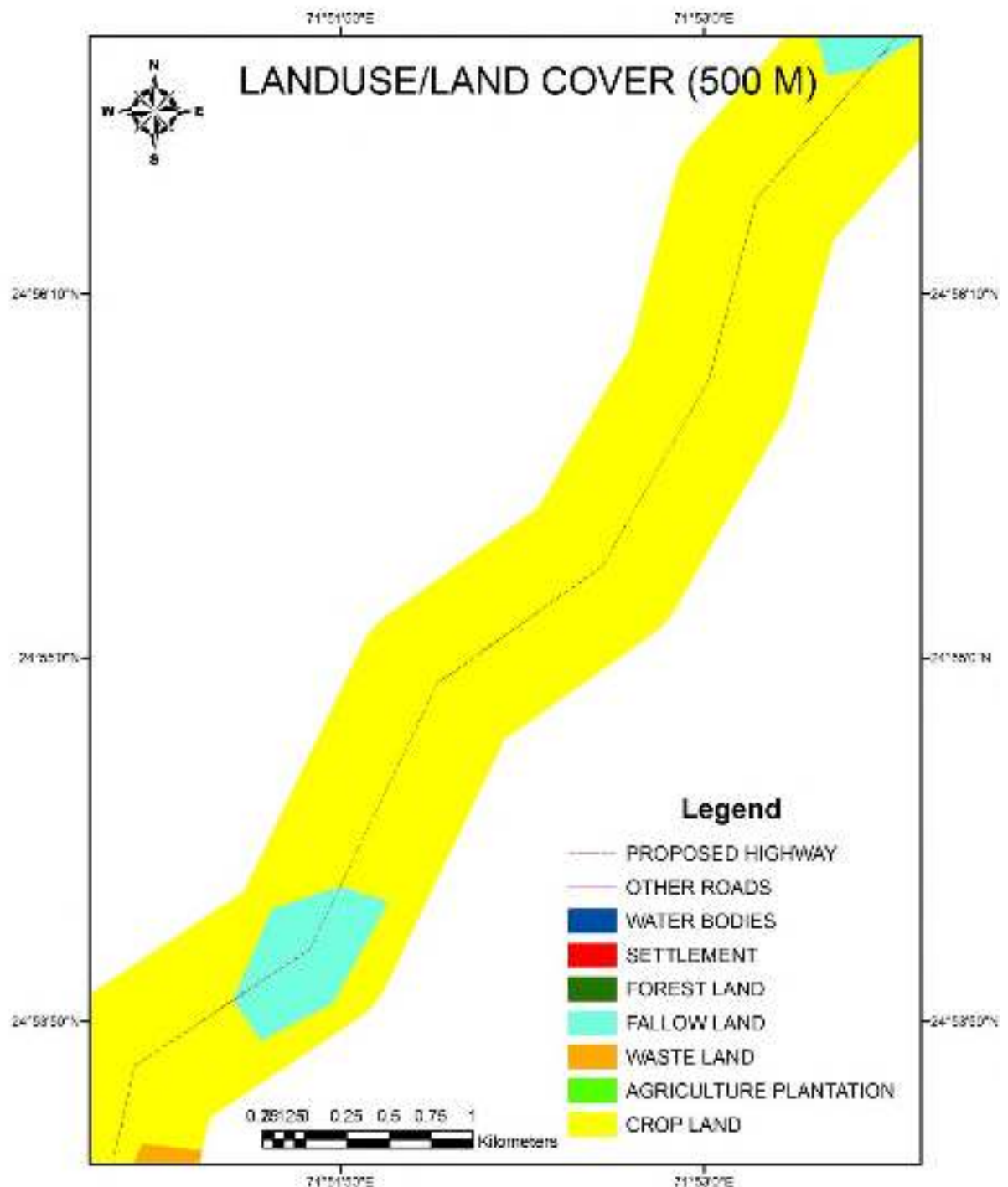


Figure 4.1(xxiv): Land use of the study area (stretch 24 from CH:169+520 to 176+940)



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

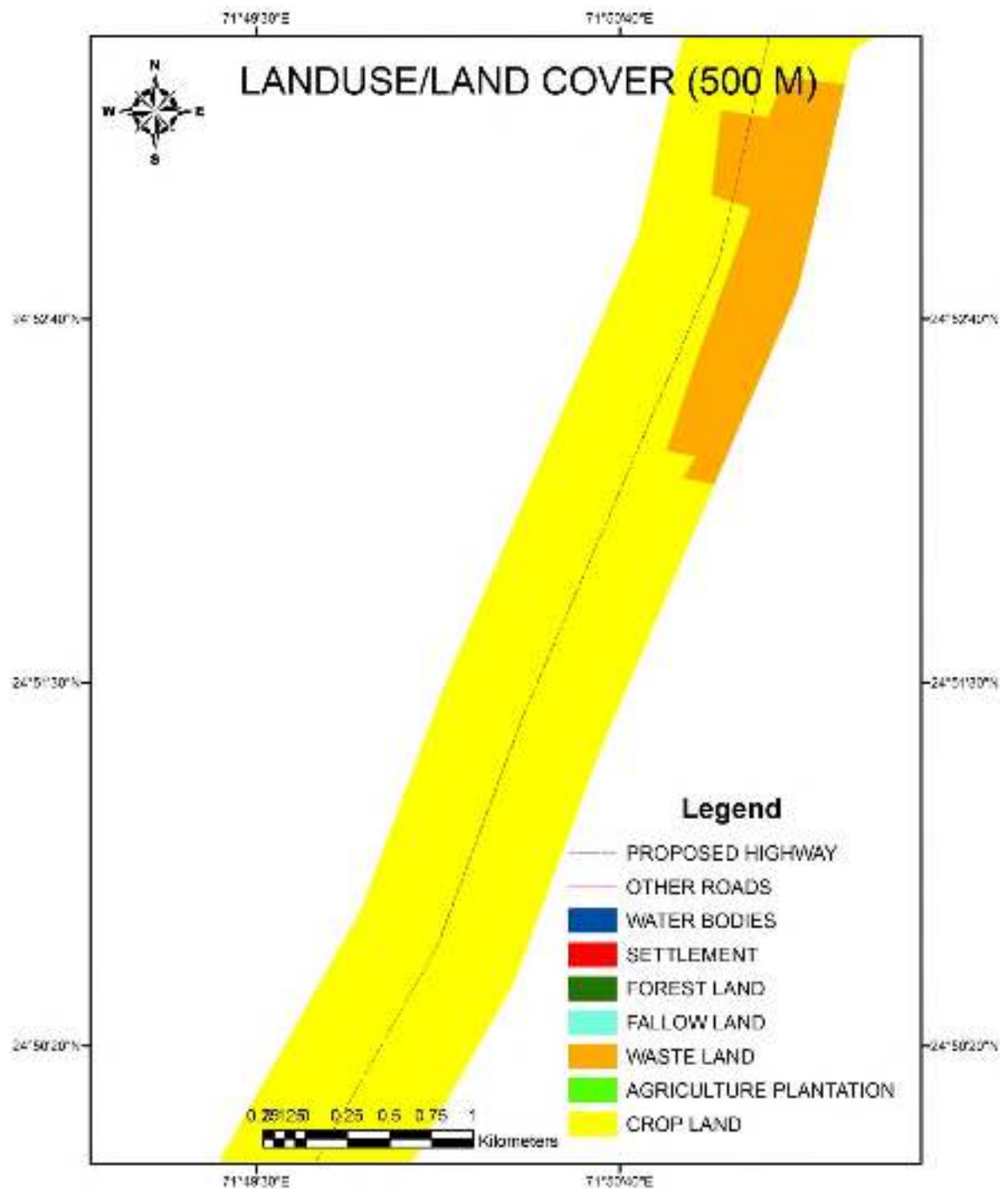


Figure 4.1(xxv): Land use of the study area (stretch 25 from CH: 176+940 to 184+500)



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

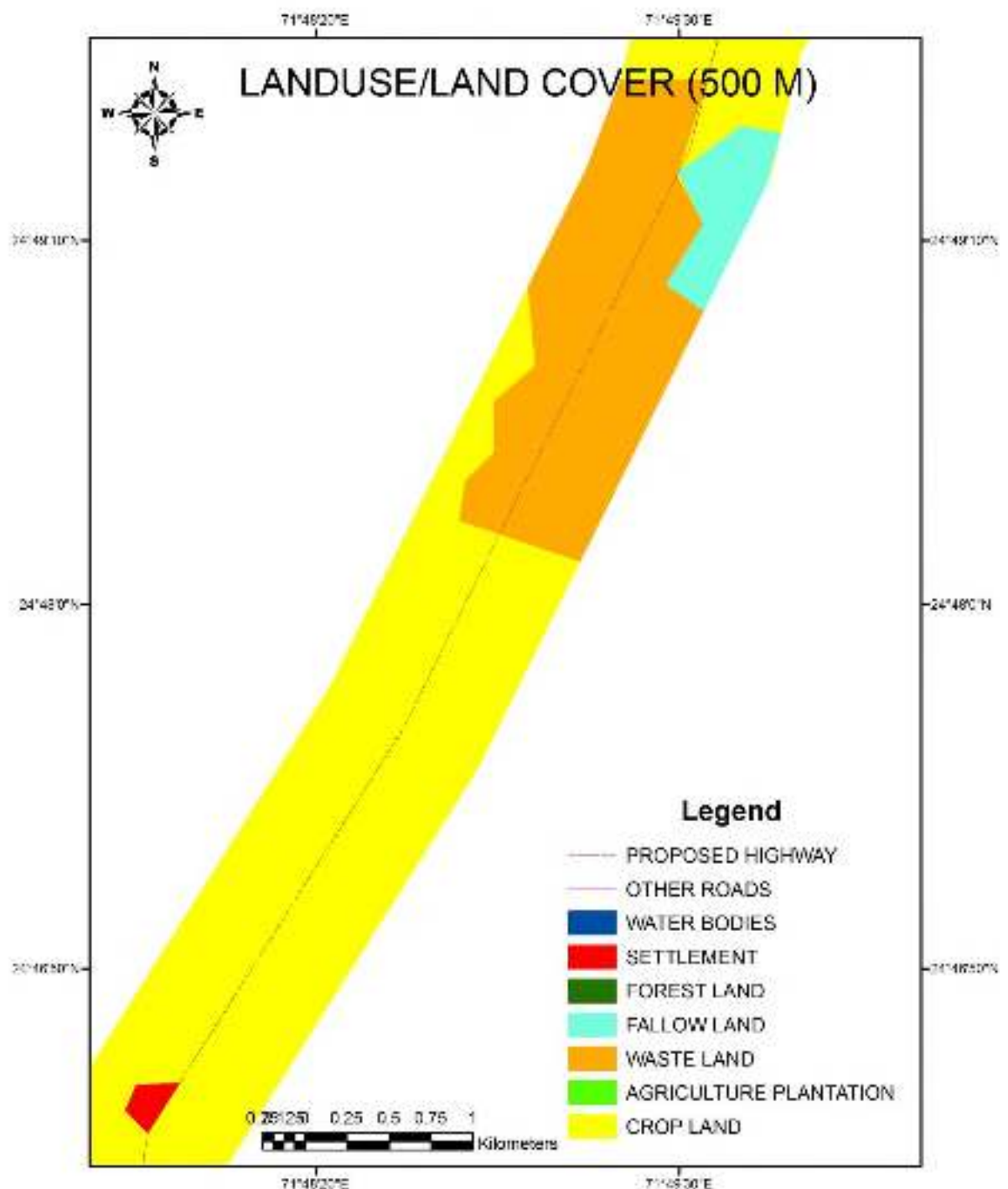


Figure 4.1(xxvi): Land use of the study area (stretch 26 from CH: 184+500 to 192+000)



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

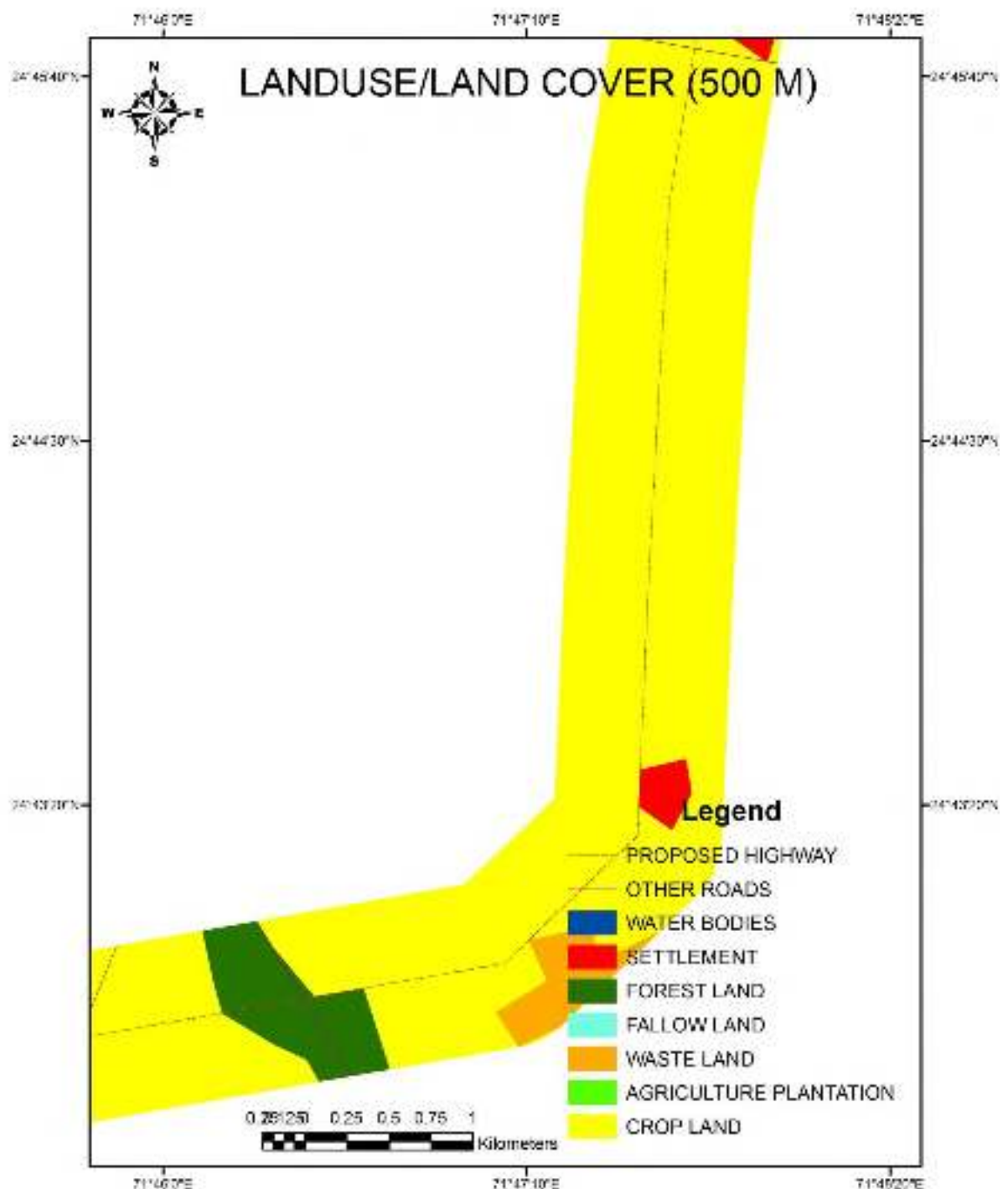


Figure 4.1(xxvii): Land use of the study area (stretch 27 from CH: 192+000 to 199+600)



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

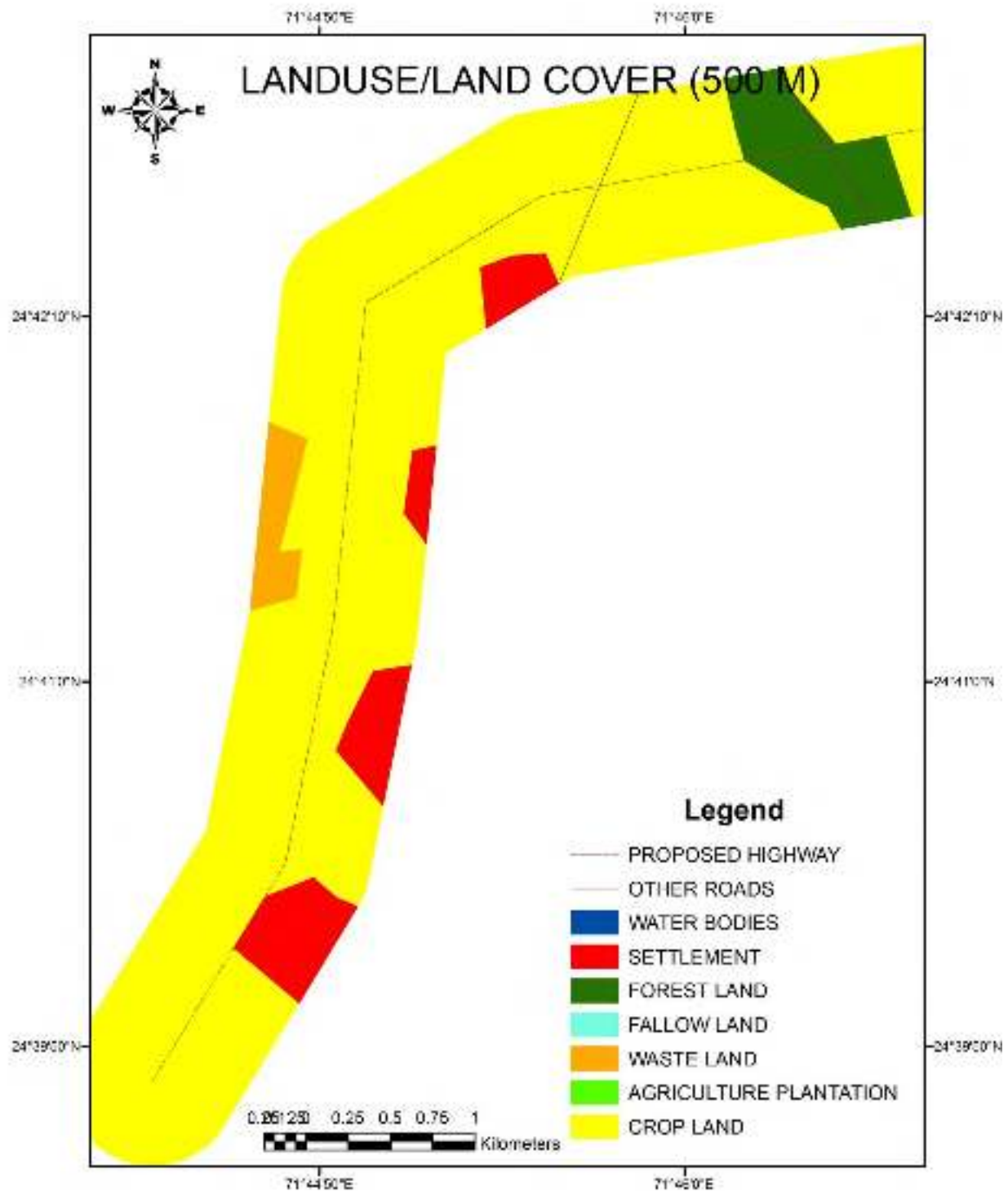


Figure 4.1(xxviii): Land use of the study area (stretch 28 from CH: 198+400 to 207+100)



4.3.4 Climate and Micro-Meteorological Parameters

4.3.4.3 Climate and Rainfall

The project area experiences arid type of climate. Climatically, the year in Rajasthan can be divided into three major conventional seasons as follows:

- The Hot- Weather Season (March to end of June)
- Monsoon Season (End of June to September)
- The Cold- Weather Season (October to February)

As the project area lies in the desert area, extremes of heat in summer and cold in winter are the characteristic of the desert. Both day and night temperatures increase gradually and reach their maximum in May and June respectively. The temperature varies from 49°C in summer to 1°C in winter. Normal rainfall of Jodhpur as per IMD is 314mm, while as per 44 year (1970-2014) annual rainfall data, average annual rainfall of the district is 373.7 mm. The main rainfall months are July and August in which about 68% of rainfall occurs. The annual maximum potential evapotranspiration in the Barmer district is 1850 mm and it is highest (260 mm) in the month of May and lowest (77 mm) in the month of December while the average rainfall in Jalore district in 2016 year is 469 mm. The nearest IMD meteorological from the project location is Barmer.

4.3.4.4 Humidity

Atmosphere of project area is generally dry except during the monsoon period. The maximum relative humidity of Jodhpur & Barmer in monsoon months is recorded around 81% & 78 respectively. The relative humidity is generally high during the period from June to September. Summer months form the driest part of the year when humidity is low particularly in April and May.

4.3.4.5 Temperature

As the Project districts lies in the desert area, extremes of heat in summer and cold in winter are the characteristic of the desert. Both day and night temperatures increase gradually and reach their maximum in May and June respectively. The temperature in Jodhpur district varies from 49°C in summer to 1°C in winter while in Barmer district the temperature varies from 48 degree in summer to 2 degree in winter. In Jodhpur district the average maximum temperature and the average minimum temperature during summer are reported to be 42.2°C and 27.3°C respectively, and during winter the average maximum temperature is 27.5° and the average minimum temperature is 9.5°C while in Jalore district the minimum and maximum temperatures of the district are 4°C and 50°C respectively.

4.3.4.6 Cloud Cover

The sky is heavily overcast during the south west monsoon season. During the rest of the year the sky is clear and lightly clouded.

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

4.3.4.7 Wind Speed/Direction

The wind speeds are generally light to moderate in the month of April and in May & June winds are moderate to strong. The wind rose diagram for Barmer IMD station (project district) were developed during the months from April 2018 to June 2018 (study period) and shown in **Figure 4.2**, which reveals that pre-dominant wind direction occurs mostly from South West direction in district and the average wind speed is 1.96m/s.

The meteorological Data Parameters at Barmer IMD has been presented in **Table 4.6**.

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

Table 4.6-: Meteorological Data Parameters at Barmer IMD station

Date	Temperature, deg C			Humidity, %			Pressure, hPa			Wind Speed, m/s	Predominant Wind Direction	Rainfall mm
	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Avg		
April	23	47	38	19	45	37	1000	1010	1007	1.8	SW	1.6
May	28	49	41	22	55	44	997	1005	1002	2.0	SW	3.9
June	30	48	41	33	67	56	995	1003	1000	2.1	SW	102.1

Source: IMD Barmer

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchores (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

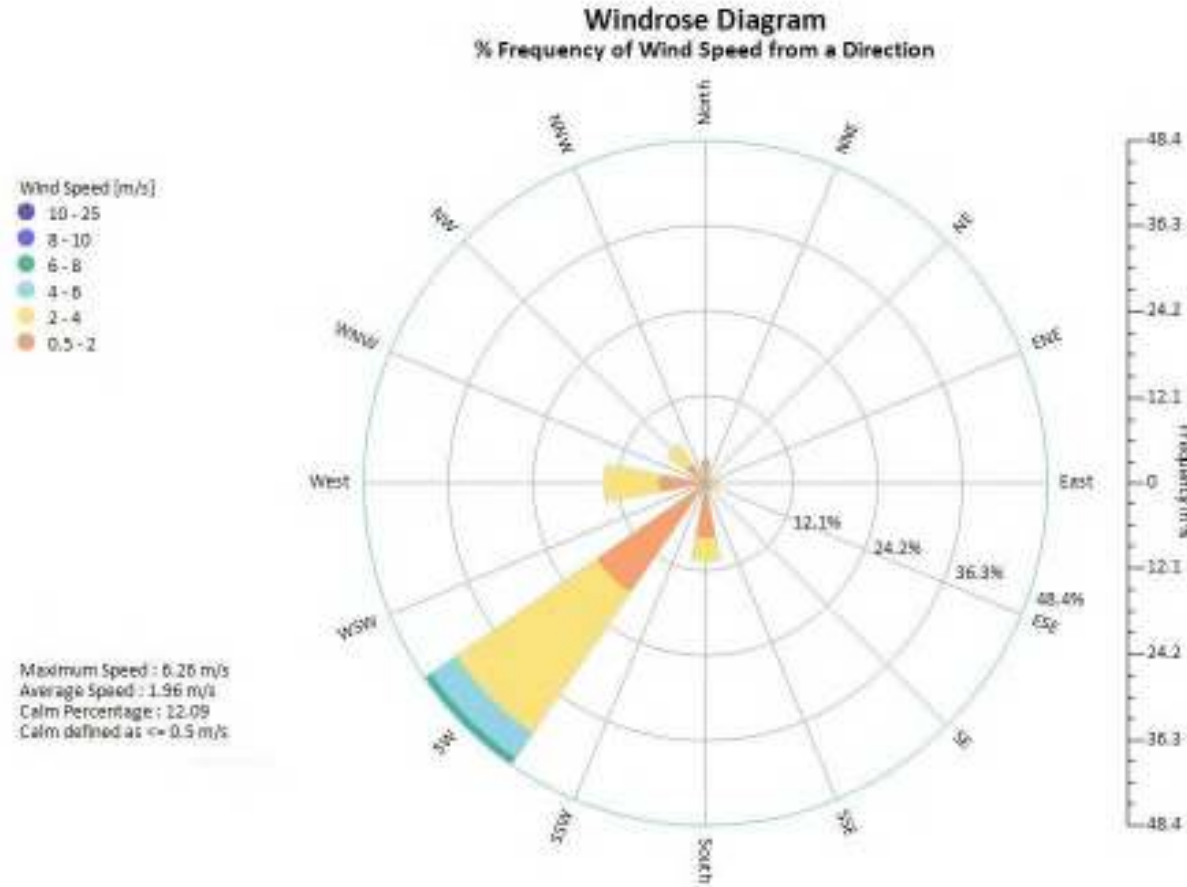


Figure 4.2: Wind Rose Diagram for Barmer District



4.3.5 Natural Hazards and Vulnerability of the sub project area

4.3.5.1 Seismic Profile of the area

The seismic hazard map of India was updated in 2000 (6) by the Bureau of Indian Standards (BIS). Apart from the merging of Zones I and II, there are no major changes in the new hazard map with respect to the state of Rajasthan, as compared with the previous 1984 BIS map. Western parts of the districts of Barmer (Project district) and Sirohi as well as northern sections of Alwar district lie in Zone IV, where the maximum intensity could reach VIII (MSK). The remaining areas of Barmer and Sirohi districts, as well as the districts of Bikaner, Jaisalmer and Sirohi lie in Zone III. The north-eastern districts of Jhunjhunu, Sikar, Bharatpur and the rest of Alwar also lie in Zone III. The maximum intensity expected in these areas would be around MSK VII. The rest of the state, including the capital, Jaipur, lie in Zone II, where the maximum intensity expected would be around MSK VI. The Project district Jodhpur falls in Zone II whereas the district Jalore falls in Zone III. The district Barmer comes falls in Zone II & Zone III.

As per Global Seismic Hazards Assessment Program (GSHAP) data (as shown in **Figure 4.4**) the state of the Rajasthan falls in a region of low to high seismic hazard. The proposed expressway falls in low to moderate hazard zone (Zone II and Zone III).

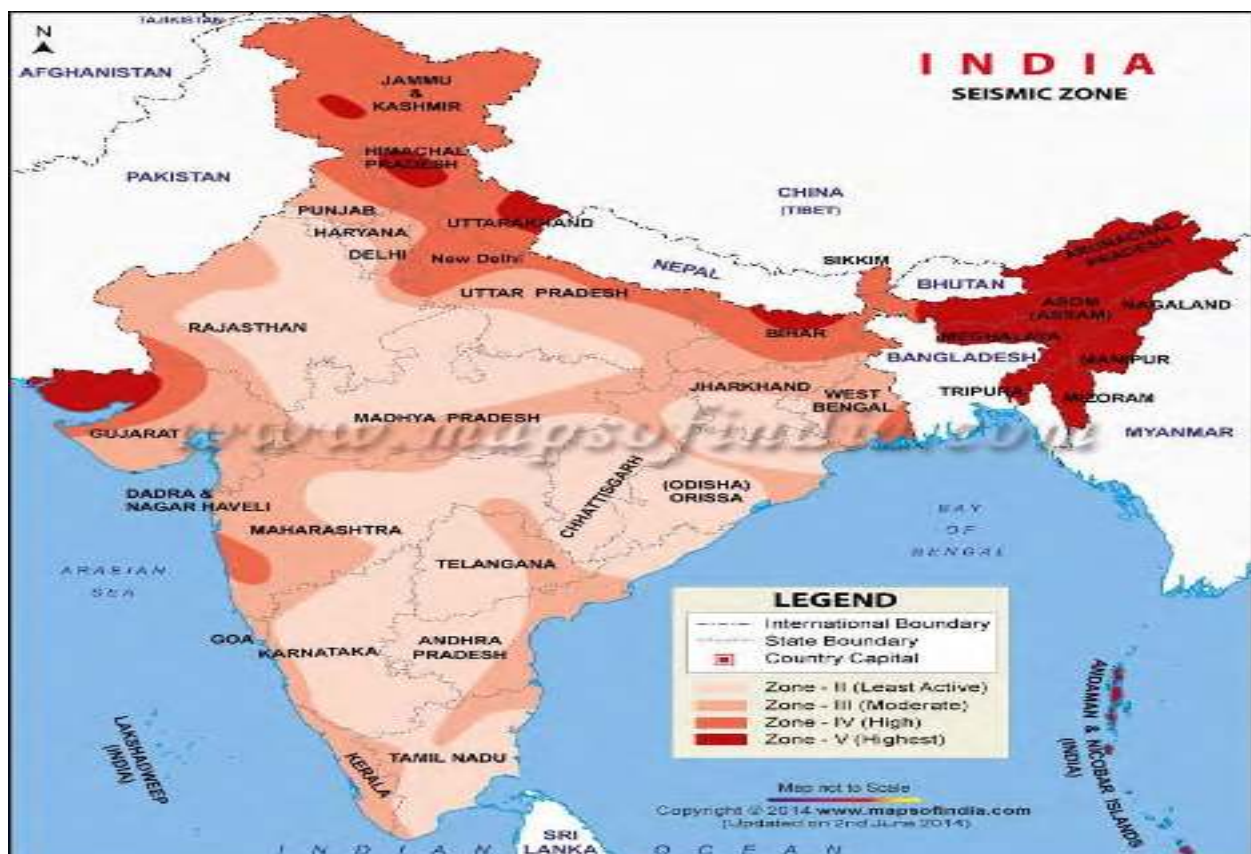


Figure-4.3: Seismic Zone of India

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)



Figure 4.4: Seismic zone map of Rajasthan (Rajasthan Earthquake Hazard Risk Zonation Map)

4.4 GEOLOGY OF THE PROJECT DISTRICT

4.4.1 Introduction

Geological set-up of the Jodhpur district is represented by various igneous, metamorphic and sedimentary rocks. Delhi Super Group litho units are very limited and occur in the form of isolated pockets. Erinpura granite and Malani igneous rocks cover large area in the southern part of the district. Marwar Super group of rocks occupy maximum geographical area covering the central, western and eastern part of the district. The rock units of various formations belonging to Cenozoic era occupy very small area and lie in the north-western part of the district. In the entire district, hard rocks are overlain by thin blanket of alluvium and wind-blown sand. The district is traversed by major lineaments: Jaisalmer- Barwani lineaments trending NW-SE, Luni- Sukri lineament trending NE-SW. Following is the regional geological succession of rock types encountered in and around Jodhpur district.

Geologically, the Barmer district is underlain by intrusive rocks at the basement (Post Delhi formation) consisting of Jalore and Siwana granite & Malani rhyolite and granite followed by Mesozoic and Tertiary formations consisting of sandstone, shale, conglomerate. Rocks of Mesozoic era are comprised of Lathi series of Jurassic and Abur series of Cretaceous period. Tertiaries consist of Akali and Kapurdi series of Eocene period. These formations are overlain by Pleistocene to recent alluvium consisting mainly of clay, sand and silt.



Topography and Terrain

The eastern part of the Jodhpur district exhibits gentle undulating topography interrupted by small ridges of hard rocks. The general elevation of plains varies from 300 m amsl in north to 150 m amsl in south. Regional slope of Jodhpur district is from north-east towards south-west direction. The alluvial and sand filled valleys are separated by the ridges whose crest elevation ranges from 325 to 460 m amsl. In the northern part of the district, highest peak of the hill is 284m amsl, whereas the surface elevation of the Barmer district varies from 70 above mean sea level (m amsl) at Sindhari to 457 m amsl at Ghonia village.

In Jalore district the eastern section is dominantly hilly, forming the flank of Mount Abu range and the highest point is 991 m above mean sea level (amsl). The elevation of the area ranges from more than 600 m amsl in the east to 75m amsl in the west at the confluence of the Luni and Jawai-Sukri 3 Rivers. Generally the terrain slopes westwards. The valley floor has an area elevation ranging from 60m amsl to 215m amsl.

Gemorphology

Geographically, the Barmer area as a whole forms a part of the Great Indian Desert. Apart from a small offshoot of the Aravalli hills in the east, the area is a vast sandy tract. The country west of Luni River represents sandy plain dotted with bold hills. A well-defined valley is observed along Barmer-Gadra road to the east of Kharin. Whereas Jalore district geomorphologically, the alluvial valley floor belongs to mature landscape system and present landform units are the products of the past meandering courses and wide flood plains. Additionally, there are innumerable old channels buried under wind-blown sand.

Distribution of various geomorphic units in Jodhpur district

Origin	Landform Unit	Occurrence
Aeolian	Sand dunes.	North and northwestern part of the district.
	Sandy Plains	North and northwestern part of the district.
Fluvial	Alluvial Plains	Eastern part of the district along rivers- Luni,
	Interdunal Plains	Scattered in entire district, mainly in north and
Denudational	Pediments	Scattered in district, mainly in east & west.
Hills	Linear Ridges	Occur in Bilara and Osian Blocks. Extend from
	Structural Hills	In northwestern & eastern parts of the district



4.4.2 Field Study and Soil Sampling Locations

For studying soil quality, sampling locations was selected to assess the existing soil conditions in and around the project area representing various land use conditions. The sample was collected by ramming a core-cutter into the soil up to 90-cm depth. The sample collection, preservation, storage, transportation and analysis were carried out as per the standard methods. The soil samples after collection were immediately subjected to the analysis of various parameters in the NABL Accredited laboratory. The details of the soil sampling locations have been presented in **Table 4.7** and **Figure 4.5**.

Table 4.7: Soil Sampling Locations

S. No.	Location Name	Chainage (km)	Code
1	Dhandhaniya Sesan	1+100	S1
2.	Dhadaniya konda ka bas	2+800	S2
3	Mandli	24+800	S3
4	Tirsingri Sodha	31+100	S4
5	Patau	45+650	S5
6	Balotra	62+200	S6
7	Muthli (L)	78+150	S7
8	Mithura (R)	97+400	S8
9	Bagoda	136+300	S9
10	Meda	152+900	S10
11	Karola	186+950	S11
12	Lachari	192+600	S12
13	Sanchoe	195+400	S13
14	Pratapura	200+200	S14
15	Gardali	204+500	S15

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

Some photographs showing soil sampling along the project area has been presented below:



Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchore (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

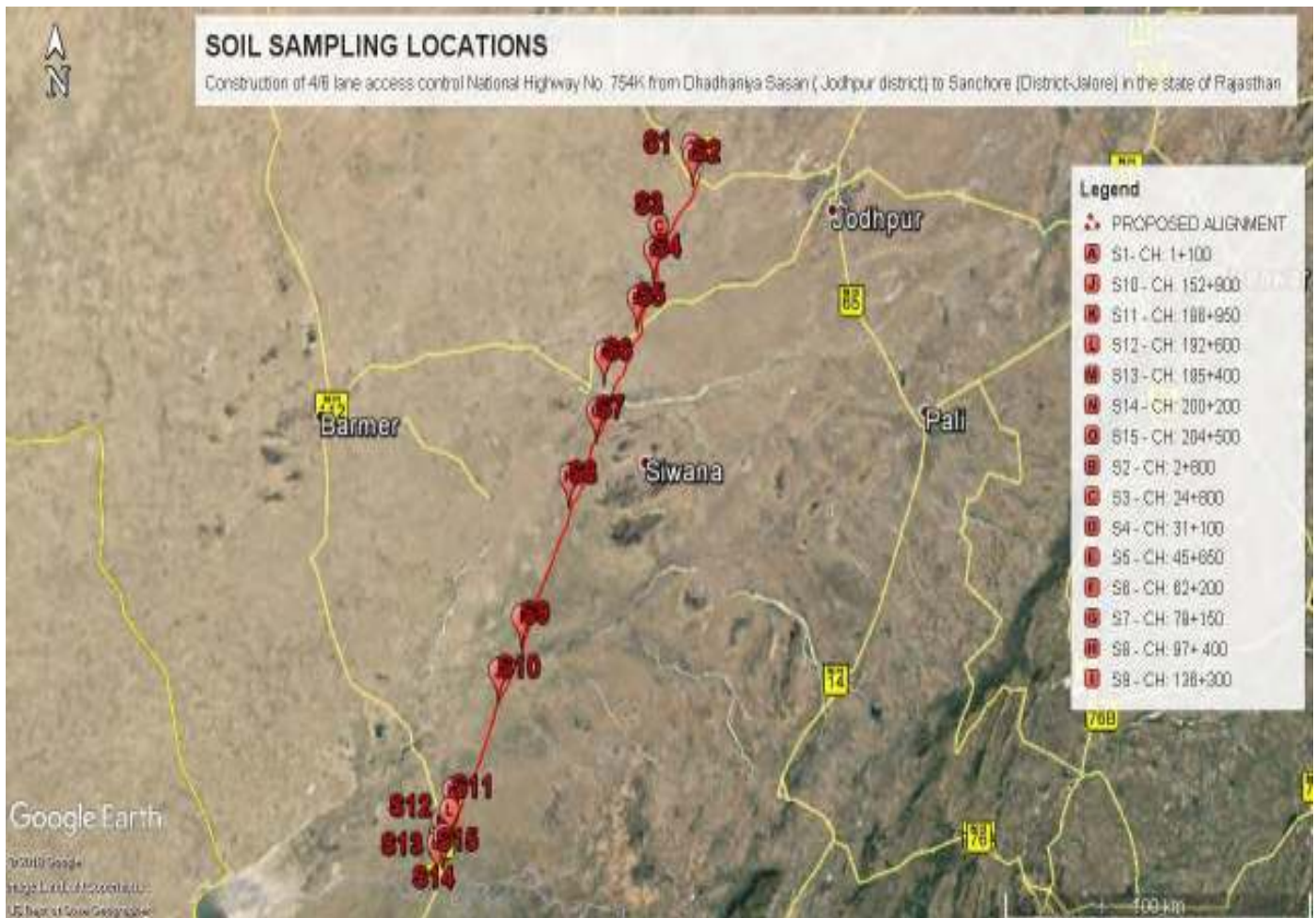


Figure 4.5: Map showing Soil Sampling locations

4.4.2.1 Soil Quality along the study area

All these soil samples were collected along the proposed expressway and analyzed for the physical, chemical properties and heavy metal concentrations. They were assessed for agricultural and afforestation potential. The characteristic of the soil along the expressway has been presented in **Table 4.8**.

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchores (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

Table 4.8: Soil Analysis along the proposed project

S. No	Parameters	Test Method	Unit	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
1.	pH(1:5 suspension)	IS:2720(Part-26)	-	6.82	6.55	6.68	6.72	6.44	6.75	6.54	6.64	6.58	6.46
2.	Electrical Conductivity at 25°C (1:5 suspension.)	IS:2720(Part-21)	µmhos/cm	475	452	440	463	465	472	458	460	455	445
3.	Moisture	STP/SOIL	%	15.5	13.8	14.7	14.9	13.4	15.4	13.2	13.5	14.6	14.8
4.	Texture	STP/SOIL	-	Sandy Clay Loam	Sandy Clay Loam	Sandy Clay Loam	Sandy Clay Loam	Sandy Clay Loam	Sandy Clay Loam	Sandy Clay Loam	Sandy Clay Loam	Sandy Clay Loam	Sandy Clay Loam
5.	Sand	STP/SOIL	% by mass	64	74	64	77	68	68	70	66	72	65
6.	Clay	STP/SOIL	% by mass	10	11	12	13	11	12	13	15	17	13
7.	Silt	STP/SOIL	% by mass	20	15	24	15	21	20	17	19	11	22
8.	Nitrogen	STP/SOIL	% by mass	526	510	522	502	526	528	512	522	505	532
9.	Potassium(as K)	STP/SOIL	mg/100g	132	135	124	130	138	132	136	128	130	138
10.	Phosphorus	STP/SOIL	mg/kg	182.56	172.32	180.66	205.6	188.24	180.16	170.34	182.26	215.6	182.22
11.	Organic Matter	IS:2720(Part-22)	% by mass	0.46	0.38	0.42	0.32	0.52	0.42	0.36	0.40	0.34	0.54
12.	Moisture Retention Capacity	STP/SOIL	% by mass	12.2	13.1	15.6	12.5	12.3	13.4	12.6	16.4	14.6	14.2
13.	Infiltration Rate	STP/SOIL	mm/hr	32.5	32.6	36.8	35.5	32.3	30.4	34.2	35.6	32.6	34.5
14.	Sulphates	STP/SOIL	mg/100g	242.6	238.5	226.2	242.7	232.5	238.2	230.8	244.5	240.2	230.4
15.	Sodium Sulphate	STP/SOIL	mg/100g	310.2	314.6	290.6	305.8	298.7	309.6	312.4	294.4	314.4	292.6
16.	Calcium Sulphate	STP/SOIL	mg/100g	716.4	805.2	810.2	780.5	746.5	714.2	815.2	812.4	782.4	742.4
17.	Bulk Density	STP/SOIL	gm /cm ³	1.42	1.34	1.30	1.38	1.44	1.40	1.38	1.36	1.34	1.45
18.	Porosity	STP/SOIL	%	24.5	20.6	25.5	26.8	25.8	23.2	22.5	25.6	25.6	24.2



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

S. No	Parameters	Test Method	Unit	S11	S22	S13	S14	S15
1.	pH(1:5 suspension)	IS:2720(Part-26)	-	6.54	6.62	6.60	6.88	6.50
2.	Electrical Conductivity at 25°C (1:5 suspension.)	IS:2720(Part-21)	µmhos/cm	462	468	446	459	465
3.	Moisture	STP/SOIL	%	16.2	15.8	12.6	13.6	16.0
4.	Texture	STP/SOIL	-	Sandy Clay Loam	Sandy Clay Loam	Sandy Clay Loam	Sandy Clay Loam	Sandy Clay Loam
5.	Sand	STP/SOIL	% by mass	75	69	72	70	66
6.	Clay	STP/SOIL	% by mass	15	11	14	17	14
7.	Silt	STP/SOIL	% by mass	10	20	14	13	20
8.	Nitrogen	STP/SOIL	% by mass	526	515	520	518	516
9.	Potassium(as K)	STP/SOIL	mg/100g	136	132	135	138	128
10.	Phosphorus	STP/SOIL	mg/kg	180.2	175.4	185.6	218.4	186.12
11.	Organic Matter	IS:2720(Part-22)	% by mass	0.40	0.38	0.42	0.32	0.58
12.	Moisture Retention Capacity	STP/SOIL	% by mass	14.2	15.5	14.8	13.6	12.2
13.	Infiltration Rate	STP/SOIL	mm/hr	33.6	35.5	32.3	30.8	36.4
14.	Sulphates	STP/SOIL	mg/100g	234.4	232.6	245.6	242.6	232.1
15.	Sodium Sulphate	STP/SOIL	mg/100g	302.6	310.2	292.6	310.5	290.5
16.	Calcium Sulphate	STP/SOIL	mg/100g	715.4	810.2	710.4	780.2	740.2
17.	Bulk Density	STP/SOIL	gm /cm ³	1.42	1.39	1.38	1.33	1.40
18.	Porosity	STP/SOIL	%	28.4	25.5	24.5	24.6	22.2

4.5 AIR ENVIRONMENT

Air pollution can cause significant effects on the environment and subsequently on human, animals, vegetation and materials. In most cases, air pollution aggravates pre-existing diseases or degrades health status, making people easily susceptible to other infections and development of chronic respiratory and cardiovascular diseases. Further, environmental impacts from air pollution can include acidic deposition and reduction in visibility. Ambient air quality is the most significant parameter that is required to quantify the impact on the natural and biophysical environment.

All air pollutants emitted by point and non-point sources are transported, dispersed or concentrated by meteorological and topographical conditions. In order to assess the impact on existing air environment due to the proposed projects, it is necessary to have baseline air status of various pollutants. The prime objective of baseline air quality survey was to assess the existing air quality of the area. This will also be useful for assessing the conformity to standards of the ambient air quality.

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

4.5.1 Ambient Air Monitoring Locations

The Ambient air quality has been carried out at fifteen different locations. Major environmental receptors such as settlements etc. were also considered for selection of monitoring locations in the study area. The details of the Ambient Air monitoring locations have been presented in **Table 4.9 and Figure 4.6.**

Table 4.9: Air Monitoring Locations

S. No.	Location Name	Chainage (km)	Category of the Area	Code
1	Dhandhaniya Sesan	0+900	Residential	AAQ1
2.	Dhadaniya konda ka bas	2+400	Residential	AAQ2
3	Mandli	24+800	Commercial	AAQ3
4	Tirsingri Sodha	31+200	Residential	AAQ4
5	Patau	45+600	Residential	AAQ5
6	Balotra	62+400	Residential	AAQ6
7	Muthli (L)	78+400	Residential	AAQ7
8	Mithura (R)	96+700	Commercial	AAQ8
9	Bagoda	136+900	Residential	AAQ9
10	Meda	153+500	Commercial	AAQ10
11	Karola	187+200	Residential	AAQ11
12	Lachari	192+000	Residential	AAQ12
13	Sanchoe	195+500	Commercial	AAQ13
14	Pratapura	200+000	Residential	AAQ14
15	Khoda	207+300	Commercial	AAQ15

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

Some photographs showing air monitoring along the project area has been presented below:



Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchole (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

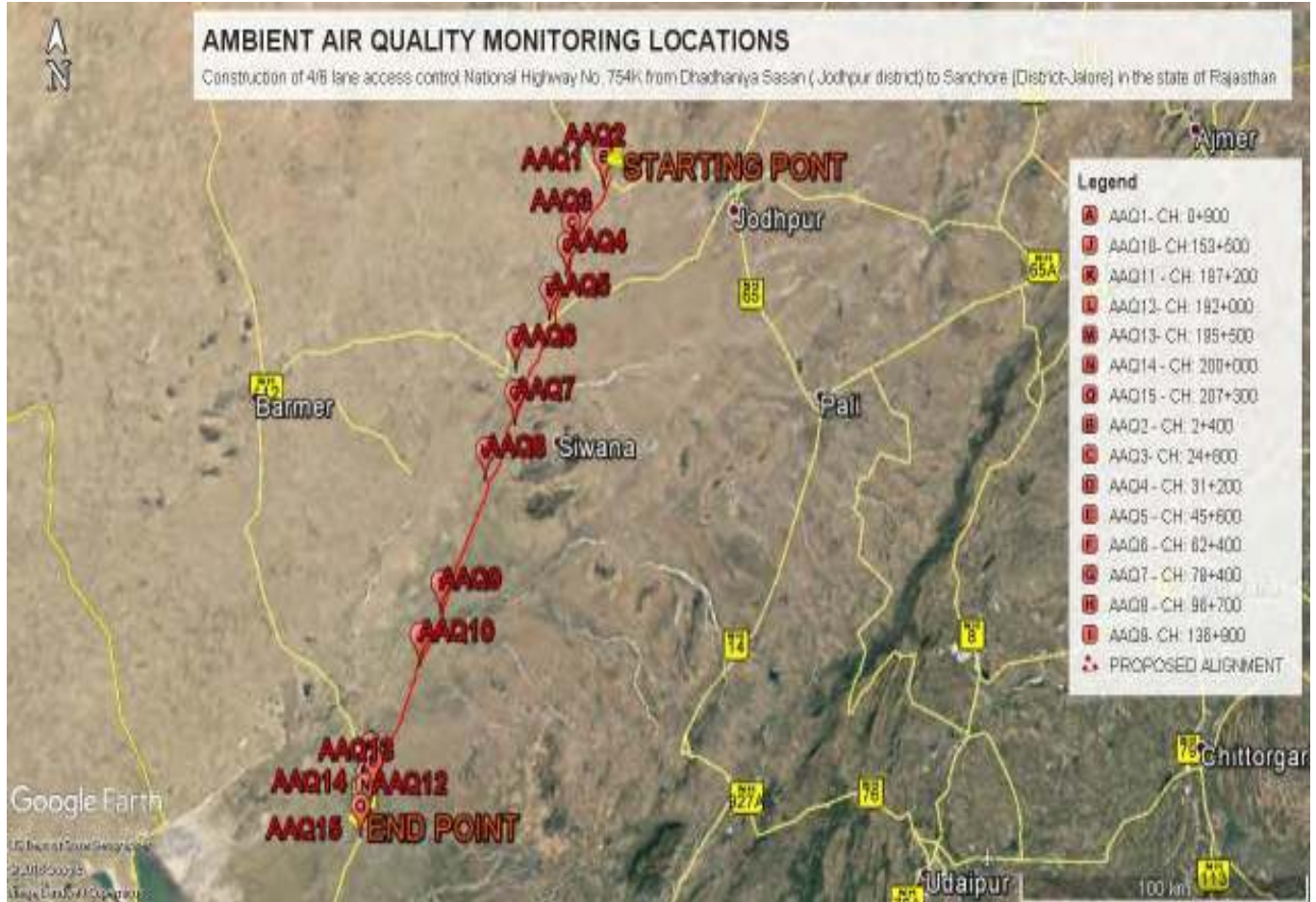


Figure 4.6: Map showing the Ambient Air Quality Monitoring Locations

4.5.2 Analysis of Ambient Air Quality along the study area

The Ambient Air Quality was measured during the period from April 2018 to June 2018 at 15 locations and results have been presented in **Table-4.10**. The chart showing the concentrations of the pollutants at various locations has been shown from **Figure-4.7 (a) to 4.7 (e)**. The Results show that all the parameters are well below the National ambient air quality standards, 2009.

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchores (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

Table-4.10: Value of the AAQ along the proposed project location

S. No.	Locations	PM10 ($\mu\text{g}/\text{m}^3$)				PM2.5 ($\mu\text{g}/\text{m}^3$)				SO2 ($\mu\text{g}/\text{m}^3$)				NOx ($\mu\text{g}/\text{m}^3$)				CO (mg/m^3)			
		Min	Max	98P	Avg	Min	Max	98P	Avg	Min	Max	98P	Avg	Min	Max	98P	Avg	Min	Max	98P	Avg
1	AAQ1	65.2	72.6	71.2	69.4	30.6	40.8	39.2	34.1	8.9	11.4	10.8	9.9	14.2	22.8	22.2	17.8	0.78	0.86	0.75	0.82
2	AAQ2	58.2	66.5	65.4	63.4	25.6	35.6	34.2	31.3	7.2	9.2	8.8	8.5	9.8	16.4	16.0	14.5	0.35	0.42	0.40	0.38
3	AAQ3	55.6	68.8	67.6	61.5	24.8	32.2	31.2	29.4	8.3	11.6	11.0	10.5	11.8	18.6	18.1	16.8	0.45	0.76	0.65	0.614
4	AAQ4	62.6	72.5	71.6	68.4	26.8	35.5	34.4	32.1	7.8	10.5	10.3	8.8	9.6	15.5	15.0	13.8	0.34	0.43	0.39	0.374
5	AAQ5	54.2	60.5	59.6	56.4	22.2	32.8	31.7	28.8	7.6	8.8	8.4	8.0	10.2	17.2	16.8	12.1	0.38	0.49	0.47	0.447
6	AAQ6	66.2	75.6	74.5	71.4	29.2	36.1	34.9	33.5	8.5	9.7	9.3	9.0	8.9	15.2	15.0	13.2	0.32	0.44	0.41	0.39
7	AAQ7	56.8	70.6	69.2	62.3	22.4	32.5	31.4	28.4	6.7	10.8	9.8	9.2	9.5	16.2	15.6	12.2	0.30	0.52	0.47	0.41
8	AAQ8	60.5	68.2	67.3	65.2	25.1	30.8	30.1	27.4	9.1	12.3	11.8	9.8	11.2	18.4	17.6	13.4	0.62	0.75	0.71	0.676
9	AAQ9	58.6	62.4	61.9	60.8	22.6	34.7	33.6	27.6	6.9	9.5	9.2	7.9	8.6	15.6	15.1	11.3	0.29	0.54	0.49	0.409
10	AAQ10	65.2	72.1	71.6	67.71	25.8	37.3	36.2	30.4	9.8	13.9	13.3	11.4	11.4	20.2	19.1	15.9	0.54	0.65	0.60	0.581

S. No.	Locations	PM10 ($\mu\text{g}/\text{m}^3$)				PM2.5 ($\mu\text{g}/\text{m}^3$)				SO2 ($\mu\text{g}/\text{m}^3$)				NOx ($\mu\text{g}/\text{m}^3$)				CO (mg/m^3)			
		Min	Max	98P	Avg	Min	Max	98P	Avg	Min	Max	98P	Avg	Min	Max	98P	Avg	Min	Max	98P	Avg
11	AAQ11	57.9	66.3	65.1	61.25	24.5	30.5	29.4	27.8	8.4	11.2	10.6	9.8	11.5	18.6	18.2	14.2	0.48	0.62	0.58	0.54
12	AAQ12	68.5	75.2	74.6	72.80	26.3	37.8	36.7	33.08	7.1	9.3	8.7	8.4	9.7	16.1	15.8	13.9	0.35	0.41	0.39	0.375
13	AAQ13	80.2	97.6	96.2	89.7	28.2	35.6	34.5	30.4	10.2	15.5	15.1	12.9	13.4	22.3	21.9	17.1	0.85	1.1	1.08	0.975
14	AAQ14	60.2	70.4	69.2	64.6	27.5	30.2	29.1	28.75	7.3	8.6	8.3	8.1	9.3	15.4	15.0	13.4	0.37	0.48	0.45	0.42
15	AAQ15	82.6	98.5	97.8	93.48	26.5	32.8	31.7	30.55	9.7	16.5	15.9	13.8	9.8	16.9	16.5	14.9	0.36	0.54	0.51	0.425

Source: Noida Testing Laboratories (April 2018 to June 2018)

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

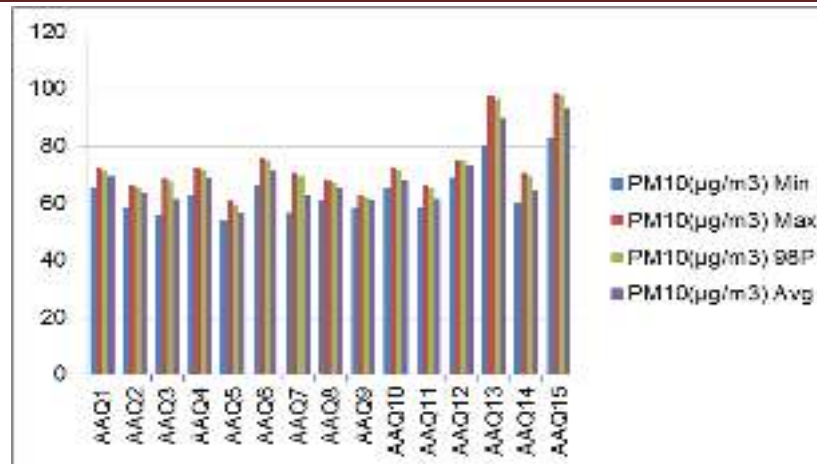


Figure 4.7 (a): Chart Showing Concentration of PM 10 at various locations.

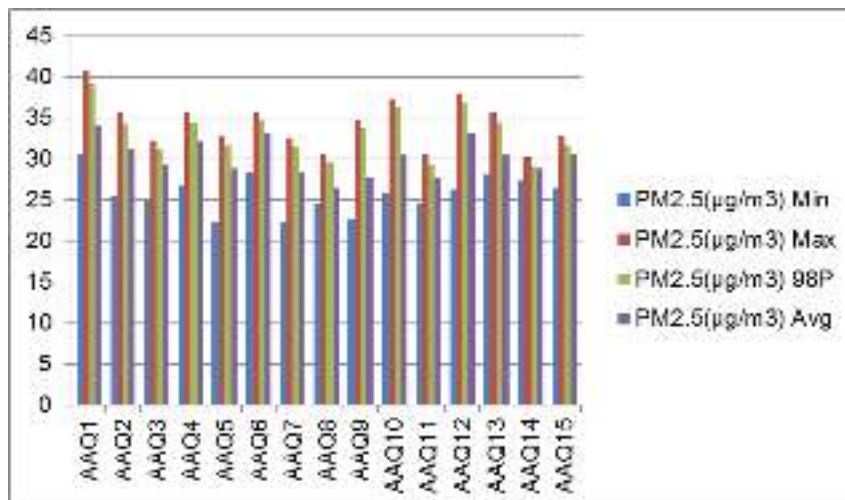


Figure 4.7 (b): Chart Showing Concentration of PM 2.5 at various locations.

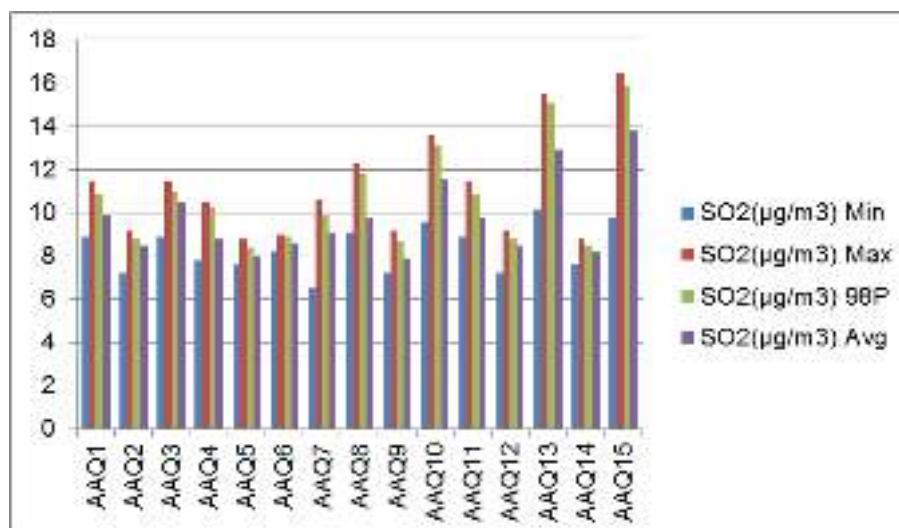


Figure 4.7 (c): Chart Showing Concentration of SO₂ at various locations.

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

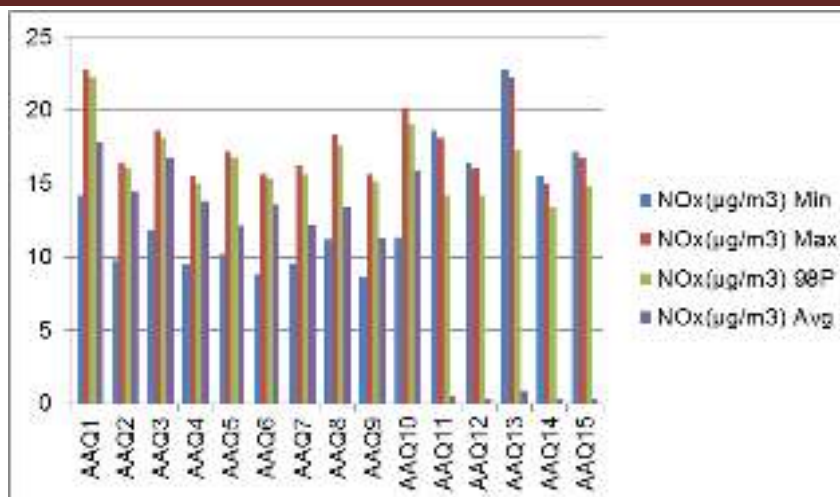


Figure 4.5 (d): Chart Showing Concentration of NOx at various locations.

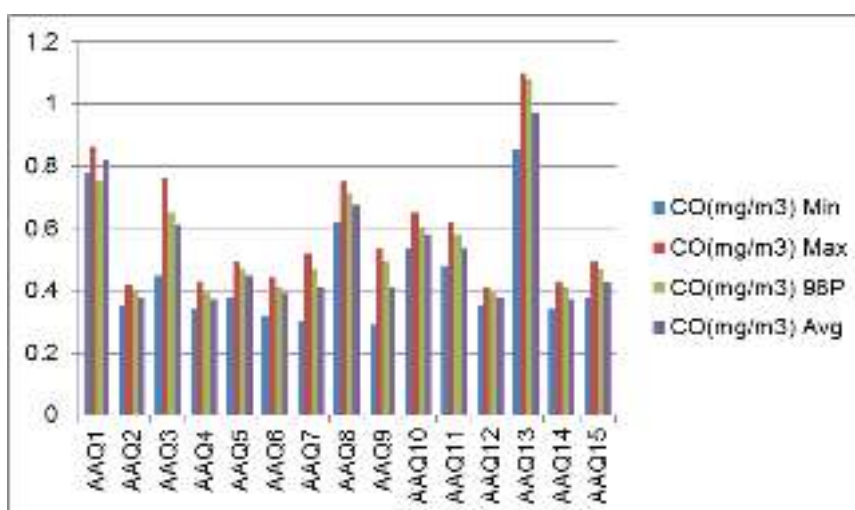


Figure 4.7 (e): Chart Showing Concentration of CO at various locations.

Analysis and Interpretation:

Particulate Matter (PM_{2.5}): The minimum and maximum concentrations for PM_{2.5} were recorded as 22.2µg/m³ and 40.8µg/m³ respectively. The minimum concentration was recorded at Tirsingri Sodha village (AAQ5) and the maximum concentration was recorded at Dhandhaniya Sasan village (AAQ1). All the results are found to be within limit when compared to the standard limit of 60µg/m³ as per latest NAAQS 2009.

Particulate Matter (PM₁₀): The minimum and maximum concentrations for PM₁₀ were recorded as 54.2µg/m³ and 98.5µg/m³ respectively. The minimum concentration was recorded at Tirsingri Sodha village (AAQ5) and the maximum concentration was recorded at Khoda village (AAQ15). All the results are found to be within limit when compared to the standard limit of 100µg/m³ as per latest NAAQS 2009.

Sulphur Dioxide (SO₂): The Minimum concentration was recorded as 6.7µg/m³ at Muthli(L) village and Maximum concentration was recorded as 16.5µg/m³ at Khoda village. All results



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

are found to be below the range as compared to standard limit of 80µg/m³ as per latest NAAQS 2009.

Nitrogen Dioxide (NO₂): The Minimum concentration was recorded as 8.6µg/m³ at Bagoda village and Maximum concentration were recorded as 22.8µg/m³ at Dhandhaniya Sasan village. All stations results are found to be below the range as compared to standard limit of 80µg/m³ as per latest NAAQS 2009.

Carbon Monoxide (CO): The minimum and maximum concentrations for CO were recorded as 0.29 mg/m³ and 1.1mg/m³ respectively. The minimum concentration was recorded at Bagoda village (AAQ7) and the maximum concentration was recorded at Sanchore (AAQ13). All the results are found to be within limit when compared to the standard limit of 4 mg/m³ as per latest NAAQS 2009.

4.6 NOISE ENVIRONMENT

Noise can be defined as any sound that is undesirable because it interferes with speech and hearing, and is intense enough to damage hearing or is otherwise annoying. Noise impacts can be of concern during construction and operational phases of the project. Factors those are important in determining noise levels include distance from the noise source, natural or manmade barriers between the source and the receptors, whether conditions, etc

4.6.1 Noise monitoring locations

An assessment of baseline noise quality was undertaken to (a) establish the status of exposure of the major sensitive receptors, and (b) to identify the noise pollution levels in and around the site. The noise monitoring was done following CPCB protocol of Noise Monitoring. The details of the Noise level monitoring locations have been presented in **Table 4.11** and **Figure 4.8**.

Table 4.11: Noise level Monitoring Locations

S. No.	Location Name	Chainage (km)	Category of the Area	Code
1	Dhandhaniya Sasan	0+900	Residential	N1
2.	Dhadaniya konda ka bas	2+400	Residential	N2
3	Mandli	24+800	Commercial	N3
4	Tirsingri Sodha	31+200	Residential	N4
5	Patau	45+600	Residential	N5
6	Balotra	62+200	Residential	N6
7	Muthli	78+200	Commercial	N7
8	Mithura	97+000	Commercial	N8
9	Bagoda	136+800	Residential	N9
10	Meda	153+000	Residential	N10
11	Karola	187+000	Residential	N11
12	Lachari	192+000	Residential	N12
13	Sanchore	195+000	Commercial	N13
14	Pratapura	200+000	Residential	N14
15	Khoda	207+700	Commercial	N15

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

Some photographs showing noise monitoring has been presented below:



Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchore (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)



Figure 4.8: Map showing the Ambient Noise Monitoring Locations

4.6.2 Analysis of Noise Monitoring along the study area

An analysis of the different Leq data obtained during the study period (April 2018 to June 2018) has been made. Variation was noted during the day-time as well as night-time Noise monitoring was conducted at ten locations along the proposed project. The details of the ambient noise quality along the proposed project locations have been presented in **Table 4.12**. The chart showing the noise level along the proposed project locations has been shown in **Figure 4.9**.

Table-4.12: Ambient Noise Quality along the proposed project

Location	Results		CPCB Limits Leq db(A)	
	Leq Day dB(A)	Leq Night dB(A)	Day*	Night*
N1	54.6	46.2	55	45
N2	50.4	39.6	55	45
N3	61.8	51.2	65	55
N4	52.5	43.8	55	45
N5	50.7	39.2	55	45
N6	51.2	40.4	55	45
N7	62.1	51.7	65	55
N8	62.4	53.2	65	55
N9	50.2	40.5	55	45
N10	52.4	41.8	55	45
N11	48.3	39.7	55	45
N12	50.8	41.2	55	45
N13	62.6	52.8	65	55
N14	42.6	37.8	55	45
N15	61.8	53.1	65	55

Source: Noida Testing Laboratories

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

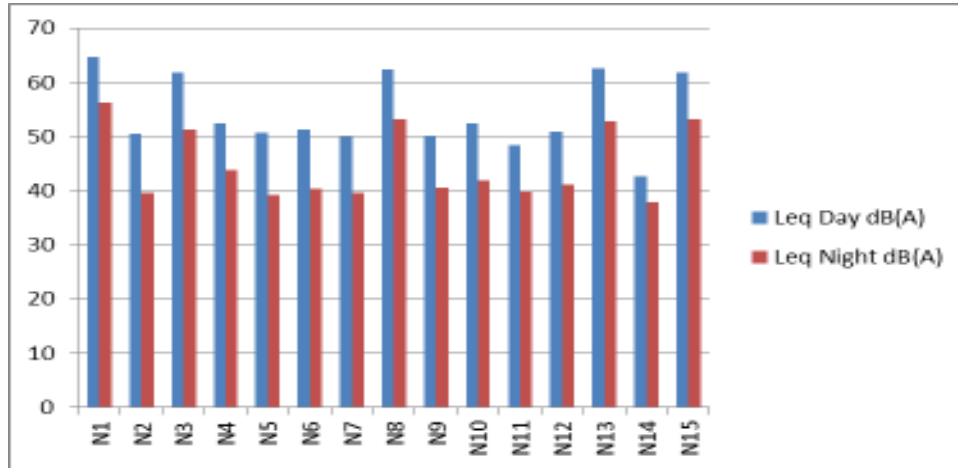


Figure 4.9: Noise level along the proposed project location

4.7 WATER ENVIRONMENT

4.7.1 Water Bodies within RoW

There are 05 Canal, 8 Nalas and 11 rivers (including distributaries) falling within the proposed RoW of alignment. The details of the water bodies present within the RoW of proposed alignment and which may be affected have been presented in **Table 4.13**.

Table 4.13: Details of Rivers/canals crossing along the proposed alignment

Sl.No	Design Chainage	Particular	Within PROW	
			Area of Water body in (Sqmtr)	Area of Water body in (Ha)
1.	13+300	Nala	164.092	0.016
2.	13+400	Nala	2038.760	0.204
3.	19+200	Nala	13286.125	1.329
4.	21+400	River	2442.960	0.244
5.	27+200	Nala	3300.322	0.330
6.	64+300	River	28931.880	2.893
7.	80+200	Nala	1165.365	0.117
8.	82+500	River	4739.983	0.474
9.	82+800	River	9941.930	0.994
10.	88+000	Nala	954.925	0.095
11.	89+200	Nala	2393.458	0.239
12.	91+200	Nala	299.681	0.030
13.	141+200	River	11074.565	1.107
14.	142+500	River	14274.586	1.427
15.	144+400	River	1543.622	0.154
16.	145+100	River	1629.303	0.163
17.	146+800	River	46742.824	4.674
18.	152+400	River	5072.631	0.507
19.	163+300	River	5602.582	0.560

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

20.	176+300	Canal	1163.800	0.116
21.	182+100	Canal	392.900	0.039
22.	187+600	Canal	407.087	0.041
23.	193+500	Canal	3850.522	0.385
24.	198+800	Canal	1690.905	0.169
Total			163831.750	16.383

4.7.2 Water Bodies within 500m of RoW

There are 05 Canal, 09 Nalas, 05 Pond and 11 rivers (including distributaries) which are present within 500m of the proposed alignment. The details of water resources falling within 500m either side of the project alignment have been presented in **Table 4.14**.

Table 4.14: Details of water bodies falling within 500m of project alignment

Sl.No	Design Chainage	Particular	Within 500 m buffer	
			Area of Water body in (Sqmt)	Area of Water body in (Ha)
1	13+300	Nala	1527.445	0.153
2	13+400	Nala	1815.518	0.182
3	13+700	Pond	11101.429	1.110
4	19+200	Nala	48480.235	4.848
5	21+400	River	37670.935	3.767
6	24+500	Pond	68170.778	6.817
7	27+200	Nala	43850.116	4.385
8	28+700	Pond	2611.326	0.261
9	31+500	Pond	21092.776	2.109
10	64+300	River	447453.749	44.745
11	80+200	Nala	28435.893	2.844
12	82+500	River	44814.144	4.481
13	82+800	River	183258.372	18.326
14	88+000	Nala	5968.578	0.597
15	89+200	Nala	40021.674	4.002
16	90+800	Nala	42597.966	4.260
17	91+200	Nala	18726.449	1.873
18	141+200	River	241287.102	24.129
19	142+500	River	174931.291	17.493
20	144+400	River	11777.291	1.178
21	145+100	River	20226.351	2.023
22	146+800	River	502212.860	50.221
23	152+400	River	20226.351	2.023
24	163+300	River	96134.337	9.613
25	176+300	Canal	21451.146	2.145
26	177+600	Pond	3008.494	0.301
27	182+100	Canal	6186.758	0.619
28	187+600	Canal	5381.399	0.538
29	193+500	Canal	28031.869	2.803
30	198+800	Canal	26647.307	2.665
Total			2205099.938	220.510



4.7.3 Hydrogeology for the study area

Hydrogeology:

Ground water in Jodhpur district occurs under unconfined to semi-confined conditions in rocks of Delhi Super Group, Jodhpur Sandstone, Bilara Limestone Nagaur Sandstone, Lathi Sandstone and unconsolidated sediments (valley fills and alluvium). These form the chief source of ground water in the district. Confined conditions are also met sometimes at deeper levels in the northwestern part of the district. Delhi Super Group: Rocks comprising of schists, phyllites, slates and quartzites form aquifer in isolated patches in small area in south-eastern part of the district. These patches occur within the granitic terrain. These generally form poor aquifer. Ground water occurs under unconfined condition in weathered mantle and fractured zone.

In district Jalore ground water occurs under unconfined condition in saturated zone of rock formation. Its occurrence is controlled by topography, physiography and 5 structural features of the geological formations. The movement of the ground water in hard rock areas is governed by size, openness, interconnection and continuity of structurally weak planes while in unconsolidated rocks, ground water movement takes places through pore space between grains.

The main water bearing formations in the Barmer district are rhyolites and granites of post Delhi; Lathi sandstone, Tertiary sandstone and Quaternary alluvium. In Quaternary alluvium, ground water occurs under semi confined to unconfined conditions. In semi consolidated Tertiary and Mesozoic formations, it occurs under unconfined to confined conditions and in weathered and fractured zones in hard rocks under phreatic conditions. Though ground water occurs in all the formations but the most productive aquifers are the Lathi sandstone, Barmer sandstone and Quaternary sediments. The Tertiary formation, which is predominantly clayey and argillaceous, is not found as productive except locally in the sandstone horizon. In general, the fractured and weathered zones in hard rocks form poor aquifers.

Depth of Water Level

Depth to water level (2011) in the Barmer district, monitored through a network of 42 hydrograph stations, ranges from 4.90 to 70.95 m bgl and 4.00 to 71.50 m bgl during pre-monsoon and post monsoon, 2011, respectively, while the depth to water level during pre-monsoon season in major part of the Jodhpur district varied from 20 m to more than 40 m bgl except for parts of Luni, Mandore, Bilara, Osian, Bhopalgarh and Bap blocks where shallower water levels upto 20 m bgl were observed. During post monsoon (November, 2011), depth to water level varied from 0.01 to 114.9 mbgl. Shallow water level upto 20 m bgl has been observed in western half of Bap, central part of Osian, southern part of Balesar, southern and eastern parts of Mandore and major parts of Luni and Bilara blocks. Water levels in the remaining areas have been found to be 20 to more than 40 m bgl.

In Jalore district during May, 2011 (Pre monsoon period), depth to water level has been observed to vary from less than 5 m to more than 50m bgl. Water level is shallower in hard rock aquifers mainly in Bhinmal block. Depth to water level varies from 20 to 40m in greater part of the district. Deeper water levels (>50m) have been observed in parts of Bhinmal, Raniwara, Soyala blocks. During November, 2011 (post monsoon period), water levels have been found to range widely from less than 3m to more than 50m bgl. In general, depth to water level varies

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

from 2m to 10m in Jaswantpura tehsil and between 10m to 20 m in 7 the eastern parts of the district. In rest of the district post-monsoon water level ranges from 20 m to more than 40m.

Depth to groundwater table for pre monsoon and post monsoon for the project districts has been shown in **Figures 4.10, Figure 4.11 and Figure 4.12.**

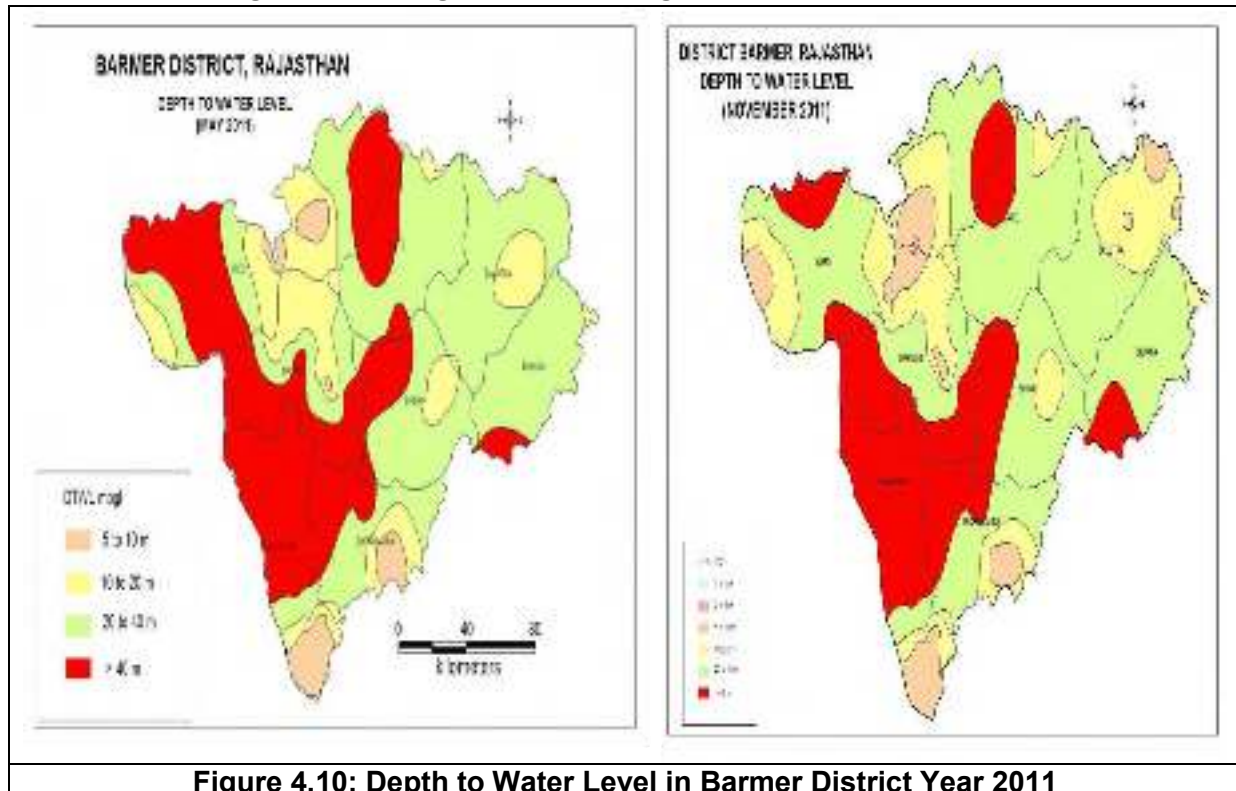


Figure 4.10: Depth to Water Level in Barmer District Year 2011

Source: Ministry of Water Resources, Central Ground Water Board, Government of India

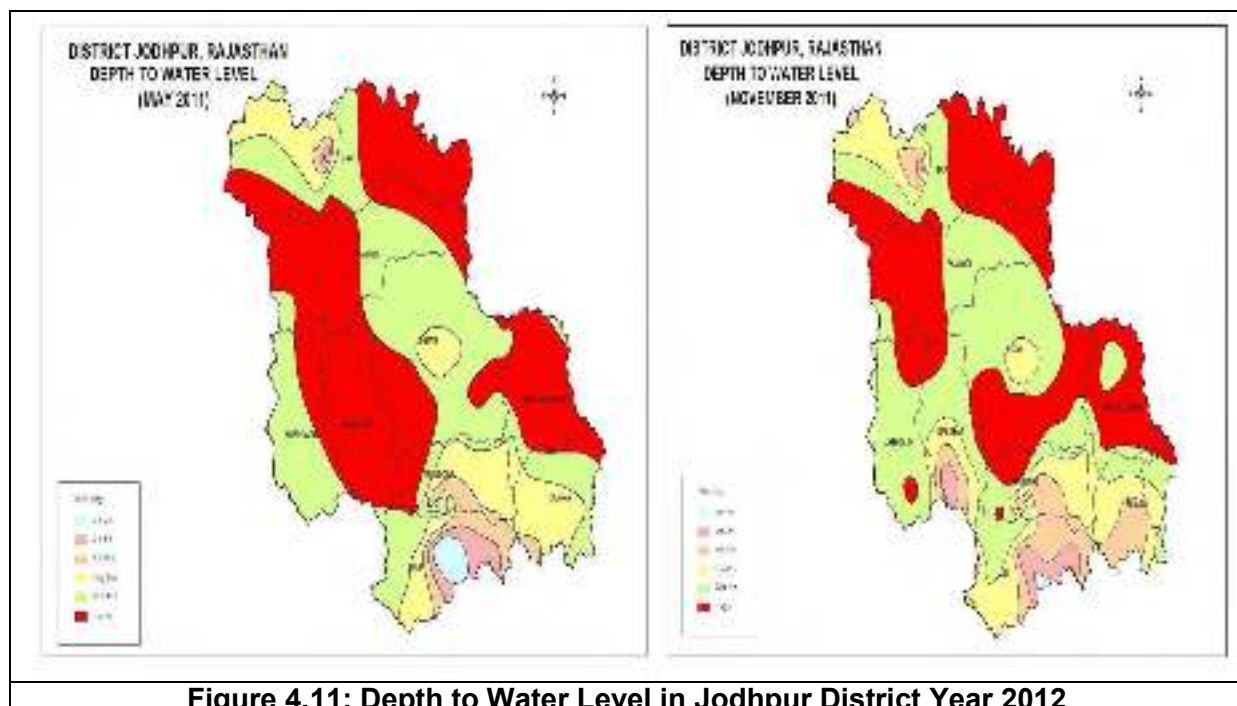
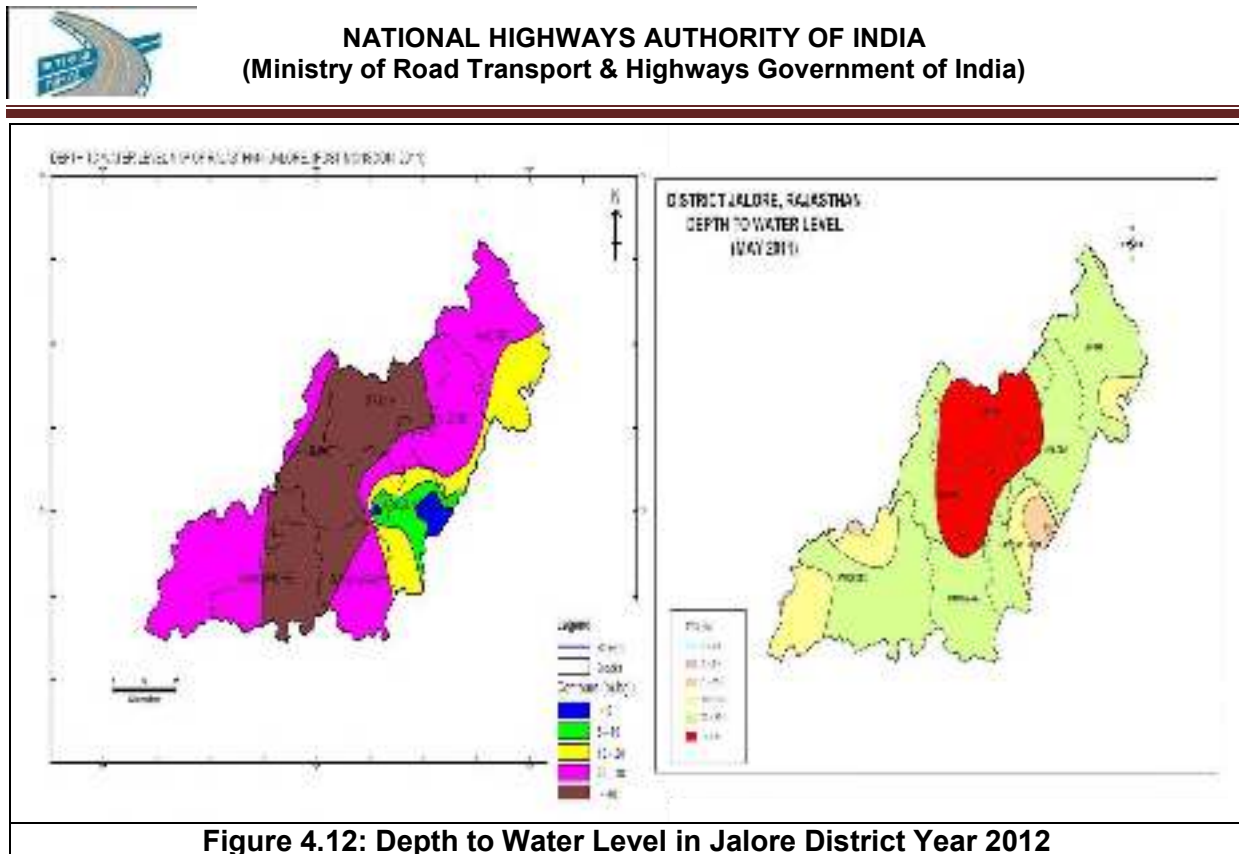


Figure 4.11: Depth to Water Level in Jodhpur District Year 2012

Source: Ministry of Water Resources, Central Ground Water Board, Government of India

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).





River and form a trellis pattern of drainage flowing due northwest. All rivers are ephemeral with graded and meandering courses and wide flood plains.

4.7.4 Water quality along the project

Selected water quality parameters of ground water and surface water resources within 10 km radius of the study area has been studied for assessing the water environment and evaluate anticipated impact of the project activity. Understanding the water quality is essential in preparation of Environmental Impact Assessment and to identify critical issues with a view to suggest appropriate mitigation measures for implementation. The purpose of this study is to:

- Assess the water quality characteristics for critical parameters; and
- Predict the impact of water quality due to project activities

4.7.4.1 Water Sampling Locations

The information required has been collected through primary surveys and secondary sources. Water quality is a concern for the numerous surface water sources and the groundwater sources. Three surface and five ground water samples have been collected from sources present along the proposed project to ascertain the baseline conditions of water quality. The locations of the Water sampling have been presented in **Table 4.15 and Figure 4.13**.

Table 4.15: Details of water sampling locations

S. No.	Water Sampling Location Station	Source	Project Chainage (km)	Sample Code
Surface Water				
1	Near Meghawas village	Pond	19+800	SW1
2	Near Mandli village	Pond	24+200	SW2
3	Canal near Sanchoe	Canal	193+500	SW3
Ground Water				
1	Mandli Village	Borewell	24+500	GW1
2	Balotra Village	Borewell	62+400	GW2
3	Muthli Village	Borewell	78+500	GW3
4	Sanchoe	Borewell	193+300	GW4
5	Partapura Village	Borewell	200+000	GW5

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchore (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

Some photographs showing water sampling along the project area has been presented below:



Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchore (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

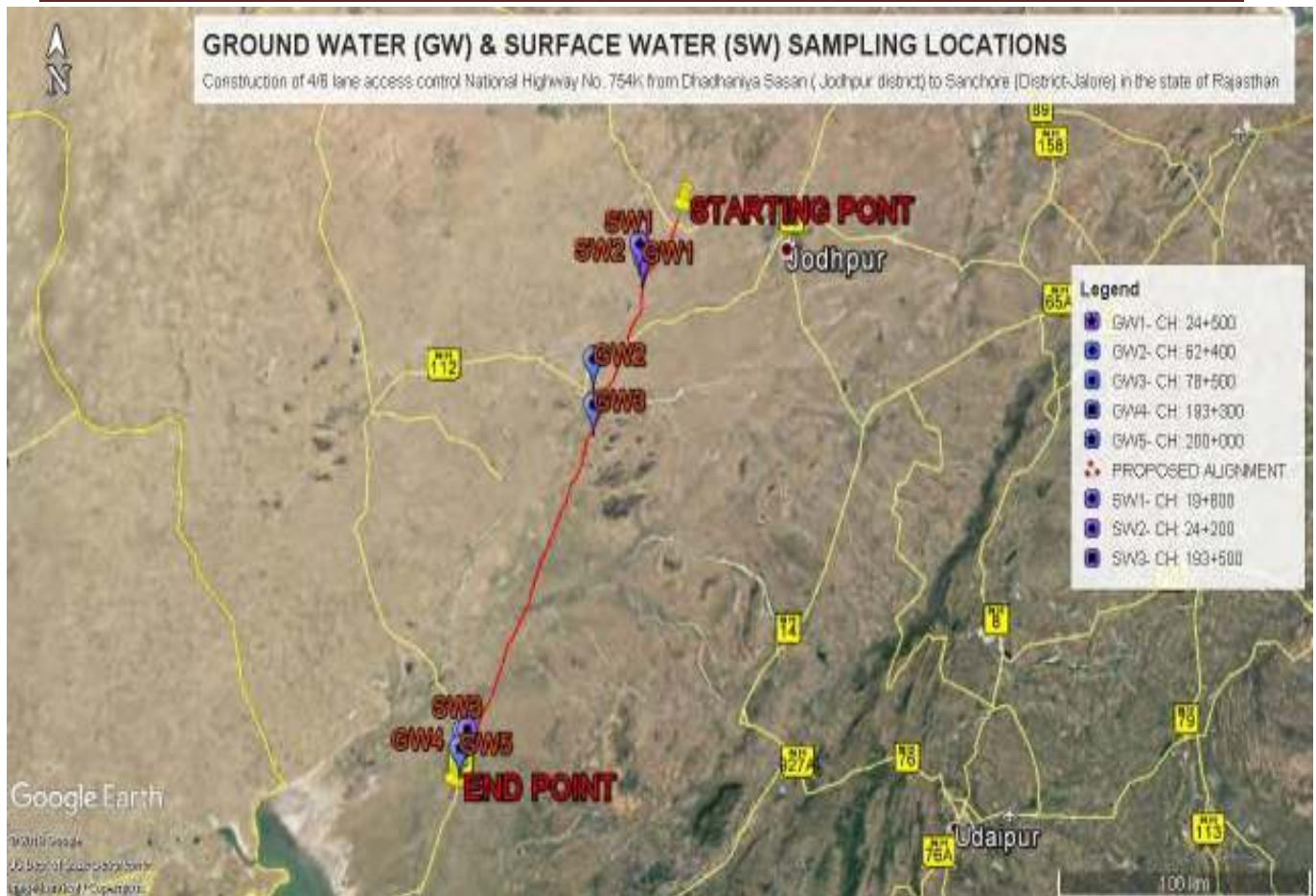


Figure 4.13: Map showing Ground Water and Surface water sampling locations

4.7.4.2 Ground Water Quality along the Study Area

A number of ground water sources like Borewells/wells exist along the project area. Five numbers of sampling locations were identified and the ground water sources monitored were borewell to assess the ground water quality along the project area. All physical and general parameters were observed within the desirable limit at all the five sampling locations as per IS10500:2012. The ground water quality along the proposed project locations were analyzed and have been presented in **Table 4.16**.

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

Table-4.16: Ground Water Quality along the proposed project locations

S. No.	Parameter	Units	GW1	GW2	GW3	GW4	GW5
1	pH	--	8.29	7.43	7.28	7.71	7.92
2	Colour	Hazen	<5.0	<5.0	<5.0	<5.0	<5.0
3	Odour	--	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
4	Conductivity @ 25°C	µS/cm	3639.08	3485.23	3727.23	3569.08	3597.69
5	Sulphate (SO ₄)	mg/l	272	258	283	266	275
6	Nitrate (NO ₃)	mg/l	21.6	20.2	19.5	18.5	20.9
7	Total Hardness (as CaCO ₃)	mg/l	842	799.90	896.60	847.90	843.70
8	Chloride(as Cl)	mg/l	815	796	826	820	861
9	Fluoride (as F)	mg/l	0.68	0.65	0.72	0.54	0.60
10	Total Dissolved Solid (TDS)	mg/l	2365.40	2265.40	2422.70	2319.90	2338.50
11.	Calcium (as Ca)	mg/l	140	133	152	144	162
12.	Magnesium (as Mg)	mg/l	120	114	126	119	107
13.	Sodium (as Na)	mg/l	318	304	327	320	294
14.	Potassium (as K)	mg/l	320	291	322	288	267
15.	Total Alkalinity (as CaCO ₃)	mg/l	598	582	612	574	586
16.	Phosphate (as P)	mg/l	<0.05	<0.05	<0.05	<0.05	<0.05
17.	TKN (N)	mg/l	<1.0	<1.0	<1.0	<1.0	<1.0
18.	Total Suspended Solid (TSS)	mg/l	<1.0	<1.0	<1.0	<1.0	<1.0
19.	Arsenic (as As)	mg/l	BDL	BDL	BDL	BDL	BDL
20.	Chromium (as Cr)	mg/l	BDL	BDL	BDL	BDL	BDL
21.	Iron (as Fe)	mg/l	0.29	0.22	0.26	0.24	0.28
22.	Mercury (as Hg)	mg/l	BDL	BDL	BDL	BDL	BDL
23.	Zinc (as Zn)	mg/l	0.06	0.04	0.05	0.08	0.05
24.	Faecal Coliform	MPN/100 ml	Absent	Absent	Absent	Absent	Absent
25.	Total Coliform	MPN/100 ML	Absent	Absent	Absent	Absent	Absent

Source: Noida Testing Laboratories



4.7.4.3 Surface Water Quality along the study area

Three sampling locations for the surface water quality was selected and monitored along the proposed project. The result of the surface water quality along the proposed project locations were analysed and have been presented in **Table 4.17**, which revealed that the water quality of the surface water are well within the limits.

Table-4.17: Surface Water Quality along the proposed project locations

S. No.	Parameter	Units	Pond Mandli village	Pond Near Meghawas village	Canal near Sanchore
1	pH	--	7.45	7.38	6.9
2	Colour	Hazen	<5	<5	<5
3	Odour	--	Odorous	Odorous	Odorous
4	Conductivity @25°C	µS/cm	735.35	669.74	435.34
5	Sulphate (SO ₄)	mg/l	38.26	36.46	30.6
6	Nitrate (NO ₃)	mg/l	3.56	3.39	18.1
7	Total Hardness(as CaCO ₃)	mg/l	210.19	187.93	156
8	Chloride(as Cl)	mg/l	148.24	134.88	60.8
9	Fluoride (as F)	mg/l	0.82	0.78	0.92
10	COD	mg/l	80.0	77.0	23.1
11.	Dissolve Oxygen	mg/l	4.5	4.0	5.9
12.	Total Dissolved Solid	mg/l	477.98	435.33	282.97
13.	BOD (3 days at 27°C)	mg/l	24.2	21.5	6.0
14.	Calcium (as Ca)	mg/l	47.80	42.70	39.8
15.	Magnesium (as Mg)	mg/l	22.12	19.8	15.9
16.	Sodium (as Na)	mg/l	78.0	70.7	52.8
17.	Potassium (as K)	mg/l	12.8	11.2	5.8
18.	Total Alkalinity (as CaCO ₃)	mg/l	212	197	146
19.	Phosphate (as P)	mg/l	0.26	0.23	0.3
20.	TKN	mg/l	6.23	5.81	24.2
21.	Total Suspended Solid	mg/l	38.6	36.1	10.2
22.	Arsenic (as As)	mg/l	<0.05	<0.05	<0.05
23.	Chromium (as Cr)	mg/l	<0.1	<0.1	<0.1
24.	Iron (as Fe)	mg/l	1.16	1.05	2.78
25.	Mercury (as Hg)	mg/l	<0.001	<0.001	<0.001
26.	Zinc (as Zn)	mg/l	0.05	0.04	0.10
27.	Faecal Coliform	MPN/100 ml	1110	1095	547
28.	Total Coliform	MPN/100ML	1840	1805	317

Source: Noida Testing Laboratories

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

4.8 BIOLOGICAL ENVIRONMENT

Though a large percentage of the total area is desert and even though there is little forest cover, Rajasthan has a rich and varied flora and fauna. The natural vegetation is classed as Northern Desert Thorn Forest (Champion 1936). These occur in small clumps scattered in a more or less open forms. Density and size of patches increase from west to east following the increase in rainfall. The Northwestern thorn scrub forests lie in a band around the Thar Desert, between the desert and the Aravallis.

Rajasthan is the largest state covering an area of 3,42,239 sq km which is 10.41 % of the geographical area of the country. Based on physiography, the state can be divided into four major regions, namely the western desert with barren hills, level rocky and sandy plains, the Aravali hills and south-eastern plateau. Further, the forest cover in the state is 16,572 sq km which is 4.84 per cent of the state's geographical area.

Legally, the forest area in the state has been classified into three categories, viz., Reserved Forest, Protected Forest and Unclassified Forest, contributing 38.11 per cent, 55.64 per cent and 6.25 per cent of the total recorded forest area of the state, respectively (FSI 2017). The district Jodhpur, Badmer and Jalore (the district to which the present project belongs) has 105, 273 and 275 sq. km. forest area respectively, which is 4 per cent of the total forest area of the state. The forest cover map of Rajasthan showing the project area has been shown in **Figure 4.14**.



Source: India State of Forest Report, FSI 2017

Figure 4.14: Forest cover map of Rajasthan showing the project area



4.8.1 Methodology for the Study

The studies on ecology and biological environment assessment were undertaken during pre-monsoon season (April 2018 to June 2018). A phased and consultative approach was followed to carry out the ecological assessment. The successive phases include: (i) Reconnaissance survey, (ii) on-site primary data collection for flora and fauna, and (iii) secondary data collection through review of available literature, reports and government documents. Wherever necessary, the required information was also collected through formal and informal discussions with the forest department officials and staff, personnel of National Highway Authority of India, Rajasthan and local inhabitants and natural resource users. Both the terrestrial and aquatic ecosystems were studied. The primary data were collected through extensive field visits and using ecological methods as per requirement as described in **Mishra (1968)**.

In order to understand the composition of the vegetation, most of the plant species were identified in the field itself with necessary support from the Forest department field staff and local inhabitants. In case of species that could not be identified at the site itself, herbarium specimen of the same were collected without uprooting the plant; in addition, their photographs were also taken wherever necessary for identification later with the help of available published literature and flora of the region and adjacent states, Madhya Pradesh and Gujarat.

The vegetation of the forest, savannah and grassland was described following **Champion and Seth (1968)** and **Dabadghao and Shankarnarayan (1973)**, respectively. The flora and fauna of the project site were classified and identified following published Floral and Faunal literature as cited in the section "References". The conservation status of the species has been recorded following the Red Data Books of BSI, MoEF&CC and ZSI, The Wildlife (Protection) Act, 1972 and IUCN Red list of threatened species.

4.8.2 Forest and Grassland Types in the Project Area

The vast diversity of habitats has led to the existence of a wide variety of species in the project site. **The project area belongs to the Biogeographic Zone-3. The Indian Desert: Biotic Province-3A Desert-Thar.**

Based on standard classification of Forest types of India by Champion and Seth (1968), the following forest types exist in the region:

- **Sub-group 5B Northern tropical dry deciduous forests**
- **Sub-group 6B-Northern tropical thorn forests**

The grass cover of the project site belongs to **Dichanthium - Cenchrus - Lasiurus grasslands type**. Key species include *Dichanthium annulatum*, *Cenchrus ciliaris*, *C. biflorus*, and *Lasiurus sindicus* (**Dabadghao and Shankarnarayan 1973**). These grasslands serve as habitat to most of the wild fauna and breeding ground to birds in addition to supporting domesticated livestock for fodder and grazing needs, and livelihood needs of the human beings. These grasslands are edaphic climax resulted from continued biotic influences, such as, deforestation, grazing and burning.



4.8.3 Wetlands along the study area

The inland wetlands in the area include ponds, canals and water-logged areas having seasonal or perennial water supply. These are solely fed by rain water and/or fresh water sources. The village ponds in addition to the above, mostly seasonal play an important role in providing habitat to numerous resident and migratory birds/waterfowls. The tree growth at nearby these wetlands provides roosting and/or nesting sites to the resident waterfowls. Ponds and marshes in sub-urban and rural areas contribute as breeding site for the **Demoiselle crane** (*Grus virgo*). *Digitaria*, *Nelumbo*, *Nymphaea*, *Panicum*, *Paspalum*, *Trapa* and *Typha* are the common aquatic plant species of these wetlands. Reduction in aquatic area and aquatic vegetation has adversely affected the occurrence of the aquatic fauna in and around areas occurring in sub-urban and urban locations.

4.8.4 Taxonomic Diversity: Flora

During study period, while surveying the project specific area, no non-flowering plant species was recorded. In general, the vegetation of the study area consisting of *Acacia leucophloea*, *A. nilotica*, *A. tortilis*, *Azadirachta indica*, *Prosopis cineraria*, *Ficus bengalensis*, *F. religiosa*, *Zizyphus jujube*, *Z. xylopara*, *Salvadora oleoides* etc.

Most of the other vegetation consists of stunted, thorny or prickly shrubs and perennial herbs which are resistant to drought. Stabilized dunes are covered mainly by *Capparis decidua*, *Calotropis procera*, *Calligonum polygonoides*, *Cyperus arenarius*, *Desmostachya bipinnata*, *Panicum turgidum*, *Dactyloctenium* spp., *Aristida* spp., *Lasiurus indicus*, *Tribulus* spp. *Cassia tora* etc.

4.8.4.1 Economically-Important Plant Species

During the field survey, a number of plant species which are of economic importance in the area, were recorded. These plants are used by local people for various purposes in their day to day life. These species include timber, firewood, fruits-yielding, fodder, medicinal and multi-purpose species.

A total of 5 species of economically-important plants were recorded in the project area. These tree species have been presented in **Table 4.18**.

Table 4.18: Economically-important plant species recorded in the project area, 2018

Sl. No.	SCIENTIFIC NAME	LOCAL/ENGLISH NAME	FAMILY	ECONOMIC USE**
(A) TREE SPECIES				
1.	<i>Acacia leucophloea</i>	Ronjh	Fabaceae	FW
2.	<i>A. nilotica</i>	Babul	Fabaceae	T,FW
3.	<i>Azadirachta indica</i>	Neem	Meliaceae	MP
4.	<i>Prosopis cineraria</i>	Khejri	Fabaceae	MP
5.	<i>Salvadora oleoides</i>	Jalki	Salvadoraceae	MP

*Source: Field survey

FW=Firewood, T=Timber, MP=Multipurpose



4.8.5 Taxonomic Diversity: Fauna

The common faunal species recorded/observed in the project area includes: *Sus scrofa* (wild boar), *Boselaphus tragocamelus* (Blue bull), *Gazella bennettii* (chinkara gazelle), *Meriones hurrianae* (Indian desert gerbil), *Lepus nigricollis dayanus* (hare), *Funambulus pennant* (squirrel) and *Hystrix indica indica* (porcupine), *felis chaus* (jungle cat) etc.

Common Reptiles include *Varanus griseus* (desert monitor), *Echis carinatus* (Indian Viper), *Eryx johnii* (Sand boa), *Ophisops jerdoni* (desert lizard), *Calotes versicolor* (oriental garden lizard), *Hemidactylus flaviviridis* (house gecko) etc.

The common bird species recorded/observed were *Alcedo atthis* (Common Kingfisher), *Pavo cristatus* (Indian Peafowl), *Coturnix coturnix* (Common Quail), *Eudynamis scolopaceus* (Asian Koel), *Grus virgo* (Demoiselle crane), *Columba livia* (Rock Pigeon), *Streptopelia senegalensis* (Laughing Dove), *Ardea alba* (Great Egret), *Accipiter badius* (Shikra), *Tyto alba* (Barn Owl), *Merops orientalis* (Green Bee-eater), *Passer domesticus* (House Sparrow) etc.

4.8.5.1 Aquatic Ecology

A total of 13 plant species and 3 fish species have been presented in **Table 4.19**

Table 4.19: Aquatic plants and phytoplankton species reported during pre-monsoon, 2018

SI. No.	AQUATIC PLANT SPECIES	LOCAL AVAILABILITY
1.	<i>Cyperus sp.</i>	Common
2.	<i>Cyperus spp.</i>	Common
3.	<i>Digitaria spp.</i>	Abundant
4.	<i>Eragrostis spp.</i>	Abundant
5.	<i>Hydrilla sp.</i>	Abundant
6.	<i>Ipomoea sp.</i>	Rare
7.	<i>Melastoma spp.</i>	Common
8.	<i>Panicum humile</i>	Abundant
9.	<i>Polygonum sp.</i>	Common
10.	<i>Phragmites karka</i>	Very Common
11.	<i>Potamogeton sp.</i>	Abundant
12.	<i>Trapa sp.</i>	Rare
13.	<i>Typha sp</i>	Very Common

Source: Field survey

The taxonomic diversity of fauna in the project area includes zooplanktons 08 species, annelid 01 species and fishes 9 species and that has been presented from **Table 4.29** and **Table 4.30**.

Table 4.29: Aquatic fauna recorded in the project area during pre-monsoon season, 2018

4.8.5.1.1 Fish diversity

The Luni is a river of western Rajasthan belonging to project area. In spite of the high salinity, it is a major river in the region and serves as a primary source of irrigation. Luni river is seasonal river and flows only during the rainy season from North-East to South-West. This river tends to increase its width rather than deepening the bed because the banks are of loose soils, which are easily erodible whereas beds are of sand. Numerous water pools are formed in the River bed. The important commercial fish species in the water bodies are *Cirrhinus mrigala*, *Catla*



catla and *Labeo rohita*. However, fishing is prohibited during rainy season due to breeding period of fishes.

4.8.6 Tree Cutting

The proposed alignment is passing mainly through agricultural, Barren Land, fallow, uncultivable, desert land, yet some trees are falling under the proposed alignment. There are approximately 4164 nos of trees which need to be cut. The common trees/species along the alignment were *Acacia leucophloea* (Ronjh), *A. nilotica* (Babul), *Azadirachta indica* (Neem), *Prosopis cineraria* (Khejri), *Salvadora oleoides* (Jalki) etc. The removal of these trees and the loss of vegetation cover will have some effect on local ecological balance, such as the disruption of habitat for small birds, mammals, etc., that will be forced to migrate to other areas. With the addition of trees and shrubs, following re-forestation, the short term impact of construction is expected to be reversed over the long term. There is no endangered species going to be affected by the project.

4.9 SOCIO-ECONOMIC PROFILE OF THE PROJECT AREAS

4.9.1 Introduction

The primary purpose of socio-economic analysis is to provide an overview of the State's, socio-economic status and the relative status of the Project Influence Area (PIA) within the State

The alignment is completely Green field and takes from design Ch. -1+142 at NH125 near existing km 52+000 between Dhandhaniya Sasan and Agolai towns (Jodhpur district) and ends at Rajasthan-Gujarat Border (Design Ch.207+100) near Sanchoe (District-Jalore) in the state of Rajasthan having 208.242 km length . The major part of alignment falls in the semi – deserted region of Rajasthan with small patches of agricultural and barren lands with major undulations.

This section presents the socio economic profile of Rajasthan, the Project Influence State, and Jodhpur, Barmer and Jalore districts, which comprises the Project Influence Area (PIA) of the proposed expressway.

4.9.2 Project Influence Districts

➤ Jodhpur District

Jodhpur is the second largest city in the Indian state of Rajasthan and officially the second metropolitan city of the state. The district is located in the western part of Rajasthan. It stretches between 26° to 27° 31' north latitude and 72° 55' to 73° 52' east longitude. The maximum length of the district from north to south is about 197 km while the maximum breadth from east to west is 208 km. The district is bounded on the north by Bikaner and Jaisalmer district, on the south by Pali and Barmer districts, on the east by Pali and Nagaur districts and on the west by Jaisalmer district. The total area of the district as per Surveyor General of India is 22850 Sq. km and is the fourth largest district of the state after Jaisalmer, Barmer and Bikaner district.

Jodhpur District is Divisional Commissioner Head Quarter District. District Collector is head of the district for revenue, Law and order matters. District Collector & District Magistrate is the



head of District Administration. For administration and development, the district is divided in Subdivisions and tehsils (sub-districts). The District Jodhpur has 7 sub-divisions. Each of the sub-divisions is headed by a Sub-divisional Officer (SDOs) / Magistrates, the officers are responsible for implementation of law and order matters in their respective sub-divisions. There are 7 Tehsil headquarters in Jodhpur district and each one has a Tehsildar as an administrative officer who works in accordance with the Land Record System to serve for the rural farmers and land holders and is responsible for maintaining the revenue matters in their respective tehsils.

According to census 2011, the total population of Jodhpur district is 36,87,165 comprising 19,23,928 males and 17,63,237 females. It shares almost 5.38 percent of state population but 6.68 percent of state area. The density of the district is 161 persons per Sq. Km. which is lower than the state density (200 persons per Sq. Km). Jodhpur district ranks 2nd in terms of population, 4th in terms of area and 29th in terms of population density

➤ **Barmer District**

District Barmer is situated in the south-west of Rajasthan between 24° 58' and 26° 32' north latitudes and 70° 05' and 72° 52' east longitudes. There is no change in the geographical area of the district since 1971, which is 28387sq.km as against the total area of 342239 sq.km of the state. In respect of area it is third largest district of the state after Jaisalmer and Bikaner district. The maximum length of the district from north to south is about 180 km while the maximum breadth from east to west is 260 km. The total length of district boundary is 915 km of which 227.5 km boundary is adjacent to the Pakistan.

Barmer district is one of the six districts, those comes under Jodhpur division. District Collector is head of the district for revenue, law and order matters. District Collector & District Magistrate is the head of District Administration. For administration and development, the district is divided in Sub-Divisions and tehsils (sub-districts). The District Barmer has 8 sub-divisions. Each of the sub-divisions is headed by a Sub-divisional Officer (SDOs) / Magistrates, the officers are responsible for implementation of law and order matters in their respective sub-divisions.

According to census 2011, the total population of Barmer district is 26,03,751 comprising 13,69,022 males and 12,34,729 females. It shares almost 3.80 percent of state population but 8.29 percent of state area. The density of the district is 92 persons per Sq. Km. which is lower than the state density (200 persons per Sq. Km.).

➤ **Jalore District**

Jalor district is situated at the south-western corner of Rajasthan State adjoining Gujarat State between 24°37' and 25°49' latitudes and 71°11' and 73°05' East longitudes. It is bounded on the north-west by Barmer district, on the north-east by Pali district, on the south-east by Sirohi district and on the south by Banaskantha district of the Gujarat State. The district covers an area of 10640 sq. km, which constitutes 47.69 sq. km Urban and 10592 sq. km Rural. It has 11th rank in the state according to the area.

Jalor district is one of the six districts, those comes under Jodhpur division. District Collector is head of the district for revenue, Law and order matters. District Collector & District Magistrate is



the head of District Administration. For administration and development, the district is divided in Subdivisions and tehsils (sub-districts). The District Jalor has 7 sub-divisions. Each of the sub-divisions is headed by a Sub-divisional Officer (SDOs) / Magistrates, the officers are responsible for implementation of law and order matters in their respective sub-divisions.

According to census 2011, the total population of Jalor district is 1828730 comprising 936634 males and 892096 females. It shares almost 2.67 percent of state population but 3.11 percent of state area. The density of the district is 172 persons per Sq. Km. which is lower than the state density (200 persons per Sq. Km.). Jalor district has 801 villages, out of them 791 villages are inhabited and 10 villages are uninhabited. In Jalor district 96 new villages and 1 new census town have created as compared to 2001 Census.

4.9.3 Demographic and Socio Economic Characteristics

4.9.3.1 Population

As per details from Census 2011, Rajasthan has population of 6.86 Crores, an increase from figure of 5.65 Crore in 2001 census. Total population of Rajasthan as per 2011 census is 68,548,437 of which male and female are 35,550,997 and 32,997,440 respectively. In 2001, total population was 56,507,188 in which males were 29,420,011 while females were 27,087,177 respectively.

The total population growth in this decade was 21.31 percent while in previous decade it was 28.33 percent. The population of Rajasthan forms 5.66 percent of India in 2011. In 2001, the figure was 5.49 percent. As for religion, Rajasthan's residents are mainly Hindus, who account for 88.49% of the population. Muslims make up 9.07%, Sikhs 1.27% and Jains 0.91% of the population.

4.9.3.2 Socio-economic characteristics of the population area

The proposed project passes through three districts of Rajasthan i.e. Jodhpur, Barmer and Jalore. The demographic profile and socio economic status of the people in the project affected districts and state as per census 2011 have been presented in **Table 4.20**.

Table 4.20: Demographic Profile

Particulars	Rajasthan	Jodhpur	Barmer	Jalore
Total Population	6,85,48,437	36,87,165	26,03,751	18,28,730
Rural Population	5,15,00,352	24,22,551	24,21,914	16,76,975
Urban Population	1,70,48,085	12,64,614	1,81,837	1,51,755
Male	3,55,50,997	19,23,928	13,69,022	9,36,634
Female	3,29,97,440	17,63,237	12,34,729	8,92,096
Gender Ratio	928	916	902	952
SC Population	1,22,21,593	6,08,024	4,36,414	3,57,196
% SC	17.83	16.49	16.76	19.53
ST Population	92,38,534	1,18,924	1,76,257	1,78,719
% ST	13.48	3.23	6.77	9.77
Density of Population (per sq. Km)	200	161	92	172

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

(Source: Census of India, 2011)

4.9.3.3 Population Growth and Urbanization

The total population growth of Rajasthan in this decade was 21.31 percent while in previous decade it was 28.33 percent. The population of Rajasthan forms 5.66 percent of India in 2011. In 2001, the figure was 5.49 percent.

Out of total population of Rajasthan, 24.87% people live in urban regions. The total figure of population living in urban areas is 17,048,085 of which 8,909,250 are males and while remaining 8,138,835 are females. The urban population in the last 10 years has increased by 24.87 percent. However 75.13 percent live in the villages of rural areas. In actual numbers, males and females were 26,641,747 and 24,858,605 respectively. Total population of rural areas of Rajasthan state was 51,500,352. The population growth rate recorded for this decade (2001-2011) was 75.13%.

4.9.3.4 State's Economy

Rajasthan's economy is primarily agricultural and pastoral. Wheat and barley are cultivated over large areas, as are pulses, sugarcane, and oilseeds. Cotton and tobacco are the state's cash crops. Rajasthan is among the lowest producers of edible oils in India and the second largest producer of oilseeds. Rajasthan is also the biggest wool-producing state in India and the main opium producer and consumer. There are mainly two crop seasons. The water for irrigation comes from wells and tanks. The Indira Gandhi Canal irrigates northwestern Rajasthan.

The main industries are mineral based, agriculture based, and textile based. Rajasthan is the second largest producer of polyester fibre in India. Several prominent chemical and engineering companies are located in the city of Kota, in southern Rajasthan. Rajasthan is pre-eminent in quarrying and mining in India. The Taj Mahal was built from the white marble which was mined from a town called Makrana. The state is the second largest source of cement in India. It has rich salt deposits at Sambhar, copper mines at Khetri, Jhunjhunu, and zinc mines at Dariba, Zawar mines and Rampura Agucha (opencast) near Bhilwara.

4.9.3.5 Sectoral Composition of State Income

Indian economy is classified in three sectors — Agriculture and allied, Industry and Services. Agriculture sector includes Agriculture (Agriculture proper & Livestock), Forestry & Logging, Fishing and related activities. Industry includes Manufacturing (Registered & Unregistered), Electricity, Gas, Water supply, and Construction. Services sector includes Trade, repair, hotels and restaurants, Transport, storage, communication & services related to broadcasting, Financial, real estate etc. At previous methodology, composition of Agriculture & allied, Industry, and Services sector was 24.76%, 27.83%, and 47.41%, respectively at current prices for year 2017-18. **Figure 4.15** shows the sectoral composition of GSVA) for the year 2017-18.

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

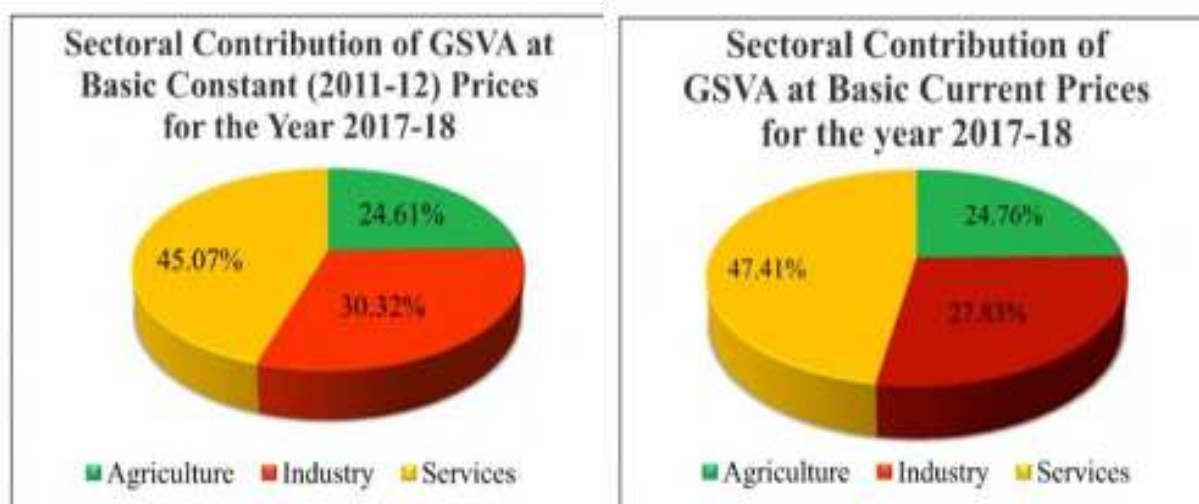


Figure 4.15: Sectoral Composition of State Income

Source: <https://www.rajras.in>

4.9.3.6 The Per Capita Income

The Per Capita Income (i.e. Per Capita NSDP) at factor cost at constant (2011-12) prices has been estimated at Rs. 76,146. In contrast to overall Indian economy and other states of the Indian union relative position of Rajasthan state has 4.40 percent of the GDP in India is generated by the State. The growth rate of GSDP is comparable with 'all states' average growth rate; there is a marginal difference only. The per capita income is far below the national average. It is US\$ 987.60 in Rajasthan against all states' average benchmark of US\$ 1324.30 in the year 2012.

4.9.3.7 Growth Trends-State Income

The growth pattern of Net State Domestic Product (NSDP) of Rajasthan for the period 1980-81 to 2011-12 is given in Table 4.19. Year-wise growth rate is indicative of the fact that economy has registered many ups and downs in the growth trajectory but the 2011-12 decade is a period of fair stability and positive growth. During the last three decades on an average, the Rajasthan economy has grown at the rate of 6.05 percent per annum. Long term growth of Rajasthan economy is satisfactory as compared to the national economy. Decadal breakup of the NSDP series shows that, in the decade of 1980s, the state grew at the rate 5.94 percent per annum and then in 1990s at the rate of 6.53 percent per annum and touched the mark of 7.17 percent per annum in the last decade. The growth pattern suggests that economy is consistently on higher growth path trajectory during the last decade.

Table 4.21: Growth pattern of Net State Domestic Product (NSDP) in Rajasthan for the period 1980-81 to 2011-12

	Year	Growth Rate (percent)
Compound Annual Growth Rate (CAGR), percent per annum	1980-81 to 1989-90	5.94
	1990-91 to 1999-00	6.53
	2000-01 to 2011-12	7.17
	1980-81 to 2011-12	6.05

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

4.9.3.8 Work Participation Ratio

Table 4.22 indicates the total workers (main and marginal) in Rajasthan according to Census 2011. As per Census 2011 the WPR in Jodhpur, Barmer and Jalore districts is 40.4%, 46.2%, 49% respectively. The gender gap in work participation ratio of Jodhpur, Barmer and Jalore is 20.4, 9.9 & 7.8 percent respectively.

Table 4.22: Total Workers Main and Marginal

Total Working and Non-Working Population of Rajasthan		
Total Workers	Main Workers	Marginal Workers
2,98,86,255	2,10,57,968	88,28,287

Source: Economic Survey 2011

4.9.3.9 Economic Classification of Workers

The broad categories of economic activities, also known as a four-fold classification of the workers are cultivators (CL), Agricultural Labours (AL), working in Household Industries (HHI) and other Workers (OW). The percentage Distribution of Total Workers by Category has been presented in **Table 4.23**.

Table 4.23: Percentage Distribution of Total Workers by Category

Classification of Workers	Jodhpur in Year 2011 (%)	Barmer in Year 2011 (%)	Jalore in Year 2011 (%)
Cultivators	5,92,370	7,54,260	4,93,355
Agricultural labour	2,42,017	1,32,696	1,58,013
Household Industries	42,412	30,565	21,867
Others	6,12,942	2,84,961	2,23,409
Total Workers	14,89,741	12,02,482	8,96,644

4.9.4 Agriculture and Allied Activities

Rajasthan's economy is primarily agricultural and pastoral. Wheat and barley are cultivated over large areas, as are pulses, sugarcane, and oilseeds. Cotton and tobacco are the state's cash crops. Rajasthan is among the lowest producers of edible oils in India and the second largest producer of oilseeds. Rajasthan is also the biggest wool-producing state in India and the main opium producer and consumer. There are mainly two crop seasons. The water for irrigation comes from wells and tanks. The Indira Gandhi Canal irrigates northwestern Rajasthan.

It has already been reported that the crop production in Rajasthan has been in the midst of a cluster of constraints including poor soil health, intermittent drought, rain-fed agriculture, and inadequate irrigation infrastructure and plummeting ground water level at an alarming magnitude. Compared to other states in India, allied sectors, viz., animals husbandry, forestry, horticulture and fisheries assume special significance for Rajasthan as a main source of income in drought years and supplementary income provider in normal years. The drought years in the state, which are more certain than normal years is overcome by small and marginal farmers with their cows, buffalos, goats and sheep. For the agricultural sector in Rajasthan to sustain added thrust on animal husbandry and other allied sectors have become all the more important in the present context.



4.9.4.5 Agricultural Production

The major crops grown in different parts of Rajasthan are bajra, wheat, jowar, maize, cotton, rapeseed and mustard, groundnut and horticultural crops. As per the cropping pattern in the state, the crop groups such as total cereals, oilseeds, pulses and fodder crops account for about 42%, 21%, 18% and 15% of GCA respectively during the year 2010-11. Among the cereals, bajra (50.5%), wheat (27.9%), maize (10.5%) and jowar (6.7%) are the major crops; while rapeseed and mustard (45.4%), taramira (21.7%), soyabean (14.0%), sesamum (10.0%) and groundnut (6.3%) are the major oilseeds grown in the state. Among total pulses, gram, moth and moong are the major crops, accounts for about 37.5 per cent, 33.5 per cent and 22.1 per cent respectively during 2010-11. The share of total cereals has declined drastically by 10 percent points (from 52 per cent in 1990-91 to 42.0 per cent in 2010-11); while the share of oilseeds has increased by 6 percent points (from 15 per cent in 1990-91 to 21 per cent in 2010-11). Thus, it can be assumed that there is shift in area from cereals to oilseeds. The Figure 4.16 shows the change in cropping pattern of the state from 1990-91 & 2010-11.

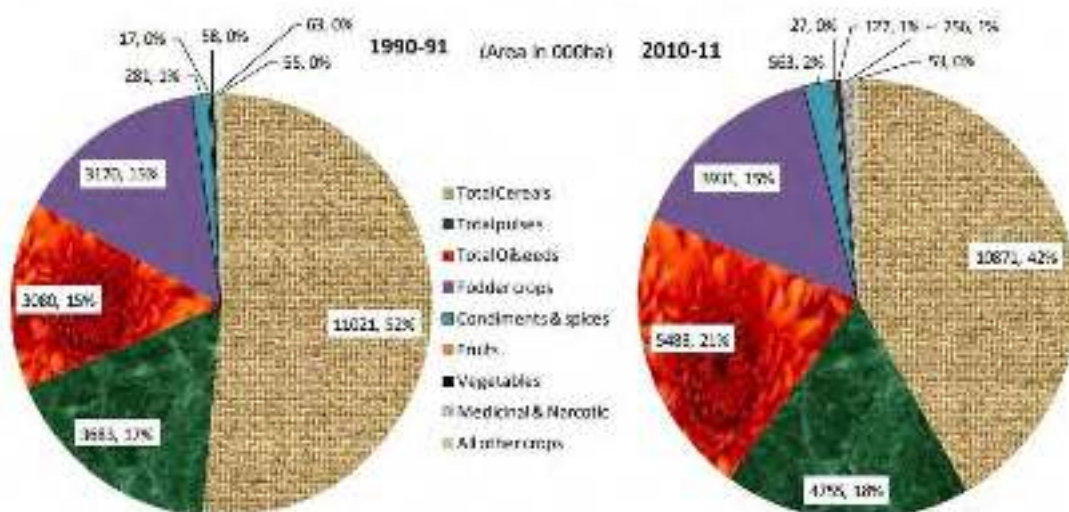


Figure 4.16: Change in crop pattern (1990-91 & 2010-11)

4.9.5 Industry

Rajasthan is a leading investment destination in India after Maharashtra and Gujarat because of its environment, law and order situation, infrastructure, investment climate and favourable population density. Areas facing NCR such as Bhiwadi are now popular with automobile and manufacturing companies. Many of the small scale suppliers and vendors have opted to shift inside Rajasthan border from Gurgaon in Haryana because of power shortage and infrastructure issues there.

Rajasthan State Industrial Development and Investment Corporation (RIICO) provide facilities for development. Rajasthan is now the preferred destination for IT companies, and North India's largest integrated IT Park is located in Jaipur and is named as Mahindra World City Jaipur covering nearly 3,000 acres (12 km²) of land. Some of the companies operating in Rajasthan include Infosys, Genpact, Wipro, Truworth, Deutsche Bank, NEI, MICO, Honda Sael Cars, Coca-Cola, Gillette etc.



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

Rajasthan is pre-eminent in quarrying and mining in India. Hindustan Zinc, headquartered in Udaipur, Rajasthan is India's only and world's leading integrated Zinc, Lead and Silver producer. With its large scale operations of smelting and mining in various districts of Rajasthan, the company has contributed to the socio-economic development of the state. The state is the largest source of cement. Rajasthan is largest cement producing state of India. It has rich salt deposits at Sambhar, copper mines at Khetri and zinc mines at Dariba and Zawar.

The handicrafts industry has, in recent years, eclipsed all the other industries in the District Jodhpur. The items manufactured include textiles, metal utensils, bicycles, ink and sporting goods. A flourishing cottage industry exists for the manufacture of such items as glass bangles, cutlery, carpets and marble products. After handicrafts, tourism is the second largest industry of Jodhpur.

Jalore is called Granite Capital of Rajasthan; it is famous for its high quality granite. The Granite industry has developed drastically after recession. Granite stone is finished here. In Jalore to help and guide new industrial units district Industry Centre, Rajasthan Finance Corporation (RFC), RIICO, and Raj. Khadi Gramodyog Board offices are established here. RIICO has developed 4 industrial areas in Jalore District viz Jalore, Bishangadh ,Sanchore and Bhinmal. In Jalore City RIICO has established 3 phase industrial areas. And fourth phase is been proposed at Bagra, 900 Bighaa of land area has been under planning. This area may accommodate nearly 500 new industrial units. Handloom work is done at Leta, Jelatara, Degaon, Pur, Vodha, Vasandevda, Lalpura, Bhatip, Khara, Gundau. District-wise status of MSMSs is given in the table 4.24 below

Table 4.24: District wise Registered MSME in Rajasthan

Sr. No.	District Name	Unit
1.	Ajmer	5341
2.	Alwar	4035
3.	Banswara	2040
4.	Baran	990
5.	Barmer	1430
6.	Bharatpur	2653
7.	Bhilwara	5655
8.	Bhiwadi	5007
9.	Bikaner	5280
10.	Bundi	1681
11.	Chittorgarh	2513
12.	Churu	1719
13.	Dausa	2148
14.	Dholpur	1252
15.	Dungarpur	1275
16.	Hanumangarh	1359□
17.	Jaipur (Urban)	21066
18.	Jaipur (Rural)	6003
19.	Jaisalmer	1851□
20.	Jalore	1520
21.	Jhalawar	1719
22.	Jhunjhunu	2379□
23.	Jodhpur	7710□
24.	Karoli	2044□
25.	Kota	5427

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

26.	Nagaur	4061
27.	Pali	4530□
28.	Pratapgarh	1074□
29.	Rajsamand	3295
30.	Sawai Madhopur	1878□
31.	Sikar	2416□
32.	Sirohi	1975
33.	Sri Ganganagar	2586
34.	Tonk	2170
35.	Udaipur	5965
36.	Phalodi	233
	Total	124280

CHAPTER -5
(ANTICIPATED
ENVIRONMENTAL IMPACTS
& MITIGATION MEASURES)



CHAPTER-5: ANTICIPATED ENVIRONMENTAL IMPACTS & MITIGATION MEASURES

5.1 INTRODUCTION

The assessment of potential environmental impact consists of comparing the expected changes in the environment with or without the project. The analysis predicts the nature and significance of the expected impacts. The magnitude and duration (short-term or long-term) of impacts are also discussed.

In this chapter, impacts on each environmental component (like soil, water, air, noise, ecology) and socio-economic environmental component (like removal or property, land acquisition, etc.) will be discussed.

5.2 POTENTIAL IMPACTS ON SOIL

Soil is one of the most important components of the natural environment. For road development the soil is primarily needed for altered road embankment. The potential impacts due to project activities are listed below.

➤ During Construction Phase

5.2.1 Loss of Productive Soil

- Loss of productive soil due to site clearance and excavation as the proposed project will require 1732.795 ha of land.
- The productivity of crops in the region will not be affected.
- The local economy is not going to be affected badly.

Compaction of Soil

- Soil compaction due to storage of quarry materials and other heavy equipment, movement of heavy vehicles at the site.

5.2.2 Erosion

The soil along the proposed expressway is sandy clay loam soil in nature. The two important eroding agents are, (i) the run-off water, and (ii) the wind. The run-off dynamics are affected by the degree of slope, extent of deforestation and the amount of water stored for irrigation. Grasses and other herbaceous plant limit the surface erosion effectively.

The potential impact includes:

- The ROW of the proposed expressway is mainly passing through Agricultural and Barren land. The degree of soil erosion is noted to be less.
 - Once trees along the proposed alignment are removed and the herbal cover is cleared on the proposed expressway, the problem of soil erosion during construction is going to be there. Some mitigation measures like:



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

- (i) Cutting of trees in phases,
- (ii) Taking advantage of the period of monsoon,
- (iii) Developing not too high and steep slopes,
- (iv) Improving drainage,
- (v) Replantation of trees, and
- (vi) Turfing of the new embankment, should be adopted.

These steps will reduce the severity of the issue and by the time the road starts operating, the ecosystem will restore itself.

Excavations of soil borrow areas may lead to higher degree of erosion. However, care has been taken that (i) many borrow areas are located on raised lands, earth mounds and heaps, (ii) in some cases the owner or villagers want to develop the area into pond for rearing fishes, (iii) re-plantation borrow pit areas will minimize the soil erosion.

5.2.3 Contamination of Soil

In the present project, contractor will use diesel, Bitumen, Emulsions etc during construction of expressway. However, at material storage site, interceptor / HDPE sheets will be provided to avoid any soil contamination. Hence, the contamination of the soil is negligible. **Table 5.1** describes the impacts of soil.

Table-5.1: Impacts on Soil

Location	Type of Impact		Mitigation measures suggested
	Loss of productive soil	Erosion / Contamination	
Road side open stretches	Loss	Very less	• More trees plantation to enhance environment and soil conservation. • Top soil should be removed & stored separately during excavation. • Top soil may be used to Re-vegetate the disturbed slope as early as possible
Market and congested areas	No Loss; Beneficial	No	• Not needed
Borrow Pit Area	Loss of productive soil; Beneficial	No	• Can be developed into pond for fisheries
Near Bridges	No significant Loss of productive soil	Soil erosion due to high embankment	• By turfing, slope should be gradual

➤ During Operation Phase

No significant impacts are predicted other than those resulting from neglected protection works in erosion prone areas and failure to maintain re-vegetated areas along the alignment, borrow



sites, and debris disposal sites. Bridge approaches with high embankments are vulnerable to soil erosion during high rainfalls.

Mitigation measures

To prevent soil erosion along the embankment during operation phase, regular monitoring inspections should be undertaken to ensure that drainage, bridge approaches and re-vegetated areas are maintained and strengthened to prevent reoccurrence of soil erosion.

5.3 IMPACTS ON WATER RESOURCES

Road development can lead to three types of modifications to the natural hydrological environment. These are:

5.3.1 Modification of the Surface Water Flow

The proposed project will no way alter the existing course of the surface water flow. However, the existing drainage problem will be mitigated in the proposed project.

The construction of new bridges, crossing rivers, irrigation canals and culverts in the proposed design in the project will be aligned with the construction of expressway. As such, the surface water flow in the rivers, streams and canals will be least affected.

5.3.2 Modification of the Groundwater Flow

The ground water table in the project area is shallow depth at about 20 to 50m. However the chance of water contamination is very less. The source of drinking water is the ground water/piped supply. Since most part of the proposed project is elevated therefore the groundwater flow is not going to be affected.

5.3.3 Rainwater Harvesting

This is a green field alignment project. The proposed project will increase of surface run-off due to more paved road surface. It will have adverse impact on ground water recharging if measures are not taken during the design. Therefore, compensation is required to recharge ground water.

Impacts:

- Loss of ground water table due to withdrawal of ground water for construction.
- Increase of surface run-off due to more paved road surface

Mitigation Measures:

Detailed hydrological survey will be conducted and adequate drainage facilities provided to discharge the run-off to existing catchments area.

- Provision of recharge pits, in the design to recharge ground water, in the urban area.
- Longitudinal road-side drains on both sides of the expressway and out fall should be nearby culverts/ bridges on nallas/ rivers/ drains.
- All the construction preparatory activities for culverts, bridges and other structure will be carried out during dry seasons.
- Water for construction will be arranged by the contractor from the existing sources.



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

- Minimum use of water from existing sources for construction purpose will be ensured promoted at construction site/camps to minimize likely impacts on other users.

Rainwater harvesting structures shall be provided near the disposal point of the side drains as prescribed by CGWB guidelines. The typical rain water harvesting structure has been shown in Figure 5.1.

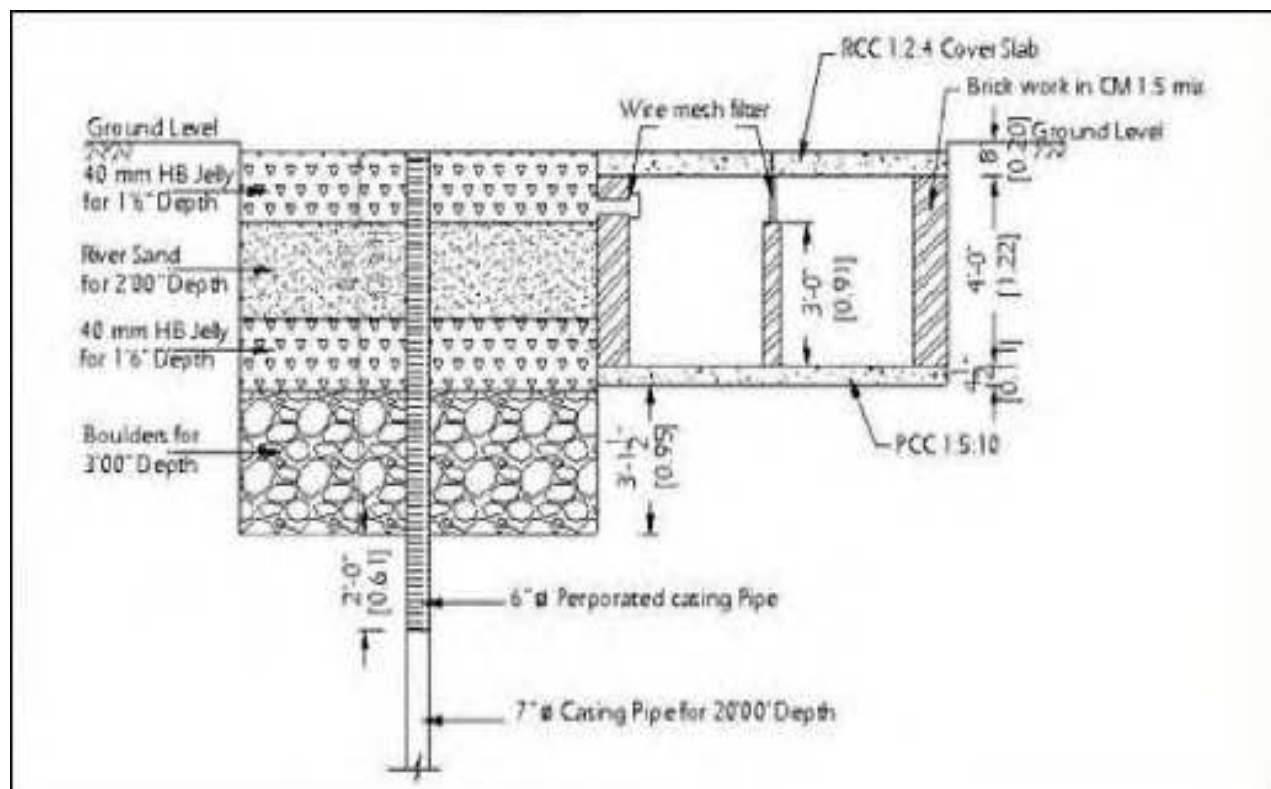


Figure 5-1: Typical rain water harvesting structure

5.3.4 Use of Local Water Supply

No local water supply will be used for construction purposes. Water will be taken from nearby surface water sources such as rivers, canals etc are available all along the highway. Underground water will be taken after permission of concerned authority at construction sites if required.

5.3.5 Water Quality Degradation

Some important parameters like pH, Chlorides, alkalinity etc. were compared with the acceptable standard for drinking water. No direct impact on water quality is predicted.

5.4 IMPACT ON AMBIENT AIR QUALITY

The ambient air quality in the project corridor is generally good and well within the national ambient air quality standards, 2009. Some important observations in the Ambient Air quality are:



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

- The emissions of individual vehicles, their monitoring and regular checks are important. The fuel composition, maintenance of engines, and engine temperature must be properly regulated for improved scenario.
- As there is no structure of archaeological importance going to be affected due to proposed alignment, the impact does not need an assessment from this point of view.
- By and large the pollution level with regard to Particulate Matter 2.5 (PM_{2.5}) and Particle Matter 10 (PM₁₀) at all study sites were within the limits. The other parameters of air quality measurements, namely, NO_x, SO₂ and Carbon Monoxide at all selected sites were also recorded to be within the prescribed limits.
- The mitigative measures suggested include the policies, regulation and enforcement programs covering vehicle standards and maintenance requirement, fuel quality and technology, management of traffic efficiency and removing the high-pollution vehicles besides plantation of tall, leafy, and dense vegetation to filter and adsorb some pollutants.
- Sensitive areas will be taken care of especially in this regard.

5.4.1 Impacts During Construction Phase

The project site impact on ambient air quality within the project site and nearby areas may be significant during the construction phases. The particulate matter will be the main pollutant due to the excavations, handling and transport of earth and construction material etc. at site. The other pollutants will be NO_x due to the construction activities like operation of construction equipment and traffic movement.

Since the construction activities is a temporary activity and hence the increase in particulate matter and NO_x will be for short duration and its impact will be felt close to the construction site only. Outside the boundary of project activities, the Impacts would be marginal or insignificant.

Generation of exhaust gases is likely due to movement of heavy machinery for clearance of the proposed ROW for construction. Toxic gases are released through the heating process during bitumen production. Although the impact will be much localized, it can spread downwind direction depending upon the wind speeds. The health effects of inhaling particulate matter have been widely studied in humans and animals and include asthma; lung cancer, cardiovascular issues, and premature death.

5.4.1.1 Use of fly Ash

Fly ash will be used as per MoEFCC notification, 2016. Fly ash is available at JSW Barmer Power Station and Giral Lignite Power Plant which is close to the proposed project and is located within 300 km. Approx. 3.7 Mcm amount of fly ash is proposed to be used for the construction of the proposed project as per availability.

5.4.1.2 Borrow Area Soil

Extensive survey was conducted to locate the potential sources of borrow area soils required for the construction of embankment and subgrade within the reasonable lead distance. The total



30,085,808.681 cum amount of soil will require for the proposed project. The details of collected borrow area locations have been presented in Table 5.2.

5.4.1.3 Coarse aggregates (stone) and Fine Aggregate (Sand) Materials

The total 4,571,809.322 & 2,217,106.167 cum amount of coarse aggregate and Fine aggregate respectively will be used for the construction of the proposed project. The Aggregate will be brought from the approved Mine quarry. The Figure 5.2 shows the location of coarse aggregate.

5.4.1.4 Bitumen

The 122,593.786 cum amount of Bitumen (VG-40) will be used for the construction of the proposed project. The total demand of Bitumen will meet from the Koyali Refinery in Vadodara District (Gujarat).

5.4.1.5 Cement

The total 571,508.045 cum amount of Cement will be used for the construction of the proposed project. The total amount of cement will be brought through the JK Lakshmi cement in Basantgarh and Wonder cement in Udaipur.

5.4.1.6 Steel

The total 57,966.392 tons of HYSD Steel will be used for the construction of the proposed project and will meet through the nearby approved suppliers in Jodhpur, Barmer and Jalore district.

5.4.1.7 Sand

The total 438,021.087 cum of Sand will be used for the construction of the proposed project and will meet through the nearby river such as Sukhari, Luni River. The location map shows the location sand in below Figure 5.2



(Ministry of Road Transport & Highways Government of India)





5.4.2 Impacts During Operation Phase

This construction of expressway will naturally increase the traffic load on it after the construction is over and as predicted the traffic load will be increased. However, impact will be less as traffic density is not high.

5.4.2.1 Prediction of Impact on Ambient Air Quality

To assess the impact on air quality of the project area during operation phase, air pollution dispersion modeling was carried out using future traffic projections. The modeling was carried out using CALINE-4, line source model developed by the California Transport Department. Carbon monoxide (CO) is the main component of the vehicular pollution. So, prediction of CO concentration is representative of the impacts of air pollution due to traffic movement.

CALINE - 4 Model

The air dispersion model used is **CL4 (A Graphical User Interface for CALINE4)** developed by the California Department of Transportation (Caltrans) for predicting air pollutant concentrations near roadways. CALINE4 is a simple line source Gaussian plume dispersion model.

CALINE4 is a model based on the Gaussian diffusion equation and employs a mixing zone concept to characterize pollutant dispersion over the roadway. The purpose of the model is to assess air quality impacts near transportation facilities. Given source strength, meteorology and site geometry, the model can predict pollutant concentrations for receptors located within 500 meters of the roadway. It also has special options for modeling air quality near intersections, street canyons and parking facilities.

CALINE4 divides individual highway sections into a series of elements from which incremental concentrations are computed and then summed to form a total concentration estimate for a particular receptor location. Downwind concentrations from the element are modelled using the crosswind FLS (Finite Line Source) Gaussian formulation, but σ_y and σ_z are modified to consider the mechanical turbulence created by moving vehicles and the thermal turbulence created by hot vehicle exhaust in the region directly over the highway, region considered as a zone of uniform emissions and turbulence.

Input Data Requirement:

- **Emissions**

The emissions are provided by traffic volume (vehicles/h) and emission factor (gr/mile/vehicle) for each section

- **Meteorology**

Wind speed Wind direction Wind direction standard deviation Atmospheric stability Class Mixing Height Ambient Temperature.

The details of input parameters considered for the modeling exercises are presented in the following paragraphs.

- **Traffic Data**



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

The traffic surveys have been carried out along the corridor to establish base year traffic with reference to traffic movements. Average hourly traffic data has been considered for the present modeling exercises.

• **Meteorological Data**

“Worst case wind angle” run type was considered to predict the worst-case scenario. The met inputs entered were:

- Wind speed: 1.0m/s
- Stability Class: F
- Mixing Height: 50m
- Standard Deviation: 5°
- Ambient Air Temperature: 25°C

PRESENTATION OF RESULTS

For One-hour simulations, the concentrations were estimated around 3 receptors to obtain an optimum description of variations in concentrations over the distance of 30m, 50m & 100m downwind from the centerline for the worst angles as identified by the model. Based on the observed traffic flows and reconnaissance surveys, the proposed project expressway has been divided into 4 homogenous traffic sections. The nearest receptor was considered to be at 30m from the centerline of Homogenous Sections. Air modeling results of all the seven homogenous sections i.e Deogarh (NH-125), Kelankot (SH-28), Patau (NH-25), Muthali 9NH-325), Balotra (SH-28), Bhukan(SH-28) and, Sanchore (SH-28) have been presented in **Table 5.2 (a) to 5.2 (g)**.

Table 5.2 (a): Air Modeling Result for NH-125, Deogarh (Predicted Conc. of CO)

Predicted Maximum 1-hour Concentration of CO (ppm)					
Receptor Distance from Center Line	2018	2023	2028	2033	2038
at 30 m	0.1	0.1	0.1	0.2	0.3
at 50 m	0.1	0.1	0.1	0.1	0.2
at 100 m	0	0.1	0.1	0.1	0.2

Predicted Maximum 1-hour Concentration of CO (µg/m ³)					
Receptor Distance from Center Line	2018	2023	2028	2033	2038
at 30 m	115	115	115	229	344
at 50 m	115	115	115	115	229
at 100 m	0	115	115	115	229



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

Table 5.2 (b): Air Modeling Result for SH-28, Kelankot (Predicted Conc. of CO)

Predicted Maximum 1-hour Concentration of CO (ppm)					
Receptor Distance from Center Line	2018	2023	2028	2033	2038
at 30 m	0.1	0.1	0.2	0.2	0.3
at 50 m	0.1	0.1	0.1	0.2	0.2
at 100 m	0	0.1	0.1	0.1	0.2

Predicted Maximum 1-hour Concentration of CO (µg/m ³)					
Receptor Distance from Center Line	2018	2023	2028	2033	2038
at 30 m	115	115	229	229	344
at 50 m	115	115	115	229	229
at 100 m	0	115	115	115	229

Table 5.2 (c): Air Modeling Result for NH-25, Patau (Predicted Conc. of CO)

Predicted Maximum 1-hour Concentration of CO (ppm)					
Receptor Distance from Center Line	2018	2023	2028	2033	2038
at 30 m	0.1	0.1	0.2	0.3	0.4
at 50 m	0.1	0.1	0.2	0.2	0.3
at 100 m	0.1	0.1	0.1	0.2	0.2

Predicted Maximum 1-hour Concentration of CO (µg/m ³)					
Receptor Distance from Center Line	2018	2023	2028	2033	2038
at 30 m	115	115	229	344	458
at 50 m	115	115	229	229	344
at 100 m	115	115	115	229	229

Table 5.2 (d): Air Modeling Result for NH-325, Muthali (Predicted Conc. of CO)

Predicted Maximum 1-hour Concentration of CO (ppm)					
Receptor Distance from Center Line	2018	2023	2028	2033	2038
at 30 m	0	0.1	0.1	0.1	0.1
at 50 m	0	0	0.1	0.1	0.1
at 100 m	0	0	0	0.1	0.1

Predicted Maximum 1-hour Concentration of CO (µg/m ³)					
Receptor Distance from Center Line	2018	2023	2028	2033	2038



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

at 30 m	0	115	115	115	115
at 50 m	0	0	115	115	115
at 100 m	0	0	0	115	115

Table 5.2 (e): Air Modeling Result for SH-28, Balotra (Predicted Conc. of CO)

Predicted Maximum 1-hour Concentration of CO (ppm)					
Receptor Distance from Center Line	2018	2023	2028	2033	2038
at 30 m	0.2	0.2	0.3	0.5	0.7
at 50 m	0.1	0.2	0.3	0.4	0.5
at 100 m	0.1	0.1	0.2	0.3	0.4

Predicted Maximum 1-hour Concentration of CO (µg/m ³)					
Receptor Distance from Center Line	2018	2023	2028	2033	2038
at 30 m	229	229	344	573	802
at 50 m	115	229	344	458	573
at 100 m	115	115	229	344	458

Table 5.2 (f): Air Modeling Result for SH-28, Bhukan (Predicted Conc. of CO)

Predicted Maximum 1-hour Concentration of CO (ppm)					
Receptor Distance from Center Line	2018	2023	2028	2033	2038
at 30 m	0.1	0.2	0.3	0.4	0.5
at 50 m	0.1	0.2	0.2	0.3	0.4
at 100 m	0.1	0.1	0.2	0.2	0.3

Predicted Maximum 1-hour Concentration of CO (µg/m ³)					
Receptor Distance from Center Line	2018	2023	2028	2033	2038
at 30 m	115	229	344	458	573
at 50 m	115	229	229	344	458
at 100 m	115	115	229	229	344

Table 5.2 (g): Air Modeling Result for SH-28, Sanchoe (Predicted Conc. of CO)

Predicted Maximum 1-hour Concentration of CO (ppm)					
Receptor Distance from Center Line	2018	2023	2028	2033	2038
at 30 m	0.2	0.2	0.3	0.4	0.5
at 50 m	0.1	0.2	0.2	0.3	0.5



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

at 100 m	0.1	0.1	0.2	0.2	0.3

Predicted Maximum 1-hour Concentration of CO (ppm)					
Receptor Distance from Center Line	2018	2023	2028	2033	2038
at 30 m	229	229	344	458	573
at 50 m	115	229	229	344	573
at 100 m	115	115	229	229	344

5.5 IMPACT ON NOISE LEVELS

The assessment of potential road noise impacts helps in understanding one of the most significant pollution, the noise pollution. Some salient features related to potential noise impact of a road development include: (i) the road noise impact is greatest where busy road passes through densely populated areas, townships and markets (ii) the range of noise level should be understood in relation to the habitation type also; for example, road noise in industrial area is not likely to be problematic but at sensitive location like schools and hospitals; its impact may be significant, (iii) mitigation of noise in urban areas is rather difficult, specially at the road intersections.

Environmental noise particularly highway traffic noise, is a complex phenomenon because its intensity and characteristics vary with time depending upon the frequency as well as type of vehicles on the road.

The impacts of noise due to the project will be of temporary significance locally in the construction phase and slight increase may occur during the operation stages. **Table 5.3** presents the source of noise pollution and the impact categorization.

Table 5.3: Source of the Noise pollution and its impact

Sr. No.	Phase	Source of Noise pollution	Impact categorization
1	Pre-construction	- Man, material & machinery movements - establishment of labor camps, onsite offices, stock yards and construction plants	all activities will last for a short duration and also shall be localized in nature
2	Construction Phase	Plant Site stone crushing, asphalt production plant and batching plants, diesel generators etc Work zones Community residing near to the work zones	Plant Site: Impact will be significant within 500m. Work zones: Such impacts again will be of temporary nature as the construction site will go on changing with the progress of the works.

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

Sr. No.	Phase	Source of Noise pollution	Impact categorization
3	Operation Phase	• due to increase in traffic (due to improved facility)	• Will be compensated with the uninterrupted movement of heavy and light vehicles.

Although the baseline day & night time noise levels monitored at fifteen locations along the proposed project are within permissible limits specified by the MoEF&CC. The highest Leq noise levels was recorded at Sanchoe which is 62.6 dB(A) during daytime and 52.8 dB(A) during night time. The Mathematical equation is used for noise prediction is $L_2 = L_1 - 20 \log D_2/D_1$.

5.5.1 Prediction of Noise Impact on Noise level

A noise propagation modeling study has been conducted to find out the impact from the noise generated because of the estimated total traffic flow as well as the significance of these impacts. The noise modeling has been done taking into account the design speed at various stretches and the stretches with restricted speeds have also been considered. DhvaniPRO is a computer program developed to undertake construction, industrial and traffic noise propagation studies for noise assessment.

Different operative speeds have been used for various horizon years in the design life to get a realistic picture of the noise levels. DhvaniPRO is used for noise modeling and **Table 5.4** presents the results.



Table 5.4: Noise level predictions for the receptors at the homogenous intersections

Sl. No.	Name of Locations	Category of the Area	Observed dB(A) 2018	Observed dB(A) 2023	Observed dB(A) 2028	Observed dB(A) 2033	Observed dB(A) 2038
1	Dhandhaniya Sasan	Residential	46	47	49	51	52
2	Dhadaniya konda ka bas	Residential	51	52	54	55	57
3	Mandli	Commercial	50	52	53	55	56
4	Tirsingri Sodha	Residential	57	59	60	62	64
5	Patau	Residential	67	68	70	72	73
6	Balotra	Residential	48	49	51	52	54
7	Muthli	Commercial	63	64	66	67	69
8	Mithura	Commercial	61	62	64	65	67
9	Bagoda	Residential	60	61	63	64	66
10	Meda	Residential	66	67	68	70	72
11	Karola	Residential	61	63	64	66	67
12	Lachari	Residential	51	52	53	55	57
13	Sanchore	Commercial	50	51	52	54	55
14	Pratapura	Residential	53	55	56	58	59
15	Khoda	Commercial	55	57	58	60	61

5.5.1.1 Outcome of the Noise level Modelling:

The outcome of the noise modeling is as follows:

- The predicted noise levels during both day and night time are exceeding the stipulated limits at every stretches Deogarh (NH-125), Kelankot (SH-28), Patau (NH-25), Muthali (NH-325), Balotra (SH-28), Bhukan (SH-28) and, Sanchore (SH-28) upto the end of design life of the project for all the land uses i.e., commercial, residential/rural and sensitive.

The Contour map showing noise levels due to total traffic outcome at the homogenous intersections from the period of 2018 – 2034 has been shown in **Figure 5.3 (a) to 5.3 (e)**.

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchore (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

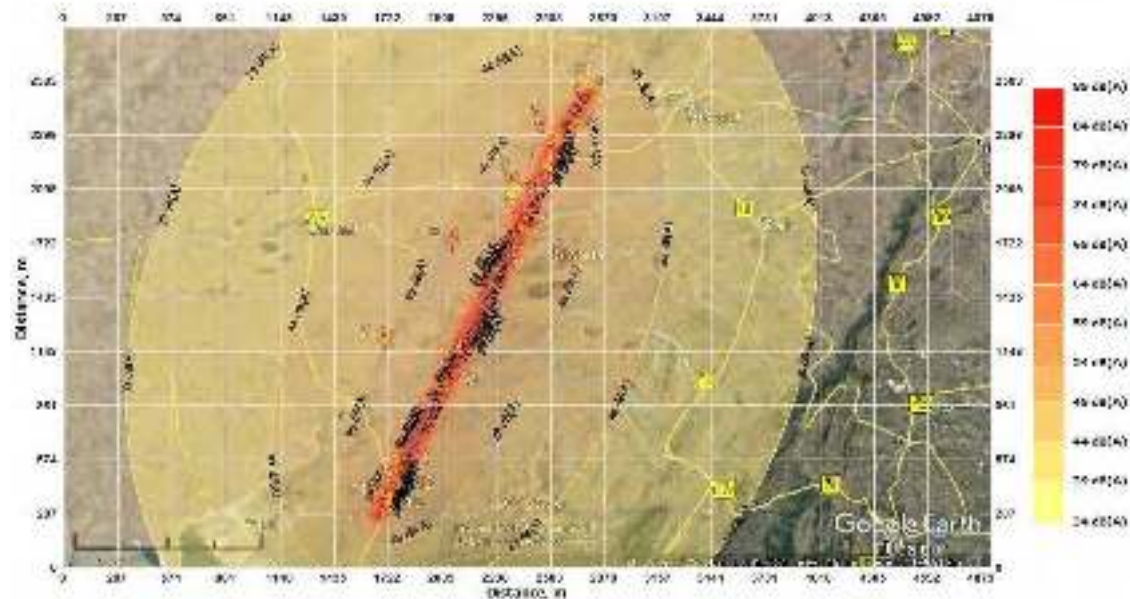


Figure 5.3 (a):- Contour map showing noise levels due to total traffic outcome at the homogenous intersections of 2018 year

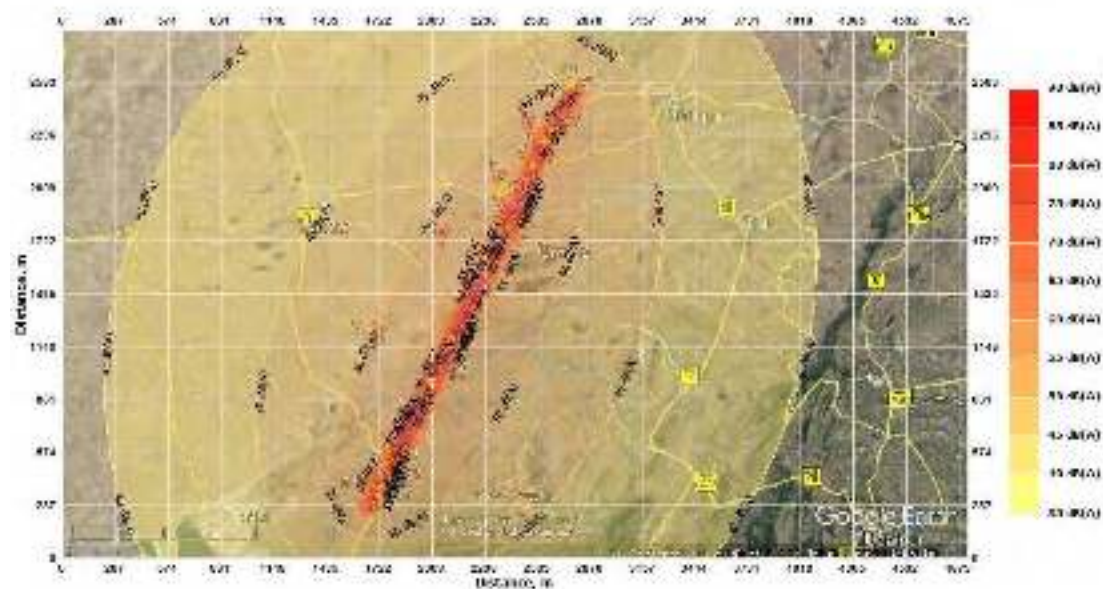


Figure 5.3 (b):- Contour map showing noise levels due to total traffic outcome at the homogenous intersections of 2022 year

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

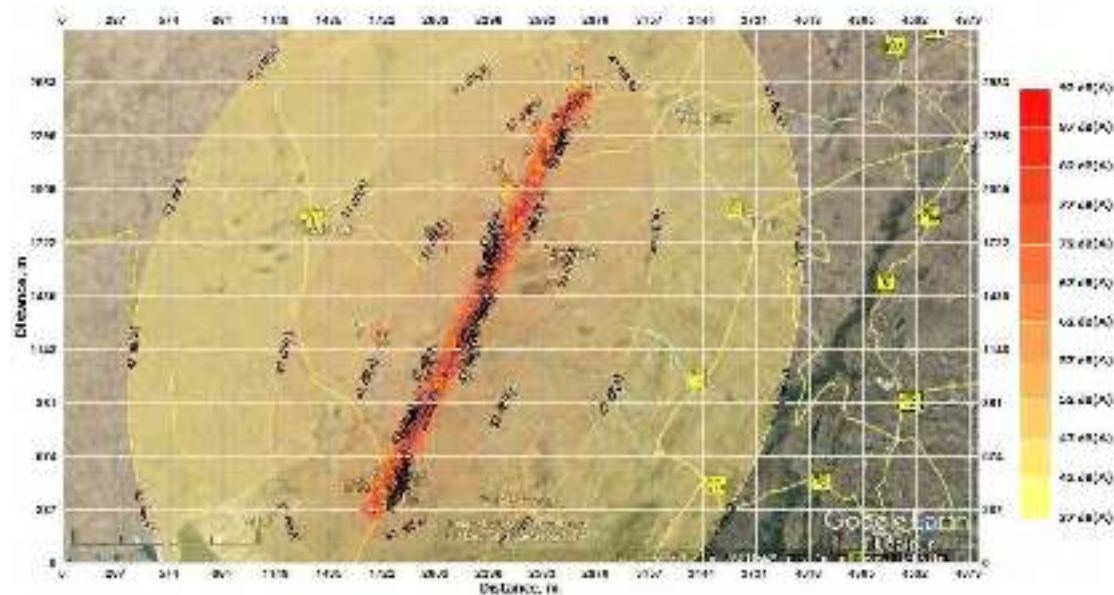


Figure 5.3 (c):- Contour map showing noise levels due to total traffic outcome at the homogenous intersections of 2026 year

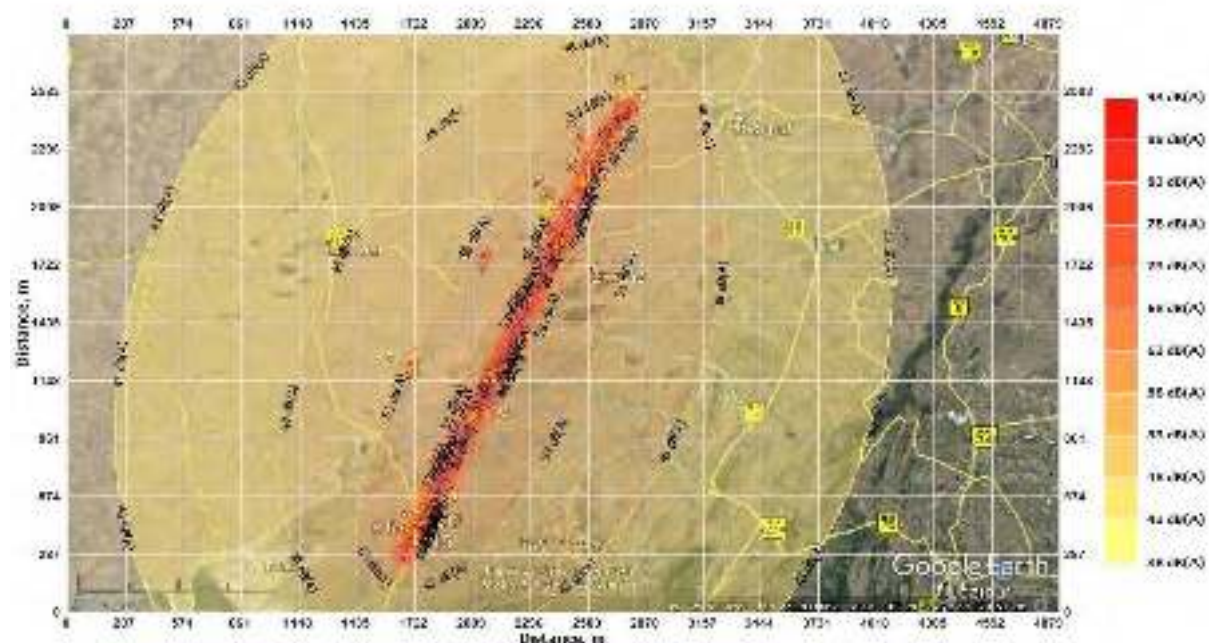


Figure 5.3 (d):- Contour map showing noise levels due to total traffic outcome at the homogenous intersections of 2030 year



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

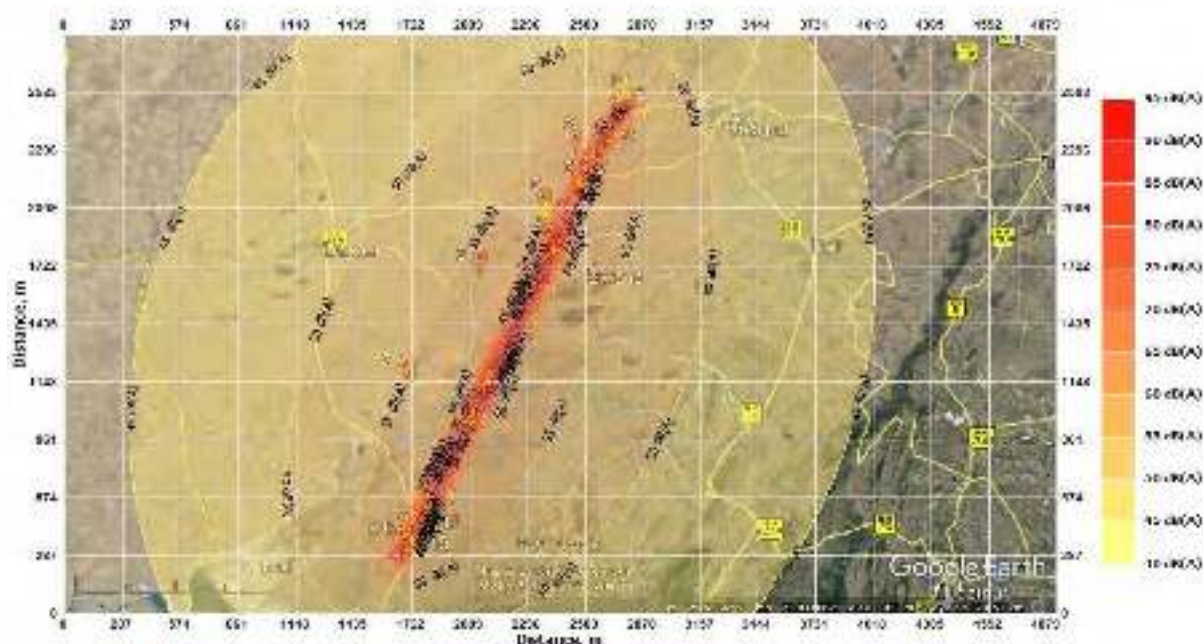


Figure 5.3 (e):- Contour map showing noise levels due to total traffic outcome at the homogenous intersections of 2034 year

5.5.2 Mitigation measures to reduce Noise levels

The following are the mitigation measures to reduce noise pollution:

- Noise standards will be strictly enforced for all vehicles, plants, equipment, and construction machinery. All construction equipment used for an 8-hour shift will conform to a standard of less than 90dB(A). If required, high noise producing generators such as concrete mixers, generators, graders, etc. must be provided with noise shields.
- Machinery and vehicles will be maintained regularly, with particular attention to silencers and mufflers, to keep construction noise levels to minimum.
- Workers in the vicinity of high noise levels will be provided earplugs, helmets and will be engaged in diversified activities to prevent prolonged exposure to noise levels of more than 90dB(A) per 8 hour shift.
- During construction vibratory compactors will be used sparingly within the urban areas. In case of complaints from roadside residents, the engineer will ask the site engineer to take suitable steps of restricting the work hours even further or use an alternative roller.
- Proposed tree and shrub plantations planned for avenue plantation especially close to settlements, may form an effective sound buffer during the operation stage.

5.6 IMPACT ON FLORA, FAUNA AND ECOSYSTEM

The cumulative impacts of the project activities on the habitat of wildlife, such as, Chinkara Gazelle, Demoiselle (Kurj), Peacock are as follows:



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

- Direct loss of habitat at intersection locations particularly on account of damage to the existing vegetation due to construction activities and transport.
- Degradation of habitat quality due to construction activities and construction camps, and human use of water resources.
- Interference of noise generated due to construction and transport to the communication systems of the wildlife.
- Fragmentation in the grassland areas may reduce home range and cause isolation of the wildlife species, particularly Chinkara Gazelle.
- Decline in wildlife population, their flow and movement.
- Injury and accidents to a lesser extent as the project has largely elevated tracks leading to mortality of wildlife.
- Reduced access to summer and winter ranges of ungulates, breeding sites and nesting habitats of birds.
- Permeability to habitats.

5.6.1 Cumulative Impact of Proposed Project on Chinkara Gazelle, Demoiselle Crane (Kurj), Peacock

The Chinkara Gazelle is grazer and prefers open grasslands with intermittent tall grasses or bushes. It is habituated to human beings.

The Peacock prefers agricultural fields but also inhabits grasslands.

The Demoiselle Crane (Kurj), inhabits wetlands, lowlands especially around agricultural areas, grasslands and cultivated fields associated with areas where there is mixture of flooded and dry grounds.

All these wild animals and also the other major species of the area require contiguity of their habitat across the landscape. The proposed project activities will cause habitat fragmentation in areas near intersections especially which will disturb the normal life of wild animals and also act as barrier to their gene flow and migration.

The habitat quality will get degraded on account of damage to vegetation (due to digging, trenching and presence of construction camps) and soil erosion. Repeated disturbance during construction phase along the proposed expressway will deter wildlife from using habitats in their vicinity. The complete avoidance of the habitat due to disturbance will lead to animal isolation.

Human activities on account of the present project will increase in the area and promote invasion by weeds and non-fodder species, pollution due to liquid, solid and gaseous (due to transport) waste. The motor vehicles will also release heavy metals in the areas of construction and labours camp. All these will adversely affect the habitat quality. The unmanaged population of labourers during the construction phase may also encourage poaching in the wildlife area.

The noise, light and human presence will make site less attractive for wild animals. The artificial light will disturb the breeding and foraging behavior of the animals. The headlight glare will interfere in the movement of birds; disrupt horning behavior of these wild animals. At times, the sudden noise may also cause shock to these wild animals.

The proposed expressway may also contribute as a source of ignition of fire in the landscape



5.6.2 Removal of Trees

Out of approx. 15360 trees which are falling in ROW approx. 5909 trees are falling in carriage way which are likely to be impacted. The impacts of tree cutting on the environmental quality will be as follows.

- The loss of trees will lead to higher degree of soil erosion. This has to be compensated by re-plantation of trees in the first priority, at the pre-construction stage.
- The loss of trees will reduce the ambient air quality since trees act as adsorbent of air pollutants thereby improving the air quality.
- The reduction in number of trees, especially in or near congested market places will enhance the raising of noise level.
- The other benefits of such trees such as shade, availability of fruits etc. will be worst affected till the new trees grow up and compensate.

However, a careful and proper planning of re-plantation of trees right at the commencement of construction and the phase wise removal of existing trees will mitigate the negative impacts.

5.6.3 Removal of Herbal Cover

The removal of herbaceous plants may lead to soil erosion. However, the degree of erosion will be of smaller magnitude. Yet, the loss of soil by erosion could be mitigated by regular watering and re-plantation of herbal cover, i.e. turfing.

5.6.4 Conservation and Mitigation Measures

Assessment of habitat quality, extent and analysis of usage and problems are essential pre-requisite for Environmental Management Plan. Predicting barriers caused by local and state activities is critical. The following **measures** could be essentially practiced for the **environmental and biodiversity conservation** in the project area:

1. **Management of Activities:** The conservation need be practiced following local people-centric decentralized participatory approach where bottom up approach for generation of information and practices for conservation need be given priority. A collaborative management approach involving the Forest department, Wildlife wing, Park personnel, local people and knowledge partners, such as, academia and research, and interface institutions like non-profit organizations and trusts would be appropriate for this purpose. Whenever possible, the Corporates may also be involved as stakeholder to perform their social responsibility in terms of their contribution as monetary support and technology for maintenance of wildlife habitat, habitat improvement and awareness generation. The establishment of industry must be discouraged in those areas nearby to Park and eco-sensitive zone.
2. **Awareness Generation:** The knowledge and technical skills are pre-requisite for human capital to perform in a desired manner. It is, therefore, suggested that the information in regard to species of plants and animals existing in the project site, importance of these species for human beings and conservation of food chain organisms and ecological processes essential for ecological balance at the site, threats for their survival and suitable package of practices for conservation of biodiversity need be made available to



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

the local people and other stakeholders through print and electronic media, street plays (*nukkar natak*) and exhibitions. Local festivals and fairs (*mela*) can be better opportunities for awareness generation.

Promotion of awareness with respect to Chinkara Gazelle particularly, about religious taboos of local communities (e.g., presence of Chinkara Gazelle in habitation and agricultural fields brings prosperity) and indigenous culture of biodiversity conservation.

3. **Promotion of Eco development and Ecotourism:** In order to reduce the dependency of local people on the forest, savannah, grassland and natural biodiversity for different socio-economic needs, such as, fire-wood, small timber, leaf fodder and medicinal species, etc., the eco-development programme focusing on the cultural and socio-economic and environmental dimensions specific to the project site need be encouraged utilizing local knowledge and practices. Wherever necessary the technology developed through scientific experiments and field experiences in regard to sustainable utilization of natural resources and organic agriculture including agro-forestry need be integrated with the traditional practices. Eco-development is now seen as a site- specific conservation-friendly measure for environmentally-compatible economic development.
4. **Control of Population Influx around the Expressway:** The construction of proposed Expressway will lead to increase in human population from outside the project area also. This will adversely affect the carrying capacity of the project site (at least temporarily) as far as the space and livelihood needs are concerned. This needs to be regulated through development of well-managed habitation and growth centers accordingly.
5. **Aquaculture for Fishery:** Fish provides meat of white category that does not lead to cardio-vascular diseases and high blood pressure. Additionally, fish is among the most potential source of animal protein and vitamin-A. Although the consumption of meat is not a common practice in the state Rajasthan, it is, therefore, suggested that **fish farming** as an aquaculture practice need be popularized in the project area to meet the **twin objective of fish harvest and fish conservation** in natural water bodies and wetlands. The pond-based fishery may be promoted in the project area. Suitable fish species such as *Cirrhinus mrigala*, *Catla catla* and *Labeo rohita* may get priority in this activity. Government of Rajasthan should contribute as resource organization for fish seed and capacity building programmes.
6. **Promotion of Farm Forestry, Agro-Forestry and Silvo-Pasture:** The multi-species landuses, such as, agro-forestry and farm forestry in the farm land, horti-pastoral and silvo-pastoral practices on the barren lands and wasteland need be given priority to achieve soil conservation and to obtain economic goods, such as, fire-wood, small timber, fodder and fruits simultaneously. For this purpose, locally-preferred species should be considered on priority.
7. **Habitat Management for Wildlife:** Both regulatory (for human actions) and habitat management practices including engineering devices need be utilized for managing and improving habitats for wildlife. The landscape approach following decentralized collaborative management need be adapted for this purpose.



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

The habitat management practices such as, road-side plantation, trees around wetlands, rain water harvesting, fencing along road-side habitats, eradication of *Prosopis juliflora* regulated grazing by domesticated livestock at selected site (away from wild animal foraging and nesting grounds) and making roads less attractive to birds can be adopted.

For good governance in the interest of wildlife conservation and sustainable economic development, the following regulatory measures need be practiced equitably in case of common citizens, authorities and very important persons:

- Wildlife (Protection) Act 1972 and amendments
- The Forest Conservation Act 1980
- The (Prevention and Control of Air Pollution) Act 1981
- The (Prevention and Control of Water Pollution) Act 1974
- The Environment (Protection) Act 1986
- The Biodiversity Act, 2002
- Discharge of effluents as per EPA, 1986
- Noise Pollution and Control Rules, 2000
- Construction and Demolition of Waste Management Rules, 2016
- Solid Waste Management Rules, 2016
- Plastic Waste Management Following Plastic Waste Management Rules, 2016

5.6.4.1 Integrated Eco-friendly designs

The engineering devices, such as, underpasses, pipe culverts, and chain link fences can be established suitably at intersections and other locations promoting the wildlife survival and movement has been shown in **Figure 5.4** and **Figure 5.5**. Underpasses should be developed to facilitate the wildlife conservation. The non-structural measures, such as messages, related to speed control (e.g., दुर्घटना से देर भली , वन्य जीव हमारे मित्र etc.), caution signs, posters, warning systems for wildlife, etc., can add further to the wildlife conservation.

The underpass and plantations along the Luni River could be developed at proposed Ch. 64+500 km. In low lying areas near agricultural fields, the pipe culverts development will facilitate movement of aquatic fauna.





NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)



Figure 5.4: Suggestive engineering devices for wildlife management (WII 2016)
Top-underpass, Middle-Box culvert; Lower-Pipe culvert



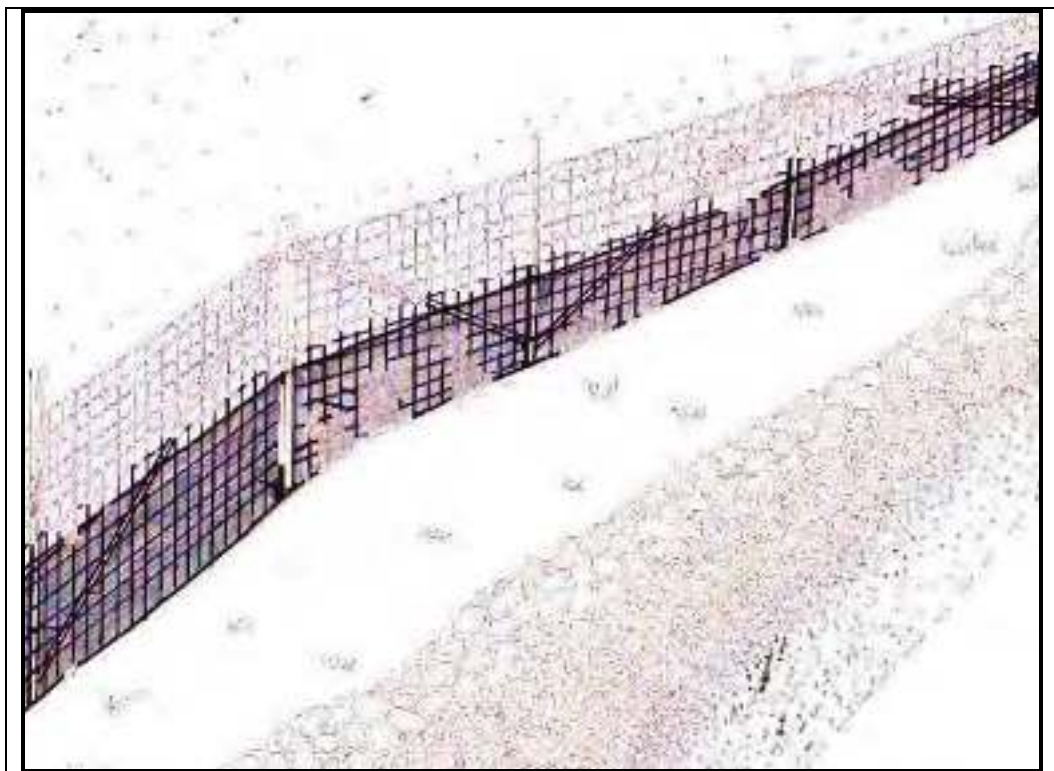


Figure 5.5: Suggestive engineering devices for wildlife management (WII 2016)
Top-fish passage; Bottom-fencing along roadside near eco-sensitive zone or National Park

5.6.4.2 Impact of Noise, Light and Power lines on Wild animals

The noise, light and human activity pressure due to proposed project will adversely affect the existing wildlife. Interference of noise generated during construction and due to transport will influence adversely the communication systems of the wild animals. The artificial light will disturb breeding and foraging behaviors of wild animals. It may also cause temporary blindness especially in young ones. The head light glare will interfere with the movement of birds, disrupt horning behavior of wild animals, matting calls and disorient the migratory wild animals. The power lines will also cause fragmentation and degradation of habitat, impediment to the movement of wild animals and sometimes mortality due to electrocution and collision.

5.7 IMPACT ON PROTECTED MONUMENTS AND CULTURAL HERITAGE SITES

It has been observed that no archaeological site or monument and cultural heritage site is coming along the proposed alignment. Therefore, there would not be any kind of significant impact on the cultural heritage sites.

5.8 IMPACTS ON SOCIAL ENVIRONMENT

The economic and social interaction of communities is going to be improved by the road projects. However, the construction of new road and new alignment will cause disruption to local interactions.

Some important observations during the field visits are:



1. The alignment is entirely Greenfield passing through mainly agricultural lands.
2. Public consultation reveals that people are aware of the proposed project and are willing to support the project. Still in our opinion, how will they behave at the time of project implementation is difficult to assess.
3. One of the topmost priorities in designing the alignment was to save as many properties as possible.

5.9 IMPACTS ON ROAD SAFETY AND HUMAN HEALTH

The planning and designing of the new expressway is in accordance with the improved safety measures and better health conditions. The chances of accidents could be minimized by (1) strengthening the pavements, (2) improving upon the curves in road geometrics, (3) fly-over and grade separators (4) proposing the service lanes in market places and near schools, etc (5) providing proper median, (6) improving upon road crossings (7) putting right signals and signboards, (8) new under passes.

The human diseases caused by the contamination of water, increase in air pollutants and noise may go up by 5-10% but proper mitigation can take care of the situation.

5.10 MITIGATION MEASURES

The project is likely to bring some negative impacts on the environment and socio-economic structure of the region. While deciding the alignment from environment point of view, some negative potential impacts are unavoidable. In such cases, adoption of mitigation measures is the only solution. Mitigation should be focused on achieving goals within clear timeframes. Use of **SMART** approach is recommended to evaluate the likely effectiveness of alternative mitigation strategies or measures. The **SMART** refers to measures that are **S**pecific, **M**easurable, **A**chievable, **R**ealistic and **T**imely.

A brief description of the approach to mitigation measures on environmental issues is mentioned below:

5.10.1 Soil

The potential impacts, their mitigation, and the phase of implementation to topographic and soil characteristics were assessed and presented below.

Potential Impacts	Mitigation	Implementation Phase
	Action confined within proposed ROW	
A. Altered embankment	- Good engineering & construction practices - Stabilization and turfing (revegetation)	Pre-construction phase & construction phase
B. Borrow pit excavation	- IRC standards to be followed - Borrow areas identified	Pre-construction phase &



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

close to expressway. construction phase

- Non-productive land will be used
- Good engineering & construction practices

5.10.2 Water Resources

The potential impacts, their mitigation and the phase of implementation regarding water sources were assessed with regard to surface water bodies, like rivers, irrigation channels and underground water tables with reference to wells, tube wells and hand pumps.

Potential Impacts	Mitigation	Implementation Phase
A. Surface water bodies	• Provision of proper drainage • Construction camps are properly located • Good engineering practices to be followed	Pre-construction, construction, post-construction and operational phases
B. Underground water	• No appreciable impacts • Water to be used for construction should have separate source	Per-construction and construction phase

5.10.3 Ambient Air Quality

Potential Impacts	Mitigation	Implementation Phase
Due to construction activities and transport of material	• Machinery to be fitted with pollution control device • Asphalt plant will be equipped with dust collectors • Sensitive places like schools and hospitals to be avoided (at least 500 m away) for Asphalt plants and other generators	Pre-construction, construction and post-construction phases
Due to additional traffic,	• Plantation of pollutant	Operational phase &



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

especially in market places	adsorbing trees	construction phase

5.10.4 Noise Levels

Noise particularly highway traffic noise, is a complex phenomenon because its intensity and characteristics vary with time depending upon the frequency as well as type of vehicles on the road.

Sr. No.	Item	Impact	Impact (Reason)	Mitigation/Enhancement
1	Sensitive receptors	Direct impact	Increase in noise pollution	- Noise barrier to be provided - Traffic calming devices to be used. - NO Horn Zone sign Post will be placed.
2a	Noise Pollution (Pre-Construction Stage)	Direct impact, short duration	Man, material & machinery movements Establishment of labor camps, onsite offices, stock yards and construction plants	- Area specific and for short duration - Machinery to be checked & complied with noise pollution regulations. - Camps to be setup away from the settlements, in the down wind direction.
2b	Noise Pollution (Construction Stage)	Marginal Impact	stone crushing, asphalt production plant and batching plants, diesel generators etc Community residing near to the work zones	- Camps to be setup away from the settlements, in the down wind direction. - Noise pollution regulation to be monitored and enforced. - Temporary as the work zones will be changing with completion of construction
2c	Noise Pollution (Operation Stage)	Marginal Impact	due to increase in traffic (due to improved facility)	It will be compensated with the uninterrupted movement of heavy and light vehicles.
3	Noise Pollution Monitoring		Effectiveness / shortfall (if any) Any unforeseen impact	Measures will be revised & improved to mitigate/enhance environment due to any unforeseen impact.



5.10.5 Human Health and Safety

Due to construction of new expressway, heterogeneous nature of traffic, congested market places, the accidents are not uncommon. Besides this the truck-drivers may carry contagious diseases, which might spread in the area if proper care is not taken.

Potential Impacts	Mitigation	Implementation Phase
Accidental spots can be reduced by providing proper signs and warnings, improvement of junctions, new under pass, fly-over etc.	• Proper provision of service roads, junctions, fly-over, under process to be provided at appropriate places	Construction and operation phases
	• Truck parking places	
	• Medical facility to be provided (an ambulance fitted with all medical equipments and a doctor)	Construction and operation phases
Sexually transmission diseases (STDs)		Operation phases
	• Detected diseased person to be carried to the nearest city hospital • Preventive measures should be taken to check the spreading of STDs	Operation phases

5.10.6 Measures Taken For Pedestrian Safety

The Provision of 138 new underpasses has been provided in proposed project for safety of pedestrian and as well as animals.

5.11 BIOLOGICAL CHARACTERISTICS

The most important negative impact that the project will cause is the loss of number of trees, leading to (a) enhanced degree of soil erosion, (b) loss of shade, fruits, timbers and other economic activities, and (c) the ecosystem. However, if re-plantation scheme is launched vigorously, it will help in restoring the ecological balance, though slowly. The project will not affect any fauna, however, keeping in view the mitigation measures will be followed to avoid any likely impacts on wildlife.

The potential impacts and mitigation measures for biological Environment have been presented in **Table 5.5**.



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

Table 5.5: Details of potential impacts and mitigation measures for biological Environment

Potential Impacts	Mitigation Measures
Cutting of approx. 5909 no of Trees	• Minimum thrice trees to be planted at loss of one tree
Loss of Habitat and Defragmentation	• Plantation will be done along the expressway sides to compensate the loss of vegetation • The strips of vegetation will be planted on either side of the linear clearing to provide attractive corridors for animals movement.
Degradation of Habitat Quality	• Precautions will be taken to avoid leakage of chemicals, any hazardous materials due to construction activities. • Labour camps will be located far from habitat of any fauna • Invasive alien species will be removed from time to time
Noise Induced physiological and Behavioral Changes	• Dense vegetation along the expressway may be provided for attenuation of noise. • Silence zone will be marked and provided with sign boards to alert drivers • Noise buffers using diversity of tree species, with a range of foliage shapes and sizes, combination of shrubs and trees and evergreen species will be provided. • Noise wall will be provided
Impacts of Headlights Glare on Wildlife	• Hedges along both sides of expressway will be provided to lower the intensity of lights



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

Potential Impacts	Mitigation Measures
1. Avoidance of Road by Animals 2. To avoid Injury and Mortality of animals	- Animal underpasses are proposed to be constructed for animals to cross the expressway. - Different types of underpasses like Box culverts, pipe culverts, and culverts with furniture will be constructed for passage of herpetofauna, amphibians etc. - Fences will be provided in combination with underpasses to direct animals away from the roads. - Vegetation or other habitat features (rocks, fallen timber) will be placed, planted or allowed to regrow so that animals are directed to preferred crossing locations. - The plantation and lighting systems along the roads should be made less attractive to birds to avoid collision of birds with vehicles.
Reduce access to saltlicks and waterholes	- Creation or improvement of water bodies will be done so that the animals have access to water. - Plantation along the water body will be done to attract the animals towards it. - The saltlicks areas will be protected from reach of human beings.
Discontinuity of Canopy	The width of the linear clearing may be kept small in the area having dense canopy to maintain the continuity above the clearing.
Disruption of Processes that maintain regional wildlife populations	- The breeding sites of animals/amphibians, nesting sites of birds, thermoregulation surface sites of snakes will be avoided for any type of construction. - Construction/modification of ponds will be done to provide breeding sites to amphibians. - The construction of strips of surfaces (next to road where high mortality of snakes are reported) that may attract snakes for thermoregulation will be done.

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

Potential Impacts	Mitigation Measures
Increased Human Pressure and Human-Wildlife Conflict	• Caution signs will be provided to alert drivers about wildlife • Speed limit will be restricted in and around habitation area to avoid any collision of animal. • Parking shall be restricted to avoid any encounter of humans with animals. • Temporary warning signs may be provided to warn drivers during specific time like breeding periods of animals or animal movement. • Animal Detection Systems may be provided for detection of any animal near road. • Poachers will be warned through sign boards

5.12 SUMMARY OF ENVIRONMENTAL IMPACT ASSESSMENT

Table 5.6 presents the summary of Environmental Impact Assessment along with the mitigation measures.

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

Table 5.6: Summary of Environmental Impact Assessment and its Mitigation Measures

S. No.	Parameters	Potential Impact	Mitigation Measures Suggested
1.	Topography and Soil	• Cut and fill operations during road construction	• The alignment passes through plain/rolling terrain and no substantial cut and fill operations are planned.
		• Borrow earth	• Borrow soil will be procure from approved quarry. • IRC guidelines will be followed during excavation
		• Quarries	• Operational and government licensed quarry have been identified, which will be used to procure the material
2.	Air environment	• Generation of Dust	• Sprinkling of water • Earth handling site • Borrow area • Road construction site • Air pollution control at stone crusher • PPE for workers • Stone crushing units environment compliance • Regulation of construction timings near sensitive receptors and settlements
		• Gaseous Pollution	• Vehicles and machineries will be regularly maintained to conform to the emission standards. • Asphalt mixing sites should be 1 km away from residential area. • Asphalt plant will be equipped with pollution control equipment • Use of PPE by workers engaged in construction and application of asphalt mix on road surface. • Responsibility of contractors and supervising officers to ensure that the workers use the PPE
3.	Noise environment	• Noise level may likely to increase during construction phase	• Properly maintained equipment's to be used • Noise levels of machineries used shall conform to relevant standard prescribed in Environment (Protection) Rules, 1986. • Ear plugs and muffs will be used by workers as per requirement during construction activities. • Regulation of timing of construction work generating noise pollution near the residential

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

S. No.	Parameters	Potential Impact	Mitigation Measures Suggested
			areas
4.	Water environment	• Drainage pattern 05 Canal, 08 Nalas and 11 river (including distributaries) other water bodies will be impacted due to the proposed expressway.	• Provision of proper drainage through culverts along the proposed expressway. • All the water bodies will be crossed by bridges and structures without affecting their original course and flow • Stabilization and turfing of slopes along the water bodies.
		• Siltation of water bodies	• Silt fencing around water bodies during construction to avoid silt laden runoff entering water body • Turfing or pitching of embankments of water bodies affected will be done where possible to prevent erosion that causes siltation. • No solid waste will be dumped in or near the water bodies or rivers.
		• Flooding due to siltation of drainages channel	• Excavated earth and other construction materials should be stored away from water bodies
		• Water for construction	• Water source would be selected so that local availability is not affected
		• Rainwater harvesting	• Rainwater harvesting drains will be provided along the road side
		• Contamination from wastes	• Provision of septic tanks to prevent any untreated sewage discharge from construction workers camps • Oil interceptors at construction machine maintenance yards
		• Contamination from fuel and wastes	• Vehicle maintenance will be carried out in a confined area, away from water sources, and it will be ensured that used oil or lubricants are not disposed to water courses
		• Sanitation and water use in construction camps	• Construction camp will be organized in a planned manner. • Proper sanitation facilities will be provided including toilets. • Camps will have separate water supply facilities so that local water sources are not affected
5.	Land environment	• Loss of topsoil	• Topsoil on stripping shall be removed and stockpiled on sides to be used on the side slopes, for top cover of borrow areas and for plantation in pits

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

S. No.	Parameters	Potential Impact	Mitigation Measures Suggested
		• Loss of topsoil from borrowing	Arable lands will be avoided for earth borrowing. If needed, topsoil will be separated and refilled after excavation
		• Borrowing of fill materials	Excavation from pre-selected locations. After excavation, the borrow pits will be dressed to match with the surrounding.
		Loss of Land • As per available data, it is observed that total land acquisition is 1730.16 ha.	The compensation to project affected persons will be paid as per the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013, National Highways Act (NH Act), 1956 and relevant Acts and guidelines of Government of India.
		Loss of structures So far as the type of dwelling structures is concerned 370 nos. Structures coming under within alignment.	
		Loss of Common Property Resources (CPRs) A total of 221 CPRs (pond, well, temple, water tank) fall within proposed alignment.	Relocation of CPRs will be done in consultation with the locals and relocation will be completed first before dismantling the existing structures of CPRs.
6.	Ecological resources	• Loss of trees	Out of approx. 15360 trees which are falling in ROW approx. 5909 trees are falling in carriage way which are likely to be impacted. At least, thrice numbers of trees for each tree to be cut will be planted as a part of compensatory afforestation. Green belt development along proposed expressway. Plantation of about 1,24,800 trees (three row plantations on either sides of the proposed expressway) proposed. Shrub plantation and grass carpeting in median is also proposed.

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchore (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

S. No.	Parameters	Potential Impact	Mitigation Measures Suggested
7.	Impacts on wildlife	• Loss of Habitat and Defragmentation	• Plantation will be done along the expressway to compensate the loss of vegetation • The strips of vegetation will be planted on either side of the linear clearing to provide attractive corridors for animals movement.
		• Degradation of Habitat Quality	• Precautions will be taken to avoid leakage of chemicals, any hazardous materials due to construction activities. • Labour camps will be located far from habitat of any fauna • Invasive alien species will be removed from time to time
		• Noise Induced physiological and Behavioral Changes	• Dense vegetation along the expressway may be provided for attenuation of noise. • Silence zone will be marked and provided with sign boards to alert drivers • Noise buffers using diversity of tree species, with a range of foliage shapes and sizes, combination of shrubs and trees and evergreen species will be provided. • Noise wall will be provided
		• Impacts of Headlights Glare on Wildlife	• Hedges along both sides of expressway will be provided to lower the intensity of lights
		• Avoidance of Road by Animals • To avoid Injury and Mortality of animals	• Animal underpasses are proposed to be constructed for animals to cross the expressway. • Different types of underpasses like Box culverts, pipe culverts, and culverts with furniture will be constructed for passage of herpetofauna, amphibians etc. • Fences will be provided in combination with underpasses to direct animals away from the expressway. • Vegetation or other habitat features (rocks, fallen timber) will be placed, planted or allowed to regrow so that animals are directed to preferred crossing locations. • The plantation and lighting systems along the expressway should be made less attractive to birds to avoid collision of birds with vehicles.

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

S. No.	Parameters	Potential Impact	Mitigation Measures Suggested
		• Reduce access to saltlicks and waterholes	• Creation or improvement of water bodies will be done so that the animals have access to water. • Plantation along the water body will be done to attract the animals towards it. • The saltlicks areas will be protected from reach of human beings.
		• Discontinuity of Canopy	• The width of the linear clearing may be kept small in the area having dense canopy to maintain the continuity above the clearing.
		• Disruption of Processes that maintain regional wildlife populations	• The breeding sites of animals/amphibians, nesting sites of birds, thermoregulation surface sites of snakes will be avoided for any type of construction. • Construction/modification of ponds will be done to provide breeding sites to amphibians. • The construction of strips of surfaces (next to road where high mortality of snakes are reported) that may attract snakes for thermoregulation will be done.
		• Increased Human Pressure and Human-Wildlife Conflict	• Caution signs will be provided to alert drivers about wildlife • Speed limit will be restricted in and around dense habitation area to avoid any collision of animal. • Parking shall be restricted to avoid any encounter of humans with animals. • Temporary warning signs may be provided to warn drivers during specific time like breeding periods of animals or animal movement. • Animal Detection Systems may be provided for detection of any animal near expressway. • Poachers will be warned through sign boards
8.	Public health and occupational safety	• Safety to public	• Signs will be posted on expressway before construction areas informing public about the work and safety provisions.
		• Restriction to Access	• Safe and convenient passage for vehicles, pedestrians and live stocks will be arranged during construction work

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchole (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

S. No.	Parameters	Potential Impact	Mitigation Measures Suggested
		- Occupational safety for workers - Occupational safety for asphalt plant workers	- Contractor will arrange all safety measures for workers as per factories act. - All worker employed on mixing asphaltic material, cement, lime mortars, concrete etc. will be provided with protective footwear and protective goggles

CHAPTER -6
(ENVIRONMENTAL
MONITORING PROGRAMME)



CHAPTER-6: ENVIRONMENTAL MONITORING PROGRAMME

6.1 ENVIRONMENT MONITORING PROGRAMME

The Environmental Monitoring Programme provides such information on which management decisions may be taken during construction and operational phase. It provides basis for evaluating the efficiency of mitigation and enhancement measures, and suggested actions that need to be taken to achieve the desired effect. The monitoring includes:

- (i) Visual observation,
- (ii) Selection of environmental parameters at specific locations, and
- (iii) Sampling and regular testing of these parameters.

The objectives are:

- Evaluation of the efficiency of mitigation and enhancement measures
- Updating of the actions and impacts of baseline data
- Adoption of additional mitigation measures if the present measures are insufficient
- Generating the data which may be incorporated in the environmental management plan in future projects

6.1.1 Ambient Air Quality (AAQ) Monitoring

The air quality is recommended for monitoring through an approved agency in the process of Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore). The monitoring of air sampling should be conducted at the location of Crusher plant, HMP, Stockyards Batching plant, Haul roads. In addition to these, air quality should also be monitored near the storage sites having aggregates, sands etc.

The parameters recommended for monitoring during construction are:

- Particulate Matter, PM10, PM2.5
- Sulphur Dioxide,
- Oxides of Nitrogen, and
- Carbon Monoxide

6.1.2 Water Quality

Water quality and public health parameters should be monitored till the end of project and two years after the completion. Monitoring should be carried-out at quarterly basis, to cover seasonal variations, by any recognized agency. Water quality shall be analyzed by applying the standard technique. The parameters for monitoring are given below.

6.1.3 Ambient Noise Monitoring

The monitoring of noise sampling should be conducted at the location of plant sites i.e crusher plant, HMP and construction sites etc. In addition to these, noise quality should also be monitored near the school, hospital, other sensitive sites and residential areas exist along the

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

40 meter to 50 meter distance of project road or at the designated locations fixed –up by the environmental expert.

The procedural details of monitoring of various components have been presented in **Table 6.1**.



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

Table 6.1: Environmental Monitoring Plan

Environmental Components	Monitoring			Location	Frequency	Institutional Responsibility	
	Parameters	Special Guidance	Standards			Implementation	Supervision
Air Quality	PM _{2.5} , PM ₁₀ , SO ₂ , NO _x , CO	As per CPCB guidelines	The Air (Prevention and Control of Pollution) Rules, CPCB, 1982	At sites where hot mix plant / batching plant is located	Twice in a month till the end of the construction	Contractor through approved monitoring agency	IC, NHAI- PIU Jodhpur
Ground and Surface Water Quality	pH, temperature, BOD, Total Hardness, COD, TDS, TSS, DO, Total coliform, Conductivity, Oil & Grease	Grab priority collected from source and analyze as per standard methods for examination of water and wastewater	Water quality standards by CPCB	River tributaries, roadside ponds and ground water at construction camp sites	Once in a season till end of construction	Contractor through approved monitoring agency	IC, NHAI- PIU Jodhpur
Noise Levels	Noise level for day and night on dB(A) scale	In free field at 1m distance from the equipment to be monitored	Noise standard by CPCB	At equipment yards, camp and villages along the alignment.	Once in a season till end of construction	Contractor through approved monitoring agency	IC, NHAI- PIU Jodhpur
Soil quality	Monitoring of NPK & heavy metals and grease	-	As per IRC code of practice	Ad-hoc if accident /spill locations involving bulk transport of carrying hazardous material	-	PIU through an approved agency	IC, NHAI- PIU Jodhpur
Road side plantation	Monitoring of felling of trees	It should be ensured that only marked trees are felled	As given in the Detailed Design for the project	All along the corridor	During the felling of trees	Forest depart Competent Agency	Developer to assist in co-ordination with NHAI
	Survival rate of trees, success of re- vegetation	The number of trees surviving during each visit should be compared with the number of saplings planted	The survival rate should be at-least 75% below which re-plantation should be done	At locations of compensatory afforestation	Every year for 3 years	PIU	Developer & Forest Department



6.2 ENVIRONMENTAL MONITORING COST

The environmental monitoring cost is estimated on the basis of the length and existing environmental scenario of the proposed project. Environmental monitoring cost of **4,60,08,000/-** has been allocated for construction and operation stages. The details have been presented in **Table 6.2.**

Table 6.2: Environmental Monitoring Cost

S. No.	Parameters / Components	Particular	Guidelines	Unit Cost/Sample (Rs)	Total Cost (Rs)
1	Ambient Air Monitoring: At construction Stage: At 15 locations for three season in a year for 3 years (twice a week)	Monitoring at Construction sites	PM2.5 and Respirable dust samplers to be used and located 50 m from the construction site	9,000	2,91,60,000
	At Operation Stage: At 15 locations for three season for a year (twice a week)	Ambient Air Quality Monitoring	-	9,000	97,20,000
2	Ground Water Monitoring: At Construction Stage: At 5 locations for three season in a year for 3 years	Ground water bodies	Analyze as per the standard methods for examination of water and waste water	6,000	8,10,000
	At Operation Stage: At 5 locations for three season for a year	Ground water bodies	Analyze as per the standard methods for examination of water and waste water	6,000	2,70,000
	Surface Water Monitoring: At Construction Stage: At 3 locations for three season in a year for 3 years	Surface water resources	Analyze as per the standard methods for examination of water and waste water	6,000	4,86,000
	At Operation Stage: At 3 locations for three season for a year	Surface water resources	Analyze as per the standard methods for examination of water and waste water	6,000	1,62,000
3	Noise Monitoring: At Construction Stage: At 15 locations for three season in a year for 3 years	At equipment yards/construction sites identified by IC	Using an integrated noise level meter kept at a distance of 15 m from the construction site	3,000	12,15,000

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

	At Operation stage At 15 locations for three season for a year	As directed by the Engineer	-	3,000	4,05,000
4	Soil Monitoring: At Construction Stage: At 15 locations for three season in a year for 3 years	At productive agricultural land	-	7,000	28,35,000
	At Operation Stage: At 15 locations where for three season for a year	At productive agricultural land	-	7,000	9,45,000
	Total Monitoring Cost (A)				4,60,08,000

CHAPTER -7

(ADDITIONAL STUDIES)



CHAPTER-7: ADDITIONAL STUDIES

7.1 INTRODUCTION

As per the conditions of the Terms of Reference given by EAC for preparation of the EIA/EMP Report, several studies were to be conducted to provide a clear picture of the project area. The suggested studies/activities were:

- Public Consultation and Public Hearing
- Social Impact Assessment
- Road Safety Measures

7.2 PUBLIC CONSULTATION

7.2.1 Introduction

Public involvement is one of the most important methods for the success of any project. It is useful for gathering environmental baseline data, understanding likely impacts, determining community and individual preferences, selecting the alternative and for designing sustainable mitigation and compensations plans.

The guiding principles include

- (i) Dissemination of information: - The information regarding the proposed project should be disseminated to the project affected people directly and indirectly.
- (ii) Soliciting information: - The basic information regarding various environmental and socio-economic issues is solicited.
- (iii) Consultation: - The consultation involves engaging people in dialogue. It is a religious process. There has to be a continuous dialogue between the components of the project and the public.
- (iv) Application of the gathered information: - The aforementioned three components of public involvement should be applied at various lines throughout the EIA process.

The public consultations are held at all the stages, namely, inception, screening, feasibility, and EIA preparation.

7.2.2 Methodology Followed For Public Consultation

In order to make the project sustainable and effective, communication with the stake-holders, other affected people and interviews with individuals was made.

The methods used for public consultation were as follows: -

- The questionnaires regarding the amusements of various environmental impacts due to the project and suggestion on their mitigations were field tested by a group under the



leadership of two supervisors. The data were recorded at the screening and feasibility stages.

7.2.3 Public Consultation Process

Consultation process was carried out at two different levels, viz.

- District, and
- Local or Village

District Level consultations were conducted to solicit public and Project-Affected Persons (PAPs) inputs. Participants in District level consultations included District Magistrate, representatives of District level officials of Revenue departments, NGOs, PAPs and PAP representatives apart from NHAI /PIU staff and consultants.

The objectives of district level consultations were:

- To expand awareness of the project among the public, local government, peoples' representatives and non- government organisations.
- To identify social and environmental sensitivities and other concerns in affected districts that should be considered during project design and planning.
- To review potential impacts of the project to date; measure taken to avoid, identified in social and environmental assessments reduce or mitigate adverse impacts and minimise displacement; and provisions of project's
- To explain principles and procedures proposed for land acquisition, resettlement and relocation; and the compensation and assistance that will be provided to project affected persons, households and groups who may lose land or assets or suffer other losses.
- To introduce house-to-house surveys, asset verification, Photography, and village level consultations along project roads.
- Assure that local-level inputs are considered in project preparation

Local Level Consultations: The objectives of local level consultations were to inform the affected persons about the project, R&R policy of GOI, to incorporate their views in the design and mitigation measures as suggested by them. For organizing the local level consultations, Consultation team was framed-up which includes one Socio-Economic Analyst specialized in qualitative data collection, two women community organizers, two investigators and one moderator. Group discussions were carried out based on semi-structured guidelines. Efforts were made to cover all those villages having major problems viz., relocation of religious structures or big market or residential area getting affected, etc. Both small and big habitations were covered in order to get representation of all the segments of affected population. More than one-group discussions were held in every affected village. The size of group was restricted to 8 to 10 so that everybody gets the chance to express their views on the project. Apart from above Separate group meetings were also organized for women participation in affected villages.

The Local Level public consultations were carried out at Mandli, Muthli, Jajoosan and Pratapura, during the date from 23/8/2018 to 26/08/2018. The issues related to resettlement were also



discussed during these consultations and the outcomes of the consultations carried out at various stages presented in **Table 7.1** and **Table 7.2**.

7.2.4 Key Issues

- Majority of PAPs agreed that given the road condition and traffic volume, widening and strengthening is necessary.
- majority of the project affected persons in the stretch are poor non-titleholders and their concern was that whether the government would do something for their welfare as they do not have any alternative source for their livelihood;
- when would they be required to shift and where will they go as they do not have any alternative, their concern was that if they are relocated to places away from the highway, they would lose opportunities for small business what they get now as a result of the highway;
- Compensation was the major issue in every discussion. Most of the PAPs feared of low compensation because of past experience. However, consultants informed them about the procedure of calculating compensation and were also informed about R&R assistances to meet the replacement value. Cash compensation is more preferred by the PAPs.

7.2.5 Consultations during Design

Consultations were carried out at the design stages to identify:

- Location specific social and social issues to be addressed through designs;
- Socio-economic profile of community along the project route;
- Extent of likely social impact due to the project;
- Expectations and reservations of people towards project; and Resettlement and rehabilitation options.

7.2.6 Consultation Sessions

Consultations were done using various tools including, interviews with government officials, questionnaire-based information with stakeholders etc. The public consultation carried out at the Screening, Feasibility and Social Assessment stages of the project has been summarized.

The extent or the likely level of adverse impacts was one of the major criteria in deciding locations for public consultation sessions. A listing of the various consultation sessions conducted at different locations along the entire project corridor is presented. These community consultations were held during various times of the design period and were attended by the Consultant's Environmental and Social experts and local populace.



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

Table 7.1: Public Consultations issues

Sl.No	Location	Design Km Chainage	Date	Participants	Issue Raise/Discussed	Suggestion from Participants	Mitigation Measures
1.	Mandli	24+500	24/08/2018	Villagers	• People Recommend for service road along the expressway. • Road crossing problem will arise for farmers to assess their agriculture fields. • Compensation issue. • Circle rate is very less • Noise Pollution due to proposed project	• Provide Vehicular underpass at every 500 m so that farmers can assess their field. • They recommend compensation at per New Act RFCTLARR-2013 • Up gradation of circle rate • Provide access to the farmers so that the productivity did not reduce and it should not increase the cost of production.	• Provisions of circle rates as per adjoining developed area. • Give assess to their fields so that the cost of production did not increase. • Provisions of VUP and PUP at every 500m. • Compensation should be given by according to new act.
2.	Muthli	77+000	24/08/2018	Villagers	• People Recommend for service road along the expressway. • Road crossing problem will arise for farmers to assess their agriculture fields. • Compensation issue. • Circle rate is very	• Provide Vehicular underpass at every 500 m so that farmers can assess their field. • They recommend compensation at per New Act RFCTLARR-2013 • Up gradation of circle rate • Provide access to the farmers so that the	• Provisions of circle rates as per adjoining developed area. • Give assess to their fields so that the cost of production did not increase. • Provisions of VUP and PUP at every 500m. • Compensation should be given by according to new act.



NATIONAL HIGHWAYS AUTHORITY OF INDIA

(Ministry of Road Transport & Highways Government of India)

					less Noise and Air Pollution due to proposed project	productivity did not reduce and it should not increase the cost of production.	
3.	Jajoosan	194+400	24/08/2018	Villagers	- People Recommend for service road along the expressway. - Road crossing problem will arise for farmers to assess their agriculture fields. - Compensation issue. - Circle rate is very less - The proposed expressway may be concern for safety specifically for women and children, accident risk will increase	- Provide Vehicular underpass at every 500 m so that farmers can assess their field. - They recommend compensation at per New Act RFCTLARR-2013 - Up gradation of circle rate - Provide access to the farmers so that the productivity did not reduce and it should not increase the cost of production. - Proper road safety measures will be incorporated in the project design.	- Provisions of circle rates as per adjoining developed area. - Give assess to their fields so that the cost of production did not increase. - Provisions of VUP and PUP at every 500m. - Compensation should be given by according to new act.
4.	Pratapura	201+000	25/8/18	Villagers	- Road crossing problem will arise for farmers to assess their agriculture fields. - Compensation issue.	- Provide Vehicular underpass at every 500 m so that farmers can assess their field. - They recommend compensation at per New Act RFCTLARR-	- Provisions of circle rates as per adjoining developed area. - Give assess to their fields so that the cost of production did not increase.

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA

(Ministry of Road Transport & Highways Government of India)

					• Circle rate is very less • The proposed expressway may be concern for safety specifically for women and children, accident risk will increase	2013 • Up gradation of circle rate • Provide access to the farmers so that the productivity did not reduce and it should not increase the cost of production • Proper road safety measures will be incorporated in the project design.	• Provisions of VUP and PUP at every 500m. • Compensation should be given by according to new act.



7.2.7 Continued Consultation

As part of the continued consultation program, the following actions are proposed:

- The NGO involved in implementation of the RAP will organize public meetings, and will appraise the communities about the progress in the implementation of R&R as required.
- The functions of Grievance Redressal Committees (GRCs) through which the project road traverses should be explained to the PAPs. The representatives of the PAPs will be associated with the committee.
- The resettlement sites, other amenities and facilities to be made available to the PAPs will be disclosed to them in consultation sessions.
- The NGO will organize public meetings to inform the community about the entitlements and provisions under the project. Regular update of the progress of resettlement component of the project (summary version of the report submitted by the NGO) will be placed for public display at PIU office.
- All monitoring and evaluation reports of the R&R components of the project will be disclosed in the same manner as suggested in this report.

Table 7.2: Addressal of General Issues and Concerns under the Project

Issue / Concern	Addressal under the project
Enhancement of communities properties	• Every effort should be made to minimize displacement of community properties
Implementation of land acquisition plan	• Land acquisition plan would be done as per LA act 1984
Resettlement of residential people	• The project Displaced families should be resettled in the village government land.
Relocation of religious properties	• Relocation of religious properties would be done in close consultation with community.
Since non-titleholders would be assisted in the project; what are the mechanism to check further influx of illegal users ROW Division of compensation to all eligible families	• The informal dwellers would have some proof that they are residing on or before cut-off-date.
Loss of Livelihood and income restoration option	• The PAPs will be compensated as per National R&R policy • RAP to detail out the assistance programme to the needy
Assistance to vulnerable groups	• Special provisions have been made in the entitlement framework for assisting vulnerable groups to improve their quality of life.
Employment of locals during construction	• Locals will be given preference for employment during the project implementation

Some of the photographs during public Consultation have been shown in **Figure 7.1**.

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchore (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)



Public consultation at Muthli



Public consultation at Muthli



Public Consultation at Mandli



Public Consultation at Mandli



Public Consultation at Jajoosan



Public Consultation at Jajoosan



Figure 7.1: Photographs during Public Consultation

7.3 PUBLIC HEARING

The public hearing has been successfully conducted on 22.01.19 in Jalore District, 28.01.2019 in Jodhpur district, and 13.02.2019 in Barmer district as per EIA Notification 2006 and its subsequent amendment. The proceedings of the public hearing are enclosed in Annexure VII.

7.4 SOCIAL IMPACT ASSESSMENT (SIA) STUDY IN THE PROJECT

The Social Impact Assessment study of the project expressway has been carried out as per terms of reference of NHAI and guidelines given by the Govt. of India. The study methodology employs a simplistic approach in which the important receptors were identified. Based on the identification, secondary baseline data were collected and then analyzed to predict the impacts and quantify them. A detailed Social Assessment has been carried out to identify nature and characteristics of losses to individuals and local communities because of the proposed project interventions. The report prepared which gives detailed impacts of the project. A Census survey of Project-Affected Persons (PAPs) was carried out along with the land resource survey of the project area. To establish impacts on people and community a resource mapping on strip map and consultation with individuals, communities and other stakeholders were done. Based on the findings of this survey and consultation with project-affected persons and other stakeholders a social impact assessment report is prepared.

7.4.1 Methodology

7.4.1.1 Approaches to Study

The social assessment process generally commences with screening stage. At this stage, social analysis is made of the project area and steps are taken from the beginning so that plans / designs / alignments are finalized in such a way that to the extent possible, adverse impacts are



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

avoided / reduced at the design stage itself to make these roads social and environment friendly. Wherever avoidance / reduction of the adverse social impact is not possible, those affected should be compensated, resettled and rehabilitated properly by adopting proper mitigation measures and the living condition of the people are improved. The key steps are:

- Avoiding / reducing the adverse social impacts at the design stage, especially while finalizing the alignments;
- Mitigating the unavoidable adverse impacts at planning, construction and implementation phase; and
- Compensating the affected people and common properties at replacement costs and by adopting appropriate rehabilitation and resettlement measures.
- Social Impact Assessment has been defined variously in different guidelines. For the study of this present project, the scope of work defined in the document (Term of Reference) prepared by the NHAI, Government of India, has been taken into consideration. The major issues and items identified in the scope in brief are:
 - Study of Background information on project and related policy and legal issues;
 - Collection of data from secondary sources;
 - Reconnaissance survey of the project impact zone, and
 - Analysis of data and Screening exercise

7.4.2 Policy, Legal and Administrative Framework

7.4.2.1 Institutional Setting

The project has been initiated and is being carried out by NHAI. The primary responsibility of the project rests with the NHAI in providing encumbrance free ROW to the concessionaire who shall implement the project.

7.4.2.2 Policy, Legal and Administration Framework

The Social Impact Assessment report of 4/6 laning expressway from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border to Sanchoe (District-Jalore) having total length of 208.200 Km has been prepared considering the Central Government legislation & Acts for resettlement & rehabilitation. Wherever required, help was also taken from the guidelines of NHAI Act 1956 for Land Acquisition.

7.4.3 Project Profile

7.4.3.1 Right of Way

- (i) This is Greenfield project and there is completely new acquisition;

7.4.3.2 Terrain & Land Use

The proposed expressway traverses mainly through plain terrain. However, few stretch of proposed expressway traverses through rolling terrain. The land use pattern along the proposed expressway includes barren, fallow, uncultivable, desert & agricultural land.

7.4.3.3 Settlement Section

The proposed project expressway traverses through 77 settlements within the Corridor of Impact. This would result in physical displacement of families, loss of livelihood and impact on



other resources. Thus, acquisition through the settlements will have considerable impact on people, property, and other resources.

The proposed expressway passes through rural area and people has to assess their field and there would be need of provision of service roads, VUP, PUP at every 500m which will have high impact on people as well as property. However, provision of service roads and development of facility for pedestrian movement across the road with necessary safety measures are desirable. Provision of service roads and barricading through traffic from the local traffic will not only reduce congestion on the project road but also will facilitate smooth movement of traffic and reduce the cases of accident.

7.4.4 Project Affected Households (PAHs) & Project Affected Population (PAPs)

The details Socio-economic survey of project-affected households are 2238 and total project affected population in 11190.

7.4.5 Land Acquisition

Based on the survey conducted and information on PROW obtained so far, the land required for construction of expressway and acquisition to provide a minimum 70 m wide ROW. This includes Agricultural, Barren Land, fallow, uncultivable and desert.

7.4.6 Public Consultation

The public consultations were carried out in villages along the project corridors. These consultations were taken up by social and Environment expert.

Preliminary interactions with the impacted persons were sought to elicit their perceptions and apprehensions of the project. Interactions with the locals were carried out to discuss their concerns specifically relating to safety, road widening, potential impacts to their properties and expected impacts. The concerns of most titleholders and also non-titleholders (shopkeepers, commercial and residential structures owners) were regarding design of PROW, loss of structure, any design scope to reduce impact on their structures and compensation norms to project affected persons.

Public consultations were also conducted with villagers along the project with major focus on Social and environment aspects. As per the findings of the same, the water quality is quite good in the project area of Rajasthan.

Locals have appreciated the proposed development in the project area and suggested improvement in road quality to reduce the air and noise pollution in the vicinity of the highway. Suggestions have also come on provision of truck lay bye, bus bays, underpasses and pedestrian underpasses in some villages. Villagers have also demanded service roads and Vehicular Underpass at every 500m in the built up areas and adequate compensation to the project affected persons.

The concerns raised by the villagers have been addressed in the project design. Mitigation measures shall be undertaken as per EMP to mitigate environmental impacts in the area. The compensation to project affected persons will be paid as per Right to Fair Compensation and Transparency in Land Acquisition, Resettlement and Rehabilitation Act, 2013, National Highways Act (NH Act), 1956.

The main purposes of public consultations are to know the community's reaction to the perceived impact of proposed project on the people at individual and settlement level. The



issues of the most concern are related to rehabilitation and resettlements. It is also generally felt that most of the people are aware about the project. The other prime concern is road safety problems. The issues have been duly incorporated in project design.

7.4.7 Potential Impacts

7.4.7.1 Impact of Land Acquisition

Brief analysis of impacts of land acquisition can be subdivided into the following subheads.

7.4.7.2 Loss of Land

Initiation of the project will have direct impact on village communities and other neighboring villages. The land to be acquired for the proposed project consists of agricultural land, mango trees, community land under Village Panchayats, various structures of public interest, residential structures and residential plots, public utilities and others. Further, there would be change in the land use pattern, as land use will be diverted from agricultural land to road construction activity. Quite a number of families would lose settled agricultural land. The livelihood of these families in most cases depends on the produce of their land.

7.4.7.3 Loss of Farm Produce

The stretch has relatively prosperous Agricultural land. Acquisition of land will result in loss of crops. As land will be acquired in a phased manner, the owners will be able to cultivate some part of their land till construction time permits. They will be allowed to harvest produce and cash compensation will be paid for crops acquired at a price fixed by the Government.

7.4.7.4 Loss of Residential and Commercial Structures

The project requires the demolition of residential houses and commercial properties. These will be acquired and compensation paid before the start of project.

7.4.7.5 Loss of Public Infrastructure

Construction of proposed expressway would entail shifting of public infrastructure. These include Temple, places of culture, places of worships, some village roads, piped water lines etc. These will be relocated at new sites as per the community's requirement, subject to allotment of land by authorities before actual demolition begins.

7.4.7.6 Loss of Income

Those losing agricultural lands will lose income opportunity. However this will be a permanent setback, unless provided with adequate compensation amount and / or training facilities for new trades with sufficient seed capital.

7.4.7.7 Increase in Employment Opportunities

Commencement of expressway will benefit the community through generation of direct and indirect employment within the project areas due to construction activity, minor repairs and maintenance works. The project will require a good number of unskilled workers and they can form a cooperative, which will supply labourers to contractors whenever required. Up gradation of roads and community development programs in the project plan will benefit the communities at large.



7.4.8 Mitigation and Enhancement Measures

Most of the mitigation measures can be incorporated as good engineering practice during the design phase itself thus ensuring the mainstreaming of social concerns early in the project. Adherence to design drawing and specifications will reduce; to within acceptable levels, the adverse impacts during construction.

7.4.9 R&R Budget

It has already been stated that the list of affected properties is yet to be firmed up. However, a tentative estimate of cost for Rehabilitation & Resettlement has been worked out to **INR. 2396.24 Crores** for which covers all components of compensation, assistance and entitlements.

7.4.10 Project Impact Zone

The road users and the population benefited / affected by the project roads are mainly the persons, who generally pass through or use the existing road / proposed alignment for their daily needs. The majority of the direct beneficiaries of the project reside in the vicinity of the road alignment, within approximately 5 km radius from the road alignment.

In order to carry out SES and conduct FGDs for preparing Social Analysis, the project impact zone has been defined as:

1. Direct impact involves the habitations existing along the project road and
2. Indirect impacted habitations will involve those within 1 km on either of the project road.

7.4.10.1 Socio-economic profiling

The majority of the potentially affected / benefited persons living in the project influence zone frequently travel down the existing roads or proposed alignment of the subprojects. Their purpose of visit brings them generally to the prominent market places by the roadside or transport boarding points either side of the road. Other beneficiaries also pass through the important junctions of the feeder roads connecting the project roads / proposed alignment. These junction points served as the clusters from where sample households and meetings were selected. Besides, administrative offices, places of worship, community structures, such as Anganwadi centres, in the major settlements within the project impact zone were also taken into considerations for holding FGD / Key Informant Interview (KII).

The project influence area (PIA) of expressway covers parts of three districts –Jodhpur, Barmer and Jalore, the project influenced habitations in these districts falling under direct and indirect influence zone is presented in **Table 7-3**.

Table 7.3: Project Affected Villages falling Under Impact Zone

State	District	Tehsil	Project Affected Villages under Impact Zone
Rajasthan	Jodhpur	Balesar	Dhadhaniya Sasan, Deogarh, Dhadhaniya Bhaila, Aagolai
	Barmer	Pachpadra	Jasti, Mansar, Ramdev nagar, Rorwa Khurd, Tibaniya, Gangawas, Bagawas, Mandli, Meghawas, Mohanpura, Dhoondhali, Tirsingri Sodha, Tisingri Chauhan, Thob, Rewara Jetmalan, Patau Kalan, Patau Kurd, Kuri, Umarlai

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

	Jalore		Jageer, Bhandiyawas, Moolji Ki Dhani, Gharoi Nadi, Janiyana, Hotloo, Bithooja, Asotara
		Siwana	Moothali, Padardi Khurd, Kalyansing ji ki dhani, Baliyana, Dev Pura, Dharna, Mithora, Padroo
		Sindhari	Bhata, Dhuriya Moti Singh
		Sayala	Dahiyavas, Sangana, Alwara, Khetlawa, Dadal
		Bagora	Kura Dhavacha, Bagora, Dhumbariya, Gaonri Rupa Ki Dhani, Bhalni, Meda Purohitan, Kooka
		Bhinmal	Thobau
		Chitalbana	Nimbau, vapa, Deora
		Sanchoe	Bijrol Goliya, Bhadroona, Chaura, Hariyali, Ravatsar, Dangara, Ruda Ka Goliya, Bhura Ki Dhani, Jiva Ka Goliya, Karola, Lachhri, Jajoosan, Sanchoe, Mokhupura, Barsam, Pratap Pura, Pahadpura, Gardali, Hanumangarh, Golasan

7.4.11 Conclusions

The proposed development will have overall positive impacts due to construction of new 4/6 lane Access Control National Highway from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore). The major impacts of project include land acquisition (agricultural land). Due consideration have been given to environmental and socio-economic issue during designing phase of the project. Some adverse environmental impacts have been identified which are likely to occur during construction phase. Those impacts will be temporary and short lived and can be mitigated effectively by implementing suggested mitigation measures. The project provides scope for environmental enhancement of the area. Green belt development along the roads has been incorporated in the project which will serve screen for air and noise pollution generated due to vehicular traffic, but at the same time it will also enhance the overall environmental quality of adjacent areas all along the project corridor. In order to ease the passage of cattle from one side of project roads to other, sufficient numbers of underpasses have been provided for cattle movements as well as for local traffic. Service roads have been provided along the project road sections which will avoid accidents due to direct collision of traffic coming from approach roads to highways. Improvement in the existing culverts has been proposed to provide better cross drainage in the area. Based on the SIA study and surveys conducted for the Project, it can be safely concluded that associated potential adverse impacts can be mitigated to an acceptable level by adequate implementation of the measures as stated in the SIA Report. Adequate provisions shall be made in the project to cover the mitigation and monitoring requirements, and their associated costs as suggested in the budget. The proposed project shall improve Road efficiency and bring economic growth. With the above approach to design, construction and operation the project will be socially feasible.

7.5 CENSUS AND SOCIO-ECONOMIC SURVEY

The objective of the census and socio-economic survey were prepare the list of the project affected households and prepare the socio-economic profile of the project affected persons for evolving the entitlement framework



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

The cut-off date for eligibility for entitlements for non-title holders is the date of the commencement of census surveys for all the three districts of 4/6 lane Green Field Expressway (NH-754K). The date of publication of Notification under section 3A(I) of NH Act will be the cut-off date for the legal titleholders.

The study time frame can be broadly divided into two phases comprising of Phase I to include secondary data search, Reconnaissance survey, Social strip mapping; and Phase II to include census and socio-economic surveys for titleholders.

The analysis of the data has been presented in the following sections for the titleholders separately

7.5.1 Survey of Project Affected families

7.5.1.1 Project Affected Structures

The surveys for the Structures have been carried out under the three categories namely Tube well House, Commercial and Residential. The total project affected structures are identified were 8,158 & 204 respectively. The distribution of structures is given in **Table 7.4**.

Table 7.4: Distribution of usage of structures

Sl. No	Category	Numbers
1	Tube well House	8
2	Commercial	158
3	Residential	204
	Total	370

Source: Primary survey (2018)

a. Area of Project Affected Families

Table 7.5 presents the distribution of type of structures about 120 Structures are pucca, 52 Structures are Semi-Pucca and 23 structures are purely kutcha.

Table 7.5: Classification of Project affected structures

S.No.	Type of Structure	Number
1	Pucca	173
2	Semi-Pucca	123
3	Kutcha	74
	Total	370

Source: Primary survey (2018)

7.5.1.2 Ownership category

The number of project affected households identified under these two categories i.e. Owners and Tenants are given in **Table 7.6**.

Table 7.6: Ownership

Type of Family	Numbers
Owners	308
Tenants	62
Total	370

Source: Primary survey (2018)



7.5.2 Socio-Economic Characteristics PAFs and PAPs

The socio-economic characteristics of the titleholder PAFs have been analyzed district-wise with respect to the following characteristics:

- Type of Family
- Project Affected Families
- Educational Status
- Sex Ratio
- Religious status
- Marital Status
- Occupational Pattern
- Income Categories
- Social Vulnerability

7.5.2.1 Type of Family

Table 7.7 below presents the distribution of households of affected structures as per the type of family i.e. nuclear and joint.

Table 7.7: Type of Family

Type of Family	Numbers
Nuclear	93
Joint	277
Total	370

Source: Primary survey (2018)

7.5.2.2 Project affected families

Table 7.8 below present the distribution of PAFs and PAPs as per the number of projects affected using the definition of family as per the R&R policy.

Table 7.8: Number of Project Affected Families

PAFs/PAPs	Numbers
Number of PAFs	2238
Number of PAPs	11190

Source: Primary survey (2018)

7.5.3 Education Status

Table 7.9 below gives the distribution of total project affected population with respect to the educational status.

Table 7.9: Educational Status of the titleholders PAPs

District	Education Level							Total
	Illiterate	Upto 5 th	Upto 8 th	9 th & 10 th	11 th & 12 th	Graduates	Engineering	
Jodhpur, Barmer and Jalore	4476	673	1679	1676	1343	1119	224	11190

Source: Primary survey (2018)

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

7.5.4 Sex Ratio

Table 7.10 presents the sex ratio of Jodhpur, Barmer and Jalore districts.

Table 7.10: Sex Ratio of PAPs

Total Population	Male	Female
11190	6043	5147

Source: Primary survey (2018)

7.5.5 Religious Status

The Religious status of the affected families getting affected due to project is presented in Table 7.11.

Table 7.11: Religious Status of PAFs

Religion	Numbers
Hindu	2127
Muslim	111
Total	2238

Source: Primary survey (2018)

7.5.6 Occupational Pattern

The occupation pattern of the PAPs is given in Table 7.12.

Table 7.12: Occupation of PAFs

Occupation	Number of Persons
Business	33
Government Job	197
Farmer	2685
Housewife	2238
Labour	1323
Private Job	49
Unemployed	671
Shopkeeper	974
Student	1765
Child	1231
Retired	25
Total	11190

Source: Primary survey (2018)

7.5.7 Income Category

The PAFs have been classified as per income slab given in Table 7.13 below.

Table 7.13: District-wise Distribution of PAFs as per income slabs

Annually income Slab	Number of Households
<=50000	224
50001-100000	334
100001-200000	539
200001-300000	581

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

300001-500000	448
Above 500001	112
Total	2238

Source: Primary survey 2018

7.5.8 Common Property Resources

Table 7.14: Common Property Details

S.No.	Common Property Resource (CPR) by type	Nos.
1	Temple	10
2	Ponds	05
3	Water Tank	19
4	Well	179
5	Other	8
	Total	221

Source: Primary survey 2018

7.5.9 Social Stratification

Table 7.15 presents the analysis of data with respect to social stratification like OBC, SC, ST and General are covered.

Table 7.15: Social Stratification

Vulnerability	Numbers
OBC	803
General	1076
SC	269
ST	90
Total	2238

Source: Primary survey (2018)

7.6 LAND ACQUISITION

7.6.1 Introduction

This chapter assesses the nature, type and magnitude of the potential social impacts likely along the project corridor. For the assessment of impacts, the baseline information based on the field visits and the primary surveys were carried out. The description of the impacts on the individual components has been structured as per the discussion in Chapter 7: Project profile of this report.

This section identifies and assesses the probable impacts on different social issues due to the proposed development. After studying the existing scenario, reviewing the process and related statutory norms, the major impacts can be identified and shall be mitigated in the forthcoming phases. Most of the impacts though shall be perceived during construction and operation phase.

7.6.2 Land Acquisition: Legal Framework

The first attempt to legally acquire land was made in 1824, through Regulation 1 of 1824 applicable to immediate subject of presidency of Fort William. The rules empowered government to acquire immovable property for public purposes.



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

- Provisions of 1824 were extended to Calcutta through Act I of 1850. Act XLII was brought to enable the provisions of regulation I of 1824 to be used for acquiring land for construction of railways.
- Building Act XXVII of 1839, Act XX of 1852 was introduced to obviate the difficulties to particular cities of Bombay and Madras.
- Act VI of 1857 was the first full enactment, which had application to the whole of British India. It repealed all previous enactment relating to acquisition and its object.
- Principle of Arbitration was introduced for the first time through Act VI of 1857, but procedure for making a reference to the arbitrator was found unsatisfactory and then came Act X of 1870. For the first time a detailed procedure for the acquisition of land were provided in 1870 Act. Rules were also framed for the determination of an amount of compensation.

The provisions of the 1870 Act did not satisfy the needs of the day and eventually the Land Acquisition Act, 1894 (I of 1894) was enacted repealing the 1870 Act. In India, the land acquisition and its compensation are generally governed by the Land Acquisition Act (1894), which has been amended from time to time. However, for the purpose of maintenance, sustenance and management of National Highways, a Special act, The National Highways Act (NH Act), 1956 has been promulgated. This Act provides for acquiring the land through "competent authority" which means any person or authority authorized by the Central Govt. by notification in the official Gazette to perform functions of the competent authority for such areas as may be specified in the notifications. For LA, the Act defines the various procedures as follows: (I) section 3A – intention of Central Govt. to acquire land, (ii) 3B - power to enter for survey, (iii) 3C - hearing of objections (iv) 3D - declaration of acquisition, (v) 3E - power to take possession, (vi) 3F - power to enter into the land where land has vested in the central government, (vii) 3G - determination of compensation and (viii) 3F - deposit and payment of the amount.

The act requires that the processes must be completed within a year from 3A to 3D. Although NH act significantly reduces the timeframe for acquisition, the rules and principles of compensation have been derived from the LA Act of 1894. The Act covers only legal titleholders and provides for (i) market value of the land; (ii) additional amount for trees, crops, houses or other immovable.

Provision of direct purchase of land from landowners in case where additional land requirement is very less (minimal) may also be considered. However, resettlement and rehabilitation benefits available to affected persons whose land would be acquired under the statute shall also be available to those affected persons whose land would be acquired through direct purchase. Properties; (iii) damage due to severing of land, residence, place of business.

7.6.3 Land Acquisition Planning For Subproject

Based on outcome of the Feasibility Study, Social and Environmental Screening Exercise, the proposed alignment was finalized and geometric design of highway was completed accordingly. Initially, the numbers of affected villages were identified as per the alignment. All the village Sazara maps were collected from the local revenue offices. The village Sazara maps were thoroughly reviewed and verified in the field. At by-pass location, realignment sections, ROB location the stacking of alignment was done by survey expert at site with the help of pegs and reference pillars. The stacked alignment was then transferred on Sazara maps with respect to



ground survey by land acquisition team and rechecked for correctness. The Land Acquisition Plan (LAP) was prepared accordingly. Based on the identified land plots by land acquisition team, local revenue officials were consulted to collect the names of owners of each plot. The details are available under the LA Plan prepared for the purpose of this project as a separate document.

7.6.4 Impact on Structures

Based on socio-economic survey, a total of **370** structures lie within 35 meters of either side of the existing centerline of proposed expressway. The structures are residential, commercial, Tube well house in their nature.

7.6.5 Type of Land Being Acquired For the Project

The land being acquired for the subproject are of various types such as Govt. land (75.50*Ha.), Private land (1,641.441*) Forest land (13.219* Ha.). The Area is presented in the **Table 7.16**.

Table 7.16: Type of the Land Being Acquired for the Subproject

Sl. No	State	Type of Land	Area in Ha.
1	Rajasthan	Govt. Land	75.50*
2		Forest Diversion	13.219*
3		Pvt. Land	1,641.441*
Total			1730.16

* The 3D of Jalore district is not finished yet, it is under process

7.6.6 Impact of Land Acquisition

The analysis of the impact of land acquisition can be categorized into following subheads:

- Loss of Land (Private and Government)
- Loss of farm produces (standing crops)
- Loss of Structures

7.6.6.1 Loss of Land (Private and Government)

The project will involve the acquisition of agriculture land and other lands in the boundary of different villages of the project area. The initiation of the project will have direct impact on village communities and other neighboring villages. The land to be acquired for the proposed project consists of agricultural land, trees and community land under village panchayats, various structures of public interest, residential structures and residential plots, public utilities and others. Further, there would be change in the land use pattern, as land use will be diverted from agricultural land to road construction activity. Quite a number of families would lose settled agricultural land. The livelihood of these families in most cases depends on the produce of their land. The details of the land requirement for the project are given in **Table 7.17**.



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

Table 7.17: Total Government & Private Land to Be Acquired

Sl. No	State	Forest Land (Ha.)	Govt. Land (Ha.)	Private Land (Ha.)	Total (Ha.)
	Rajasthan	13.219*	75.50*	1,641.441*	1730.16

7.6.6.1.1 Loss of Farm Produce

The stretch has relatively prosperous Agricultural land on either side of the highway. Acquisition of land will result in loss of crops. As land will be acquired in a phased manner, the owners will be able to cultivate some part of their land till construction time permits. They will be allowed to harvest produce and cash compensation will be paid for crops acquired at a price fixed by the Government.

7.6.6.1.2 Loss of Residential Houses

The project requires the demolition of residential houses and commercial properties. These will be acquired and compensation paid before the start of project.

7.6.6.1.3 Loss of Income

Those losing agricultural lands will lose income opportunity. However, this will be a permanent setback, unless provided with adequate compensation amount and / or training facilities for new trades with sufficient seed capital.

7.7 MITIGATION & ENHANCEMENT MEASURES

7.7.1 Introduction

Most of the mitigation measures can be incorporated as good engineering practice during the design phase itself thus ensuring the mainstreaming of social concerns early in the project. Adherence to design drawing and specifications will reduce; to within acceptable levels, the adverse impacts during construction.

7.7.2 Mitigation Measures Proposed

The following considerations may be kept in view at the design stage:

- Construction and Up gradation of approach roads to the highway.
- Up gradation of the existing road.
- Ambulance service to transport serious cases to district hospital in case of accidents.

7.7.2.1 General

- VUP and PUP has been proposed for every 500m so the farmers can assess their field frequent.
- Wherever possible, displacement shall be reduced or avoided altogether by



sensitive design of civil works (e.g. alternative designs or modification to the design).

7.7.2.2 Land Acquisition- Mitigation Measures

Based on the survey conducted and information on ROW obtained so far, the land required for widening of the existing road and acquisition to provide a 70m wide PROW including for the project shall include agricultural, desert, barren / fallow lands governmental and other lands under private ownership. Due to the ribbon development almost all throughout the area, care shall be taken to minimize land acquisition. In order to mitigate the ensuing negative impacts of the land acquisition a Resettlement and Rehabilitation (R&R) policy shall be prepared based on the RFCTLARR-2013. The salient features of the mitigation measures are:

- Where displacement is unavoidable, those displaced will have their living standard improved.
- PAPs will be compensated, at replacement cost, for assets lost. Adequate social and physical infrastructure will be provided.
- PAPs and lost community would be encouraged to participate in the implementation of RAP.

7.7.3 Enhancement Opportunities

Enhancements specifically refer to these positive actions to be taken up during the implementation of the project for the benefit of the road users and the communities living close to project road alignment. The following enhancement opportunities have been explored as part of the detailed project report:

- Bus bay and Truck lay-bye.
- Wayside amenities.
- Introduction of ambulance services to transport serious accident cases.

The enhancements shall be carried out with the following objectives:

- To enhance the appeal of the project road considers to the users;
- To enhance visual quality along the highway; and
- To generate goodwill amongst the local community towards the project, by the enhancement of common property resources.

7.7.4 Proposed Action Plan

The proposed action plan for social assessment would include the following:

- A Census and Socio-Economic survey of the Project Affected Persons based on the Corridor of Impact and alignments provided by the design engineers.
- Analysis of the Primary and secondary data.
- Preparation of the Social impact Assessment (SIA).



7.7.5 Implementation of RAP

The implementation of Resettlement Action Plan (RAP) is primarily envisaged, as a participatory exercise where the consulting NGO is responsible for the implementation of RAP is expected to play a role of secondary stakeholder or in other words the implementing agency would be a partner in the whole exercise.

The role of the implementing NGO would be to mitigate the adverse effects of the project, both, from the NHAI perspective, to ensure timely completion of the road construction, and, from the perspective of affected people, to ensure that their rehabilitation process is taken up in a right spirit with a comprehensive livelihood system and these people are able to take advantages of the options available. The prime responsibility of the implementing agency is to ensure that each and every eligible project affected person receive appropriate and due entitlement within the overall framework of R&R policy and entitlement matrix and the PAPs have improved (or at least restored) their previous standard of living by the end of the RAP implementation process.

7.7.5.1 Stages of RAP Implementation: A Methodological Framework

The objective of the project is to construct the new expressway aimed at economic and social development of the region. One of the key activities in the project cycle is the implementation of Resettlement Action Plan with an objective of minimizing the adverse impact of the project implementation on the lives of people living in the project area. The R&R policy envisages that the project-affected families (PAFs) are to be resettled and rehabilitated so that the adverse impact due to proposed improvement of the road gets minimized. The stepwise methodology for implementation of the RAP has been shown through a flow chart.

7.7.5.1.1 Training and Capacity Building of Project Staff

As a first step, it is essential to build the capacity of our staff i.e. Team Leader, Supervisors, Engineers, Village level workers etc. The aspects of training to be imparted would include social impact assessment survey, conducting focus group discussions, community participation, PRA/RRR, relocation of common property resources etc.

7.7.5.1.2 Focus Group Discussion, Awareness Campaign and Dissemination of Information

In order to make the RAP implementation process transparent as per NHAI guidelines, a series of FGDs/ meetings etc would be organized with all stakeholders for dissemination of information regarding rehabilitation process and entitlement framework. The RAP policy will be printed in Hindi language as well as English and the same will be distributed to the PAFs in order to make the process transparent.

7.7.5.1.3 Rehabilitation of Affected Families and Restoration of Income and Livelihood

Rehabilitation of all the PAFs is one of the critical tasks of the project implementation process in order to help the communities derive the maximum benefits out of the project without losing their livelihoods and the least impact on socio-cultural aspects of their lives. It includes livelihood analysis, preparation and implementation of a comprehensive livelihood support plan and development of a comprehensive livelihood support system. This process must result in improved or at least restored living standards, earning capacity or improve the quality of life of the people affected by the project. Accordingly, rehabilitation will be conceived and shall be



implemented as a development programme with particular attention to the needs of women headed households and vulnerable groups.

The effort of the NGO shall be to improve the PAPs economic productive capacity and building up a permanent capacity for self-development. One of the key strategies could be to facilitate the process of forming Self-Help Groups through community mobilization efforts within the overall framework of the project. This could be done through a set of livelihood analysis on the basis of different indicators like backward and forward linkages, raw material, resources, credit, marketing linkages etc. The process will also take care of the convergence of other state and central government programmes for income generation etc.

Organizing the economic activities would be according to the skills possessed by the affected families and in case such options are not economically viable, the corresponding skill up gradation support for the economic activities would be facilitated. The PAP will be free to choose to act as individuals or as informal groups like SHGs for accessing credit, Milk Producer Groups (MPGs), Agriculture Commodities (like vegetable, pulse, wheat) Processing Groups etc or as co-operatives, with their overall operating efficiency and viability of the livelihood options chosen by them.

In context of the socio-economic profile of the region, their existing activity base and the skills, efforts should also be made to ensure that the groups are resettled in a manner so that their backward and forward linkages in the activities performed by them are maintained and they are provided support in improving their income through support of other government sponsored programs also.

7.8 INSTITUTIONAL FRAMEWORK & GRIVENCE REDRESSAL MECHINASIM

7.8.1 Introduction

The institutional mechanism for the effective implementation of the project in general and R&R activities in particular is envisaged on partnership model whereby each and every agency/ institution proposed at various levels supplement and complement each other efforts. The key elements in designing these institutional mechanisms are transparency in operation, collaboration/ sharing of responsibilities with clearly defined roles, involvement of key stakeholders and vertical and horizontal linkages amongst various institutions/ agencies, as given in **Figure 7.2**.



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

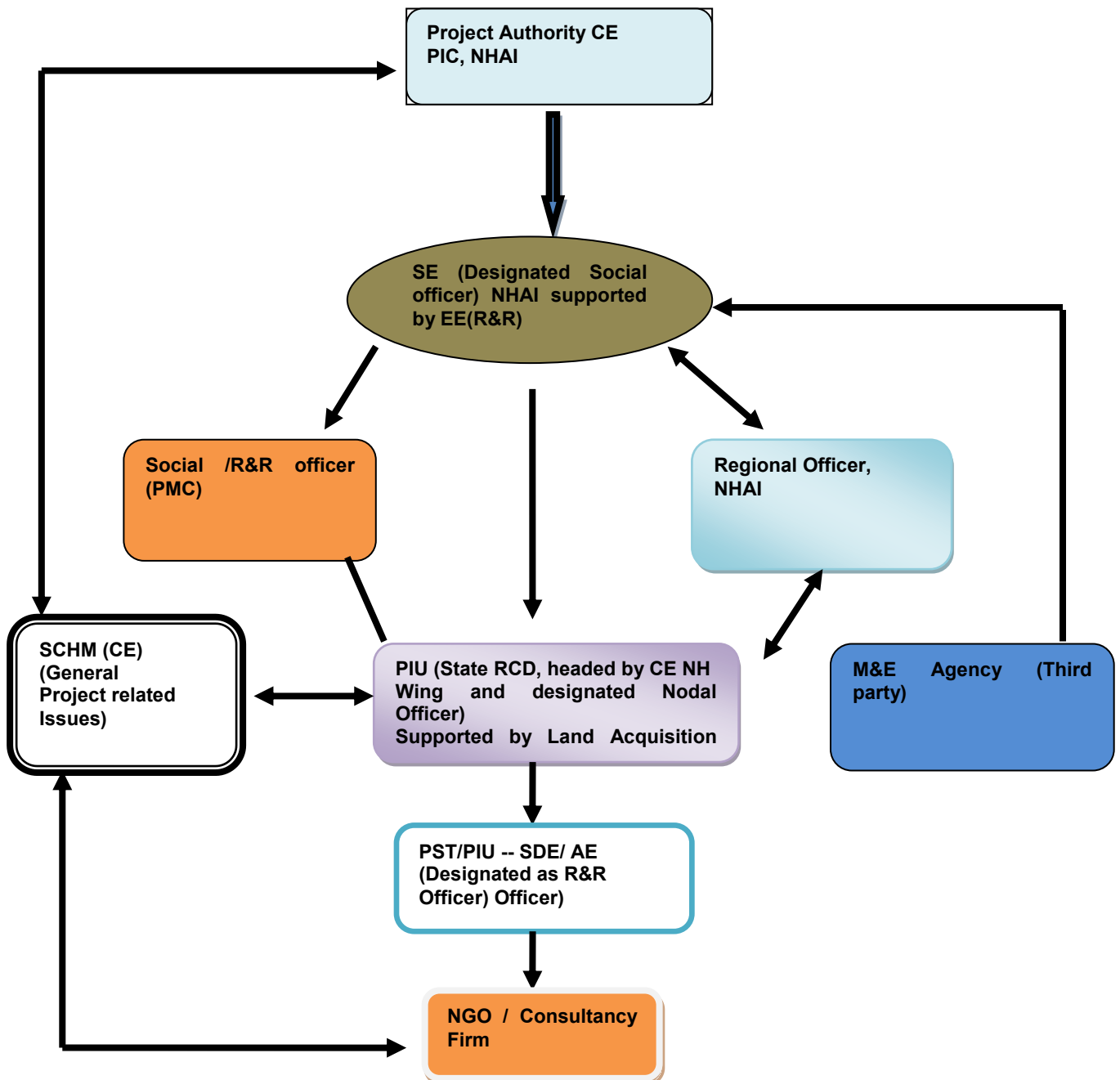


Figure 7.2: Institutional Arrangement for RAP Implementation

The proposed Institutional Arrangements will be set up at three levels viz., (Central Govt.), State Level and Sub-Project Level.



7.8.2 Central Level Institutional Arrangement

At Central Level, the Chief Engineer (PIC), NH, Govt. of India will be overall responsible for the implementation of RAP. Chief Engineer (PIC) will have all delegated administrative and financial decisions with regard to implementation of the project as well as land acquisition, RAP implementation

Institutional arrangement at Central Level will include augmenting the capacity of NHAI with regard to resettlement and rehabilitation. A team comprising Superintending Engineer designated as Social Development Specialist (SDS) and a suitable number of Technical and Secretarial Staff will assist CE (PIC). The designated SDS will be directly involved in the implementation of RAP. The SDS will ensure that all resettlement and rehabilitation issues are complied with as per the RPF. The roles and responsibility of the SDS would broadly include the following:

- Assist technical team at Central Level in finalizing the RAP and Land Acquisition Plan.
- Guide and supervise in matters related to resettlement and rehabilitation to state and subproject level offices.
- Compile data related to resettlement and rehabilitation activities received from field offices and update reporting officer and suggest suitable measures to be taken.
- Interact with RAP implementation agency on a regular basis.
- Undertake field visits as and when required.
- Facilitate necessary help needed at site with regard to LA and R&R issues.
- Co-ordinate with state government department in matters related to implementation of R&R.
- Ensure budgetary provision for resettlement and rehabilitation of EPs and relocation, rehabilitation and reconstruction of common property resources (CPRs) and implementation of RAP.
- Ensure timely release of budget for implementation of RAP.
- Monitor implementation of RAP carried out by the agency through RRO.
- Perform other roles and responsibilities related to implementation of RAP as assigned by the CE (PIC) from time to time.
- Ensure free, prior and informed consultation with Tribal families along the project and also ensure that sufficient supporting documentation is maintained.



7.8.3 State Level Institutional Arrangement

At State Level, a Land Acquisition cum Social Development Officer will be appointed to provide assistance to the designated Nodal Officer of PIU, Road Construction Department, and Government of Rajasthan. The roles and responsibility of the LA cum SDO would broadly include the following:

- Facilitate land acquisition and RAP implementation,
- Guide and supervise RAP implementation at sub-project level,
- Interact with RAP implementation agency and undertake field visits for first-hand information,
- Compile data on LA progress and resettlement and rehabilitation activities received from field offices and update reporting officer and suggest suitable measures to be taken,
- Co-ordinate with various government departments in matters related to implementation of RAP,
- Check implementation of RAP carried out by the agency from time to time by undertaking site visits and consultations with PAPs,
- Perform other roles and responsibilities related to implementation of RAP as assigned by the Reporting Officer from time to time.

7.8.4 Sub-Project Level Institutional Arrangements

A Project Implementation Unit (PIU) comprising officials of State PWD will be constituted at subproject level headed by the Superintending Engineer/ Executive Engineer designated as Project Director. The PIU will be responsible for the project execution including RAP implementation. There will be a designated or appointed Resettlement & Rehabilitation Officer (RRO) at respective PIUs who will be responsible only for the implementation of RAP at site. No other roles and responsibilities will be assigned to RRO other than resettlement and rehabilitation. RRO will assist Project Director at PIU and RRS at Central Level in all matters related to resettlement and rehabilitation.

The roles and responsibilities of the Resettlement and Rehabilitation Officer are as under:

- Ensure RAP implementation with assistance from implementation agency as per the time line agreed upon.
- Interact with RAP implementation agency on a regular basis.
- Undertake field visits with implementation agency from time to time.
- Facilitate necessary help needed at site with regard to LA and R&R issues to implantation agency.
- Co-ordinate and district administration and other departments in matters related to implementation of R&R.
- Ensure distribution of Resettlement and Rehabilitation Policy to PAPs.



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

- Ensure and attend meetings organised by implementation agency on related to awareness and dissemination of information on resettlement and rehabilitation policy and entitlements.
- Ensure inclusion PAPs who could not be enumerated during census but have documentary evidence to be included in the list of EPs.
- Ensure timely preparation of micro-plan from RAP implementation agency and approval from Head Office.
- Ensure preparation of identity cards and distribution of the same to EPs.
- Ensure disbursement of resettlement and rehabilitation assistance in a transparent manner.
- Participate in meetings related to resettlement and rehabilitation issues.
- Facilitate in opening of joint account of EPs.
- Prepare monthly progress report related to physical and financial progress of implementation of RAP & submit to Head Office.
- Ensure release of compensation and assistance before taking over the possession of land for start of construction work
- Assist and facilitate aggrieved PAPs (for compensation and assistance) by bringing their cases to GRC,
- Facilitate in opening of joint account of PAPs,
- Generate awareness about the alternative economic livelihood and enable PAPs to make informed choice,
- Consultations with PAPs regarding the choice of resettlement (i.e. self or assisted), development of resettlement site, participation of women, etc.
- Identify training needs of PAPs for income generation and institutions for imparting training,
- Consultations with local people and Panchayati Raj Institutions with regard to relocation, rehabilitation, reconstruction of affected CPRs as well as availability of new facilities under the project,
- Participate in various meetings,
- Submit monthly progress report, and
- Any other activities that may be required for the implementation of RAP.

7.8.5 Coordination with Other Agencies and Organizations

R&R Cell will establish important networking relationships with many departments and organizations. The Revenue Department has an influencing role in Land Acquisition proceedings, and initiation of resettlement process. Unless the compensation process is prompt and efficient, implementation process will get delayed. R&R Cell will coordinate with the Project Land Acquisition Officer to expedite the land acquisition process.

Income restoration will be sole responsibility of the project authority. NGO will facilitate linkages to be established with the government poverty alleviation programs to restore the income of PAPs. Restoration of community assets such as hand pumps, bore wells, drainage facilities will require help from Jal Nigam. Where schools are affected, coordination will be required from the District Offices of Education Department.



Considering the above, NHAI will extensively work on developing lateral linkages for mobilization of resources to benefit the PAPs and to achieve the desired results expected from implementation of RAP.

7.8.6 Role of Other Agencies

Various government department and public agencies, particularly the Revenue Department, Rural Development and Financial Institutions, have an important role in implementing the RAP. The Revenue Department is responsible for providing land records, acquiring land and other properties and handing them over to the proper authorities. The District Rural Development Agency (DRDA) will extend the RD and other developmental schemes to include the PAPs. The representative of these departments/agencies will be in contact with the R&R Cell, which will facilitate the integration of the various agencies, involved in the R&R process.

7.8.7 Grievance Redressal Mechanism (GRM)

The RAP Provides for a mechanism to ensure that the benefits are effectively transferred to the beneficiaries. However, need also exists for an efficient grievance redressal mechanism which will assist the APs in resolving queries and complaints. Land Acquisition will take place according to NH Act 1956 (Amended 1988). Compensation and entitlements will be paid according to NPRR (2007). Any disputes or grievances will be addressed through the grievance redressal mechanism proposed here. Detailed Investigation will be undertaken which may involve field investigation with the concerned APs. The GRCs are expected to resolve the grievances of the eligible persons within a stipulated time. The decision of the GRCs is binding, unless vacated by court of law.

The GRC will be constituted by the Project Authority with the aim to settle as many disputes as possible through consultations. There will be one GRC for each PIU. The GRC will comprise five members headed by a retired Magistrate not below the rank of SDM. Other members of the GRC will include a retired PWD Officer (not below the rank of Executive Engineer), RRO, representative of PAPs and Sarpanch (Elected Head of Village) of the concerned village. Grievances of EPs in writing will be brought to GRC for redressal by the RAP implementation agency. The RAP implementation agency will provide all necessary help to PAPs in presenting his/her case before the GRC. The GRC will respond to the grievance within 15 days. The GRC will normally meet once in a month but may meet more frequently, if the situation so demands. A time period of 45 days will be available for redressing the grievance of EPs. The decision of the GRC will not be binding to EPs. This means the decision of the GRC does not debar EPs taking recourse to court of law, if he/she so desires. Broad functions of GRC are as under.



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

- Record the grievances of EPs, categorize and prioritize them and provide solution to their grievances related to resettlement and rehabilitation assistance.
- The GRC may undertake site visit, ask for relevant information from Project Authority and other government and non-government agencies, etc in order to resolve the grievances of EPs.
- Fix a time frame within the stipulated time period of 45 days for resolving the grievance.
- Inform EPs through implementation agency about the status of their case and their decision to EPs and Project Authority for compliance.

The GRC will be constituted within 3 months by an executive order from competent authority (center/ state) from the date of mobilization of RAP implementation agency. The RRO will persuade the matter with assistance from implementation agency in identifying the suitable persons from the nearby area for the constitution of GRC. Secretarial assistance will be provided by the PIU as and when required.

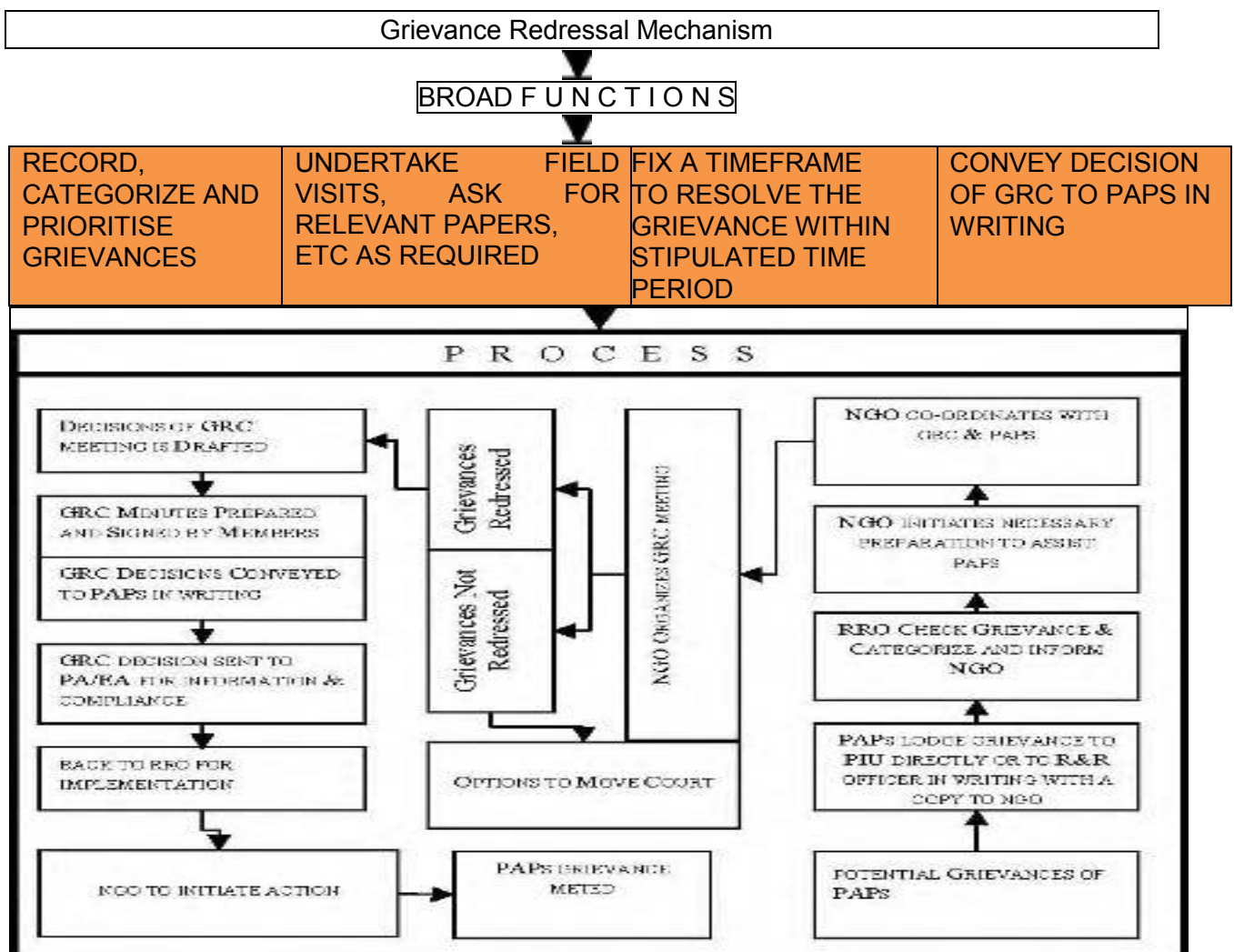


Figure 7.3: Grievance Redressal Mechanism



7.8.8 Suggestions and Complaint Handling Mechanism (SCHM)

Being an inter-state project involving several states and large scale of civil works along with R&R and Environment issues, the project is likely to receive many suggestions, complaints, inquiries, etc through the project implementation period. The NHAI recognizes the importance of this and hence intends to establish a SCHM for the NH.

Though the Right to Information Act, 2005 an Act of the Parliament of India provides for setting out the practical regime of right to information for citizens. The Act applies to all States and Union Territories of India except the State of Jammu and Kashmir. Under the provisions of the Act, any citizen may request information from a "public authority" (a body of Government or "instrumentality of State") which is required to reply expeditiously or within thirty days. The Act also requires every public authority to computerize their records for wide dissemination and to pro-actively publish certain categories of information so that the citizens need minimum recourse to request for information formally.

In other words under the act, citizens have right to seek information from concerned agencies by following the set procedures. However, it is quite likely that many people may not use the provisions of this Act, only in limited cases covering serious concerns. Therefore, NHAI has agreed to establish SCHM as a good practice to address public concerns pertaining to various issues. Several communication channels viz., toll free phone number, dedicated email, mechanism for on line submission of suggestions/complaints/inquiries, provision of suggestion/complaint box (at site and project office), post and other suitable means shall be set up for suggestion and complaint handling.

Right from beginning of project implementation, the appointed NGO / consultancy firm shall disseminate the information regarding establishment of Suggestions and Complaint Handling Mechanism for this project among the Project affected / benefited peoples. The appointed NGO / consultancy firm will explain the process through various applicable mode to be followed / adopted by the peoples for filing complains & suggestion.

7.8.9 Information Campaign

Attention of the PAPs will be invited to the proposed redressal system for a quick, inexpensive and amicable settlement of claims for enhanced compensation. They will also be advised to get their records of rights updated. All possible efforts will be put forth to motivate the affected landowners and structure owners for a voluntary and amicable settlement of their claims outside the court.

Most of the issues will be settled out of court as far as possible. Hand-outs will be distributed among all the affected persons highlighting the prospects of amicable settlement of dispute in question, outside the court, speedy and at lesser expense along with the timetable of inquiries and spots inspections of the committee. Besides, public announcements will be made in affected areas. Press notes will be released in local newspapers to aid publicity.

7.9 GENDER ISSUES AND WOMEN PARTICIPATION

7.9.1 General



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

There are two important aspects of project where gender issues are required to be addressed. It is expected that in development project, women are going to experience socio-economic impacts due to acquisition of land for the project as well as during the construction of the project.

Impacts on women due to land acquisition have been addressed in the following section. 'Women's Participation' deals with the aspects of the project on RAP and during the construction phase. Women as a vulnerable group, woman-headed households, livelihood and training for women, etc., feature in other Sections of the Report also.

Involvement of women in the project, even beyond the scope of RAP, has been foreseen, especially during the construction of the project highway. However, there is no consideration for addressing gender issues in the RAP for construction period. A try has been made here to bring this into the notice of the implementers. This has been done especially predicting the situation during the construction period.

This is to be noted here that post-project provisions as mentioned in the RAP has been done keeping in mind the well-being of mostly the affected women along with women of the host communities. Thus, these relate to resettlement and rehabilitation. Whereas, gender issues in the construction phase will mostly concern the women workers who will be engaged in the road construction activities. These women workers are expected to come from outside being engaged by the construction contractors and will be staying in the construction camps during the construction. There may be participation from local women also in the construction activities.

7.9.2 Impact on Women

While women constitute around 46% of the affected and displaced population in the project area, they are neglected from the socio-economic development point of view. Socio-economic parameters like literacy, work force participation rate, and general health conditions etc. reveals that social status of women is very backward in the project area and thereby brought forward the scope of considering the households headed by women as vulnerable

Women headed households are found to be less in number in the project area. The percentages of such families affected are around 3%. For the cause of compensation and assistance to be provided to these households, it is better to consider the absolute number of such families in the affected and displaced categories. The details of the affected women headed household have been presented in **Table 7.18**.

Table 7.18: Affected Women Headed household

Affected WHH Summary	Numbers
Titleholder	67
Total	67

Source: Primary survey (2018)



7.9.3 Participation of Women in Project

The Gender-related Development Index (GDI) value for India is very low and the socio-economic profile of the project area shows much lower socio-economic standing for women. It is imperative to bring the issue of women's development in the process of socio-economic uplift within the scope of the RAP for sub-project. For this a conscious effort should be made towards integrating the issue in the project.

7.9.4 Impact of Developmental Activities on Women

Women as a vulnerable group has been addressed in the RAP but to give R&R a proper shape this group should be considered with special emphasis as they constitute half the society's population and they are found to be the worst affected in most of the developmental projects in our country.

Women are involved in the project anyway. However, most of the times, they are on the negatively impacted side. Following is the account of the ways women are affected and/or involved in the project

- Women constitute about 46% of the PAPs.
- The RAP reveals that 67 women headed households (TH & NTH) are affected by the project.
- Women face hardship and continue to suffer in silence during the transition period till the time the families are able to regain the previous living standard. The duration of this process is often lengthened, due to delays in payment of compensation, rehabilitation assistance and implementing the R&R, reconstructing the livelihood systems. Longer the transition period, more are the miseries.

As per the R&R Policy as well as looking into the need of the day, women are required to be involved in the process of sustainable development. They have to be integrated in the project as full-fledged participants taking part in all the stages of the project starting from planning through implementation and even in the post-project stages. Only then the process of development is going to help this section.

7.9.5 Women Involvement in Development Process through Empowerment

The development experience of at least two decades shows that it is equally necessary to consult the women and offer them choices enabling them to make informed choices and decide for their own development.

Participation of women has been envisaged specifically in the following areas:

- In the pre-planning and planning stages participation from women could be sought through allowing them taking part in the consultation process. For this, the local level agencies of implementation, i.e. the NGOs have an important role to play.
- Each field team of the NGO shall include at least one women investigator/facilitator



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

- Compensation for land and assets lost being same for all the affected or displaced families, special care should be taken by the NGOs for women group while implementing the process of acquisition and compensation as well.
- It is imperative that the PIU ensures that the women are consulted and invited to participate in group based activities, to gain access and control over the resource as a part of the RAP, Additionally,
- From the contractor's side – Woman inspector of works will be there.
- The NGOs should make sure that women are actually taking part in issuance of identity cards, opening accounts in the bank, receiving compensation amounts by cheques in their name or not, etc. This will further widen the perspective of participation by the women in the project implementation.
- Under the entitlement framework there are a number of provisions kept for compensation and assistances towards the losses incurred upon the impacted women headed households by the project. On the other, some provisions, mostly those of the assistances, have been created towards reducing the probable hardship to be experienced by them in the process side by side creating scope for their sustainable socio-economic development.
- The assistances to be provided to women as a vulnerable group is creating alternative livelihood for them to ensure their sustainable socio-economic upliftment.
- The implementing agencies should provide trainings for upgrading the skill in the alternative livelihoods and assist throughout till the beneficiaries start up with production and business.
- Women's participation should be initiated through Self-Help Group formation in each of the villages affected by the project. These groups can then be linked to various special development schemes of the State and Central Government.
- For monitoring and evaluation, there should be scope for women's participation. Monitoring of project inputs concerning benefit to women should involve their participation that will make the process more transparent to them.
- Women should be encouraged to evaluate the project outputs from their point of view and their useful suggestions should be noted for taking necessary actions for further modifications in the project creating better and congenial situation for increasing participation from women. All these done in a participatory way may bring fruit to this vulnerable group in an expected way.

All assistance would be paid in a joint account in the name of both the spouses; except in the case of women headed households and women wage earners.



7.9.6 Involvement of Women in Construction Activities

The construction works for strengthening the proposed project corridor will start after the R&R activities are over and the RoW is clear of any encroachment and land is temporarily acquired for borrow areas and construction camps. The construction contractors will set up their construction camps on identified locations where labour force required for the construction activities will be provided with temporary residential accommodation and other necessary infrastructure facilities.

The labour force required for the construction activities will be mostly of high-skill nature since a lot of machine work will be there in the construction of the highway. In addition, there will be requirement of unskilled labour where women will certainly contribute. Apart from this, women as family members of the skilled and semi-skilled labourers, will also stay in the construction camps and will be indirectly involved during the construction phase. The families of labourers will include their children also.

The construction contractors are expected to bring along their labour force. Thus, in most cases the labourers, both male and female, will be migratory labourers. But, the involvement of local labour force, especially for unskilled activities, cannot be fully ruled out. Moreover, the RAP suggests the provision of creation of man-days for local affected people. Hence, there will be involvement of local women also in the local labour force.

Foreseeing the involvement of women, both direct and indirect in the construction activities, certain measures are required to be taken towards welfare and well-being of women and children in particular during the construction phase.

7.9.7 Specific Provisions in the Construction Camp for Women

The provisions mentioned under this section will specifically help all the women and children living in the construction camp.

7.9.7.1 Temporary Housing

During the construction the families of labourers/workers should be provided with residential accommodation suitable to nuclear families.

7.9.7.2 Health Centre

Health problems of the workers should be taken care of by providing basic health care facilities through health centers temporarily set up for the construction camp. The health center should have at least a doctor, nurses, GD staff, medicines and minimum medical facilities to tackle first-aid requirements or minor accidental cases, linkage with nearest higher order hospital to refer patients of major illnesses or critical cases. The health center should have MCW (Mother and Child Welfare) units for treating mothers and children in the camp. Apart from this, the health center should provide with regular vaccinations required for children.

7.9.7.3 Day Crèche Facility

It is expected that among the women workers there will be mothers with infants and small children. Provision of a day crèche may solve the problems of such women who can leave behind their children in such a crèche and work for the day in the construction activities.



The crèche should be provided with at least a trained ICDS (Integrated Child Development Scheme) worker with to look after the children. The ICDS worker, preferably woman, may take care of the children in a better way and can manage to provide nutritional food (as prescribed in ICDS and provided free of cost by the government) to them. In cases of emergency she, as being trained, can tackle the health problems of the children and can organise treatment linking the nearest health center.

7.9.7.4 Proper scheduling for Construction work

Owing to the demand of a fast construction work it is expected that a 24 hour-long work-schedule would be in operation. Women, especially the mothers with infants should to be exempted from night shifts as far as possible. If unavoidable, crèche facilities in the construction camps must be extended to them in the night shifts too.

7.9.7.5 Educational Facilities

The construction workers are mainly mobile groups of people. They are found to move from one place to another taking along their families with them. Thus, there is a need for educating their children at the place of their work. For this at least primary schools are required to be planned in the construction camps. Wherever feasible, day crèche facilities could be extended with primary educational facilities.

7.9.7.6 Special Measures for Controlling STD/AIDS

Solitary adult males usually dominate the labour force of construction camps. They play a significant role in spreading sexually transmitted diseases. In the construction camps as well as in the neighbouring areas they are found to indulge in physical relations with different women. This unhealthy sexual behaviour gives rise to STDs and AIDS. While it is difficult to stop such activities,

It is wiser to make provisions for means of controlling the spread of such diseases. Awareness camps for the target people, both in the construction camp and neighbouring villages as well, and supply of condoms at concession rate to the male workers may help to large extent in this respect.

7.9.7.7 Control on Child Labour

Minors i.e., persons below the age of 15 years should be restricted from getting involved in the constructional activities. Measures should be taken to ensure that no child labourer is engaged in the activities.

Exploitation of young unmarried women is very common in these kinds of camps. A strong vigilance mechanism should be created to check this and ensure ceasing of such exploitation.

7.9.7.8 Engaging woman Inspector of Works

Contractors should engage a woman Inspector of Works not below the rank of a Senior Engineer to inspect the construction camps and any other component of work with respect to gender issues. She would assist the Resident Engineer (RE) in all aspects of gender and child-labour related activities. She would have a full-time tenure throughout the entire construction period. Her duties should include the preparation of monthly and quarterly reports and submit them to the RE with a copy to the RO, MoRT&H as well as PIU.



7.10 R&R BUDGET

7.10.1 Introduction

A consolidated overview of the budget is provided and the cost estimates given below shall be viewed accordingly. The cost estimates for land and structures based on data collected during the survey and contingency provisions have been made to take into account variations from this data.

The compensation amount for the acquisition of land and structures will be determined by the competent Authority appointed under NH Act 1956. Over and above, the PAF will be entitled for R&R assistance as per the entitlement framework given in Para 7.2.2 (for Acquisition of long Stretches of land) of the Right to Fair Compensation and Transparency in Land Acquisition on Resettlement & Rehabilitation 2013 for project affected Families.

7.10.2 Cost of Land and other Replacement Value

The project requires about 1,641.441* Hectare of total land for construction of road, junction improvement, curve improvements, lanes taking into the account of revenue rate, market rate and stake holder's estimation, the market value of the land has been assumed during the primary survey. The cost of land, which includes compensation amount, Multiplier Factor 2-times, solatium of 100%, which become 4-times as per RFCTLARR-2013 Schedule-1 on Land acquisition estimated to be INR. 2166.8 Crores.

7.10.3 Compensation for Structures

For the loss of building structures, like commercial, residential and Tube well house the titleholder will be compensated at replacement cost. A government approved value has assessed the replacement cost.

It is premature here to estimate the cost of structures at this stage when census of the properties in land acquisition area is in progress however; compensation for the structures has been calculated during the structure identification survey in the project area. The Replacement cost for the structure will be based on the updated Basic Schedule of Rates.

7.10.4 Provision for development of Community Structures

There are few religious structure which is located along the expressway within the ROW. A lump sum amount of Rs. 700,000/- has been kept for relocation of religious structures. Break up cost of temple.

7.10.5 Budget

It has already been stated that the list of affected properties is yet to be firmed up. However, estimated of land Acquisition and cost for Rehabilitation & Resettlement has been worked out to **INR.2396.24 Crores**. This covers all components of compensation, assistance and entitlements. The broad break up of R & R budget is given below in **Table 7.19**. The budget is based on assessment conducted by the consultant on the market value of land through interviewing Patwaries (Local Revenue Officer) and PAPs:

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

Table 7.19: Estimated budget for R&R Activities

Sl. No.	Particulars	Unit	Quantity	Rate per unit (per Ha)	Crores INR
1	Land Acquisition				
1.1	Compensation for private land (1,641.441*Hact.) Annexure-1	Hact.	1,641.441*	33,00,000	541.68
1.2	Multiplier Factor 2 -times Rural				1083.4
1.3	Solatum 100%				1083.4
					2166.8
	Total land Acquisition Cost				
2	Replacement of Structures				
2.1	Residential area (0.248 Ha)	Ha	204	30,00,000	0.074
2.2	Commercial Area (1.52 Ha)	Ha	158	30,50,000	0.463
2.3	Tube well House(0.036Ha)	Ha	8	29,00,000	0.010
2.4	Relocation Grant for Large temples @INR 700000 (Lump sum)	No.	10	700000	0.7
2.5	Relocation of Water tank @ 100000	No.	19	200000	0.19
2.6	Relocation of Wells @ 100000	No.	179	100000	1.79
	Total Cost for Replacement of Structures				
					3.22
3	C. Assistance for PAFs				
3.1	Resettlement Allowance	Family	370	50000	1.85
3.2	Assistance Allowance	Family	370	36000	1.33
3.3	Financial Assistance	Family	370	50000	1.85
3.4	Shifting Allowance	Family	370	50000	1.85
	Total cost for Assistance to PAFs				
					6.88
4	R&R Implementation cost				
4.1	NGO-Services Charge Lump Sum			Lump Sum	0.5
4.2	Administrative cost Lump Sum			Lump Sum	0.5
4.3	M&E Consultant Lump sum			Lump Sum	0.5
	Total Cost for Construction Stage				
					1.5
	Total Cost				
					2178.4
	Contingency (10% of the total cost)				
					217.84
	Grand Total				
					2396.24

* The 3D of Jalore district is not finished yet, it is under process



7.11 CONCLUSION

The report on social impact assessment has primarily tried to focus on the relevant legislations, potential impacts due to the proposed project and to propose mitigation measures at different phases of the project. Based on the findings during the study some measures have to be considered from the inception of the project, which will reduce the detrimental effects of project appreciably.

- The Greenfield project has been explored in order to find a suitable alignment that has minimum adverse impact on social aspects.
- The alignment for widening has been designed considering minimum land acquisition.
- The proposed project expressway tried to avoid schools, places of worships, public utilities and other common resources.
- An amicable solution with regard to shifting of religious structures (if required) shall be explored in consultation with community leaders, religious leaders and other prominent persons in the local area during implementation.
- It will be ensured that the likely affected common properties used by local people are suitably rehabilitated before the start of civil construction work and budgetary provision for the same has been made in the project estimates.

With the above approach to design, construction and operation the project will be socially feasible.

7.12 ROAD SIDE SAFETY MEASURES

Indian Road Congress (IRC) codes will be followed in proposing and designing road safety features. Pavement markings will be done for traffic lane line, edge lines and hatching. The marking will be with hot applied thermoplastics materials. The pavement markings will be reinforced with raised RR pavement markers and will be provided for median and shoulder edge longitudinal lines and hatch markings. Highway lightings including high masts will be provided at intersections in order to improve the night time visibility.

All the urban locations as well grade separated structure locations will be provided lighting arrangements

CHAPTER -8

(PROJECT BENEFITS)



CHAPTER-8: PROJECT BENEFITS

8.1 INTRODUCTION

The Ministry of Road Transport and Highways (MoRTH) / National Highways Authority of India (NHAI) have decided to develop new national highways with access control, Inter Corridors and Feeder Routes to improve the efficiency of freight movement in India under Bharatmala Pariyojana. The proposed highway is planned to connect Amritsar and Jamnagar passing through four states i.e. Punjab, Haryana, Rajasthan and Gujarat.

The proposed access controlled expressway project with new alignment has been envisaged through an area which shall have the advantage of simultaneous development as well as shall result in a shorter distance to travel. The junctions with existing road will be planned in the form of interchanges and flyover to ensure uninterrupted flow of traffic.

The proposed project would act as the prime artery for the economic flow to this region. It will enhance economic development, provide employment opportunities to locals, strengthen tourist development, ensure road safety and provide better transportation facilities and other facilities such as way side amenities. Vehicle operating cost will also be reduced due to improved road quality. The compensatory plantation and road side plantation shall further improve the air quality of the region.

8.2 ENVIRONMENTAL BENEFITS FROM THE PROJECT

The environmental benefits from the proposed project have been described below:

- Better level of service in terms of improved riding quality and smooth traffic flow.
- Faster transportation will ultimately lead to massive savings in the form of reduced wear and tear of vehicles, reduced vehicle operating costs (VOCs) and total reduction in transportation costs etc.
- With the improvement of road surface, the traffic congestion due to obstructed movement of vehicles will be minimized and thus wastage of fuel emissions from the vehicles will be reduced.
- Increased road landscaping and safety features.
- Plantation of tree all along the proposed expressway will improve the tree density along the RoW which will improve aesthetics as well as trees will act as a pollution absorber.
- The compensatory plantation and road side plantation shall further improve the air quality of the region.
- Overall Environment improvement of the region.



8.3 SOCIO-ECONOMIC BENEFIT OF THE PROJECT

The socio economic benefits from the proposed project have been described below:

- The proposed project would act as the prime artery for the economic flow to this region.
- Enhanced connectivity between rural & urban population which will benefit the all sections of the society like general population, small-medium-large scale industries, farmers, businessmen etc.
- Improved access to higher education facilities & modern health facilities.
- Strengthening of both rural & urban economies which in turn will improve economic scenario of the state and country.
- Faster transportation will strengthen tourist development in the area.
- Improved road connectivity helps in better implementation and management of government schemes.
- With improvement in economy, more generation of employment opportunities.

8.4 OTHER TANGIBLE BENEFITS

- Enhanced connectivity between rural & urban population which will benefit the all sections of the society like general population, small-medium-large scale industries, farmers, businessmen etc.
- Improved access to higher education facilities & modern health facilities.
- Strengthening of both rural & urban economies which in turn will improve economic scenario of the state and country.
- Improved road connectivity helps in better implementation and management of government schemes.
- With improvement in economy, more generation of employment opportunities.

8.5 ROAD SAFETY

The construction of green alignment of Dhadhaniya Sasan to Rajasthan-Gujarat Border near Sanchoe will ensure smooth flow of the traffic. Installation of proper road safety system through signage, barricades, and crash barriers will add to be safety to the traffic. Bus bays, lay byes, rest areas, underpasses, service roads are proposed in the project, which shall enhance the road safety.



8.6 REDUCTION IN VEHICLE OPERATING COST

Vehicle Operating Cost (VOC) will be reduced when the expressway is constructed. Fuel consumption, wear and tear of tyres, suspension will be benefited when a geometric of the road is improved. VOC consist of the following components.

- Fuel consumption
- Lubricating oil consumption
- Spare part consumption
- Tyre consumption
- Vehicle depreciation

8.7 INDIRECT BENEFITS

In addition to the direct benefits, there are number of indirect benefit attributed to Highway project. Lowering transportation cost for users and improving access to goods and services enables new and increased economic and social activity.

The indirect benefits include changes in land use and development, changes in decision on residential area or colonies where land are less expensive or more desirable, changes in development of business in order to take advantage of improved speed and reliability in the transportation system. These benefits hence lead to increase property values, increased productivity, employment and economic growth.

The indirect benefit of the proposed expressway would work through the dynamic developmental externalities generated through the forward and backward linkages. A better connectivity between Jodhpur, Barmer and Jalore will increase the business, which will reflect in the changes in the pattern of economic activities, income generation, price evolution, and employment condition. There will be also increase in greater accessibility to market, health and educational facilities

CHAPTER -9
(ENVIRONMENTAL
MANAGEMENT PLAN (EMP))



CHAPTER-9: ENVIRONMENTAL MANAGEMENT PLAN (EMP)

9.1 INTRODUCTION

Some additional measures needed to improve the environment are proposed to be undertaken during the project implementation. Such measures are known as environmental enhancements. These relate to improvement of natural, physical and aesthetic environment of roadside. The 'enhancement measures', in fact, differ from 'mitigation measures'. While the former aims at improving the already degraded or mundane ambience, the latter intends to reduce the negative impacts due to the project.

The objective of these measures include: -

- To enhance the appeal of the proposed project,
- To improve the environmental quality, and
- To generate goodwill amongst local community

To achieve these objectives, some suggested measures include:

1. Enhancement of roadside facilities (bus stops, rest areas, etc.)
2. Improvement of aesthetic qualities along the proposed expressway.
3. Improvement of the local natural resources for local population.
4. Enhancement of cultural properties and access to them.
5. Management of some existing problems.

9.2 ENHANCEMENT OF NATURAL ENVIRONMENT

The natural environment can be improved by plantation of ornamental and shade providing avenue trees on the roadside, the shrubs and some important herbs besides developing ponds and providing bore wells along the roadside.

9.2.1 Plantation of Trees, Shrubs and Herbs along the proposed Expressway

The plantation of trees can be done in different densities depending on:

- Habitat and soil type
- Water table depth
- Availability of indigenous species
- Survival rate of plants and
- People's choice

The physical growth characteristics like the form and shape of canopy types, branching patterns, growth rate, colour of flowers, foliage and root characteristics were also the major criteria in the selection of plantation type and densities.

Since the natural forests of desired density are lacking in the region, the ecological importance of the roadside plantation becomes increasingly significant. But, what kind of tree species should be selected for such plantation has been a debated issue. The acute shortage of forest



products provided support to the view point that the strip plantation along the expressway should be managed primarily to meet the requirement of the local people and industries for various forest products. However the consideration of comfort to travelers was given the top priority.

9.2.2 Enhancement of Water Bodies

There are number of surface water bodies crossing the project corridor. In order to make these water bodies more accessible and enhance the waterfront landscape following measures has been suggested.

The water bodies are used for various purposes including bathing, washing, fishing, growing water-fruits, livestock drinking and often irrigating the agricultural fields. The landscape treatment includes

- Provision of stepped access to the edge of water
- Providing flat boulders for washing
- Stone pitching for slope stabilization towards roadside
- Plantation of trees and shrubs for stabilization of pond edge

9.3 CONSERVATION STATUS AND BIODIVERSITY MANAGEMENT

The project area does not pass through any protected/reserve forest or wildlife sanctuaries. The natural resource management cannot be successful without the participation of all the stakeholders utilizing the resource. So during the field visit to the project area, concerted attempts were made to consult and listen the stakeholders, such as some visitors and local inhabitants of area and Intersection sites to understand their perception, concern and knowledge. The analysis of flora and fauna of the project area indicates that there is no endangered species in the study area.

9.3.1 THREATS TO BIODIVERSITY IN THE PROJECT SITE

The major threats are enumerated as follows:

- Fragmentation and gradual shrinkage of wildlife habitat due to expansion of agriculture and economic development activities
- Existence of altered habitats in patches or in continuity, such as, gregarious growth of *Prosopis juliflora* and further spread on account of changed environment due to climate change and anthropogenic activities
- Gradual increase in human and livestock population
- Limited waterholes
- Lack of herbaceous fodder during summer on account of nearly zero rainfall
- Unusual soil erosion on the fringes of Park and around wetlands
- Human and livestock activities, such as, burning, open grazing and seasonal flooding in the low-lying areas
- Exposure to diseases in case of wildlife (least at present) due to exposure to domestic cattle



- Damage to Demoiselle crane breeding sites existing near habitation due to competing utilization of wetland and marsh resources by the human beings

9.4 PHYSICAL ENVIRONMENT

9.4.1 Construction of Bus Stops

Bus stops will be constructed for providing comfort to travelers. Following improvement in design of bus stops are suggested:

- Provision of bus bays to prevent the bus from stopping in the carriageway
- Provision of covered, semi-covered and open spaces with seating areas
- Plantation of shade trees to improve the microclimate
- The bus stop should be aesthetically pleasing
- Provision of adequate right distances

9.4.2 Developing Truck Stoppage Complex

In view of the heavy truck parking activities in midsections, truck stoppage sites/ truck lay byes are suggested at the appropriate locations along the highway.

The requirements of truck stoppage complexes are:

- Acquisition of land for developing the complex
- Each complex should have some shops covering the repair shops, medicine shops, restaurants, and recreation
- The location of petrol pumps should be close to such complexes
- Ornamental and shade trees and shrubs to be planted in order to develop the area aesthetically.

9.4.3 Enhancement of Major Road Intersections

The road intersections are the main nodal spaces along the corridor. Proper landscaping of these areas by flowering trees and shrubs will improve the area aesthetically.

9.4.4 Enhancement of Cultural Properties

The cultural properties should be viewed as assets contributing towards meaningful and pleasurable traveling experience. These are the sites of community and individual sentiments. The landscape and design improvements include:

- Providing and improving access to cultural properties.
- The precincts of such properties should be defined or redefined.
- Provision of parking should be made to avoid haphazard parking activities.
- Seating space and rest areas around the cultural properties to be developed.
- Plantation of trees and shrubs for shade and aesthetics.



9.4.5 Enhancement of Quarries and Borrow Areas

The following enhancement measures will be undertaken for quarries:-

Construction Stage

Development of site: To minimize the adverse impact during excavation of material following measures are need to be undertaken:

- i) Adequate drainage system shall be provided to prevent the flooding of the excavated area
- ii) At the stockpiling locations, the Contractor shall construct sediment barriers to prevent the erosion of excavated material due to runoff
- iii) Construction of offices, laboratory, workshop and rest places shall be done in the up-wind of the plant to minimize the adverse impact due to dust and noise.
- iv) The access road to the plant shall be constructed taking into consideration the location of units and also slope of the ground to regulate the vehicle movement within the plant.
- v) Incase of storage of blasting material, all precautions shall be taken as per The Explosive Rules, 1983.

Quarry Operations Including Safety

- i) Overburden shall be removed and disposed on designated site
- ii) During excavation, slopes shall be flatter than 20 degrees to prevent their sliding. Incases where quarry strata are good and where chances of sliding are less this restriction can be ignored.
- iii) Incase of blasting, procedure and safety measures shall be taken as per The Explosive Rules, 1983.
- iv) The contractor shall ensure that all workers related safety measures shall be done as per guidelines for Workers and Safety.
- v) The Contractor shall ensure maintenance of crushers regularly as per manufacturer's recommendation.

Topsoil will be excavated and preserved during transportation of the material. Measures shall be taken to minimize the generation of dust and prevent accidents.

Borrow Areas Management

Borrow areas will be finalized either form the list of locations recommended during EIA stage or new areas identified by contractor. The finalization of locations identified during EIA identified and may be finalized by contractor depends upon the formal agreement between landowners and contractor and its suitability from civil engineering as well as environmental consideration. Meeting the guidelines/notifications as stipulated from time to time by the Ministry of Environment, Forest and Climate Change, Government of India, and local bodies, as applicable shall be the sole responsibility of the contractor.

Besides this certain precautions have to be taken to restrict unauthorized borrowing by the contractor. No borrow area shall be opened without permission of the Engineer/EO. The engineer in addition to the established practices, rules and regulation will also consider following criteria before approving the Borrow areas.



To avoid any embankment slippage, the borrow areas will not be dug continuously, and the size and shape of borrow pits will be decided by the Engineer. Redevelopment of the borrow areas to mitigate the impacts will be the responsibility of the contractor. The contractor shall evolve site-specific redevelopment plans for each borrow area location, which shall be implemented after the approval of the Supervision Consultant.

To ensure that the spills, which might result from the transport of borrow and quarry materials do not impact the settlements, it will be ensured that the excavation and carrying of earth will be done during day-time only. The unpaved surfaces used for the haulage of borrow materials will be maintained properly.

Borrowing of earth shall be carried out at locations recommended as follows:

Non-Cultivable Lands: Borrowing of earth will be carried out upto a depth of 2.0 m from the existing ground level. Borrowing of earth shall not be done continuously. Ridges of not less than 8m width shall be left at intervals not exceeding 300 m. Small drains shall be cut through the ridges, if necessary, to facilitate drainage. Borrow pits shall have slopes not steeper than 1 vertical in 4 horizontal.

Productive Lands: Borrowing of earth shall be avoided on productive lands. However, in the event of borrowing from productive lands, under circumstances as described above, topsoil shall be preserved in stockpiles. The conservation of topsoil shall be carried out as described in section of this chapter. At such locations, the depth of borrow pits shall not exceed 45 cm and it may be dug out to a depth of not more than 30 cm after stripping the 15 cm top soil aside.

Elevated Lands: At locations where private owners desire their fields to be leveled, the borrowing shall be done to a depth of not more than 2 m or up to the level of surrounding fields.

Borrow pits along Roadside: Borrow pits shall be located 5m away from the toe of the embankment. Depth of the pit should be such that the bottom of the pit shall not fall within an imaginary line of slope 1 vertical to 4 horizontal projected from the edge of the final section of the bank. Borrow pits should not be dug continuously. Ridges of not less than 8 m width should be left at intervals not exceeding 300 m. Small drains should be cut through the ridges to facilitate drainage.

Borrow pits on the riverside: The borrow pit should be located not less than 15m from the toe of the bank, distance depending on the magnitude and duration of flood to be withstood.

Community / Private Ponds: Borrowing can be carried out at locations, where the private owners (or in some cases, the community) desire to develop lands (mostly low-lying areas) for pisciculture purposes and for use as fishponds.

Borrow Areas near Settlements: Borrow pit location shall be located at least 1.0 km from villages and settlements. If unavoidable, they should not be dug for more than 30 cm and should be drained.

After identification of borrow areas based on guidelines. Contractor will fill reporting format as under and submit the same for approval to the "Engineer" Once approved the contractor will adhere to the recommendation for borrow area to the satisfaction of Engineer.



- (1) In no case the depth of borrow area should exceed 2m from the existing ground level.
- (2) Borrow pits slope should be maintained, no steeper than 1 Vertical: 2 Horizontal.
- (3) Water pooling to be avoided/managed so that NO disease spread due to water stagnation.
- (4) Precautionary measures as the covering of vehicles will be taken to avoid spillage during transportation of borrow area.
- (5) The unpaved surfaces used for the haulage of borrow materials should be maintained properly for dust suppression.
- (6) Haulage of material to embankments or other areas of fill shall proceed only when sufficient spreading and compaction facility is operating at the place of deposition, to minimize dust pollution.
- (7) During rains appropriate measures to be taken to minimize soil erosion, silt fencing to be provided as directed by Engineer/EO.

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

9.5 ENVIRONMENT MANAGEMENT ACTION PLAN

The Environmental Management Action Plan is the synthesis of all proposed mitigation and monitoring actions, to be implemented within a time frame with specific responsibility assigned and follow-up actions defined. It contains all the information for the project proponents, the contractors and the regulatory agency to implement the project within a specified time frame.

- The EMP is a plan of action for avoidance, mitigation and management of the negative impacts of the project. The Environmental Enhancement is also an important component of EMP.
- The EMP refers to all implementable task at different stages of project, namely,
 - i. Design Phase
 - ii. Construction Phase, and
 - iii. Operation Phase
- The EMP includes a list of all project-related activities and impacts and a clear reporting schedule.
- The EMP is divided into two broad components, (i) dealing with natural environment, and (ii) dealing with action plan for resettlement and rehabilitation (RAP). While the mitigation measures of the natural environment and their management have been incorporated in the present volume, the management of issues related with resettlement and rehabilitation of human communities has been provided in Resettlement Action Plan.

The EMP has been presented in the **Table-9.1**.

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchole (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

Table 9.1: Environmental Management Action Plan

Environmental Issue/Component	Impact Description	Remedial Measure
PRE-CONSTRUCTION/DESIGN PHASE		
1. ALIGNMENT		
Constricted sections / settlements	- The local traffic will mix up with fast moving vehicles leading to accidents - Communities on two sides in market are unable to cross the road easily - Loss of property & income source - Increased traffic	- Erecting the service lanes - Developing underpasses in markets - Developing resettlement sites - Modify designs to save settlements, trees and other environmental Components - Construction of wide Road
2. LAND		
Embankment slopes	Some degree of soil erosion on newly constructed embankment	Turfing of the slopes to check soil erosion with grasses, etc.
Borrow areas	Soil and land use will be changed	- Borrow pits shall not be dug continuously. The location, shape and size of the designated borrow areas shall be as approved by the Engineer. No borrow area shall be opened without permission of the engineer. - If borrow pits along the expressway is permitted by the Engineer, these shall not be dug continuously and shall confirm to MORTH specifications. - Borrow pits shall be redeveloped as per MoEF&CC guidelines. Spoils shall be dumped with an overlay of stockpiled topsoil in accordance with compliance requirements with respect to MoEF&CC guidelines.
3. WATER		
Water source	No appreciable impact on underground	Relocation of water sources like wells and hand pumps

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

Environmental Issue/Component	Impact Description	Remedial Measure
	water sources • No loss of surface water bodies or canals	
Drainage	• No significant impact as sufficient no. of CD works are available	• Raising the road level • Provision for drainage on the side of expressway
4. FLORA AND FAUNA		
Protected forest	• Removal of approx. 5909 no of trees	• Loss of trees will be managed through compensatory afforestation and roadside plantation.
Wildlife	• Loss of Habitat and Defragmentation	• Plantation will be done along the proposed expressway to compensate the loss of vegetation • The strips of vegetation will be planted on either side of the linear clearing to provide attractive corridors for animals movement.
	• Degradation of Habitat Quality	• Precautions will be taken to avoid leakage of chemicals, any hazardous materials due to construction activities. • Labour camps will be located far from habitat of any fauna • Invasive alien species will be removed from time to time
	• Noise Induced physiological and behavioral Changes	• Dense vegetation along the road side may be provided for attenuation of noise. • Silence zone will be marked and provided with sign boards to alert drivers • Noise buffers using diversity of tree species, with a range of foliage shapes and sizes, combination of shrubs and trees and evergreen species will be provided. • Noise wall will be provided
	• Impacts of Headlights Glare on Wildlife	• Hedges along both sides of expressway will be provided to lower the intensity of lights

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchole (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

Environmental Issue/Component	Impact Description	Remedial Measure
	• Avoidance of Road by Animals • To avoid Injury and Mortality of animals	• Animal underpasses are proposed to be constructed for animals to cross the expressway. • Different types of underpasses like Box culverts, pipe culverts, and culverts with furniture will be constructed for passage of herpetofauna, amphibians etc. • Fences will be provided in combination with underpasses to direct animals away from the expressway. • Vegetation or other habitat features (rocks, fallen timber) will be placed, planted or allowed to regrow so that animals are directed to preferred crossing locations. • The plantation and lighting systems along the expressway should be made less attractive to birds to avoid collision of birds with vehicles.
	• Reduce access to saltlicks and waterholes	• Creation or improvement of water bodies will be done so that the animals have access to water. • Plantation along the water body will be done to attract the animals towards it. • The saltlicks areas will be protected from reach of human beings.
	• Discontinuity of Canopy	• The width of the linear clearing may be kept small in the area having dense canopy to maintain the continuity above the clearing.
	• Disruption of Processes that maintain regional wildlife populations	• The breeding sites of animals/amphibians, nesting sites of birds, thermoregulation surface sites of snakes will be avoided for any type of construction. • Construction/modification of ponds will be done to provide breeding sites to amphibians. • The construction of strips of surfaces (next to road where high mortality of snakes are reported) that may attract snakes for

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchole (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

Environmental Issue/Component	Impact Description	Remedial Measure
		thermoregulation will be done.
	Increased Human Pressure and Human-Wildlife Conflict	- Caution signs will be provided to alert drivers about wildlife - Parking shall be restricted to avoid any encounter of humans with animals. - Temporary warning signs may be provided to warn drivers during specific time like breeding periods of animals or animal movement. - Animal Detection Systems may be provided for detection of any animal near the expressway. - Poachers will be warned through sign boards
Private plantation	Loss of trees leading to increase in air and noise pollution; the loss of ecological and economic activities	Trees will be removed as per design with prior approval
5. ENVIRONMENTAL QUALITY		
Air quality	There will be slight increase in the pollution level of the air in a few places	- Construction of the expressway will allow optimum speed of fast moving vehicles - Tree plantation scheme will be implemented
Noise level	The noise level might be increased slightly in area due to machinery activities	- Construction of the expressway will allow optimum speed of fast moving vehicles - Tree plantation scheme will be implemented
6. UTILITIES		
Relocation of utility lines/community utilities	- Short time negative impact during transitory phase of shifting of utility lines - No impact on shifting wells, hand-pumps etc.	- All utilities to be relocated with prior approval of the concerned agencies - All community utilities such as sources of water to be relocated to suitable places
7. CULTURAL HERITAGE		

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchole (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

Environmental Issue/Component	Impact Description	Remedial Measure
Relocation of cultural properties	Most of the temples being small the issue is not a sensitive one	- Community meetings to be held before relocation or shifting - Provision of enhancement of religious structures, and access road
8. ENVIRONMENTAL SAFETY		
Accidents	- Moving of fast moving & slow moving vehicles in market places will enhance chances of accidents - Poor visibility causes more accidents	- Segregating the slow moving traffic in the market places by developing the service lanes - Provision of wider median in rural stretches and plantation of shrubs/under trees in it to avoid the gear of vehicles moving in opposite direction - Signals to be erected to reduce speed - Proper light arrangement to be made
CONSTRUCTION PHASE		
1. SOIL		
Soil Erosion	- Removal and cleaning of tree line, herbaceous and shrubby covers from embankment will increase soil erosion - Excavations of borrow pits will increase soil erosion	- Turfing of road embankment slopes with herbs, shrubs and grasses - In borrow pits, the depth of the pit should be regulated so that the sides of the excavation will have a slope not steeper than 1 vertical to 4 horizontal from the edge of the final section of bank - The device for checking soil erosion include the formulation of sediment basins, slope drains etc. Such works and maintenance thereof will be deemed as accidental to the earthwork - Cutting of trees in phases
Loss of top soil	The loss of top soil is considerable as the proposed alignment is passing through agricultural field.	- The borrow pit areas could be developed into ponds for fisheries - Land taken for borrow area should be infertile
Compaction of soil	The excavations in borrow areas may lead to marginal loosening of soil	It should be ensured that the stability of excavation of fills is maintained

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchole (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

Environmental Issue/Component	Impact Description	Remedial Measure
	The compaction of soil may not be affected largely	- Construction vehicles, machinery and equipment shall move, or be stationed in the designated area - If operating from temporarily hired land, it will be ensured that the topsoil for agriculture remains preserved & not destroyed by storage, material handling or any other construction related activities - The topsoil from all areas of cutting and all areas to be permanently covered shall be stripped to a specified depth of 150 mm and stored in stockpiles of height not exceeding 2 m - Cut and fill should be equalized as per design - Earth, if required, should be dumped in selected & approved area by the engineers.
Borrowing of earth	Large quantities of earth is needed for raising the level of road, its expansion and embankment	- No earth should be borrowed from within the ROW - If new borrow areas are selected, there should be no loss of productive soil, and environmental considerations are met with - If vehicles are passing through some villages, the excavation and carrying of earth will be done during day time only - The borrow areas should not be dug continuously, and the size and shape of borrow pits to be decided by the engineer - Borrow pits should be redeveloped by dumping of spoils; by creating a pond for fisheries, etc. or by leveling an elevated, raised earth mounds.
Contamination of soil from fuel and lubricants	- The impact will be negligible since the chemical nature of the soil will not change much - Negligible impact on the growth of	- Vehicles and machines are maintained and refilled in such a fashion that diesel spillage does not contaminate the soil - Fuel storage and refilling sites should be kept away from cross drainage structure and important water bodies

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchole (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

Environmental Issue/Component	Impact Description	Remedial Measure
	vegetation	spoils shall be disposed off as desired and the site shall be fully cleaned before handing over
Contamination of soil from construction wastes	- The impact will be marginal on the soil quality - The growth of vegetation will be partially disturbed	- The construction wastes should be dumped in selected pits, developed on infertile land - Follow the norms of SPCB - Borrow pits to be filled by such wastes
2. WATER		
Water bodies	Effect on surface water.	- Any source of water for the community such as ponds, wells, tube-wells etc. lost incidentally shall be replaced immediately - All desired measures will be taken to prevent temporary or permanent flooding
Other water sources	- The lost sources of water like wells and tube-wells are going to affect the community adversely - Loss of source of irrigation	- Any source of water for the community such as ponds, wells, tube-wells etc. lost incidentally shall be replaced immediately - All desired measures will be taken to prevent temporary or permanent flooding
Drainage and run-off water	The flow of run off water will not be affected largely, excepting certain stretches where the drainage problem already exist	- At cross drainage channels, etc. the earth, stone or any other construction material should be properly disposed of so as not to block the flow of water - All necessary precaution shall be taken to construct temporary or permanent device to prevent water pollution (due to increased situation and turbidity)
Contamination of water from construction waste	- The construction wastes may increase the suspended matter and clay in stagnant water bodies - There will be very little increase in toxicity	- Construction work close to the streams or other water bodies shall be avoided, especially during monsoon period - All waste arising from the project is to be disposed of, as per norms of SPCB

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchore (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

Environmental Issue/Component	Impact Description	Remedial Measure
	The community dependent on such water used for purposes other than drinking may be affected	Waste products must be collected., stored and taken to approved disposal site
Contamination of water from fuel and lubricants	- The fuel and lubricants may affect the both component of water bodies - The community may be slightly affected	- The slopes of embankment landing to water bodies should be modified and re-channelized so that contaminant may not enter the water body - To avoid contamination from fuel and lubricants, the vehicles and equipment shall be properly maintained and refilled
Sanitation and waste disposal in construction camps	- The absence of sanitation may lead to many human diseases which are mostly water-borne - No communicable diseases are going to be spread	- The construction laborers camp shall be located away from the densely habitation areas. - The sewage system for such camps shall be properly designed and built so that no water pollution takes place to any water-body or water course - The workplace shall have proper medical approval by local medical health or municipal authorities
Use of water for construction	- The use of water from sources, already in use by local community may cause scarcity of water for community - The easy availability of surface water will not affect the communities	- Arrangement for supply and storage of water will be made by the contractor in such a way so that the water availability and supply to nearby communities remain unaffected. If a new tube-well is to be bored, proper sanction and approval by Underground Water Department is needed - The wastage of water during the construction should be minimized
3. AIR		
Emission from construction vehicles and machinery	- Effect on human health - Dust settled on leaves may reduce growth rate of the plants	All vehicles, equipment and machinery used for construction shall be regularly maintained to ensure that the pollution emissions levels are as per norms of SPCB

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchole (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

Environmental Issue/Component	Impact Description	Remedial Measure
	Crowded market places and construction sites will have higher degree of emission	- Monitoring of suspended particulate matter to be conducted at least once a month at the sites where crushers are used - The human settlements should be at least 500 m downward wind direction of asphalt mixing plant
Dust and its treatment	- The impact of dust at construction sites is rather adverse, but localized in nature - No serious health problem is likely to be caused	- Precautions to reduce the level of dust emissions from the hot mix plants shall be taken. - The hot-mix plants should be located at least 500 m from the nearest habitation. They should be fitted with dust extraction unit - Water should be sprayed in the line and earth mixing sites, asphalt mixing site and service roads. In filling subgrade, water spraying is needed to solidify the material. After the impacting, water should be sprayed regularly to prevent dust - Vehicles delivering material should be covered
4. NOISE LEVELS		
Noise from vehicles, asphalt plants and equipments	- The activities of using heavy machinery and equipments are localized and intermittent - No serious impact on human health like loss of hearing ability though some sleep disorders may result	- The parts and equipments used in construction shall strictly confirm to CPCB noise standards - Vehicles and equipments used should be fitted with silencer - Noise standards or industrial enterprises will be strictly enforced to construction workers from damage - In construction sites with 150 m where, there are human settlements, noisy construction should be stopped between 10:00 pm and 8:00 am - Noise to be monitored at construction sites
5. BIOLOGICAL ENVIRONMENT		
Loss of damage to	The loss of trees, shrubs and herbal cover	Areas of tree plantation cleared will be replaced according to

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchole (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

Environmental Issue/Component	Impact Description	Remedial Measure
vegetation	- may lead to higher degree of soil erosion - The loss of shade and other benefits due to loss of trees - The air quality may decline - There will be no loss or damage to hydrophytes	- Compensatory Afforestation Policy under Forest Conservation Act-1980 - Trees should be removed in phases
Compaction of vegetation	- The effect on compaction will not be much severe - There will be no loss of biodiversity	- The removal of vegetation is confined along the proposed project. - Replantation of tree species along ROW - Plantation of shrubs and under trees in the median
Loss, damage or disruption to fauna	There will be no loss, damage or disruption to fauna	- Construction workers should be educated not to disrupt or damage any fauna - Hunting is strictly prohibited
6. OTHERS ISSUES		
Accident risk from construction activities	The type of accidental risks may be due to ill-maintained machines and vehicles, due to poor light conditions at the work place, or due to carelessness and poor management of the work involved	- To ensure safe construction in the temporary accesses during construction, lighting devices and safety signal devices shall be installed. Traffic rules and regulations to be strictly followed - Safety of workers under various operations during construction should be ensured by providing them helmets, masks, safety goggles etc - The electrical equipment should be checked regularly to avoid risks to workers
		At every work place, a ready available first aid unit including an adequate supply of dressing materials, a mode of transport (ambulance), nursing staff and an attending doctor to be provided

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchole (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

Environmental Issue/Component	Impact Description	Remedial Measure
		Lighting device and signals at workplace to be installed
Health issues	- The unhygienic conditions at work place of construction workers - The non-availability of potable water	- At every workplace, the potable, and sufficient water supply shall be maintained to avoid waterborne diseases and securing the health of workers - Adequate drainage, sanitation and waste disposal to be provided at workplace - Medical care to be provided to workers in case of medical requirements
Damage or loss of cultural properties	- No existence of archaeological sites in proposed alignment - No monument exists in the corridor	- Relocation of cultural properties to be done after consultation - All necessary and adequate care should be taken to minimize the impact on cultural properties - If valuable or invaluable articles such as fabrics, coins, artifacts, structures or other geographic or archaeological rare discovered, the excavation should be stopped and archaeology department to be contacted - Archaeologist will supervise the excavation to avoid any damage to the relics
Roadside landscape development	- The positive impact will be on bio-aesthetics and beauty - Landscaping and beautification of ponds, and access roads will improve aesthetic considerations	Avenue plantation of foliage, shade trees mixed with flowering trees, scented plants to be done
Roadside amenities	People will be largely benefitted by the comfort and use, provided by these amenities	- Construction of new / improvement of existing bus shelters, bus bays and truck stoppage sites - Footpaths, railings, traffic signs, Underpasses, speed zone, signs

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchore (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

Environmental Issue/Component	Impact Description	Remedial Measure
		etc. shall be provided
Cultural properties	The enhancement of cultural properties will bring harmony, goodwill and coherence amongst communities	Enhancement of all cultural properties and access road shall be completed as per design
Contamination from spills due to traffic and accidents	The chances of accidents are likely to be reduced with improved quality of the road. The contamination of soil and water due to spills will be minor	Cleaning of the spills at the accidental site by a workforce provided by state PWD The left over spill may be scrapped to a small nearby pit with ROW
Dust generation	Though dust is a common feature of tropical climate, yet the situation will be improved by developing vegetation cover	- Roadside tree plantation to be provided - New sites (for example, gram panchayat land etc) near the road to be discovered for afforestation
Air pollution	The degree of air pollution is likely to be on a lower scale with improvement in road surface	- Vehicular emissions of SPM, RSPM, CO, SO₂, NO_x to be checked - Roadside tree plantation to be done and maintained - Atmospheric pollution to be managed and monitored - Public awareness programme to be launched
Water	- Due to construction of expressway as per design, the water logging during monsoon will not take place - Proper drainage will be provided for better water flow	- The drainage system should be periodically cleared - Public awareness programmes to be launched for maintaining clean drinking water
Flora and Fauna (key stone species)	The loss of trees, shrubs and herbs will not affect the keystone species and bio-diversity	- The afforestation scheme, containing keystone species should be strictly implemented - Improvement of density of vegetation by planting such species
Accidents involving hazardous materials	The chances of such accidents will minimum, yet not unavoidable	The rules as defined in Environmental (Protection) Act, 1986 should be compiled

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchole (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

Environmental Issue/Component	Impact Description	Remedial Measure
		• For delivery of hazardous substances, concerned license need to be taken • Vehicles delivering hazardous substances will be printed with unified signs • Public security, transportation and the firefighting departments will designate a special route for these vehicles • The project hazardous substances will be administrated by highway management department registration system • In case of spillage, the report to relevant department to be provided and instructions to be followed
Traffic & Road Safety	• The chances of accidents will be less due to construction of expressway as compared to small width road	• Traffic management plan to be developed, especially in congested locations • Traffic control measures including speed limits to be enforced strictly • Growth of encroachment and squatting on ROW to be discouraged • Proposing service lanes in markets and near schools • Providing proper median • Putting warning signals and signboards



9.6 GREEN BELT DEVELOPMENT PLAN

Certain species are listed in **Table 9.2** for developing green belt with the objective of pollution control, carbon sequestration and as source of food especially for birds and amenity purpose. The list is neither complete nor exhaustive. Depending upon the suitability, availability and desirability, other local species should also be considered. The work of green belt development should be taken up by the project proponents with guidance from the Forest Department of the Government of Rajasthan. Minimum 3 nos. of row, (@10 m distance) of trees on either sides of the proposed highway shall be planted and approx. 1,24,800 nos. of tree will be proposed. It is stated that the indigenous species of local economic and ecological (soil and water conservation) importance need be given priority over commercial and non- native species.

Table 9.2: Suitable plant species for green belt along the project

Sl. No.	SCIENTIFIC NAME	LOCAL/ENGLISH NAME
TREE SPECIES		
1.	<i>Acaci leucophloea</i>	Reonjha
2.	<i>Acacia nilotica (=A. indica)</i>	Babul
3.	<i>Ailanthus excels</i>	Maharukh
4.	<i>Azadirachta indica</i>	Neem
5.	<i>Dalbergia sissoo</i>	Shisham
6.	<i>Ficus religiosa</i>	Pipal
7.	<i>Tamarindus indica</i>	Imli
8.	<i>Tectona grandis</i>	Sagaun
9.	<i>Terminalia arjuna</i>	Koha
10.	<i>Zizyphus jujuba</i>	Ber
11.	<i>Zizyphus xylopara</i>	Ghot
SHRUB SPECIES		
12.	<i>Adhatoda vasica</i>	Adusa
13.	<i>Clerodendron serratum</i>	Mamri
14.	<i>Salvadora persica</i>	Meswak
15.	<i>Suaeda fruticosa</i>	-
HERB SPECIES		
16.	<i>Achyranthus aspera</i>	Latjeera
17.	<i>Acorus calamus</i>	Bach
CLIMBER SPECIES		
18.	<i>Tinospora cordifolia</i>	Giloi
GRASS SPECIES		
19.	<i>Agrostis spp.</i>	-
20.	<i>Apluda mutica</i>	Phuli
21.	<i>Bothriochloa pertusa</i>	-
22.	<i>Cenchrus ciliaris</i>	-
23.	<i>Cenchrus setigerus</i>	-
24.	<i>Chrysopogon fulvus</i>	Ghoriya
25.	<i>Cymbopogon martinii</i>	Rusa
26.	<i>Cynodon dactylon</i>	Dub



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

27.	<i>Dichanthium annulatum</i>	Kel
28.	<i>Digitaria spp.</i>	-
29.	<i>Eragrostis tenella</i>	-
30.	<i>Iseilema laxum</i>	-
31.	<i>Panicum flaccidum</i>	-
32.	<i>Sporobolus spp.</i>	-
33.	<i>Themeda triandra</i>	-

9.6.1 Plantation operations and practices for Greenbelt and open space replantation

The plantation strategy should include operations, such as, Development of seedlings/saplings of the tree and shrub species, Land/site preparation for transplanting/seeding, Transplanting, and Post-transplanting maintenance under the guidance of a field -oriented botanist or agriculture professional or field staff of the Forest Department.

(a) Development of planting material

For tree and shrub species, the seedlings and saplings could be raised in nursery in poly bags of standard size or root trainer trays. The healthy certified seed material should be used for this purpose. These materials can also be arranged on demand from the nurseries owned by Forest Department or private organizations. Healthy and disease-free planting material is pre-requisite for success of the plantation.

(b) Site preparation

This activity need be undertaken well in advance before monsoon for rainy season species and during October -November for winter species. Thorny bushes and weeds need to be removed completely from the site. It should be followed by soil and water conservation work using physical measures, such as, surface rain water harvesting, trenches, stone bunds; engineering structures, such as, small check dams; and biological devices, such as, planting of fast spreading grass and leguminous species and bushy materials.

For planting seedling/sapling, pits of appropriate size (1×1×1m for tree species, 0.5×0.5×0.5 m for shrub species) need be prepared well in advance. The top soil of 30 cm depth need be kept aside for mixing with FYM to promote microbial growth for nutrient recycling.

After digging, the pit must be kept unfilled and uncovered so that sterilization through sun rays could occur. It should follow by filling stone -free soil (3 part) and well-decomposed weed-free compost or dump manure (1 part). For improving soil fertility, neem/castor/ground cake can be used. The basal dressing of urea, ammonium phosphate, potassium sulphate or DAP could be applied in morning hours at appropriate interval.

(c) Seeding and Transplanting

This operation must be done after rain showers. In case of grass and leguminous species, direct seeding could be practiced to establish a surface cover to check soil loss and grass growth for herbivores and nesting sites for birds.

The plantation should be done in rows following 5×5 spacing both row to row and plant to plant using healthy seedling/sapling. While planting, the poly bag should be moistened first. The poly

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

bag should not be removed completely, only the bottom part of it should be removed by cutting it with a sharp blade without disturbing planting material. The planted material should be watered slowly to avoid soil disturbances.

(d) Post-planting maintenance

The transplanted material needs attentive care for complete one year at least, followed by care during stressful seasons particularly. The maintenance operations include watering, removal of weeds, prevention and control of diseases and pests using bio-pesticides preferably, and trimming, and fertilization. No specific amount could be mentioned for watering, etc., as it is selective to species, hence, based on field conditions, the maintenance activities should be done. The fertilization could be carried out at an interval of 30 days avoiding occurrence of rains. The gaps caused on account of mortality, should be filled by replanting the same species.

Above all, the development of green space must get value similar to Expressway development.

9.7 ENVIRONMENTAL MANAGEMENT PLAN BUDGET

The cost of environmental protection measures has been estimated Rs 33.8 crores as per the following details. Total cost estimate on environment for present Section has been presented in **Table 9.3.**



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

Table 9.3: Environmental Management Plan Budget

Component	Stage	Items	Estimated Rate	Total Cost (Rs)
Environmental Training	Construction	-	Lump Sum	20,00,000
Environmental Monitoring	Construction and Operation Period	Monitoring of air, water, soil, noise and Soil (Refer Table 6.2)	As per environmental monitoring plan	4,60,08,000
Air	Construction	Dust Suppression at the project site @ Rs 1500/trip x 20 trips/day x 365 days x 3 years	208 km	3,28,50000
Solid waste	Construction	Demolition wastes and bituminous scrap disposal as per C& D rules 2016	Lump Sum	20,00,000
Flora	Construction	Plantation of trees along the proposed expressway i.e 1,24,800 trees to be planted	Rs 1500/tree including tree guard	18,72,00,000
		Maintenance for the period of 3 years including causality replacement of tree	Lump Sum	50,00,000
		Ornamental Plantation on Cross Sections.	Lump Sum	30,00,000
		Shrub Plantation and grass carpeting in median	Lump Sum	30,00,000
Wildlife	Construction	Signage for wildlife	Lump Sum	4,00,000
Safety	Construction	Demarcation of borrow areas clearly, using fencing if needed.	Lump Sum	2,00,000
		Provision of Hoarding /Posters at construction camps and provision of health checks at construction sites	Lump Sum	10,00,000
		Provision for helmet, gumboots, jackets, goggles etc. to labours	Lump Sum	5,00,000
Construction Camps	Construction	Sanitary Facilities	Lump Sum	10,00,000
Rain Water Harvesting	Construction and operation	Construction of RWH Structures @ every 500 mts (Approx. 416 structures)	Rs 50,000 per structure	2,08,00,000
		Maintenance of Rain water Harvesting Structures during defect liability period	Lump Sum	20,00,000
Total				30,69,58,000
Contingency @ 10%				3,06,95,800
Total				33,76,53,800
Say				33.8 Cr

CHAPTER -10
(DISCLOSURE OF THE
CONSULTANT)



CHAPTER: 10 - DISCLOSURE OF THE CONSULTANT

10.1 INTRODUCTION TO FIRM

Enviro Infra Solutions Private Limited (EIS Pvt. Ltd.) is an environmental consultancy organisation, led by Qualified Industry and Infrastructure Experts from 2013. The company has received accreditation from Quality Council of India (NABET-QCI) as an EIA Consultancy organisation in 2016.

The aim of the company is to promote engineered and environmentally sustainable solution to address infrastructural needs with ground check on balance between Ecological niche & ongoing development of the Infrastructure and Industrial projects.

We at Enviro Infra Solutions Pvt. Ltd. are committed to provide environmental consultancy to a wide range of Environmental Services to our clients for various projects and developments in sustainable manner by: -

- Review and commitment to comply with management system being followed and continuous improvement in standard of services delivered to customers.
- Achieving optimum customer satisfaction.
- Contemplating maximum environmental protection
- Comply with the statutory requirements and continually improve the effectiveness of Quality Management System.
- Reviewing the policy for continuing suitability

The company has undertaken many EIA and other associated studies and clearances for Mining of Minerals (opencast only); River Valley Projects; Thermal Power Plants; Highways; Building and construction Projects.

The Main objects of the company are as follows: -

- **Enviro Infra Solution (EIS)** provides comprehensive and strategic services to various Industries as well as government & extends its cutting-edge services with the help of its competent staff as well as through the association with proficient companies worldwide.
- To provide **Environmental Impact Assessment** Reports for Various Infrastructure and Industrial Projects as Per MoEF&CC / World Bank / ADB / JICA And Other Financial Institutes Guidelines.
- To provide Community Survey, **Socio-Economic Studies**, Preparation of Indigenous People Plan, Public Consultation And Focus Group Discussion Studies as per World Bank, JICA and ADB Guidelines.
- To undertake **Facility Audits** of Industrial Plants for Safety/ Accreditation Guidelines
- Main consulting sectors of the company are **River Valley Projects, Highway Projects, Township and area development Projects** etc.



10.2 AREA OF EXPERTISE

Environmental Impact Assessment: We have undertaken many EIA studies and clearances for Mining of Minerals (opencast only); River Valley Projects; Thermal Power Plants; Highways; Building and construction Projects. The areas of specialisation are as follows: -

- i. Mining of Minerals
- ii. Thermal Power Plants
- iii. Highway and Railways
- iv. Building and Construction Projects
- v. Cement Plants
- vi. Port & Harbors, Break Waters and Dredging
- vii. Township and Area Development Projects
- viii. Oil & Gas Transportation Pipeline (Crude and Refinery / Petrochemical Products), Passing Through National Parks / Sanctuaries /Coral Reefs / Ecologically Sensitive Areas Including LNG Terminal
- ix. Irrigation & Hydroelectric Projects
- x. Solid and Hazardous Waste Management Site.

10.3 BRIEF RESUME OF TEAM MEMBERS: -

EIS Pvt. Ltd. comprises a group of professionals from various development fields. The core members of EIS team hold experiences in Pollution Control (Air pollution, Water pollution, SHW), Ecology and Hydrology, Economic Analysis etc. The brief resume of the Environment Coordinator and the Functional Area Experts are discussed below:

Sanjeev Sharma (FAE - AP, AQ, NP, SHW)

Mr. Sharma has more than 20 Years of National and International Experience in EIA studies. He is a QCI/NABET approved EIA coordinator in Sectors – Mining of Minerals (Opencast), River Valley, Thermal power plants, Ports & Harbors, and Highways. He has in depth understanding of environment legislations applicable in India and has also undertaken an assessment of legislative framework on the development projects. He supervises the baseline data collection in respect of soil, water & noise and vibration parameters and provides guidance to field monitoring team.

Niranjan Prakash Melkania (FAE -Ecology and Biodiversity)

Mr. Melkania has more than 30 years of experience in Ecology and Biodiversity & EIA studies and he is also QCI/NABET Functional Expert in the sector of Ecology and Biodiversity. He has Developed and Organized Management Development Programme on EIA & Environmental Auditing.

Mr. Vijay Sharma (FAE - AP, SC)

Mr. Sharma has more than 15 years of National and International Experience in EIA studies. He is QCI/NABET approved EIA coordinator in Sector - Building & construction projects and Function Area Expert (FAE) for Air Pollution Prevention Monitoring & Control and Soil



Conservation. He has established Environmental monitoring sites for air, water, soil and water, collection of Primary secondary data for EIA studies, Compliance of Environmental clearance Conditions for Various projects. He also has experience in assessment of fertility and characterization of soil and assesses the impact of pollutants on soil in large and medium size projects.

Mr. Anoop Kishore Mishra (FAE -AP,SHW, WP)

Mr. Mishra has more than 30 Years of experience in Environmental Studies, Risk Analysis & HAZOP. He is QCI /NABET approved Function Area Expert for Air Pollution, Solid Hazardous Waste, Water Pollution. He has been a **Lead auditor** for ISO 9001, ISO 14001 & OHSAS 18001. He is responsible for entire operation of the plant including Planning, Organizing, and Control of the Production, Maintenance, Quality Control, Safety Health & Environment, Liaison with govt. Bodies, Marketing Project implementation, HR & Administration, Supply Chain Management and organizing various training sessions on different topics for plant personnel's for safe & efficient operations and to enhance their performance level.

Mr. B.M. Sinha – (FAE- Geology)

Mr. Sinha has more than 30 years of National & International experience in Geology & EIA studies. He is QCI/NABET EIA Coordinator in the Sectors - Oil & Gas transportation pipelines and Offshore and Onshore Oil & Gas exploration and QCI/NABET Functional Expert in the sector of Geology. He studies the environmental aspects such as top soil preservation, waste dump management, reclamation/rehabilitation for EIA/EMP of mining projects and studies the environmental impacts on onshore exploration, exploitation of oil & Gas and post production stages including preparation of environmental management plans.

Mr. Nitin Shitole – (FAE – SE)

Mr. Shitole has more than 30 years of National & International experience in Socio Economics & EIA studies and he is QCI/NABET Functional Expert in the sector of Socio Economics. He has prepared many socio impact assessment report, R & R studies and resettlement action plan, preparation of indigenous people plans as per ADB Guidelines and also he has conducted stakeholder and community survey meetings.

10.4 QCI/ NABET ACCREDITATION CERTIFICATE

We are accredited under QCI-NABET scheme for accreditation of EIA consultants organizations vide certificate number: NABET/EIA/1619/IA 0018 and it is valid upto November,09 2019 for Mining of Minerals (Open Cast only), Offshore and onshore oil and gas exploration, development & production, River Valley Projects, Thermal Power Plants, Metallurgical Industries for both ferrous and non-ferrous only, Cement plants, Synthetic organic chemicals industry, Distilleries, Oil & gas transportation pipeline, Ports, harbours, break waters and dredging, Highways, Building and Construction projects and township and area development projects. The copy of the QCI/NABET accredited certificate has been attached as **Annexure IV**.



10.5 BRIEF ABOUT THE LABORATORY

Enviro Infra Solutions Pvt. Ltd. has entered into a MoU with Noida Testing Laboratories (NTL), a NABL and MoEF&CC accredited laboratory for carrying out measurement of various environmental parameters such as Ambient Air Quality, Noise, Water Quality of Surface and Ground water resources, Micro Metrological data collection and Soil Investigation. The copies of the NABL and MoEF&CC Certificate have been attached in **Annexure V**.

NTL is well equipped with sophisticated & versatile analytical instruments & having updated technology for various analytical applications in the field of environment. NTL provides a wide range of services including:-

- ❖ Monitoring and Analysis of Environmental Samples & Environmental Compliances Reports
- ❖ Sample Collection of Water Soil/ Sludge and Solid Waste.
- ❖ Field monitoring for ambient air, Indoor Air, stack, noise etc.
- ❖ Meteorological Monitoring.
- ❖ Water, Waste water, Ground Water, Raw Water, Drinking Water, Mineral Water, Construction Water, Boiler Water & Domestic Effluent etc. Testing as per CPCB Guidelines, EPA Act.
- ❖ Ambient & Work Zone Noise Monitoring.
- ❖ Facilities for bioassay of industrial effluents. Micro Biological analysis of water.
- ❖ Characterization of soil and its Fertility.
- ❖ Solid Waste Characterization, Identification & analysis

10.5.1 Lab Facilities

We have state-of-the-art lab facilities for carrying out the sampling, monitoring, analysis/testing and reporting in line with our quality policy. With an aim for comprehensive coverage of assessment and analysis, our testing infrastructure has wide range of instruments for testing parameters of water & soil samples, air monitoring and meteorological monitoring etc.

The classified lists of instruments used for environmental monitoring have presented below

LIST OF LAB INSTRUMENTS	
Analytical balance pH meter Conductivity meter Portable water analysis kit (for DO, pH, Temp., Conductivity Redox) Turbidity meter Water Bath Centrifuge Distillation Assembly Heating mantle Refrigerator Deep Freezer BOD Incubator Oven	Depth sampler Rotary shaker COD Digestion Apparatus Flame Photometer Fuming chamber Bottom sampler Magnetic stirrer with Hot plate Vacuum filtration pump Inoculation Hood Aquarium for bioassay & Aerator Water deionizer Water current meter Dissolved oxygen meter Global Positioning system (GPS)

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

Muffle Furnace Colorimeter AIR Respirable Dust Sampler PM ₁₀ Fine particulate samplers PM _{2.5} Carbon Monoxide Analyzer Automatic weather monitoring station Sound Level Meter	Flask shaker Flocculator Hot plate Indoor Air Sampler Stack Sampling Kit Handy Air Sampler



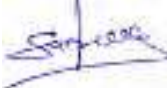
NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

10.6 DECLARATION BY EXPERTS CONTRIBUTING TO THE EIA: EIA/EMP Report for Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchore (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).

I, hereby certify that I was a part of the EIA team in the following capacity that developed the above EIA.

EIA coordinator:-

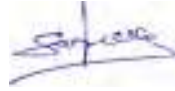
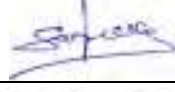
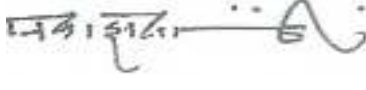
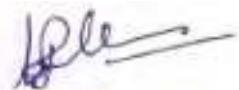
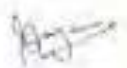
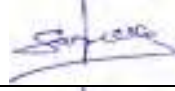
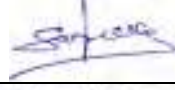
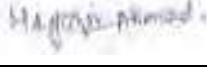
Name : Sanjeev Sharma

Signature and Date : 

Period of Involvement : April 2018 – till date

Contact Information : +91-9818922344

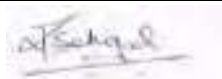
Functional area experts:

S. No.	Functional Areas	Name of the experts	Signature
1	AP	Sanjeev Sharma	
2	WP	Anoop Kishore Misra	
3	SHW	Sanjeev Sharma	
4	SE	Nitin Shitole	
5	EB	Niranjan Prakash Melkania	
6	HG	Ishan Jain	
7	GEO	B. M. Sinha	
8	SC	Vijay Sharma	
9	AQ	Sanjeev Sharma	
10	NV	Sanjeev Sharma	
11	LU	Yasir Ahmed	

Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).



NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways Government of India)

12	RH	Anoop Kishore Misra	
Functional Area Associate (FAA)			
1	AP & NV	Rishabh Sehgal	

Declaration of association in the EIA

Declaration by the Head of the accredited consultant organization/ authorized person:

I, ML Sharma, Director, hereby, confirm that the above-mentioned experts prepared the EIA/EMP report for Construction of 4/6 lane access control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) in the state of Rajasthan under Bharatmala Pariyojana (Package 7/Lot-4).). I also confirm that the consultant organization shall be fully accountable for any misleading information mentioned in this statement.



Signature :

Name : **ML Sharma**

Designation : **Director**

Name of the EIA consultant organization : **Enviro Infra Solutions Pvt. Ltd.**

NABET Certificate issued vide Letter No : **NABET/EIA/1619/IA 0018 dated
January 05, 2017**

ANNEXURE-I
(Copy OF APPROVED TOR
LETTER)

F. No. 10-51/2018-IA.III
Government of India
Ministry of Environment, Forest and Climate Change
(Impact Assessment Division)

Indira Paryavaran Bhawan,
Jor Bagh Road, Aliganj
New Delhi - 110 003

Dated: 12th, September, 2018

To

The General Manager (Environment)-II
National Highways Authority of India
G - 5 & 6, Sector - 10, Dwarka
New Delhi - 110 075.

Sub: Construction of 4/6 lane Access Control (NH 754K) length of 208.200 Km from Dhadhaniya Sasan, District Jodhpur, to near Sanchoe, Rajasthan-Gujarat Border, District Jalore, Rajasthan by M/s National Highways Authority of India (NHAI) – **Terms of Reference**

Sir,

This has reference to your letter No. 1013/1/2k/Env./550 submitting above mentioned proposal online on 10th July, 2018, for seeking Terms of Reference (TOR) as per the provisions of the Environment Impact Assessment (EIA) Notification, 2006 and subsequent amendments under the Environment (Protection) Act, 1986.

2. The proposal for 'Construction of 4/6 lane Access Control (NH 754K) length of 208.200 Km from Dhadhaniya Sasan, District Jodhpur, to near Sanchoe, Rajasthan-Gujarat Border, District Jalore, Rajasthan by M/s National Highways Authority of India (NHAI)' was considered by the Expert Appraisal Committee (EAC) for Industrial Estate/Area, SEZ and Highways projects in its 193rd meeting held on 26th July, 2018 in the Ministry of Environment, Forest and Climate Change, New Delhi.

3. During the above meetings, the project proponent, along with EIA Consultant M/s Enviro Infra Solutions Private Limited, Ghaziabad, made a presentation and provided following information to the Committee:

- (i) The proposal involves the construction of 4/6 lane Access Control National Highway No.754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchoe (District-Jalore) lies entirely in the state of Rajasthan. It Starts from NH125 at Ch.52.000 near Dhadhaniya Sasan in Jodhpur district passing through Barmer District and ends at Rajasthan-

RK

- Gujarat Border near Sanchoe in Jalore district. This is a part of Amritsar to Kandhla Corridor under Bharatmala Pariyojana. The alignment has a length of 208.200 Km.
- (ii) **Location:** Starts from NH125 at Ch.52.000 near Dhadhaniya Sasan in Jodhpur district to Rajasthan-Gujarat Border near Sanchoe, Jalore district in the state of Rajasthan. The alignment passes through two districts Barmer and Jalore.
 - (iii) **Land use of the site and around the site up to 10 km radius:** Agricultural, Barren Land, fallow, uncultivable, desert.
 - (iv) **Whether the project is in Critically Polluted area -** No.
 - (v) **Total water requirement and its source:** The Peak water requirement is 19000 KLD during construction stage and will be extracted from local surface water sources.
 - (vi) **Water bodies, diversion if any-** Alignment is crossing Sukhri & Luni rivers and five canals.
 - (vii) **Tree cutting, types, numbers, girth size etc.:** The alignment will require cutting of approximately 4164 no. of trees.
 - (viii) **Proposed RoW:** The width of RoW will be 70m in rural section.
 - (ix) **Rehabilitation involved if any:** The Project requires approx. 2100 ha land. Total 120 no. of structures are coming in the proposed RoW of the NH. The land will be acquired as per procedure laid down in Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement (RFCT LARR) Act, 2013.
 - (x) **If the project involves diversion of forest land, extend of the forest land -** Yes, the forest proposal is under preparation.
 - (xi) **Whether the project is in Critically Polluted area:** No.
 - (xii) **Waste water generation, treatment and disposal:** Not applicable.
 - (xiii) **Municipal solid waste generated disposal facility:** Not applicable.
 - (xiv) **Rain Water Harvesting:** Not applicable.
 - (xv) **National Park/ Wild Life Sanctuary in 10 km radius area and Eco-Sensitive Zone in 10 km radius area:** Not applicable.
 - (xvi) **Investment/Cost of the project:** INR. 5500 Crore (approx.).
 - (xvii) **Benefits of the project:** The Project will enhance economic development in the area through industrial growth, agricultural, and commercial development and consequent employment generation, savings in travel time and shall provide easy access to social infrastructure. The proposed road would act as the prime artery for the economic flow to this region. It will enhance economic development, provide employment opportunities to

REK

locals, strengthen tourist development, ensure road safety, and provide better transportation facilities and other facilities such as way side amenities. Vehicle operating cost will also be reduced due to improved road quality. The compensatory plantation and road side plantation shall further improve the air quality of the region.

(xviii) **Employment potential:** During the construction of the road project around 1000 persons would be employed temporarily for a period of 3 years. However due to construction of toll plazas approx. 100 persons will be employed on permanent basis. Preference will be given to local people for employment.

(xix) **If any court case pending for violation of the environmental laws:** No.

4. Based on the deliberations in the meeting and information provided by the proponent in support of the project, the EAC recommended for grant of TOR. As per the recommendation of the EAC, the Ministry of Environment, Forest and Climate Change hereby accords TOR for 'Construction of 4/6 lane Access Control (NH 754K) length of 208.200 Km from Dhadhaniya Sasan, District Jodhpur, to near Sanchoe, Rajasthan-Gujarat Border, District Jalore, Rajasthan by M/s National Highways Authority of India (NHAI)' and for preparation of EIA/EMP report with public consultations subject to compliance of all conditions as notified in the standard ToR applicable for highways and specific conditions, as mentioned below:

A. Project Specific Conditions: EAC recommended the following additional ToR to this project in addition to standard ToR:

- (i) Cumulative Impact Assessment to be carried out along the entire length of corridor including other parts of it, if any.
- (ii) Water bodies along proposed alignment needs to be surveyed for their conservation and sustainability. Each water body should be clearly identified with its size, any important and threatened species associated with it, its usage by local community along with shape file of each of water body. Impact of proposed project on these water bodies to be identified along with mitigation measures. Emphasis should be given to avoid alignment passing through/over water bodies.
- (iii) Source water availability to be ascertained for construction and domestic need. Necessary permissions to be obtained from State Authority/ CGWA, if any.
- (iv) Certificate from the Chief Wildlife Wardens of the state(s) concerned stating that no protected area/animal corridor is situated within the 10 km range of the proposed alignment.
- (v) Fund allocation for Corporate Environment Responsibility (CER) shall be made as per Ministry's O.M. No. 22-65/2017-IA.III dated 1st May, 2018 for various activities therein. The detailed report shall be submitted to this Ministry and its concerned regional office within 3 months.



B. General Conditions

- (i) A brief description of the project, project name, nature, size, its importance to the region/state and the country shall be submitted.
- (ii) In case the project involves diversion of forests land, guidelines under OM dated 20.03.2013 shall be followed and necessary action be taken accordingly.
- (iii) Details of any litigation(s) pending against the project and/or any directions or orders passed by any court of law/any statutory authority against the project to be detailed out.
- (iv) Detailed alignment plan, with details such as nature of terrain (plain, rolling, hilly), land use pattern, habitation, cropping pattern, forest area, environmentally sensitive areas, mangroves, notified industrial areas, sand dunes, sea, rivers, lakes, details of villages, teshils, districts and states, latitude and longitude for important locations falling on the alignment by employing remote sensing techniques followed by "ground truthing" and also through secondary data sources shall be submitted.
- (v) Describe various alternatives considered, procedures and criteria adopted for selection of the final alternative with reasons.
- (vi) Land use map of the study area to a scale of 1: 25,000 based on recent satellite imagery delineating the crop lands (both single and double crop), agricultural plantations, fallow lands, waste lands, water bodies, built-up areas, forest area and other surface features such as railway tracks, ports, airports, roads, and major industries etc. alongwith detailed ground survey map on 1:2000 scale showing the existing features falling within the right of way namely trees, structures including archaeological & religious, monuments etc. if any, shall be submitted.
- (vii) If the proposed route is passing through any hilly area, the measures for ensuring stability of slopes and proposed measures to control soil erosion from embankment shall be examined and submitted.
- (viii) If the proposed route involves tunneling, the details of the tunnel and locations of tunneling with geological structural fraction should be provided. In case the road passes through a flood plain of a river, the details of micro-drainage, flood passages and information on flood periodicity at least of the last 50 years in the area shall be examined and submitted.
- (ix) If the project is passing through/located within the notified ecologically sensitive zone (ESZ) around a notified National Park/Wildlife Sanctuary or in the absence of notified ESZ, within 10 km from the boundary of notified National Park/Wildlife Sanctuary, the project proponent may simultaneously apply for the clearance for the standing committee of

TRK

NBWL. The EC for such project would be subject to obtaining the clearance from the standing committee of NBWL.

- (x) Study regarding the animal bypasses/underpasses etc. across the habitation areas shall be carried out. Adequate cattle passes for the movement of agriculture material shall be provided at the stretches passing through habitation areas. Underpasses shall be provided for the movement of Wild animals.
- (xi) Study regarding in line with the recent guidelines prepared by Wildlife Institute of India for linear infrastructure with strong emphasis on animal movement and identifying crossing areas and mitigation measures to avoid wildlife mortality.
- (xii) The information shall be provided about the details of the trees to be cut including their species and whether it also involves any protected or endangered species. Measures taken to reduce the number of the trees to be removed should be explained in detail. The details of compensatory plantation shall be submitted. The possibilities of relocating the existing trees shall be explored.
- (xiii) Necessary green belt shall be provided on both sides of the highway with proper central verge and cost provision should be made for regular maintenance.
- (xiv) If the proposed route is passing through a city or town, with houses and human habitation on either side of the road, the necessity for provision of bypasses/diversions/under passes shall be examined and submitted. The proposal should also indicate the location of wayside amenities, which should include petrol stations/service centres, rest areas including public conveyance, etc.
- (xv) Details about measures taken for the pedestrian safety and construction of underpasses and foot-over bridges along with flyovers and interchanges shall be submitted.
- (xvi) The possibility that the proposed project will adversely affect road traffic in the surrounding areas (e.g. by causing increases in traffic congestion and traffic accidents) shall be addressed.
- (xvii) The details of use of fly ash in the road construction, if the project road is located within the 100 km from the Thermal Power Plant shall be examined and submitted.
- (xviii) The possibilities of utilizing debris/waste materials available in and around the project area shall be explored.
- (xix) The details on compliance with respect to Research Track Notification of Ministry of Road, Transport and Highways shall be submitted.



- (xx) The details of sand quarry and borrow area as per OM No.2-30/2012-IA-III dated 18.12.2012 on 'Rationalization of procedure for Environmental Clearance for Highway Projects involving borrow areas for soil and earth" as modified vide OM of even No. dated March 19, 2013, shall be examined and submitted.
- (xxi) Climate and meteorology (max and min temperature, relative humidity, rainfall, frequency of tropical cyclones and snow fall); the nearest IMD meteorological station from which climatological data have been obtained to be indicated.
- (xxii) The air quality monitoring shall be carried out as per the notification issued on 16th November, 2009. Input data used for Noise and Air quality modelling shall be clearly delineated.
- (xxiii) The project activities during construction and operation phases, which will affect the noise levels and the potential for increased noise resulting from this project shall be identified. Discuss the effect of noise levels on nearby habitations during the construction and operational phases of the proposed highway. Identify noise reduction measures and traffic management strategies to be deployed for reducing the negative impact if any. Prediction of noise levels shall be done by using mathematical modelling at different representative locations.
- (xxiv) The impact during construction activities due to generation of fugitive dust from crusher units, air emissions from hot mix plants and vehicles used for transportation of materials and prediction of impact on ambient air quality using appropriate mathematical model, description of model, input requirement and reference of derivation, distribution of major pollutants and presentation in tabular form for easy interpretation shall be examined and carried out.
- (xxv) The details about the protection to existing habitations from dust, noise, odour etc. during construction stage shall be examined and submitted.
- (xxvi) If the proposed route involves cutting of earth, the details of area to be cut, depth of cut, locations, soil type, volume and quantity of earth and other materials to be removed with location of disposal/ dump sites along with necessary permission.
- (xxvii) If the proposed route is passing through low lying areas, details of filling materials and initial and final levels after filling above MSL, shall be examined and submitted.
- (xxviii) The water bodies including the seasonal ones within the corridor of impacts along with their status, volumetric capacity, quality and likely impacts on them due to the project along with the mitigation measures, shall be examined and submitted.

IBK

- (xxix) The details of water quantity required and source of water including water requirement during the construction stage with supporting data and also classification of ground water based on the CGWA classification, shall be examined and submitted.
- (xxx) The details of measures taken during constructions of bridges across rivers/ canals/major or minor drains keeping in view the flooding of the rivers and the life span of the existing bridges shall be examined and submitted. Provision of speed breakers, safety signals, service lanes and foot paths shall be examined at appropriate locations throughout the proposed road to avoid accidents.
- (xxxi) If there will be any change in the drainage pattern after the proposed activity, details of changes shall be examined and submitted.
- (xxxii) Rain water harvesting pit shall be at least 3 - 5 m above the highest ground water table. Provisions shall be made for oil and grease removal from surface runoff.
- (xxxiii) If there is a possibility that the construction/widening of road may cause an impact such as destruction of forest, poaching or reduction in wetland areas, examine the impact and submit details.
- (xxxiv) The details of road safety, signage, service roads, vehicular under passes, accident prone zones and the mitigation measures, shall be submitted.
- (xxxv) IRC guidelines shall be followed for widening & upgradation of roads.
- (xxxvi) The details of social impact assessment due to the proposed construction of the road, shall be submitted.
- (xxxvii) Examine the road design standards, safety equipment specifications and Management System training to ensure that design details take account of safety concerns and submit the traffic management plan.
- (xxxviii) Accident data and geographic distribution shall be reviewed and analyzed to predict and identify trends - in case of expansion of the existing highway and provide Post accident emergency assistance and medical care to accident victims.
- (xxxix) If the proposed project involves any land reclamation, details shall be provided of the activity for which land is to be reclaimed and the area of land to be reclaimed.
- (xl) Details of the properties, houses, business activities etc likely to be effected by land acquisition and an estimation of their financial losses, shall be submitted.
- (xli) Detailed R&R plan with data on the existing socio-economic status of the population in the study area and broad plan for resettlement of the

REK

displaced population, site for the resettlement colony, alternative livelihood concerns/employment and rehabilitation of the displaced people, civil and housing amenities being offered, etc and the schedule of the implementation of the specific project, shall be submitted.

- (xlii) The environment management and monitoring plan for construction and operation phases of the project shall be submitted. A copy of your corporate policy on environment management and sustainable development, shall also be submitted.
- (xliii) Estimated cost of the project including that of environment management plan (both capital and recurring) and source of funding. Also, the mode of execution of the project, viz, EPC, BOT, etc, shall be submitted.
- (xliv) A copy of your CSR policy and plan for meeting the expenditure to address the issues raised during Public Hearing, shall be submitted.
- (xlv) Details of blasting if any, methodology/technique adopted, applicable regulations/permissions, timing of blasting, mitigation measures proposed keeping in view mating season of wildlife.
- (xlvi) In case of river/ creek crossing, details of the proposed bridges connecting on either banks, the design and traffic circulation at this junction with simulation studies.
- (xlvii) Details to ensure free flow of water in case the alignment passes through water bodies/river/streams etc.
- (xlviii) In case of bye passes, the details of access control from the nearby habitation/habitation which may come up after the establishment of road.
- (xlix) Bridge design in eco sensitive area /mountains be examined keeping in view the rock classification hydrology etc.
- (l) Details of litigation pending against the project, if any, with direction/order passed by any Court of Law against the Project should be given.
- (li) The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.
- (lii) In case of alignment passing through coastal zones
 - a. HTL/LTL map prepared by authorized agencies superimposed with alignment and recommendation of Coastal Zone Management Authority
 - b. Details of CRZ-I (I) areas, mangroves required to be removed for the project along with the compensatory afforestation, area and location with budget
 - c. Details of road on stilt in CRZ-I areas, design details to ensure free tidal flow
 - d. Details of Labour camps, machinery location



- (liii) Any further clarification on carrying out the above studies including anticipated impacts due to the project and mitigative measure, project proponent can refer to the model ToR available on Ministry website "<http://moef.nic.in/Manual/Highways>".

5. Following general guidelines shall be strictly adhered:

- (i) The EIA document shall be printed on both sides, as far as possible.
- (ii) All documents should be properly indexed, page numbered.
- (iii) Period/date of data collection should be clearly indicated.
- (iv) Authenticated English translation of all material provided in Regional languages.
- (v) The letter/application for EC should quote the MoEF&CC File No. and also attach a copy of the letter prescribing the TOR.
- (vi) The copy of the letter received from the Ministry on the TOR prescribed for the project should be attached as an annexure to the final EIA-EMP Report.
- (vii) The final EIA-EMP report submitted to the Ministry must incorporate the issues in TOR and that raised in Public Hearing. The index of the final EIA-EMP report, must indicate the specific chapter and page no. of the EIA-EMP Report where the specific TOR prescribed by Ministry and the issue raised in the P.H. have been incorporated. Questionnaire related to the project (posted on MoEF&CC website) with all sections duly filled in shall also be submitted at the time of applying for EC.
- (viii) Grant of TOR does not mean grant of EC.
- (ix) Grant of TOR/EC to the present project does not mean grant of approvals in other regulations such as the Forest (Conservation) Act 1980 or the Wildlife (Protection) Act, 1972.
- (x) Grant of EC is also subject to Circulars and Office Memorandum issued under the EIA Notification 2006 and subsequent amendments, which are available on the MoEF&CC website: www.envfor.nic.in.
- (xi) The status of accreditation of the EIA consultant with NABET/QCI shall be specifically mentioned. The consultant shall certify that his accreditation is for the sector for which this EIA is prepared.
- (xii) On the front page of EIA/EMP reports, the name of the consultant/consultancy firm along with their complete details including their accreditation, if any shall be indicated. The consultant while submitting the EIA/EMP report shall give an undertaking to the effect that the prescribed TOR (TOR proposed by the project proponent and additional TOR given by the MoEF) have been complied with and the data submitted is factually correct (Refer MoEF office memorandum dated 4th August, 2009).

RK

- (xiii) While submitting the EIA/EMP reports, the name of the experts associated with/involved in the preparation of these reports and the laboratories through which the samples have been got analysed should be stated in the report. It shall clearly be indicated whether these laboratories are approved under the Environment (Protection) Act, 1986 and the rules made there under (Please refer MoEF office memorandum dated 4th August, 2009). The project Coordinator of the EIA study shall also be mentioned.
- (xiv) All the TOR points as presented before EAC shall be covered.
6. A detailed draft EIA/EMP report shall be prepared in terms of the above additional TOR and should be submitted to the State Pollution Control Board for Public Hearing. Public Hearing to be conducted for the project in accordance with the provisions of Environmental Impact Assessment Notification, 2006 and the issues raised by the public should be addressed in the Environmental Management Plan. The Public Hearing shall be conducted based on the TOR letter issued by the Ministry and not on the basis of Minutes of the Meeting available on the website.
7. The project proponent shall submit the detailed final EIA/EMP report prepared as per TOR including issues raised during Public Hearing to the Ministry for considering the proposal for environmental clearance within 3 years as per the MoEF&CC OM No J-11013/41/2006-IA-II(I) (Part) dated 29th August, 2017.
8. The consultants involved in preparation of EIA/EMP report after accreditation with Quality Council of India/National Accreditation Board of Education and Training (QCI/NABET) would need to include a certificate in this regard in the EIA/EMP reports prepared by them and data provided by other Organization(s)/Laboratories including their status of approvals etc. vide notification of the MoEF dated 19th July, 2013.
9. The prescribed TOR would be valid for a period of three years for submission of the EIA/EMP Reports.

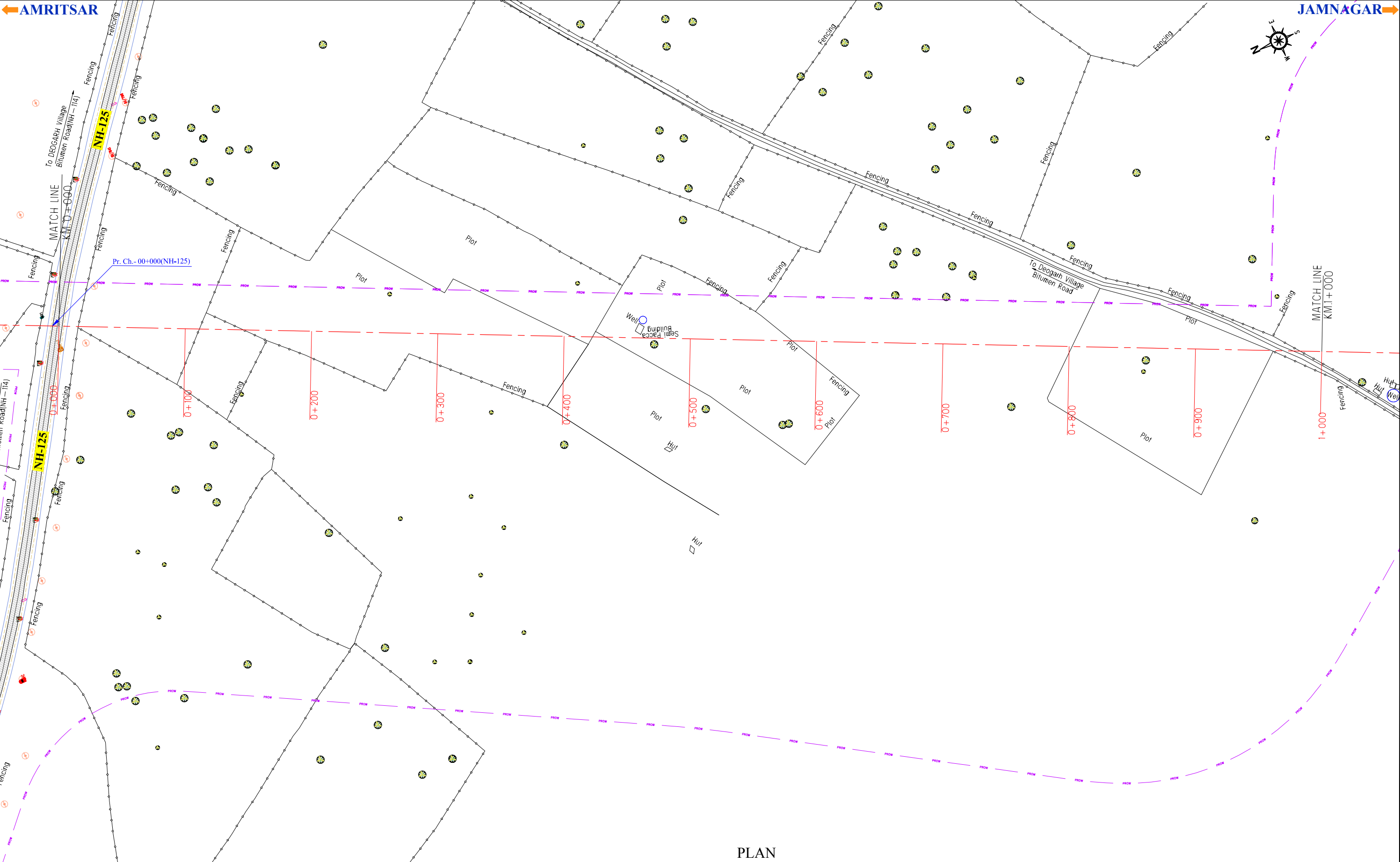

(Raghu Kumar Kodali)
Director/Scientist F

Copy to:

1. The Member Secretary, Rajasthan State Pollution Control Board, G.O. - 1, Phase II, RIICO Industrial Area, Bhiwadi, Rajasthan - 301019.


(Raghu Kumar Kodali)
Director/Scientist F

ANNEXURE-II
(DETAILED GROUND
SURVEY MAP in 1:2000
SCALE)

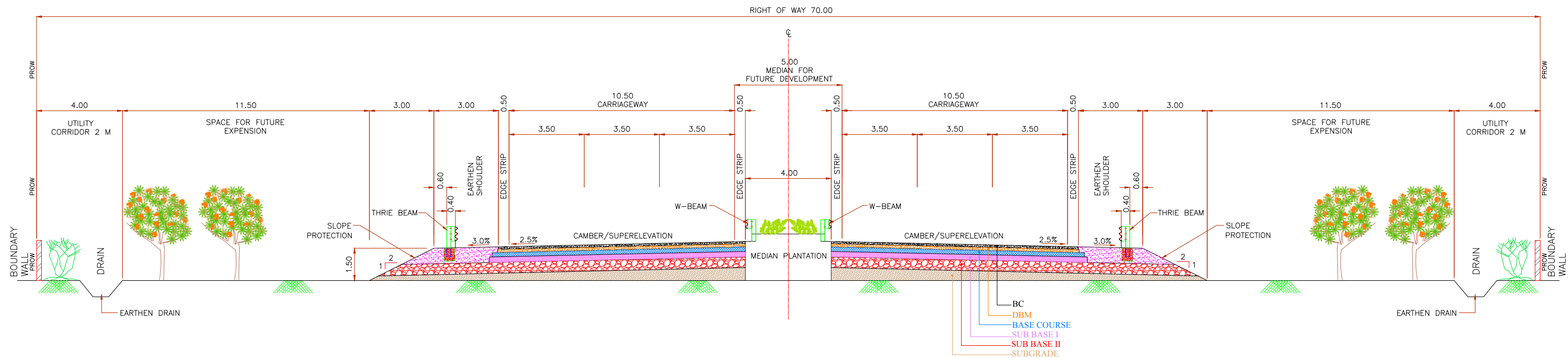


PLAN

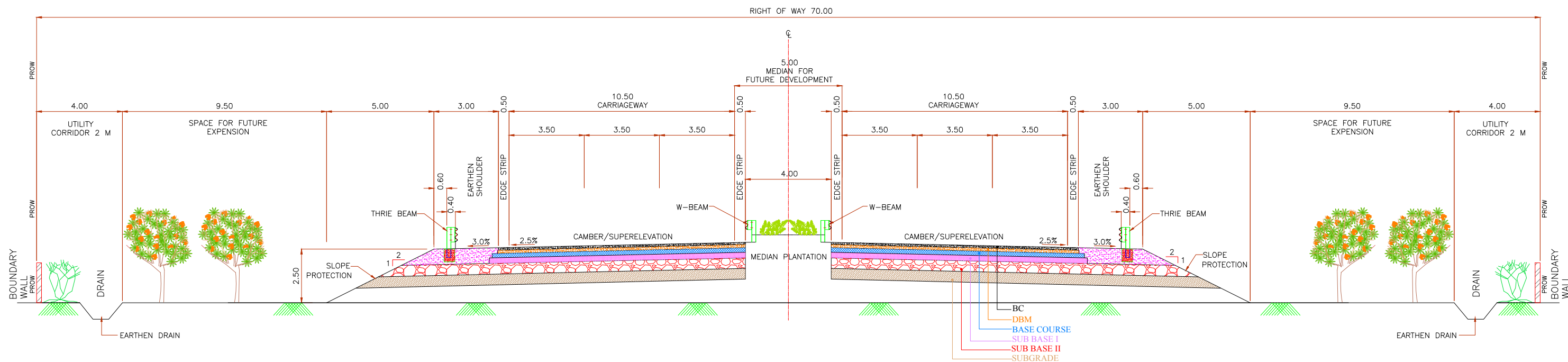
LEGEND	EXISTING ROAD		RAILWAY TRACK		ELECTRIC POLE & LINE		BUILDING, HOUSE, HUT		WATER TANK		KM STONE		TRANSFORMER		GPS		SURVEY STATION POINT					
	EXISTING CENTRE LINE		FENCEING		RIVER/NALA		GATE		WELL		HAND PUMP		HIGH TENSION LINE		BRICK FIELD		PROPOSED CENTRE LINE					
	APPROCH ROAD		COMPOUND WALL		WATER PIPE LINE		TEMPLE / MAZAR		TREE		OPTICAL FIBER CABLE		GAS LINE		GAURD WALL		PROPOSED PROW					
CLIENT -		NATIONAL HIGHWAYS AUTHORITY OF INDIA (MINISTRY OF ROAD TRANSPORT & HIGHWAYS) GOVERNMENT OF INDIA					CONSULTANT -					NAME OF WORK:					DRG. NO.		R		0	
																	SCALE		1:2000		Date-24/09/18	
																	TITLE:		GROUND SURVEY MAP KM 00+000 TO 01+000			
							</															

ANNEXURE-III

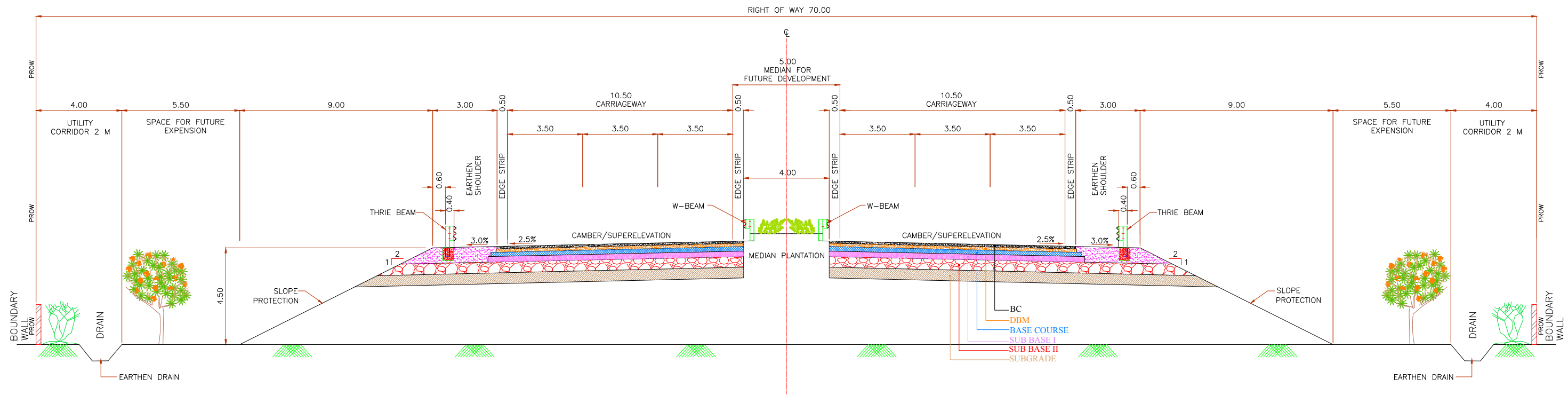
(TCS DRAWINGS)



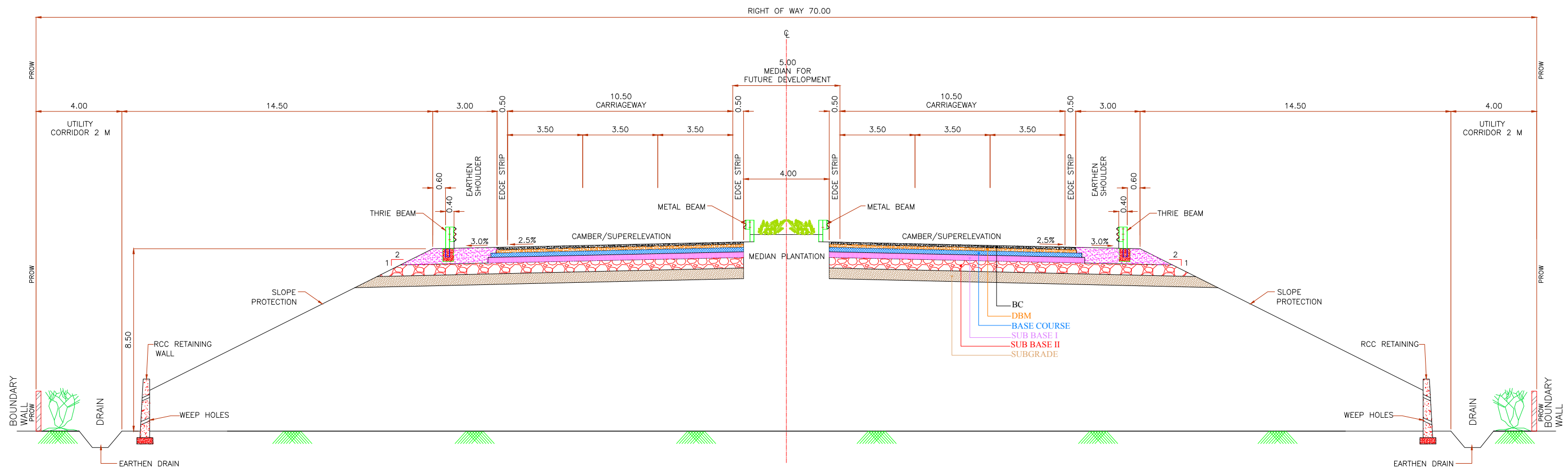
TCS-1
6-LANE CONSTRUCTION WITHOUT SERVICE ROAD



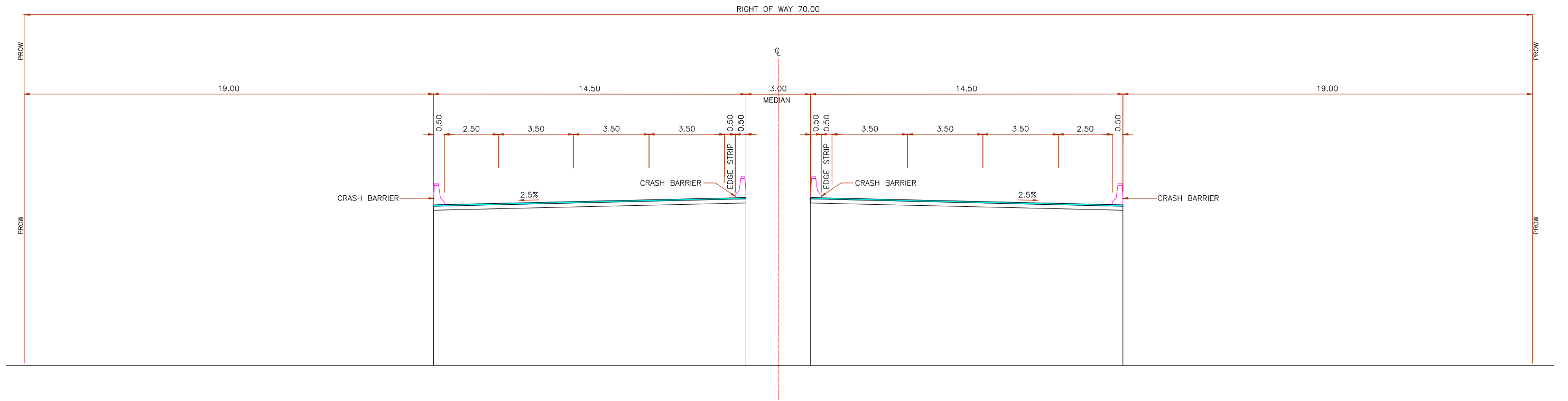
TCS-2
6-LANE CONSTRUCTION WITHOUT SERVICE ROAD



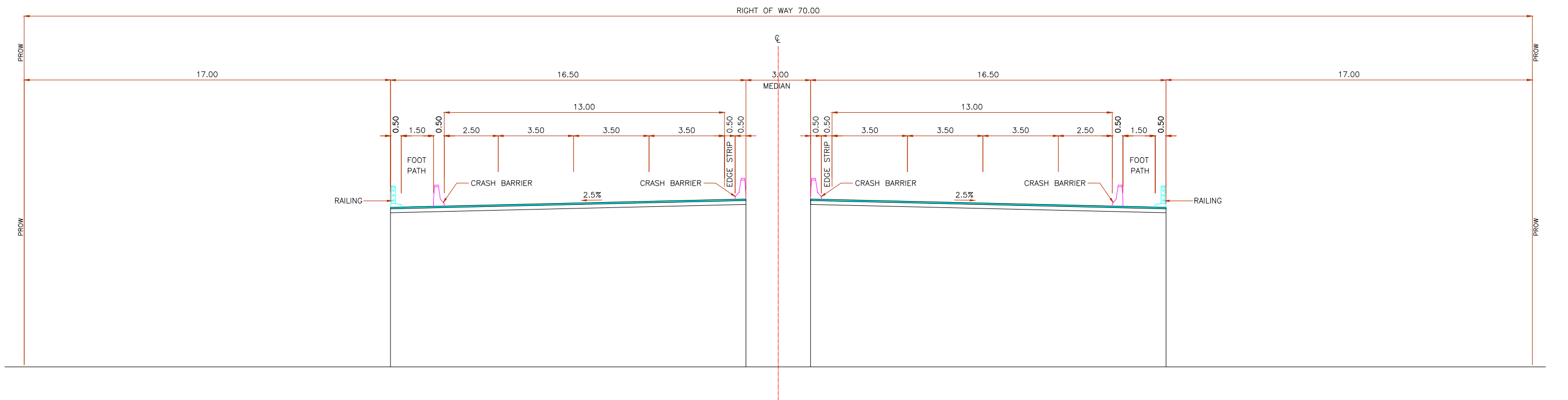
TCS-3
6-LANE CONSTRUCTION WITHOUT SERVICE ROAD



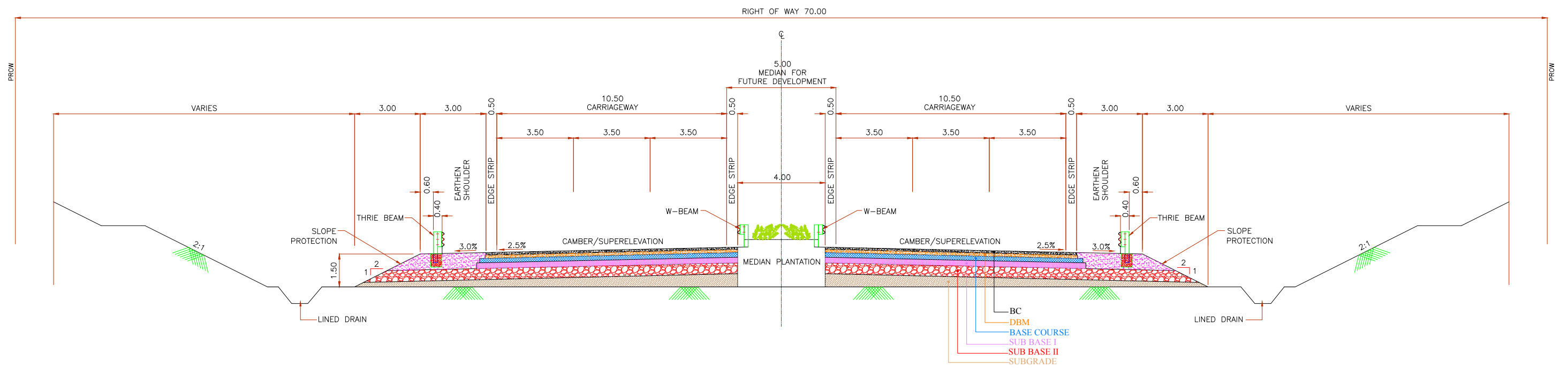
TCS-4
6-LANE CONSTRUCTION WITHOUT SERVICE ROAD



TCS-5
TYPICAL CROSS SECTION FOR 6-LANE FOR VUP,SVUP,LVUP,MINOR BRIDGE, MAJOR BRIDGE
(STAGE DEVELOPMENT)



TCS-6
TYPICAL CROSS SECTION FOR 6-LANE FOR ROB
(STAGE DEVELOPMENT)



TCS-7
6-LANE CONSTRUCTION WITHOUT SERVICE ROAD
(CUTTING SECTION)

ANNEXURE-IV
(NABET/QCI CERTIFICATE
OF ENVIRONMENT
CONSULTANT)



Quality Council of India

National Accreditation Board for Education & Training



CERTIFICATE OF ACCREDITATION

M/s Enviro Infra Solutions Pvt. Ltd, Ghaziabad

301,302 & 305, SRBC, Plot No. INS - 12, Sector - 9, Vasundhara, Ghaziabad - 201012

is accredited under the QCI-NABET Accreditation Scheme for EIA Consultant Organizations (Version3) for preparing EIA/EMP reports in the following sectors:

Scope of Accreditation:

Sl. No.	Name of Sector	Cat.
1.	Mining of Minerals (opencast only)	B
2.	Offshore and onshore oil and gas exploration, development & production	A
3.	River Valley projects	A
4.	Thermal power plants	A
5.	Metallurgical industries (for ferrous only)	B
	Metallurgical industries (for non ferrous only)	A
6.	Cement plants	B
7.	Synthetic organic chemicals industry (dyes & dye intermediates; bulk drugs and intermediates excluding drug formulations; synthetic rubbers; basic organic chemicals, other synthetic organic chemicals and chemical intermediates)	A
8.	Distilleries	A
9.	Oil & gas transportation pipeline (crude and refinery/ petrochemical products), passing through national parks/ sanctuaries/coral reefs / ecologically sensitive areas including LNG terminal	A
10.	Isolated storage & handling of Hazardous chemicals (As per threshold planning quantity indicated in column 3 of schedule 2 & 3 of MSIH Rules 1989 amended 2000)	A
11.	Ports, harbours, break waters and dredging	B
12.	Highways	A
13.	Building and construction projects	B
14.	Townships and Area development projects	B

Note: Name of approved EIA Coordinators and Functional Area Experts are mentioned in IAAC minutes published on website dated Dec 16, 2016.

The Accreditation shall remain in force subject to continued compliance to the terms and conditions and on successful completion of Surveillance Assessment after 18 months. The renewal of accreditation shall be done through Re-accreditation process prior to expiry date of this certificate within 36 months

C.E.O
NABET

Certificate No.
NABET/ EIA/1619/ IA 0018

Valid up to
November 09, 2019

NABET is member of International Accreditation Forum (IAF) and Pacific Accreditation Cooperation (PAC).



ANNEXURE-V
(MOU WITH LABORATORY)

MEMORANDUM OF UNDERSTANDING (MOU)

BETWEEN

M/s Enviro Infra Solutions Pvt. Ltd., 301,302,305, SRBC Sector-9 Vasundhara Ghaziabad (U.P.)- 201012 (hereinafter called 1st Party) and **M/s Noida Testing Laboratories**, GT -20, Sector -117, Noida, (U. P.) - 201301 (hereinafter called 2nd Party)

The purpose of MoU is utilizing the services of Noida Testing Laboratories for monitoring and testing of Air, Noise, Water, and Soil samples for on-going projects of Enviro Infra Solutions Pvt. Ltd. on following terms:-

1. The first party shall place the work order (WO) to second party on project to project basis defining the Sampling/monitoring locations and Professional Fee.
2. The second party shall be responsible for sample collection, transportation, and testing of samples on following basis:
 - a. For Ambient Air (as per National Ambient Air Quality Standards, 2009), like PM₁₀, PM_{2.5}, SO₂, NO_x and CO etc.
 - b. Stack monitoring and analysis for various parameter as per respective industries
 - c. The Noise level Monitoring as per national ambient air quality standards w.r.t. noise (2000).
 - d. Ground water quality analysis as per IS:10500 (2012). Surface water and Waste water analysis as per the requirements and parameters provided.
 - e. Soil Quality for general parameters covering physical-chemical characteristics as per project related requirements and defined by first party.
 - f. Any other specific testing/monitoring charges will be defined separately by first party.
 - g. The NABET accreditation certificate and calibration certificates of equipment shall be provided by second party.
 - h. The first party representative will supervise the sample collection/monitoring at site.
 - i. The first party may visit the laboratory and check analysis work in Laboratory as and when desired during samples testing and analysis.
3. All expenses towards lodging and boarding, local travel, IIIAC train fare will be paid separately by first party for which second party shall give expense details in proposal.
4. The MoU shall become effective from the date of signing i.e. 17 April 2015 and remain effective for a period of five years until 16 April 2020. The same will be reviewed after five years and may be continued based upon mutually agreed conditions.

FOR M/s Enviro Infra Solutions Pvt. Ltd

Signature
Vijay Sharma
Sr. Manager - Projects

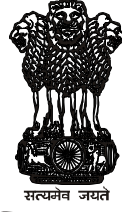


FOR M/s Noida Testing Laboratories

Signature
Pankaj Kumar Sharma
(Partner)



ANNEXURE-VI
(GAZETTE NOTIFICATION
REGARDING THE PROJECT)



भारत का राजपत्र The Gazette of India

असाधारण

EXTRAORDINARY

भाग II—खण्ड 3—उप-खण्ड (ii)

PART II—Section 3—Sub-section (ii)

प्राधिकार से प्रकाशित

PUBLISHED BY AUTHORITY

सं. 1655]

नई दिल्ली, मंगलवार, मई 08, 2018/वैशाख 18, 1940

No. 1655]

NEW DELHI, TUESDAY, MAY 08, 2018/VAISAKHA 18, 1940

सड़क परिवहन और राजमार्ग मंत्रालय

अधिसूचना

नई दिल्ली, 08 मई, 2018

का.आ. 1842(अ).—केन्द्रीय सरकार, राष्ट्रीय राजमार्ग अधिनियम, 1956 (1956 का 48) की धारा 2 की उप-धारा (2) द्वारा प्रदत्त शक्तियों का प्रयोग करते हुए, निम्नलिखित तालिका के स्तम्भ (2) और (3) में विनिर्दिष्ट प्रत्येक राजमार्ग को राष्ट्रीय राजमार्ग घोषित करती है।

उक्त राजमार्गों, जिन्हें राष्ट्रीय राजमार्ग घोषित किया जाना है, को तालिका के क्रमशः स्तम्भ (1), (2) और (3) में यथा-निर्दिष्ट नई क्रम संख्याओं, नई राष्ट्रीय राजमार्ग संख्याओं तथा राष्ट्रीय राजमार्गों के विवरण के साथ उक्त अधिनियम की अनुसूची में विनिर्दिष्ट किया गया समझा जाएगा।

तालिका

क्र. सं.	नई रारा सं.	राष्ट्रीय राजमार्ग का विवरण
(1)	(2)	(3)
524	148एन	गुजरात राज्य में दोडका (बड़ोदरा) के निकट रारा-48 के साथ अपने जंक्शन से प्रारंभ होकर गोधरा, दाहोद, मध्य प्रदेश राज्य में रतलाम, जाओरा, राजस्थान राज्य में झालावाड़, कोटा, सवाई माधोपुर, लालसोट, दौसा हरियाणा राज्य में फिरोजपुर जिरका को जोड़ते हुए सोहना के निकट रारा-248ए के साथ अपने जंक्शन पर समाप्त होने वाला राजमार्ग।
525	754के	राजस्थान राज्य में सांगरिया के निकट रारा-54 के साथ अपने जंक्शन से प्रारंभ होकर हनुमानगढ़, सूरतगढ़, लूनकरासर, बीकानेर, जोधपुर, थोब, पंचपादरा, बालोतरा, संचोर, गुजरात राज्य में थराड, वाव को जोड़ते हुए संतालपुर के निकट रारा-27 के साथ अपने जंक्शन पर समाप्त होने वाला राजमार्ग।
526	152डी	हरियाणा राज्य में गंधेरी (निकट इस्माइलाबाद) के निकट रारा-152 के साथ अपने जंक्शन से प्रारंभ होकर कौल धतरथ, लाखन माजरा, कलानौर, चरखी दादरी को जोड़ते हुए और रारा-148बी (नारनौल बाइपास) के साथ अपने जंक्शन पर समाप्त होने वाला राजमार्ग।

[फा.सं. एनएच-14012/27/2014-पी ऐंड एम](पार्ट-5)

राजेश गुप्ता, उप सचिव

पाद टिप्पण: राष्ट्रीय राजमार्ग अधिनियम, 1956 (1956 का 48) की अनुसूची, भारत के राजपत्र में प्रकाशित अधिसूचना संख्या का.आ. 689 (अ), दिनांकित 4 अप्रैल, 2011 द्वारा प्रतिस्थापित की गई थी और बाद में संशोधन अधिसूचना सं. 1466 दिनांकित 03.04.2018 द्वारा किया गया था।

MINISTRY OF ROAD TRANSPORT AND HIGHWAYS

NOTIFICATION

New Delhi, the 8th May, 2018

S.O. 1842(E).—In exercise of the powers conferred by sub-section (2) of section 2 of the National Highways Act, 1956 (48 of 1956), the Central Government hereby declares each of the highways specified in columns (2) and (3) of the Table below to be a national highway.

The said highways, now declared to be national highways, shall be deemed to be specified in the Schedule to the said Act with the new serial numbers, the new national highways numbers and the description of the national highways thereof, as indicated in columns (1), (2) and (3) respectively, of the said Table.

TABLE

Serial No.	New National Highway No.	Description of National Highways
(1)	(2)	(3)
524	148N	The highway starting from its junction with NH-48 near Dodka (Vadodara) connecting Godhra, Dahod in the state of Gujarat, Ratlam, Jaora in the state of Madhya Pradesh, Jhalawar, Kota, Sawai Madhopur, Lalsot, Dausa in the state of Rajasthan, Firozpur Jhirka and terminating at its junction with NH-248A near Sohna in the state of Haryana.
525	754K	The highway starting from its junction with new NH-54 near Sangariya connecting Hanumangarh, Suratgarh, Loonkarasar, Bikaner, Jodhpur, Thob, Pachpadra, Balotra, Sanchore in the state of Rajasthan, Tharad, Vav and terminating at its junction with NH-27 near Santalpur in the state of Gujarat.
526	152D	The highway starting from its junction with NH-152 near Gangheri (near Ismailabad), Kaul Dhatrath, Lakhan Majra, Kalanaur, Charkhi Dadri and terminating at its junction with NH-148B (Narnaul bypass) in the State of Haryana.

[F. No. NH-14012/27/2014-P&M(Pt-5)]

RAJESH GUPTA, Dy. Secy.

Footnote: The Schedule to the National Highways Act, 1956 (48 of 1956) was substituted vide notification number S.O.689 (E), dated 4th April, 2011 published in the Gazette of India, dated the 4th April, 2011 and subsequently amended vide notification no. 1466 dated 03.04.2018.

RAKESH SUKUL
Digitally signed by RAKESH SUKUL
Date: 2018.05.10 17:54:04 +0530'

Annexure VII
Public hearing

DETAILS OF PUBLIC HEARING FOR DISTRICT JODHPUR



क्षेत्रीय कार्यालय

फोन नं० 2723225

राजस्थान राज्य प्रदूषण नियन्त्रण मण्डल

एसपीएल-2 मरुधर इण्डस्ट्रीयल एरिया, बासनी प्रथम जोधपुर

क्रमांक:-राप्रनिम/जनसुनवाई/18-19/1890

दिनांक: 31/01/19

सदस्य सचिव,
रा० प्र० नि० म०
जयपुर।

विषय:-मैसर्स भारतीय राष्ट्रीय राजमार्ग प्राधिकरण, परियोजना कार्यान्वयन इकाई, जोधपुर द्वारा भारतमाला परियोजना (पेकैज-7/लोट-4) के तहत 4/6 लेन अभिगम नियंत्रण राष्ट्रीय राजमार्ग संख्या 754K का निर्माण राजस्थान राज्य में धधानिया शासन, (जोधपुर जिला) से राजस्थान-गुजरात के पास सांचौर (जिला जालोर) तक कार्य हेतु पर्यावरण स्वीकृति के लिये जन सुनवाई दिनांक 28.01.2019 के कार्यवृत्त विवरण (Meeting Minutes) भिजवाने के क्रम में।

महोदय,

उपरोक्त विषय में निवेदन है कि मैसर्स भारतीय राष्ट्रीय राजमार्ग प्राधिकरण, परियोजना कार्यान्वयन इकाई, जोधपुर द्वारा भारतमाला परियोजना (पेकैज-7/लोट-4) के तहत 4/6 लेन अभिगम नियंत्रण राष्ट्रीय राजमार्ग संख्या 754K का निर्माण राजस्थान राज्य में धधानिया शासन, (जोधपुर जिला) से राजस्थान-गुजरात के पास सांचौर (जिला जालोर) तक कार्य हेतु पर्यावरण स्वीकृति के लिये जन सुनवाई दिनांक 28.01.2019 के कार्यवृत्त विवरण (Meeting Minutes), सीडी की दो प्रति, फोटोग्राफ, पेपर कटींग एवं जन सुनवाई में भाग लेने वालों की सूची दो प्रतियों में संलग्न कर सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित है।

संलग्न:-उपरोक्तानुसार।

भवदीय

Sdr

क्षेत्रीय अधिकारी

प्रतिलिपि निम्नलिखित को सूचनार्थ प्रेषित है:-

1. जिला कलेक्टर, जोधपुर।

2. मैसर्स भारतीय राष्ट्रीय राजमार्ग प्राधिकरण, परियोजना कार्यान्वयन इकाई, जोधपुर

12/1/19
क्षेत्रीय अधिकारी

**राजस्थान राज्य प्रदूषण नियंत्रण मण्डल**

एसपीएल-2 मरुधर इण्डस्ट्रीयल एरिया, बासनी प्रथम जोधपुर

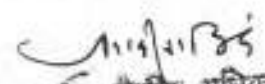
जन सुनवाई कार्यवाही विवरण दिनांक 28.01.2019**मैसर्स भारतीय राष्ट्रीय राजमार्ग प्राधिकरण, परियोजना कार्यान्वयन इकाई, जोधपुर**

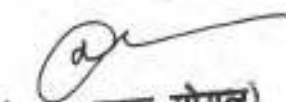
वन एवं पर्यावरण मंत्रालय, भारत सरकार द्वारा जारी पर्यावरणीय प्रभाव आंकलन अधिसूचना दिनांक 14.09.2006 तत्पश्चात् संशोधित अधिसूचना के अन्तर्गत क्षेत्रीय कार्यालय रा० प्र० नि० म० जोधपुर द्वारा जन सुनवाई के लिये सूचना प्रादेशिक समाचार पत्र राजस्थान पत्रिका एवं द टाइम्स ऑफ इंडिया में दिनांक 22.12.2018 को प्रकाशित की गई थी। मैसर्स भारतीय राष्ट्रीय राजमार्ग प्राधिकरण, परियोजना कार्यान्वयन इकाई, जोधपुर द्वारा भारतमाला परियोजना (पेकैज-7/लोट-4) के तहत 4/6 लेन अभिगम नियंत्रण राष्ट्रीय राजमार्ग संख्या 754K का निर्माण राजस्थान राज्य में धधानिया शासन, (जोधपुर जिला) से राजस्थान-गुजरात के पास सांचौर (जिला जालोर) तक कार्य हेतु पर्यावरण स्वीकृति के लिये जन सुनवाई दिनांक 28.01.2019 निर्धारित की गयी।

जन सुनवाई श्री छगनलाल गोयल अतिरिक्त जिला मजिस्ट्रेट प्रथम जोधपुर जो कि जिला कलेक्टर जोधपुर के प्रतिनिधि के तौर पर एवं श्री जगदीश सिंह क्षेत्रीय अधिकारी, राजस्थान राज्य प्रदूषण नियंत्रण मण्डल, जोधपुर के द्वारा आयोजित की गई। जन सुनवाई के उक्त अधिकारियों के अतिरिक्त श्री रोहित कुमार, उपखण्ड अधिकारी बालेसर एवं श्री प्रवीन्द्र गहलोत मैनेजर NHAI भी उपस्थित थे। जिनका उपस्थिति पत्र मय हस्ताक्षर संलग्न है। (संलग्नक-1) जन सुनवाई में क्षेत्र के ग्रामवासी एवं अन्य की उपस्थिति पत्र मय हस्ताक्षर संलग्न है। (संलग्नक-2) जनसुनवाई के लिए आस पास के क्षेत्र में सूचना प्रकाशित होने की तिथि से जन सुनवाई दिनांक 28/01/2019 तक कोई लिखित सुझाव/आक्षेप क्षेत्रीय कार्यालय राजस्थान राज्य प्रदूषण नियंत्रण मण्डल जोधपुर को प्राप्त नहीं हुए है।

मैसर्स भारतीय राष्ट्रीय राजमार्ग प्राधिकरण, परियोजना कार्यान्वयन इकाई, जोधपुर द्वारा भारतमाला परियोजना (पेकैज-7/लोट-4) के तहत 4/6 लेन अभिगम नियंत्रण राष्ट्रीय राजमार्ग संख्या 754K का निर्माण राजस्थान राज्य में धधानिया शासन, (जोधपुर जिला) से राजस्थान-गुजरात के पास सांचौर (जिला जालोर) तक कार्य हेतु पर्यावरण स्वीकृति के लिये आयोजित जन सुनवाई की बैठक में निम्न अधिकारीगण उपस्थित थे-

1. श्री छगनलाल गोयल
अतिरिक्त जिला मजिस्ट्रेट प्रथम, जोधपुर
2. श्री जगदीश सिंह
क्षेत्रीय अधिकारी राजस्थान राज्य प्रदूषण नियंत्रण मण्डल, जोधपुर
3. श्री रोहित कुमार,


क्षेत्रीय अधिकारी
राजस्थान राज्य प्रदूषण नियंत्रण मण्डल
जोधपुर


(छगन लाल गोयल)
अतिरिक्त जिला मजिस्ट्रेट प्रथम जोधपुर

उपखण्ड अधिकारी, बालेसर जिला-जोधपुर

जन सुनवाई के प्रारम्भ में राजस्थान राज्य प्रदूषण नियंत्रण मण्डल के क्षेत्रीय अधिकारी श्री जगदीश सिंह ने सभी आगंतुकों का स्वागत किया एवं जन सुनवाई के प्रावधान, उद्देश्य, महत्व तथा प्रस्तावित विस्तार परियोजना के बारे में जानकारी दी। उन्होंने परियोजना के बारे में विस्तृत जानकारी देने हेतु पर्यावरण सलाहकार संस्था मै0 एनवायरा इंफा सोल्यूशन्स प्राईवेट लिमिटेड गाजियाबाद के प्रतिनिधि श्री तरुण सहारण को आमंत्रित किया गया। श्री तरुण सहारण ने प्रस्तावित परियोजना के बारे में उपस्थित जन समुदाय को विस्तृत जानकारी दी।

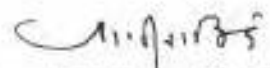
तत्पश्चात् श्री जगदीश सिंह, क्षेत्रीय अधिकारी, राजस्थान राज्य प्रदूषण नियंत्रण मण्डल, जोधपुर ने जन सुनवाई में उपस्थित जन समुदाय से राष्ट्रीय राजमार्ग संख्या 754K का निर्माण राजस्थान राज्य में धधानिया शासन, (जोधपुर जिला) से राजस्थान-गुजरात के पास सांचौर (जिला जालोर) तक कार्य हेतु आयोजित जन सुनवाई में आपतियां व सुझाव प्रस्तुत करने के लिए आमंत्रित किया।

जिसके अंतर्गत निम्नलिखित ने विचार/आपति/सुझाव प्रस्तुत किये-

मोहनराम, ग्राम- गोदासर

उक्त परियोजना अन्तर्गत होने वाले कार्य के कारण कृषकों/कास्तकों की भूमि का सरकार द्वारा अधिग्रहण किये जाने पर सरकार की ओर से कृषकों को उपलब्ध करवाये जाने वाले मुआवजें व अन्य प्रयासों के बारे में जानकारी देने के लिये निवेदन किया। जिस पर उपखण्ड अधिकारी बालेसर श्री रोहित कुमार द्वारा उपस्थित जन समुदाय को यह आश्वासन दिया गया कि भूमि, भवन निर्माण, व्यवसायिक निर्माण का अधिग्रहण किये जाने पर भारत सरकार के भूमि अधिग्रहण बिल 2013 में तय मापदण्ड अनुसार नियमानुसार मुआवजा सरकार की ओर से दिया जावेगा।

साथ ही यह भी जानना चाहा कि यदि किसी कृषक/कास्तकारों के खेत की मध्य में से होकर राजमार्ग के गुजरने पर उनके लिये यातायात/आवागमन की व्यवस्था का प्रबन्ध के बारे में पूछने पर उपखण्ड अधिकारी श्री रोहित कुमार एवं मै0 एनवायरा इंफा सोल्यूशन्स प्राईवेट लिमिटेड गाजियाबाद के प्रतिनिधि श्री तरुण सहारण ने यह आश्वासन दिया कि राजमार्ग से लगते हुये सर्विस लेन/एसपीवी की सुविधा उपलब्ध करवाई जायेगी। एक निर्धारित सीमा पर अण्डरपास एवं ओवरब्रिज बनाये जायेगे ताकि आवागमन में किसी भी प्रकार की असुविधा उत्पन्न न हो।


क्षेत्रीय अधिकारी
राजस्थान राज्य प्रदूषण नियंत्रण मण्डल
जोधपुर


(अनुराग सहारण)
अध्यक्ष जिला राजमार्ग विकास जोधपुर

लालाराम चौधरी- ढाढणिया (गोदासर)

राष्ट्रीय राजमार्ग परियोजना के कारण भूमि अधिग्रहण पर यहां के कृषकों/कास्तकारों को पंजाब के कृषकों/कास्तकारों के समान मुआवजें दिलाये जाने की मांग रखी। जिस पर उपखण्ड अधिकारी द्वारा भूमि अधिग्रहण बिल 2013 में तय मापदण्ड अनुसार मुआवजें की बात दोहराई।

इसी बीच श्री जगदीश सिंह क्षेत्रीय अधिकारी राजस्थान राज्य प्रदूषण नियंत्रण मण्डल, जोधपुर यह उक्त परियोजना के कारण पर्यावरणीय दृष्टि से होने वाले प्रभाव पर भी अपने सुझाव एवं विचार प्रस्तुत करने का निवेदन किया।

उपस्थित जन समुदाय में से यह निवेदन किया गया कि इस परियोजना अन्तर्गत बनने वाले राजमार्ग के कारण ढाढणिया शासन में ही एक ढाणी के लगभग 25 परिवारों को एकसाथ विस्थापित होना होगा इस बारे में उनके पुर्नवास एवं मुआवजे के लिये सरकार द्वारा किये जाने वाले प्रयासों की जानकारी चाही गई।

उपस्थित जन समुदाय के अनुसार राजमार्ग में बनने वाले सर्कल एवं जक्शन के आसपास की भूमि को निजी कास्तकारों को सुपुर्द नहीं करने एवं इसके सरकारी उपयोग किये जाने की मांग रखी।

उपस्थित जन समुदाय के अनुसार राजमार्ग के बनने पर महिलाओं की सुरक्षा हेतु भी प्रयास किये जाने की मांग रखी गई।

श्री मोहनराम गांव गोदासर द्वारा इस राजमार्ग के बनने पर समीप के खेतों एवं उनकी भूमि पर पड़ने वाले विपरीत प्रभाव की रोकथाम के प्रयास के बारे में पूछने पर मै0 एनवायरा इंफा सोल्यूशन्स प्राईवेट लिमिटेड गाजियाबाद के प्रतिनिधि श्री तरुण सहारण ने यह अवगत करवाया पर्यावरण प्रबन्धन हेतु लगभग 37 करोड की व्यवस्था परियोजना अन्तर्गत रखी है। राजमार्ग के दोनों तरफ 3 पक्तियों में पेड लगाये जावेगे। चूंकि रोड की चौड़ाई 70 मीटर रहेगी। जैसा कि ई0 एम0 पी0 में इंगित है, वायु प्रदूषण को रोकने हेतु रोड के साथ ही ग्रीन बेल्ट का निर्माण साथ-साथ किया जावेगा। लगभग 1,24,800 पेड इसके अन्तर्गत लगाये जावेगे। राजमार्ग के दोनों तरफ पानी के छिडकाव की लगातार व्यवस्था रखी जावेगी जिससे धूल/मिट्टी का फैलाव रोका जा सके। अधिक से अधिक हरियाली किये जाने पर भी जोर दिया जावेगा।

श्री छगनलाल गोयल, अतिरिक्त जिला मजिस्ट्रेट प्रथम एवं श्री रोहित कुमार उपखण्ड अधिकारी, बालेसर एवं क्षेत्रीय अधिकारी श्री जगदीश सिंह राजस्थान राज्य प्रदूषण नियंत्रण मण्डल, जोधपुर द्वारा उपस्थित जनसमुदाय को आश्वस्त किया कि नियमानुसार पर्यावरण संरक्षण एवं स्वास्थ्य सम्बन्धी समस्त समस्याओं का प्राथमिकता से समाधान किया जायेगा। पर्यावरणीय प्रदूषण बिल्कुल नहीं होने दिया जावेगा। आधुनिक

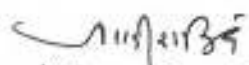
11/11/21
क्षेत्रीय अधिकारी
राजस्थान राज्य प्रदूषण नियंत्रण मण्डल
जोधपुर


(छगन लाल गोयल)
अतिरिक्त जिला मजिस्ट्रेट प्रथम, जोधपुर

तकनीक द्वारा प्रदूषण को नियंत्रण किया जायेगा। इससे आस-पास के ग्रामीणवासियों पर प्रदूषण का दुष्प्रभाव नहीं होगा।

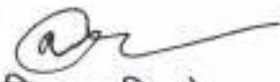
तत्पश्चात् श्री रोहित कुमार उपखण्ड अधिकारी बालेसर ने जन समुदाय को आश्वस्त किया कि कि राजमार्ग के कारण भूमि अधिग्रहण पर उत्पन्न होने वाली समस्याओं के लिये प्रशासन की ओर से अलग से सुनवाई तिथि निर्धारित कर समस्याओं के समाधान के प्रयास किये जावेगे।

अन्त में श्री जगदीश सिंह, क्षेत्रीय अधिकारी, राजस्थान राज्य प्रदूषण नियंत्रण मण्डल, जोधपुर ने उपस्थित जन समुदाय जनसुनवाई में उपस्थित होने एवं अपने विचार रखे जाने पर धन्यवाद ज्ञापित करते हुए जन सुनवाई की समाप्ति की घोषणा की गई।



क्षेत्रीय अधिकारी

राजस्थान राज्य प्रदूषण नियंत्रण मण्डल, जोधपुर



अतिरिक्त जिला मजिस्ट्रेट प्रथम

जोधपुर
(छगन लाल गोयल)

जिला कलक्टर (प्रथम) जोधपुर

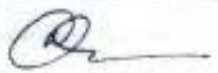
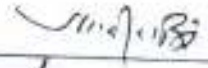
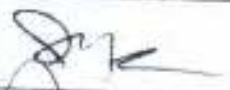
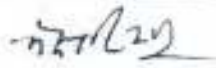
जन सुनवाई हेतु नामित पदाधिकारियों का उपस्थिति पत्र

मैसर्स भारतीय राष्ट्रीय राजमार्ग प्राधिकरण, परियोजना कार्यान्वयन इकाई, जोधपुर द्वारा भारतमाला परियोजना (पैकज-7/लोट-4) के तहत 4/6 लेन अभिगम नियंत्रण राष्ट्रीय राजमार्ग संख्या 754K का निर्माण राजस्थान राज्य में धनानिया शासन, (जोधपुर जिला) से राजस्थान-गुजरात के पास सांचौर (जिला जालोर) तक कार्य हेतु पर्यावरण स्वीकृति के लिये आयोजित जन सुनवाई की बैठक।

स्थान : राजकीय माध्यमिक विद्यालय, डाढणिया भायला
तहसील : बालेसर, जिला - जोधपुर

दिनांक : 28/01/2019

समय : प्रातः 11:30 बजे

क्र.सं.	नाम	पद एवं विभाग	हस्ताक्षर
1	C.L. Gogoi	ADME Jodhpur	
2	जगदीश सिंह	जगदीश सिंह, जिला अधिकारी राजस्थान राज्य पर्यावरण विभाग	
3	Rohit Kumar	SDM Balesar	
4	Shankhchud Mishra	Coordinator - Iaj Pragati Sh.	
5	प्रवीणदास शर्मा	Manager (T) & NDS Jodhpur	
6	म. क. शर्मा	L.A.E	

पं.सं. - 1

जन सुनवाई में उपस्थित विभागों के पदाधिकारी, ग्रामवासी/जन प्रतिनिधियों का उपस्थिति पत्र

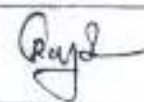
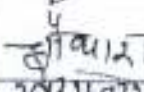
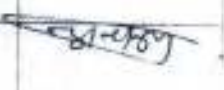
मैसर्स भारतीय राष्ट्रीय राजमार्ग प्राधिकरण, परियोजना कार्यान्वयन इकाई, जोधपुर द्वारा भारतमाला परियोजना (पैकेंज-7/लोट-4) के तहत 4/6 लेन अभिगम नियंत्रण राष्ट्रीय राजमार्ग संख्या 754K का निर्माण राजस्थान राज्य में धधानिया शासन, (जोधपुर जिला) से राजस्थान-गुजरात सीमा पास सांघौर (जिला जालोर) तक कार्य हेतु पर्यावरण स्वीकृति के लिये आयोजित जन सुनवाई की बैठक।

स्थान : राजकीय माध्यमिक विद्यालय, डाढणिया भायला
तहसील : बालेसर, जिला - जोधपुर

दिनांक : 28/01/2019
समय : प्रातः 11:30 बजे

क्र.सं.	नाम	पद एवं विभाग/ग्राम/रहवासीय स्थान का पता	हस्ताक्षर
1)	आजी लाल 510 डाढणिया भायला	डाढणिया भायला	
2)	अनूप सिंह 510 डाढणिया भायला	डाढणिया भायला	
3)	मोहन राम 510 डाढणिया भायला	डाढणिया भायला	मोहन राम
4)	देवराज 510 डाढणिया भायला	(गोदास)	देवराज
5)	गोविंद 510 डाढणिया भायला	डाढणिया भायला	गोविंद
6)	किशन राम 510 डाढणिया भायला	डाढणिया भायला	किशन राम
7)	प्रेम राम 510 डाढणिया भायला	डाढणिया भायला	प्रेम राम
8)	अनूप राम 510 डाढणिया भायला	डाढणिया भायला	
9)	मोहन राम 510 डाढणिया भायला	डाढणिया भायला	
10)	लाला राम 510 डाढणिया भायला	डाढणिया भायला	लाला राम
11)	मोहन राम 510 डाढणिया भायला	डाढणिया भायला	
12)	मोहन राम 510 डाढणिया भायला	डाढणिया भायला	मोहन राम
13)	देवराज 510 डाढणिया भायला	डाढणिया भायला	देवराज
14)	किशन राम 510 डाढणिया भायला	डाढणिया भायला	किशन राम

क्र.सं.	नाम	पद एवं विभाग/ग्राम/रहवासीय स्थान का पता	हस्ताक्षर
32	लुनाराम	गगणिया सासवा	
33	प्रेमराम	दरिगाह गगणिया	
34	राजुराम	ठांठगिआ (भांगला)	राजुराम
35	रूपाराम	ठांठगिआ (भांगला)	रूपाराम
36	केसराम	हादगिआ (भांगला)	केसराम
37	दौलतराम	भांगला	
38	मोहनराम	ठांठगिआ (भांगला)	मोहनराम
39	मन्तराम	ठांठगिआ भांगला	मन्तराम
40	देवदाम	गौदासर	देवदाम
41	अकाराम	हादगिआ	
42	मोहनराम	भांगला	मोहनराम
43	दीपाराम	भांगला	
44	कानाराम	गौदासर	
45	लुनाराम	भांगला	
46	रणाराम	गौदासर	
47	खानाराम	गौदासर	

क्र.सं.	नाम	पद एवं विभाग/ग्राम/रहवासीय स्थान का पता	हस्ताक्षर
48	राजाराम मेघवाल	हरिनगर, डा. भायना (वालेसर)	
49	मुकेश मेघवाल	हरिनगर, डा. भायना (वालेसर)	
50	विष्णुराम	भायना	
51	भवंलाल	ढाढीयाँ भायना	
52	पौषाराम	ढाढीयाँ (भायना)	
53	श्वराजराज	ढाढीयाँ (भायना)	पौषाराम श्वराजराज
54	वालुराम	ढाढीयाँ भायना लोले की छविवाँ	वालुराम
55	भवनलाल	नोडापूर नयाँ ढाढीयाँ भायना	
56	राजाराम	खोडा का नाम	राजाराम
57	सताराम	गोदासर गाँव	सताराम
58	जमराम	गोडासर गाँव	जमराम
59	गोरखराम	गोडासर गाँव	गोरखराम
60	बेनाराम	गोदासर गाँव	बेनाराम
61	गेनाराम	ढाढीयाँ भायना	
62	मोडाराम	देवगाँव	
63	मोडाराम	देवगाँव	मोडाराम
64	सुरवाराम	देवगाँव	सुरवाराम

[illegible]

20/12/20

BM-7

Kerala church row: Police take into custody Orthodox priest

Kothamangalam (Kerala): As tension prevailed, the stand-off between the warring Orthodox and Jacobite factions over con-

trol of the Kothamangalam Mar Thoma Syrian Church, ended in second day. The police forcefully on Fri- day took into custody Orthodox priest Father Thomas Paul Raman, who joined with a High Court plea; waited out- side the church since Thursday to gain entry into the church. The Raman told the media that the police, while taking

him into custody, informed him that the Ernakulam district collector has issued the order for his arrest. "Today when I didn't want to relieve myself, I was taken to

the bullet of cooperative with the de- when I want to have with me the orders that they, the court that has allowed custody as my at the church," said have made amban from a hospital unless I return here.

7 labourers crushed to death

Dehradun: Seven labourers were killed in a rockfall on Rudrapur-Gaurikund highway on Friday. Three persons were injured in the mishap. All the labourers were from Jammu & Kashmir. Three beridars came in sliding down from the hill & crushed the labourers working on a road project, said official. There were 22 labourers working at the time of the incident. Thirteen managed to run to safety while seven were killed and three were critically injured. The district mag- strate has ordered a magis- tral probe into the incident and officials said action has been initiated against the en- tractor for not taking ad- equate precautions while ex- tending the work, an-



Pment Board
Jaipur-842601
Website: www.pmentboard.org
Phone: 0621-221167

OTICE
(chicang)

Revised Test (CBT) Stage
Revised computer Based Test (CBT) con-04.09.2018 for the posts of Junior Categories of Technicians been published on 20.12.20 board of RRB / Muzaffarpur Test (CBT) is schedule 9 to 23.01.2019. This final website of RRB / Muzaffarpur.gov.in

No.-RRB CHAIRMAN
Date: 21 RRB/Muzaffarpur



राजस्थान राज्य प्रमुख नियंत्रण मण्डल
जिला-1, राजस्थान, जयपुर, जयपुर, जयपुर
फोन नं: 0291-2723225, ई-मेल: rrb@rrbmuzaffarpur.org

परीक्षाधीन अधिकारी हेतु सूचना

1. परीक्षाधीन अधिकारी हेतु सूचना जारी की जा रही है।

2. परीक्षाधीन अधिकारी हेतु सूचना जारी की जा रही है।

3. परीक्षाधीन अधिकारी हेतु सूचना जारी की जा रही है।

4. परीक्षाधीन अधिकारी हेतु सूचना जारी की जा रही है।

5. परीक्षाधीन अधिकारी हेतु सूचना जारी की जा रही है।

6. परीक्षाधीन अधिकारी हेतु सूचना जारी की जा रही है।

7. परीक्षाधीन अधिकारी हेतु सूचना जारी की जा रही है।

8. परीक्षाधीन अधिकारी हेतु सूचना जारी की जा रही है।

9. परीक्षाधीन अधिकारी हेतु सूचना जारी की जा रही है।

10. परीक्षाधीन अधिकारी हेतु सूचना जारी की जा रही है।



राजस्थान राज्य प्रमुख नियंत्रण मण्डल
जिला-1, राजस्थान, जयपुर, जयपुर, जयपुर
फोन नं: 0291-2723225, ई-मेल: rrb@rrbmuzaffarpur.org

परीक्षाधीन अधिकारी हेतु सूचना

1. परीक्षाधीन अधिकारी हेतु सूचना जारी की जा रही है।

2. परीक्षाधीन अधिकारी हेतु सूचना जारी की जा रही है।

3. परीक्षाधीन अधिकारी हेतु सूचना जारी की जा रही है।

4. परीक्षाधीन अधिकारी हेतु सूचना जारी की जा रही है।

5. परीक्षाधीन अधिकारी हेतु सूचना जारी की जा रही है।

6. परीक्षाधीन अधिकारी हेतु सूचना जारी की जा रही है।

7. परीक्षाधीन अधिकारी हेतु सूचना जारी की जा रही है।

8. परीक्षाधीन अधिकारी हेतु सूचना जारी की जा रही है।

9. परीक्षाधीन अधिकारी हेतु सूचना जारी की जा रही है।

10. परीक्षाधीन अधिकारी हेतु सूचना जारी की जा रही है।



Make in India Series NORTH

CONSUMER CONNECT INITIATIVE

Make in India Series NORTH

CONSUMER CONNECT INITIATIVE













Public Hearing Details - Issues raised and their response

District – Jodhpur

Venue – State Secondary School, Dhandhaniya Bhayla, Tehsil: Balesar,

Dist: Jodhpur

Date: 28.01.19

S.No	Name and address of stakeholder	Question	Reply
1	Shri Mohanram Village Godasar	Request to tell us about the compensation amount of the acquired land of the farmers by the Government. Also tell us about the provisions made for their movement in case national highway is passing through the middle of their land / farm. What are the provisions made to stop the negative impact that will arise on nearby lands of farmers due to the construction of this national highway.	Shri Rohit Kumar, Subsection Officer, Balesar – He assured that compensation of acquired land, residential and commercial construction will be given as per criteria and rules of Land Acquisition Act 2013. Shri Rohit Kumar, Subsection Officer, Balesar and Shri Tarun Saharan, Representative, Enviro Infra Solutions Pvt. Ltd. – 34 nos. of LVUPs, 85 nos. of SVUPs, 26 nos. of VUPs, 09 nos of interchanges have been proposed under this proposed alignment for the movement of the villagers. The details have been presented in section 2.7.4 and 2.7.5 of Chapter 2 in EIA/EMP report. Shri Tarun Saharan, Representative, Enviro Infra Solutions Pvt. Ltd. – Rs 37 Cr. has been proposed for Environment Management Plan under this proposed project. Trees will be planted on both sides of the road in rows of three since ROW is of 70m. As per EMP, there is provision of Green belt plan to control air pollution and approx. 1,24,800 trees will be planted. There will be provision of water sprinkling on both sides of highway so as to control the dust. More and more plantation will be done. The details of the impacts and its mitigation measures have been presented in Chapter 5 of EIA/EMP report.

			Shri Chagan Lal Goyal, Additional District Magistrate and Regional Officer Pollution Control Board, Shri Jagdish Singh, Jodhpur – They assured that environmental protection and health related problems will be given priority and resolved. Through modern technology, environmental pollution will be controlled and there will be no adverse effect of pollution on nearby villagers.
2	Shri Lalaram Chaudhary Village Dhandhaniya, Godasar	Give similar compensation amount of acquired land due to this NHAI project as given to farmers in Punjab.	Shri Rohit Kumar, Subsection Officer, Balesar - Compensation will be given as per criteria and rules of Land Acquisition Act 2013.

DETAILS OF PUBLIC HEARING FOR DISTRICT JALORE

जन सुनवाई कार्यवाही विवरण

वन एवं पर्यावरण मंत्रालय, नई दिल्ली, के द्वारा जारी अधि सूचना दिनांक 14.09.2006 के अन्तर्गत उद्योगों को पर्यावरण स्वीकृति जारी करने से पूर्व प्रोजेक्ट स्थल के आसपास के क्षेत्र के लोगो के मध्य जन सुनवाई किया जाना आवश्यक होता है। इसी क्रम में इस जन सुनवाई का आयोजन किया जा रहा है।

अतिरिक्त जिला कलेक्टर एवं अतिरिक्त जिला मजिस्ट्रेट जालोर के पत्र क्रमांक ROW/18/7080 दिनांक 18.12.2018 एवं क्षेत्रीय कार्यालय के पत्र क्रमांक राप्रनिम/क्षे.का./बालोतरा/PH-01/1327-29 दिनांक 19.12.2018 के क्रम में मैसर्स नेशनल हाइवे ऑथोरिटी ऑफ इण्डिया (एन.एच.ए.आई.) के द्वारा प्रस्तावित भारतमाला परियोजना (लोट-4/पैकेज-7) के तहत 4/6 लैन एक्सेस कन्ट्रोल हेतु राष्ट्रीय राजमार्ग संख्या 754k के निर्माण हेतु पर्यावरण स्वीकृति हेतु दिनांक 22.01.2019 प्रातः 11:30 बजे स्थान उप जिला मजिस्ट्रेट कार्यालय भीनमाल परिसर, तहसील भीनमाल, जिला जालोर में उपस्थित ग्रामवासियों की उपस्थिति में पर्यावरणीय जनसुनवाई का आयोजन किया गया।

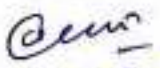
उक्त पर्यावरणीय जन सुनवाई की आम सूचना राजस्थान पत्रिका एवं टाइम्स ऑफ इण्डिया के संस्करण दिनांक 21.12.2018 में प्रकाशित की गई जिसकी प्रति परिशिष्ट -'अ' पर संलग्न है। सुनवाई से पूर्व क्षेत्रीय कार्यालय बालोतरा में उक्त जनसुनवाई के संबंध में दिनांक 21.01.2019 तक कोई मौखिक अथवा लिखित आपत्ति/सुझाव/विचार प्राप्त नहीं हुये।

पर्यावरणीय जन सुनवाई निम्न अधिकारियों की उपस्थिति में आयोजित की गई।

1. श्री अशोक कुमार, मुख्य कार्यकारी अधिकारी (अतिरिक्त कार्यभार - अतिरिक्त जिला कलेक्टर एवं अतिरिक्त जिला मजिस्ट्रेट जालोर, आदेश की प्रति संलग्न है)।
2. श्री विनय कट्टा, क्षेत्रीय अधिकारी, राजस्थान राज्य प्रदूषण नियंत्रण मण्डल, बालोतरा।
3. श्री दौलतराम चौधरी, उपखण्ड अधिकारी, भीनमाल, जिला जालोर।
4. श्रीमती गोमती शर्मा, उपखण्ड अधिकारी, सांचौर, जिला जालोर।
5. श्री रमेश कुमार, उपखण्ड अधिकारी, सायला एवं बागोडा, जिला जालोर।
6. श्री रोहित चौहान, तहसीलदार, भीनमाल, जिला जालोर।
7. श्री बलजीत मीणा, कनि. पर्यावरण अभियंता, राजस्थान राज्य प्रदूषण नियंत्रण मण्डल, बालोतरा।

पर्यावरणीय जन सुनवाई के दौरान उपस्थित अधिकारियों एवं ग्रामवासियों का विवरण मय हस्ताक्षर परिशिष्ट -'ब' पर उपलब्ध है।

श्री अशोक कुमार, मुख्य कार्यकारी अधिकारी (अतिरिक्त कार्यभार - अतिरिक्त जिला कलेक्टर एवं अतिरिक्त जिला मजिस्ट्रेट जालोर ने इस जनसुनवाई की अध्यक्षता करते हुए सभी


क्षेत्रीय अधिकारी
राजस्थान राज्य प्रदूषण नियंत्रण मण्डल
बालोतरा


मुख्य कार्यकारी अधिकारी
जिला परिषद, जालोर

उपस्थित अधिकारियों व ग्रामवासियों का स्वागत करते हुए आग्रह किया कि वे सभी प्रस्तावित परियोजना को सुनें तथा इस बाबत किसी भी प्रकार की जानकारी लेना चाहते हैं या अपनी आपत्ति/सुझाव/विचार लिखित अथवा मौखिक देना चाहे तो आपका स्वागत है।

इसी दौरान श्री विनय कट्टा, क्षेत्रीय अधिकारी ने भी सभी उपस्थित अधिकारियों व ग्रामवासियों का स्वागत करते हुए जनसुनवाई के प्रावधान, उद्देश्य एवं महत्व के बारे में उपस्थित आमजन/ग्रामवासियों को बताया और परियोजना के बारे में विस्तृत रूप से जानकारी देने हेतु परियोजना के पर्यावरणीय विशेषज्ञ/सलाहकार मैसर्स इनवायरो इन्फ्रा सॉल्यूशंस प्राईवेट लिमिटेड, गाजियाबाद के प्रतिनिधि से परियोजना के बारे में विस्तृत विवरण प्रस्तुत करने का अनुरोध किया। इसी दौरान किसी अन्य व्यक्ति/ग्रामवासी द्वारा बुलाये जाने पर समस्त उपस्थित ग्रामवासी/आमजन उठकर सुनवाई का बहिष्कार करते हुए उप जिला मजिस्ट्रेट कार्यालय भीनमाल परिसर से बाहर चले गये एवं धरने पर बैठ गये। इसके पश्चात जनसुनवाई में उपस्थित समस्त अधिकारियों द्वारा बार-बार निवेदन करने के बावजूद जन सुनवाई में उपस्थित नहीं हुये एवं कहा कि हम अपनी आपत्ति/सुझाव/विचार सामुहिक ज्ञापन के रूप में लिखित में प्रस्तुत करेंगे एवं समस्त ग्रामवासियों ने अपनी आपत्ति/विचार/सुझाव ज्ञापन के रूप में प्रस्तुत किये। जिनकी प्रति परिशिष्ट - 'स' पर संलग्न है। जनसुनवाई के फोटोग्राफ एवं DVD परिशिष्ट - 'द' पर संलग्न है।

अंत में श्री देवीलाल सुन्देशा निवासी भीनमाल ने मौखिक रूप से बायोडायवर सीटी की बात करते हुए कहा कि इस परियोजना के तहत हजारों वृक्ष काटे जायेंगे, जिनके बदले नये पौधे लगाने का क्या प्रावधान है। जिसके जवाब में कम्पनी के प्रतिनिधि द्वारा अवगत करवाया गया कि इस परियोजना के तहत लगभग 5909 वृक्ष काटे जायेंगे जिनके बदले सड़क के दोनों तरफ तीन पंक्तियों में वृक्षारोपण किया जायेगा जिनकी संख्या लगभग 124800 होगी।

अंत में क्षेत्रीय अधिकारी, राजस्थान राज्य प्रदूषण नियंत्रण मण्डल, बालोतरा द्वारा कहा गया कि ज्ञापन एवं मौखिक रूप से प्राप्त आपत्ति/विचार/सुझाव को जन सुनवाई के कार्यवृत्त में शामिल करते हुए सक्षम प्राधिकरण को प्रेषित कर दिया जायेगा। साथ ही उन्होंने जन सुनवाई में उपस्थित सभी गणमान्य अधिकारियों/नागरिकों को उपस्थित होने के लिए धन्यवाद देते हुए जनसुनवाई का समापन किया।

Dev
(विनय कट्टा)
क्षेत्रीय अधिकारी
राजस्थान राज्य प्रदूषण नियंत्रण मण्डल
रा.प्र.नि.म. बालोतरा

h
(अशोक कुमार)
अतिरिक्त जिला मजिस्ट्रेट एवं
अतिरिक्त जिला मजिस्ट्रेट
जालोर

मैसर्स भारतीय राष्ट्रीय राजमार्ग प्राधिकरण द्वारा भारतमाला परियोजना (लॉट-4/पैकेज-7) के अंतर्गत इकोनॉमिक कॉरिडोर अमृतसर-कांडला परियोजना के राष्ट्रीय राजमार्ग संख्या 754K के देवगढ़ (जिला जोधपुर) से सांचौर (जिला जालोर) खण्ड के किमी. 0.000 से किमी. 207.000 तक छः/चार लेन मय पेव्ड शॉल्डर कार्य हेतु लोक सुनवाई आयोजित की गई जिसमें उपस्थित व्यक्तियों की सूची इस प्रकार है :-

क्र. सं.	नाम	पद व पता	हस्ताक्षर
1	श्री अशोक कुमार	कार्यपालक - वृहत्-डी-एम् सी. डी. डी. जालोर	हस्ताक्षर
2	" विनय कटारिया	डी. आर. सी. प्र. नि. म. जालोर	हस्ताक्षर
3	" श्री लाल राम	उपखण्ड डी. आर. नि. म. जालोर	हस्ताक्षर
4	गणेश मली जी शर्मा	— — — सांचौर	हस्ताक्षर
5	" वलमीत मीठा	डि. प्रमो. डी. आर. नि. म. जालोर	हस्ताक्षर
6	श्री. वि. डी. डी.	डी. आर. नि. म. जालोर	हस्ताक्षर
7	विजय शर्मा	पुनर्वास डी. आर. नि. म. जालोर	हस्ताक्षर
8	डि. आर. नि. म.	पुनर्वास डी. आर. नि. म. जालोर	हस्ताक्षर
9	पीताराम	सहायक नि. म. जालोर	पीताराम
10	मोताराम	कर्मचारी डि. आर. नि. म. जालोर	मोताराम
11	प्रमुराम	पुनर्वास डि. आर. नि. म. जालोर	प्रमुराम
12	मोताराम	कर्मचारी डि. आर. नि. म. जालोर	मोताराम
13	कर्मचारी	कर्मचारी डि. आर. नि. म. जालोर	कर्मचारी
14	पुनर्वास	पुनर्वास डि. आर. नि. म. जालोर	पुनर्वास
15	पुरवराज किशोर्	सदस्य जिला आयोजना समिति जिला परिषद जालोर	हस्ताक्षर

ક. સ.	નામ	પદ વ પતા	હસ્તાક્ષર
16	જેનારાય વિશ્નોઈ	જાણીતી બીજાલ	જેનારાય
17	હામરાપાક	જામરાની મામલી	હામરાપાક
18	હામરાપાક	જામરાની વ્યવસ્થા	હામરાપાક
19	Nagpal J. Kotungol	K&J Projects Pvt Ltd. Shikam, 16 NIT layout, Bani Nagar Nagpur	Nagpal
20	મંચરાલેલ વાણક	સાધારણ	
21	જગમાણનાથ વિશ્નોઈ	સંગ-લોક	
22	ચંદનસિંહ	વાગોડા	ચંદનસિંહ
23	ગ્રીષ્મકુમાર દવે	બાણેર	
24	હન્ડેઆણ માલી	મીનમાલ	હન્ડે
25	બાલકેચ્છ	સાધારણ	બાલકેચ્છ
26	માધવભાઈ	મીનમાલ	
27	હરિશ્ચંદ્રભાઈ	સહાયક પ્રશાસક કમિશનરી કાર્યાલય જાણી	
28	મોહન રાણ	સહાયક પ્રશાસક, મીનમાલ	
29	પરભાઈ	જાણીતી રીમ	
30	Ramash Kumar	SDO - Bhylo/Bugad	
31	દેવીલાલ સુબેરા	આધિકારી મીનમાલ	Alif
32			
33			
34			

पंजीकरण संख्या - 1

जीवरक्षा

संस्कार निर्माण

पंजीयन क्रमांक-30/जागीर/5 जून 2012



श्री जम्भेश्वर पर्यावरण एवं जीवरक्षा प्रदेश संस्था (रजि.)

पंजीकृत प्रधान कार्यालय : श्री गुरु जम्भेश्वर जन्मस्थली, पीपामर तह. एवं जिला नागौर (राज.)

Phone : 01582-241136 (Office) E-mail : jambheshwarjeavraksa@gmail.com

संस्था

प्रदेश

जिला

आचार्य स्वामी रामानन्दजी
संस्था पीपामर, मुक्तिधाम मुकाम
मो. 9414429279

रामरतन विश्नोई (एच.कॉन्. साहित्यकार)
जागीर (राज.)
मो. 9214118849

हिरालाल गोदारा
भमाण का मालिक, ग. भांगौर
मो. 9784199591

क्रमांक SP 1

श्रीमान जे.प्रिय. श्री. श्री. श्री.
रा. प्र. नि. म. जालोर

दिनांक 22/01/2019

विषय : - N.H. 75PK सिमलने पर पर्यावरण
प्रभावित होने के बारे में

मान्यवर जी, जालोर जिले में दहीवा से जोलाधन
(सायली) (खोन्हा)

लक सड़क निम्नलिखित से पश्चिमी राजस्थान का पर्यावरण
अच्छा रूप से प्रभावित होगा। पश्चिमी राजस्थान बहुत गर्म
है। सड़क के कारण हरियाली हरिया बरेगा और से
जमीन बदेगी। अ गर्म हरिया में रहने वाले जीव-जन्तु बुरी तरह
प्रभावित होंगे। पूर्व में जीवों की खेती कर रही है और बरेगी
जिसे खेतकम गड़बड़ा जायेगा। यहां के लोगों का जीवन
प्रभावित होगा। छोटे पौधों के मरने से लोगों का जीवन प्रभावित
होगा जो अयेगा जिसे बनाना समाप्त या स्थित है। भाग है इस
सड़क से N.H. 68 में मिलाने से पर्यावरण बचेगा हमारी सोच है
समाप्त पर्यावरण 68 में लगेगा

भारत माला एक्सप्रेस हाईवे किसान संघर्ष समिति जिला जालोर

क्रमांक 592-1

दिनांक 22/11/19

श्रीमान् क्षेत्रीय अधिकारी

राज. राज्य प्रदूषण नियंत्रण मंडल,

बालोतरा (बाड़मेर) (कम्प भीनमाल)।

विषय :- सड़क परिवहन मंत्रालय भारत सरकार के अधीन प्रस्तावित
भारतमाला परियोजना (NH -754K) के संबंध में पर्यावरण
बचाओ बाबत।

मान्यवरजी,

उपर्युक्त विषय में सादर निवेदन है कि भारतमाला परियोजना NH 754 K जालोर जिले के सांचौर, चित्तलवाना, भीनमाल, बागौडा, सायला तहसील से होकर निकालना प्रस्तावित है।

भारतमाला एक्सप्रेस हाईवे संघर्ष समिति का निम्न प्रकार से विरोध है -

1. सांचौर तहसील में गोलासन (गुजरात बार्डर) से चौरा भादरूणा तक 24 किलोमीटर तक का एरिया नर्मदा नहर सिंचित एरिया है, जिससे प्रतिवर्ष 3 फसलें ली जाती हैं, जो इस प्रस्तावित सड़क से भयंकर रूप से पर्यावरण प्रभावित होगा। पर्यावरण वैज्ञानिक सागरधारा के अनुसार फीकट्टी में ऑक्सीजन तैयार होती है। उसी तरह खेतों में किसान ऑक्सीजन तैयार करता है इसी तरह खेतों की जमीन नष्ट हो जाएगी और किसान बर्बाद हो जाएंगे।
2. जालोर जिले में प्रवेश से लेकर गुजरात सीमा तक सायला के दहीवा से गुजरात बार्डर तक गोलासन तक पेड़ खेजड़ी, रोहिडा, नीम, बबूल, शीशम व पीपल, कंकड़ी जाल इत्यादि ऑक्सीजन तैयार करने वाले लाखों पेड़ प्रभावित होंगे, जिससे इस एरिये का पर्यावरण गड़बड़ा जाएगा।
3. पेड़-पौधों के कटने से स्थानीय जीव-जन्तु भयंकर रूप से प्रभावित होंगे, जिनका आसियाना उजड़ जाएगा। वर्तमान में हिरण, रोज, गायें इत्यादि इन्हीं पेड़ों पर निर्भर हैं, इनका भोजन खत्म हो जाएगा। नीम-कंकड़ी, केर, जाल के कटने से मोर, नेबला, जजगर, गौ-साप, गिरगिट, गिलहरी तितलियां खत्म होने की कगार पर हैं। इससे पर्यावरण का आधार खत्म हो जाएगा।

जन गुनवाई
22/11/2019

4. उक्त सड़क के निकलने से सैकड़ों की संख्या में परिवार बेघर हो रहे हैं, जो केवल भटकने पर मजबूर होंगे, जो पर्यावरण को प्रभावित करेंगे।
5. किसान साल में तीन बार फसल की बुवाई करके पर्यावरण को संतुलित करता है। जमीन जानें से उसका आधार ही खत्म हो जाएगा।
6. सड़क के कारण उक्त ऐरिये में बाग-बगीचे, अनार चीकू इत्यादि फलदार पौधे लगे हैं, वो तमाम प्रभावित होंगे।
7. जालोर जिला मसाला खेती के लिए विश्व में प्रसिद्ध है। उक्त सड़क निकलने से जीरा, इंसब, दाल दलहन, मिर्च, धनिया, सौंफ आदि का उत्पादन भारी मात्रा में गिरेगा, जो हमारे सामाजिक घटक को प्रभावित करेंगे।
8. वृक्षों की व जीव-जन्तुओं के रक्षार्थ राजस्थान के लोगों ने पूर्व में बलिदान देकर इनको बचाया है (अमृतादेवी बलिदान 363 शहीद हुए)। खेजड़ी को काटा जाना राजस्थान के लोग धर्म पर प्रहार मानते हैं, जिनको काटा जाना पुत्र बलिदान सम माना जाता है, इससे सामाजिक विद्रोह हो सकता है।
9. उक्त सड़क निकालने से साल में 3 फसल का ऐरिया घटेगा, जिससे ग्लोबल वार्मिंग प्रतिशत बढ़ेगा।

10. उक्त सड़क निकलने से सैकड़ों ट्यूबवेल प्रभावित होंगे, जिससे फसत बुवाई व पीने के पानी का संतुलन गड़बड़ा जाएगा। नए आधार कायम करने पर सैकड़ों रुपये व्यय होगा।

11. पर्यावरण संतुलन गड़बड़ाने से उक्त पश्चिमी एरिये में बीमारियां बढ़ेंगी। गर्मियों में होने वाली बीमारियां होने लगेंगी, जिससे समाज रुग्ण अवस्था में पहुंचेगा।

प्रतिलिपि आवश्यक कार्यवाही हेतु :-

1. माननीय मुख्यमंत्री राजस्थान सरकार।
2. माननीय वन एवं पर्यावरण मंत्री राजस्थान सरकार।
3. जिला कलेक्टर महोदय जालोर।
4. माननीय प्रदूषण नियंत्रण मण्डल भारत सरकार।
5. पी.डी. एस के मिश्रा NH-754K।

जिला प्रमुख
जिला मजिस्ट्रेट
जालोर
9680967171

हाफाराम्प अमाना (पुरवराज विजयोर)
पार्क, अमाना
नीवांदा पि फेपार अमाना

अमर

कमिश्नर
जालोर
जिला मजिस्ट्रेट
जालोर

अमर
जिला मजिस्ट्रेट
जालोर

प्रतिष्ठा में,

माननीय प्रधानमंत्री महोदय
भारत सरकार, नई दिल्ली।

श्रीपत्र
भारतमाला प्रोजेक्ट
21-1-19

मार्फत :- उपखण्ड अधिकारी महोदय सांचौर जिला जालोर।

विषय - सड़क परिवहन मंत्रालय भारत सरकार के अधीन प्रस्तावित भारतमाला परियोजना के सम्बन्ध में।
मान्यवरजी,

--: ज्ञापन --:

जरिये ज्ञापन सूचित व आगाह किया जाता है कि दिनांक 12 सितम्बर 2018 से उपखण्ड मुख्यालय सांचौर के समक्ष भारतमाला किसान संपर्क समिति सांचौर में अध्यक्ष श्री कुमार चौधरी की अध्यक्षता में आज दिनांक-21 जनवरी 2019 को 132 वें दिन जारी है धरने में गोलासन, गरदाली, प्रतापपुरा, बड़सम, माखपुरा, जालुसन, लाछड़ी, जीवा का गोलिया, भूरा की डाणी, रुड़ा का गोलिया, रावतसर सहित कई गांवों के किसानों ने आपत्ती पत्र उपखण्ड अधिकारी सांचौर को प्रस्तुत कर एक्सप्रेस-वे में जमीन नहीं देने का एतराज पेश किया है। 20 से 25 गांवों के किसानों द्वारा अनिश्चित कालीन धरणा देकर मांग कर रहे हैं कि समय रहते हमारी न्यायोचित मांगों पर ध्यान नहीं दिया गया तो आन्दोलन और उग्र किया जायेगा।

सड़क परिवहन मंत्रालय भारत सरकार के अधीन ड्राइव प्राधिकरण द्वारा भारतमाला परियोजना के तहत सांगरिया हनुमानगढ़ से सांचौर के आगे गुजरात तक एक्सप्रेस-वे विधानसभा क्षेत्र सांचौर के उत्तर का शुरूआती गांव वापा से प्रवेश कर निम्बाऊ, देवड़ा, बिजरोल गोलिया, भादरूणा, चौरा, हरियाली, डामरा, रावतसर, कारोला, रुड़ा का गोलिया, भूरा की डाणी, जीवा का गोलिया, लाछड़ी, जालुसन, बसडम, माखपुरा, प्रतापपुरा, हनुमानगढ़, पहाडपुरा, गरदाली व गुजरात बोर्डर पर लगता अन्तिम गांव गोलासन तक 42 किलोमीटर लम्बी व 70 मीटर चौड़ी बनाना प्रस्तावित है।

यह है कि उक्त भारतमाला नाम से प्रस्तावित एक्सप्रेस-वे का पूर्व में हवाई सर्वेक्षण किया गया। जिसमें इस एक्सप्रेस-वे में किसी तरह का एस हाईप मौड़ नहीं था। सामान्य मौड़ वे, परन्तु परागत पर रुने करने पर राजनैतिक दबाव से सांचौर के पास दो मौड़ दिये गये। उससे एक्सप्रेस-वे की लम्बाई बढ़ी व किसानों के ज्यादा खेत एक्सप्रेस-वे अधीन गए। सांचौर की जमीन चौरा से लगाकर गोलासन तक समेटा कमाण्ड क्षेत्र में आती है। जो कीमती जमीन है, व किसानों के पास बहुत कम जमीन होने से 42 किलोमीटर लम्बाई में कई किसान भूमिहीन हो रहे हैं, व कई किसानों के खेत के बीचों-बीच सड़क निकलने से खेत दो भागों में बंटने व छोटे-छोटे टुकड़े होने से किसान कारत नहीं कर पाएंगे।

यह है कि किसानों की जमीन की कीमत का मुआवजा तय किया ही नहीं जा सकता क्योंकि सांचौर

विधानसभा क्षेत्र में नर्मदा कमाण्ड क्षेत्र होने व बाकी भूमिगत जल से सिंचाई होने से पीड़ितों से किसान अपने परिवार का पालन-पोषण कर रहे हैं। तथा नर्मदा नहर कि लिफ्ट से सिंचित 46 किलोमीटर लम्बाई में 42 गांवों के किसान प्रभावित हो रहे हैं। 2-लिफ्ट (प्रथम-गोलासन, द्वितीय-सांचीर) सिस्टम, 13 माईनर, 11 सब माईनर, 371 डिगियां और 50 हजार हैक्टर भूमि सिंचाई हो रही है नहर द्वारा सिंचित भूमि में तीनों सीजन में फसलें बोई जाती हैं। अधिकतर किसान छोटे किसान हैं। नौकरी-पेशा या व्यापार इन किसानों के पास नहीं हैं। केवल खेती पर ही निर्भर हैं। ऐसे में एक्सप्रेस-वे निकलने के बाद किसानों के रोजगार व परिवार पालने का कोई जरिया नहीं बचेगा। किसान दर-दर की टोकरी खाने की मजदूर होगा। इस एक्सप्रेस-वे से स्थानीय लोगों को कोई फायदा नहीं है। क्योंकि एक्सप्रेस-वे में बढ़ने व उतरने के बीच काफी दूरी है। व एक्सप्रेस-वे पार करने के लिए भी किसान को सामने वाले खेत में खेती पर जाने के लिए एक गांव से दूसरे गांव जाकर वापस आना पड़ेगा।

यह है कि राजस्थान का अंतिम गांव गोलासन के पास गुजरात में एक्सप्रेस-वे प्रदेश गांव कातड़ाऊ से गांव मियाल होते हुए गांव मेसरा से पुनः NH-68 पर धराद तक चलेगी। ऐसे में यह पूरी एक्सप्रेस-वे धराद से गांधी तक आराम से चल कर आगे बालोतरा तक सीधी जा सकती है। जिससे किसानों के खेत कम खराब होंगे। व मुआवजा भी कम लगेगा।

यह है कि एक्सप्रेस-वे प्राधिकरण द्वारा किसानों को मुआवजा सांचीर में डीएलसी रेट तथा सांचीर से दूर 10 किलोमीटर तक डीएलसी का डेढ़ गुना, 10 से 15 किलोमीटर तक डेढ़ गुना, 15 से 20 किलोमीटर तक तीन गुना, 20 किलोमीटर से आगे से आगे चार गुना दिया जाना प्रस्तावित है।

उक्त मुआवजा बहुत कम है। क्योंकि विधानसभा क्षेत्र सांचीर में 42 किलोमीटर में पांच जगह बिजौरा गोल्या में 55.80 हैक्टर, भादखणा में 71 हैक्टर, जीवा का गोल्या व भुरा की डाणी 88.40 हैक्टर, जाजुसन 78 हैक्टर, मीखुपुरा 117.28 हैक्टर जमीन सर्किल बनाने व वाणिज्यिक व औद्योगिक गलियारा बनाने के नाम पर किसानों से जमीन अवाप्त करना प्रस्तावित है। जिसका हम सभी किसान चौर दिरोय करते हैं व किसी भी कीमत पर केवल मुआवजे के बदले जमीन नहीं देंगे, मर जाएंगे परन्तु हमारे पुरखों की पुस्तेनी जमीन जो हमारी आजीविका का साधन है नहीं छोड़ेंगे, नहीं देंगे।

हमारी मांग है कि

1. सांचीर विधानसभा क्षेत्र में इस एक्सप्रेस-वे को हाईवे नं. 68 पर ही चलाया जाय। ताकि किसानों को भूमिहीन नहीं होना पड़े।
2. यह है कि जमीन अवाप्त से पूर्व किसी भी प्रकार के पीलर नहीं खड़े किये जायें। क्योंकि किसानों की फसलें खड़ी हैं जो बर्बाद हो जाएगी। जो पीलर खड़े कर रहे हैं उन्हें अविलम्ब रोका जायें।

दिनांक-12 सितम्बर 2018 से भारतमाला किसान संघर्ष समिति सांचौर के तत्वाधान में एवं भारतमाला किसान संघर्ष समिति सांचौर के अध्यक्ष कूपाराम चौधरी की अध्यक्षता में उपखण्ड मुख्यालय सांचौर के सक्षम अनिश्चित कालीन धरणा आज- दिनांक-21 जनवरी 2019 को 132 वें दिन धरणा जारी है जिसमें हमारी मांगों पर कार्यवाही नहीं होने पर किसान आन्दोलन करने को तैयार हैं व कभी भी आन्दोलन कर सकते हैं जिसमें तमाम जिम्मेदारी प्रशासन की रहेगी।

प्रतिलिपि :-

1. माननीय नितिन गडकरी परिवहन मंत्री महोदय, भारत सरकार नई दिल्ली।
2. माननीय वी.के. जोशी जनरल मैनेजर महोदय, भारतमाला परियोजना जी. 545 सेक्टर नं.10 द्वारका नई दिल्ली-110075
3. माननीय एस.के. मिश्रा परियोजना अधिकारी महोदय भारतमाला परियोजना, 188 उम्मेद हेरीटेज कॉलोनी रातानाडा जोधपुर।
4. माननीय अशोक गहलोत महोदय, मुख्यमंत्री राजस्थान सरकार जयपुर।
5. माननीय सचिन पायलट, उपमुख्यमंत्री महोदय, राजस्थान सरकार जयपुर।
6. माननीय युधवीरसिंह मलिक, सचिव, सड़क ट्रांसपोर्ट ओथोरेटी, नई दिल्ली।
7. माननीय देवजी एम पटेल महोदय, सांसद जालोर-सिरोही।
8. माननीय सुखराम विशनोई, वन एवं पर्यावरण विभाग मंत्री महोदय, राजस्थान सरकार एवं विधायक सांचौर जालोर।
9. श्रीमान जिलाधीश महोदय, बाड़मेर।
10. श्रीमान जिलाधीश महोदय जालोर।

 विनय

अधीक्षक

राजस्थान

(N. K. Chaudhary)





Public Hearing Details - Issues raised and their response

Venue: SDM Office, Bhinmal, Jalore

Date: 22.01.19

S.No	Name and address of stakeholder	Question	Reply of Project Proponent
1	Shri Devilal Sundesha	This road construction will destroy our biodiversity. What are the provisions to protect it?	The project is the linear project and only 5909 trees will be cut. In this proposed project, tree plantation will be done on both sides of the road and approx. 1,24,800 trees will be planted in consultation with the forest department. The details of the tree species which shall be planted have been presented in section 9.6 of Chapter 9 of EIA/EMP report. Biodiversity of the area will not be affected.
2	-	In Sanchoe, 24 Km area from Golasan to Bhadura, is irrigated by Narmada canal for sowing of 3 crops. Crops and environment will be affected due to this proposed project. Farmers will be adversely affected by this.	Due to this project, no river or canal will be blocked and to protect them, minor and major bridges will be constructed which not affect the irrigation network, The details of the bridges will have been presented in section 2.7.1 of Chapter 2 of EIA EMP report. Compensation will be paid for irrigated land as per NH act. Huge plantation will be done on both side of the road which will increase the oxygen level in the area and will not affect the lifecycle of people living in the nearby area.
3	-	In Jalore district, trees like Kejdi, Rohida, Neem, Babool, Shisham and Peepal will be affected in this region and will create an imbalance in the environment.	Under this project, only those trees will be planted which are found in this region. Plantation will be done in consultation with Forest department/ local panchayat to restore the balance. The details of the tree species which shall be planted have been presented in section 9.6 of Chapter 9 of EIA/EMP report.
4	-	Animals will be affected due to cutting of trees and they will lose their home. At present, Deer and Cows are dependent on the plantation in this region. Peacock, Nivla, butterflies and other animals / birds are on the verge of dying due to cutting of trees like Neem, Ker and Kankeri.	Under this project only 5909 trees will be cut which spreads in the length of 208 km i.e. approx 28 trees in a km and plantation will be done 1,24,800 trees with provision of their maintenance upto 10 years those trees will be planted on which such types of birds / animals are dependent. More and more plantation will be done which will increase the habitation of such birds and animals under avenue plantation (CER activities).
5	-	Due to this road, a large number of families will be displaced and become homeless.	Design and construction of this road will be done in such a way that no village habitation is directly impacted and only 370 structures

			are impacted which will be duly compensated with appropriate compensation as per NH Act.
6	-	Farmers sow their crops thrice in a year and stabilize the environment. Due to loss of land because of acquisition, farmer's base of very existence will be lost.	Due to this project, land of those farmers which will be affected, will be given appropriate compensation. Most of the farmers are partially impacted being a linear nature of the project. More and more plantation will be done so that environmental balance does not get disturbed.
7	-	Due to this road, fruitful plants of Anar, Chiku, etc will be affected.	Under this project, only those trees and plants will be planted which are found in this region in consultation with the forest department, therefore impacts will be minimum. Fruit trees will be given compensation as per assessment by competent authority.
8	-	Jalore district is famous for it's spices cultivation. Due to this road construction, production quantity of spices like Jeera, Esab, Daal, Dalhan, Mirch, Dhaniya, Saauf, etc will reduce and disturb the social component of this region.	Due to this project, land of those farmers which will be affected, will be given appropriate compensation so that they can purchase new land and cultivate their spices. Being a linear acquisition the impact is marginal.
9	-	In the past, People of Rajasthan have sacrificed their lives to protect their land, trees and animals. Cutting of tree like Kejdi is considered as sacrificing their son and this may result in societal revolt.	Cutting of Kejdi tree will be avoided and only those are falling in the main carriageway of 14m will be cut. To protect the environment, tree plantation will be done on both sides of the road and approx. 1,24,800 trees will be planted.
10	-	Due to road construction, area of three cultivated crops which are sown every year will reduce. Hence this will add to global warming.	To protect the environment, tree plantation will be done on both sides of the road and approx. 1,24,800 trees will be planted. This will minimize the effect of global warming.
11	-	Due to road construction, numerous tube wells will be affected and disturb the balance of drinking water and water required for irrigation.	Farmers will be given suitable compensation for their tube wells. Compensation will be given for tube wells so that new tube well will be bored by farmers. Water of any canal or nala will not be blocked and the provision of 10 nos of Major bridges, 20 nos of Minor Bridges and 282 + 40 additional nos of culverts have been proposed for the expressway to avoid any impact in the water level.
12	-	Due to environmental imbalance, there is a probability of increase in diseases in the region during the summer season.	To protect the environment, tree plantation will be done on both sides of the road and approx. 1,24,800 trees will be planted to restore the environmental balance.

DETAILS OF PUBLIC HEARING FOR DISTRICT BARMER



क्षेत्रीय कार्यालय
राजस्थान प्रदूषण नियंत्रण मण्डल
जसोल फांटा, जे.वि.वि.एन.एल. कार्यालय के सामने, बालोतरा, जिला बाड़मेर
Phone: 02988-225923 Website www.rpcb.nic.in, Email ro.balotara@gmail.com

राप्रनिमं/क्षे.का./बालोतरा/जनसुनवाई (NHAI)/1581

दिनांक: 15-02-2019

✓ अध्यक्ष सचिव महोदया,
राजस्थान राज्य प्रदूषण नियंत्रण मण्डल,
जयपुर।

विषय :- मैसर्स राष्ट्रीय राज मार्ग प्राधिकरण द्वारा भारत माला परियोजना के तहत 4/6 लेन पहुच नियंत्रण राष्ट्रीय राजमार्ग संख्या 754K का निर्माण राजस्थान राज्य में धाघनिया सासन जिला जोधपुर से जिला बाड़मेर क्षेत्र से होते हुए राजस्थान गुजरात सीमा के पास सांचीर जिला जालौर तक निर्माण हेतु प्रस्तावित परियोजना विस्तार के लिये पर्यावरण स्वीकृति बाबत लोक जनसुनवाई का आयोजन दिनांक 13.02.2019 से संबंधित कार्यवाही विवरण।

महोदया,

उपरोक्त विषयान्तर्गत निवेदन है कि मैसर्स राष्ट्रीय राज मार्ग प्राधिकरण द्वारा भारत माला परियोजना के तहत 4/6 लेन पहुच नियंत्रण राष्ट्रीय राजमार्ग संख्या 754K का निर्माण राजस्थान राज्य में धाघनिया सासन जिला जोधपुर से जिला बाड़मेर क्षेत्र से होते हुए राजस्थान गुजरात सीमा के पास सांचीर जिला जालौर तक निर्माण हेतु प्रस्तावित परियोजना विस्तार के लिये पर्यावरण स्वीकृति बाबत लोक जनसुनवाई का आयोजन दिनांक 13.02.2019 को 11:00 बजे अटल सेवा केन्द्र ग्राम पंचायत आसोतरा, तहसील पचपदरा, जिला बाड़मेर में किया गया।

जनसुनवाई का कार्यवृत्त विवरण (Minutes) की हस्ताक्षरित प्रति, उपस्थिति पत्रक एवं विलियोग्राफी से संबंधित सी.डी. (दो प्रति) एवं फोटोग्राफ सूचनार्थ एवं अग्रिम आवश्यक कार्यवाही हेतु प्रेषित है।
संलग्न- उपरोक्तानुसार

महोदय

(विनय कदटा)
क्षेत्रीय अधिकारी

राप्रनिमं/क्षे.का./बालोतरा/जनसुनवाई (NHAI)/

दिनांक:

प्रतिलिपि :-

1. जिला कलेक्टर, बाड़मेर को सादर सूचनार्थ एवं अग्रिम कार्यवाही हेतु मय सी.डी. एवं फोटोग्राफ प्रेषित है।
2. जिला जन सम्पर्क अधिकारी, बाड़मेर को सादर सूचनार्थ एवं अग्रिम कार्यवाही हेतु मय सी.डी. एवं फोटोग्राफ प्रेषित है।
3. ए.सी.पी. रा.प्र.नि.मं, जयपुर को मण्डल मुख्यालय पत्रांक एफ. टेक (P-0158) RPCB/CPM/837 दिनांक 09.08.2011 की पालना में जनसुनवाई का कार्यवृत्त विवरण को मण्डल की वेबसाइट पर दर्शाने हेतु सादर प्रेषित है।
4. ग्राम पंचायत आसोतरा, तहसील पचपदरा, जिला बाड़मेर।
5. मैसर्स नेशनल हाईवे अथॉरिटी ऑफ इण्डिया (NHAI-पर्यावरण) जी 5-6, सेक्टर 10, द्वारका, नई दिल्ली - 110075।

क्षेत्रीय अधिकारी

जनसुनवाई कार्यवाही विवरण

वन एवं पर्यावरण मन्त्रालय नई दिल्ली के द्वारा जारी अधि सूचना दिनांक 14-09-2006 के अंतर्गत उद्योगों को पर्यावरण स्वीकृती जारी करने से पूर्व प्रोजेक्ट स्थल के आस पास के क्षेत्र के लोगों के मध्य जन सुनवाई किया जाना आवश्यक होता है, इसी क्रम में जन सुनवाई का आयोजन किया जा रहा है।

अतिरिक्त जिला कलेक्टर बाड़मेर, राजस्थान पत्र क्रमांक सामान्य /2018/47 दिनांक 10-01-2019 एवं क्षेत्रीय कार्यालय के पत्रांक राप्रनिम /क्ष.का./बालोतरा/पी.एच./1418 दिनांक 11-01-2019 के क्रम में नेशनल हाईवे अथॉरिटी ऑफ इंडिया एन.एच.ए आई के द्वारा प्रस्तावित भारत माला परियोजना (पैकेज-4/लॉट-7) के तहत राजस्थान राज्य में सांचौर (जिला-जालोर) के पास राजस्थान-गुजरात बॉर्डर तक टांडणिया सासण (जोधपुर जिला) से 4/6 लेन एक्सेस कंट्रोल नेशनल हाईवे नंबर 754K का निर्माण (लम्बाई 208.242 KM) :- जिला बाड़मेर से गुजरात जाने वाली प्रस्तावित परियोजना के लिए पर्यावरणीय स्वीकृती हेतु दिनांक 13-02-2019 प्रातः 11 बजे अटल सेवा केंद्र ग्राम पंचायत - आसोतरा तहसील- पंचपदरा जिला - बाड़मेर उपस्थित ग्राम वासियों की उपस्थिति में पर्यावरण जन सुनवाई का आयोजन किया गया

उक्त पर्यावरणीय जनसुनवाई की आम सूचना राजस्थान पत्रिका एवं टाइम्स नेशन के संस्करण दिनांक 12.01.2019 में प्रकाशित की गई जिसकी प्रति परिशिष्ट - अ पर सलग्न है। सुनवाई से पूर्व क्षेत्रीय कार्यालय बालोतरा में दिनांक 13 -02 -2019 तक कोई मौखिक अथवा लिखित आपत्ति/सुझाव/विचार प्राप्त नहीं हुए।

पर्यावरण की जन सुनवाई निम्न अधिकारियों की उपस्थिति में आयोजित की गई।

- 1 श्री राकेश कुमार अतिरिक्त जिला कलेक्टर, बाड़मेर।
- 2 श्री विनय कट्टा क्षेत्रीय अधिकारी राजस्थान प्रदूषण नियंत्रण मंडल बालोतरा।
- 3 श्री अनिल मेहला उपखण्ड अधिकारी, बालोतरा।
- 4 श्री भल्लाराम कनि० पर्यावरण अभियंता, प्रदूषण नियंत्रण मंडल बालोतरा

श्री राकेश कुमार अतिरिक्त जिला कलेक्टर, बाड़मेर, राजस्थान ने इस जन सुनवाई की अध्यक्षता करते हुए सभी उपस्थित अधिकारियों एवं ग्रामवासियों का स्वागत करते हुए आग्रह किया की वह सभी प्रस्तावित परियोजना के बारे में सुने तथा इस बाबत किसी भी प्रकार की जानकारी लेना चाहते हैं या अपनी आपत्ति/सुझाव/विचार मौखिक अथवा लिखित में देना चाहे तो आपका स्वागत है।

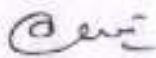

क्षेत्रीय अधिकारी
राजस्थान राज्य प्रदूषण नियंत्रण मंडल
बालोतरा



इस दौरान श्री विनय कट्टा क्षेत्रीय अधिकारी राजस्थान प्रदूषण नियंत्रण मंडल बालोतरा ने सभी उपस्थित अधिकारियों एवं ग्रामवासियों का स्वागत करते हुए जनसुनवाई के प्रावधान उद्देश्य एवं महत्व के बारे में उपस्थित आमजन/ग्रामवासियों को बताया और परियोजना के बारे में विस्तृत रूप से जानकारी देते हुए परियोजना के पर्यावरणीय विशेषज्ञ/सलाहकार श्री विजय शर्मा मैसर्स एनवायरो इंक सोल्यूशन्स प्राइवेट लिमिटेड गाज़ियाबाद से परियोजना के बारे में विस्तृत विवरण करने का अनुरोध किया। उन्होंने परियोजना के बारे में विस्तृत जानकारी दी। अंत में श्री विनय कट्टा क्षेत्रीय अधिकारी राजस्थान प्रदूषण नियंत्रण मंडल बालोतरा ने ग्रामवासियों को अपनी मौखिक अथवा लिखित आपत्ति/सुझाव/विचार देने का आग्रह किया।

क्रम संख्या	जनता द्वारा पूछे गये सवाल	परियोजना प्रस्तावक द्वारा दिये गये जवाब
1	शंकर गांव आसोतरा ने कहा की रोड के बीच में मेरा ट्यूब वेल और पेड आ रहे हैं उसके लिये क्या मुआवजा दिया जायेगा।	एन.एच.ऐ.आई. अधिकारी ने जवाब दिया कि रोड के बीच में जो भी ट्यूब वेल और पेड आ रहे हैं, उसके लिये दो गुना मुआवजा दिया जायेगा।
2	अनवर फारूक हाडा समाज सेवी आसोतरा ने पूछा की एक खेत से दूसरे खेत में जाने के लिये इस परियोजना में क्या व्यवस्था की गई है। जो रोड के बीच में कटान रास्ते आ रहे हैं उनके लिये इस परियोजना में क्या व्यवस्था की गई है।	एन.एच.ऐ.आई. अधिकारी ने जवाब दिया कि एक खेत से दूसरे खेत में जाने के लिये रोड पर अण्डर पास की व्यवस्था की गई है जिससे किसानों को आने जाने में परेशानी पैदा न हो। जो कटान रास्ते हैं उनके पास ही अण्डर पास दिये जायेंगे और कटान रास्ते बंद नहीं किये जायेंगे।
3	खेताराम पटेल आसोतरा ने कहा कि इस परियोजना में जो राजस्व रास्ते आ रहे हैं उनके लिये क्या व्यवस्था की गई है। और सर्विस लाइन का क्या प्रावधान है।	एन.एच.ऐ.आई. अधिकारी ने जवाब दिया कि राजस्व रास्तों का ध्यान रखा गया है, और इस रोड में सर्विस लाइन की भी व्यवस्था की गई है। जिससे आम जनता को कोई परेशानी ना हो।
4	जयराम पटेल सरपंच आसोतरा ने कहा कि हमारी जमीन जाने से हम लोग बेरोजगार हो जायेंगे उसके लिये प्रस्तावक ने क्या प्रावधान रखा है।	एन.एच.ऐ.आई. अधिकारी ने जवाब दिया की जो जमीन ली जायेगी उसका उचित मुआवजा दिया जायेगा जिससे वे लोग दूसरी जमीन खरीद सकते हैं अथवा अपना व्यवसाय कर सकते हैं जिससे बेरोजगारी की नोबत नहीं आयेगी।

5.	मोनाराम आसोतरा ने कहा कि अण्डर पास की उंचाई व चौड़ाई कितनी होगी जिससे हमारे वाहन को आने जाने में परेशानी न हो। मोनाराम ने कहा कि ग्रामीणों को इस रोड पर चढ़ने के लिये रास्ता दिये जायेगा या नहीं	एन.एच.ऐ.आई. अधिकारी ने जवाब दिया कि अण्डर पास की उंचाई 21 फुट होगी और चौड़ाई 20 फुट होगी जिससे वाहनो के आने जाने में कोई व्यवधान पैदा नहीं होगा। और जवाब दिया कि ग्रामीणों को चढ़ने के लिये रास्ता दिया जायेगा जिससे वे लोग इस परियोजना का लाभ उठा सकें।
6.	खेताराम पटेल ने कहा कि हम ग्रामीणवासियों के लिये टोल फ्री होना चाहिये इसके लिये प्रस्तावक ने ग्रामीणवासियों के लिये क्या प्रावधान रखा है। खेताराम ने कहा कि इस परियोजना के बनने से जो ध्वनी प्रदूषण होगा उससे पास की स्कुलो के बच्चों पर काफी प्रभाव पड़ेगा उसके लिये इस परियोजना में क्या प्रावधान रखा गया है।	एन.एच.ऐ.आई. अधिकारी ने जवाब दिया कि अभी तक इसके बारे में कोई विचार नहीं किया गया है, लेकिन किसानों की समस्या को ध्यान में रखते हुये इस समस्या का समाधान करेंगे। विजय शर्मा पर्यावरण सलाहकार ने जवाब दिया कि रोड पर स्कुलो के पास नोएज बैरियर लगाये जायेंगे एवं चोड़ी पत्ती वाले पेड लगाये जायेंगे जिससे ध्वनी प्रदूषण को रोका जा सकेगा जिससे वहां पर पढ़ने वालों बच्चों पर ध्वनी प्रदूषण का कोई प्रभाव नहीं पड़ेगा।
7.	अनवर आसोतरा ने कहा कि पानी के जो भी नदी नाले है उनके लिये क्या प्रावधान रखा गया है।	एन.एच.ऐ.आई. अधिकारी ने जवाब दिया कि यह ध्यान दिया गया है कि किसी भी नदी या नाले में अवरोध उत्पन्न ना हो उसके लिये उचित व्यवस्था की गई है
8.	श्री अनिल सिंह मेहला एस.डी.एम. बालोतरा ने कहा कि जांहा पर कटान रास्ते हैं वहां पर एन.एच.ऐ.आई. अण्डर पास जरूर दें।	एन.एच.ऐ.आई. अधिकारी ने कहा कि ग्रामीणों की समस्या को ध्यान में रखते हुये जितना भी संभव हो सकेगा कटान रास्ते पर अण्डर पास देने का विचार किया जायेगा जिससे समस्या का समाधान हो सके।
9.	पोप सिंह आसोतरा ने कहा कि मेरा टांका आ रहा है उसके लिये क्या मुआवजा दिया जायेगा।	एन.एच.ऐ.आई. अधिकारी ने जवाब दिया कि पटवारी द्वारा सर्वे करवाकर उसका उचित मुआवजा दिया जायेगा।


क्षेत्रीय अधिकारी
 पर्यावरण राज्य प्रदूषण नियंत्रण मण्डल
 बालोतरा



आपतियां

1. जयराम चौधरी की आपत्ति संलग्न है।
2. किशनराम की आपत्ति संलग्न है।
3. नेमाराम की आपत्ति संलग्न है।
4. सूजाराम की आपत्ति संलग्न है।
5. जगाराम की आपत्ति संलग्न है।
6. कुम्भाराम की आपत्ति संलग्न है।
7. कपूराराम की आपत्ति संलग्न है।

अंत में श्री राकेश कुमार, अतिरिक्त जिला कलेक्टर, बाड़मेर ने कहा कि सारे ग्रामीणवासियों के लिये उनकी समस्या को ध्यान में रखते हुये सही सर्वे करवाकर सही मुआवजा देने का आग्रह किया और उन्होंने ग्रामीणवासियों को बोला कि जो भी उनकी आपत्ति है वो एस.डी.एम. बालोतरा एवं सिवाना के कार्यालय में जाकर अपनी शिकायत दर्ज करवा सकते हैं, जिससे उनकी समस्या का समाधान हो सके।

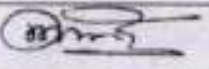
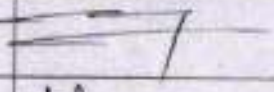
अंत में क्षेत्रीय अधिकारी राजस्थान प्रदूषण नियंत्रण मंडल बालोतरा द्वारा कहा गया कि मौखिक रूप से प्राप्त आपत्ति/सुझाव/विचार को जन सुनवाई के कार्यक्रम में शामिल करते हुए सक्षम प्राधिकरण को प्रेषित किया जायेगा एवं लिखित में प्राप्त उपरोक्त आपतियां इसकी कार्यवाही विवरण के संलग्न सक्षम प्राधिकारी को उचित निर्णय हेतु अर्पित की जायेगी जिसके द्वारा लिये गये निर्णय से आपत्ति कार्ता को सूचित किया जायेगा। साथ ही उन्होंने जन सुनवाई में उपस्थित सभी गणमान्य अधिकारियों/नागरिकों को उपस्थित होने के लिए धन्यवाद देते हुए जन सुनवाई का समापन किया।

श्री विनय कट्टा,
क्षेत्रीय अधिकारी
रा.प्र.नि.म. बालोतरा
राजस्थान.

क्षेत्रीय अधिकारी
राजस्थान राज्य प्रदूषण नियंत्रण मण्डल
बालोतरा

श्री राकेश कुमार
अतिरिक्त जिला कलेक्टर
बाड़मेर,

6	श. के. मिशन वीरछ सामन्तयक के. एड जे. जे. के. 22	Bharatw
7	म. म. व. म.	म. म. व. म.
8	उत्तर काष्ठ लक्ष	~~उत्तर काष्ठ लक्ष~~
9	ज. म. म. - चौधरी	ज. म. म.
10	दुरगा राम	
11	ज. म. म. ली	~~ज. म. म. ली~~
12	ज. म. म. 5/6 ज. म. म. ची देल	Chetung
13	मे. म. म. 22 ज. म. म. ली	~~मे. म. म. 22 ज. म. म. ली~~
14	द. म. म. म. - चौधरी	H. R. P.
15	ज. म. म. म. - चौधरी	ज. म. म. म.
16	ज. म. म. म. - चौधरी	ज. म. म. म. (
17	ज. म. म. म. / B. m. m.	~~ज. म. म. म. / B. m. m.~~
18	मि. म. म. म.	मि. म. म. म.
19	ज. म. म. म. म.	ज. म. म. म.
20	श. म. म. म.	श. म. म. म.
21	ज. म. म. म.	ज. म. म. म.
22	ज. म. म. म.	ज. म. म. म.
23	ज. म. म. म.	~~ज. म. म. म.~~
24	ज. म. म. म.	ज. म. म. म.

25	लक्ष्मण	लक्ष्मण
26	चेल राम	
27	पोकरराम	पोकरराम
28	शम्भू	शम्भू
29	सोवाम	सोवाम
30	वज्राराम	वज्राराम
31	रामदास कंत	रामदास कंत
32	गोपाराम	गोपाराम
33	कलाम	कलाम
34	हनुमतराम माली	
35	जवेरीदास	जवेरीदास
36	राजाराम	राजाराम
37	हनुमान चौधरी	
38	रामाराम चौधरी	
39	मोहम्मद इफ्तेखार जासोकरा	पतवसे
40	डोगादास पणारी हासोकरा	
41	भगवाम ग्राम विकास अधिकारी	
42	जबलपाम बकरीची लक्ष्मण	
43	हनुमान राम	
44	किराना राम	

45	सकभाम् 5/07/2021 कागसमी-चोथी	सकभाम्
46	दुरगा राम	दुरगा राम
47	मुडाराम 51-चलवाजी-चोथी	मुडाराम
48	भांगाराम 51-मोटाजी-चोथी	भांगाराम
49	वगता राम पुरोहित	वगता राम
50	लुम्बा राम जी	लुम्बा राम
51	फिरोज आशोत	फिरोज
52	मोहन लाल आशोत	मोहन
53	मोहनलाल चोथी 51/2021	मोहन
54	मुडाराम	मुडाराम
55	लोभाराम/कापुराम काशी-	लोभाराम
56	शेखराम फ. ल. सदाय कल्ले	शेखराम
57	वगवाराम नील	वगवाराम
58	वाव राम	वाव राम
59	विश्वनाथ	विश्वनाथ
60	दुडाराम	दुडाराम
61	शालीवाराम	शालीवाराम
62	लिना/महा 51 मुला रवा आशोत	लिना/महा 51
63	पौलाराम/मुनमारामजी गांव मुलजी/वीरजी	पौलाराम
64	वाला राम/पुरारामजी गांव मुलजी/वीरजी	वाला राम

9462 2021 72

①

सेवामें

श्रीमान अधिकारी मोहम्म.
सलम अधिकारी भूमि आवारि.

विषय,

ज्मान आसोररा के खसरा नं. 1800, 1850
की भूमि अधिग्रहण के संबंध में
मोहम्मदी.

पार्थिवरा सावलराम पुत्र श्री कालारामजी
नवलराम किसाराम जिरामराम ड. राहुजी
सालारी चौधरी कलकी निवासी आसोररा
तह. पंचपदरा जिला. कोडमूर (राज.) पार्थना

आपका प्रस्तुत कर निवेदन है कि

- ① मैंने आज 5000 कोटि बालोहरा में 2 कार आवारि
दो कार है युकाहुं जिसकी डिली थिछे सलजगहै।
- ② हमारी जमीन हाईवे के दोनो तरफ आती है।
सो एक साईट में करने की हुआ कराने दो
हमारा बुकसान कम है कम हो सके
- ③ खसरो में हमारी कृषि सिचाई के लिए पशुब-
कैल व कृषि बुझा है। जो कि रोड के बीचो-बीच
में आता है सो हमें उचित मुभावना दिलावे
ताकीहो हम नमी कृषि साधन वापस लेमाकरके
- ④ हमारे खसरो में जो पेड़ है उन्हें चिन्हीत किए हैं सो
काजी थिछे छोड दिये हैं सो पुनः जिरसरा करवे।
- ⑤ हमारे परिवार कृषि आधारित परिवार है सो
आप से निवेदन है कि हमारे कृषि के लिए भुमी के
जदले भुमि दिलावे व साथ में ही हाईवे पर

संशोधन

न्यायालय श्रीमान् उपखण्ड अधिकारी एवं
सक्षम अधिकारी, भूमि आवापति (एस डी एम)
बालोतरा

पत्राचार संख्या :-

प्राथमिक प्रस्तुतीकरण :-

विषय :- ग्राम आसोतरा के खसरा नम्बर 1800, 1850 की भूमि के अधिग्रहण के
सम्बन्ध में आपत्ति दर्ज करने एवं उचित मुआवजा दिलाये जाने कायत
प्रार्थना पत्र।

5ep
1800 0.374
1850 0.32

महोदयजी

प्रश्रीगण साधाराम पुत्र श्री वमत्तारामजी, नवाराम, किशनाराम, जेरामाराम
गिसरान, गजुरामजी जातिमान कलबी चौधरी निवासी आसोतरा तहसील पंचपदरा
जिला बा.मेर द्वारा प्रार्थना पत्र प्रस्तुत कर निवेदन है कि-

Dec
1800 0.370
1850 0.2143

(1) कि हमारी एक मालिकाना कब्जा मुदा खातेदारी भूमि किस्म बाथनी
अ.म.ल. की सराफद मीजा ग्राम आसोतरा पटवार क्षेत्र आसोतरा तहसील
बा.मेर जिला बा.मेर खसरा नम्बर 1800 रकबा 2.12 बीघा, खसरा नम्बर
1850 रकबा 2 बीघा 10 विस्या स्थित है।

2 Feb 19
1800 0.04

(2) कि अधिसूचना दिनांक 20.08.2018 के अनुसार दिनांक 08.09.2018 को
राजस्थान पत्रिका समाचार पत्र में प्रकाशित भारत के राजपत्र के अनुसार
राजस्थान राजा के बा.मेर जिले में राष्ट्रीय राजमार्ग सड़क 754K के कि.मी.
381.743 से 455.243 कि.मी. (बालोतरा) तक के भूखण्ड के निर्माण
(शिफ्टिंग/पेव्ड शोल्डर सहित-2लेन/4-लेन का बनाना आदि) अनुरक्षण,
प्रस्थान और पलायन के लोक प्रयोजन के लिए अधिग्रहण हेतु सूचित किया
गया है।

(3) कि उपरोक्त भूमि नेशनल हाईवे नम्बर 754K के 2-लेन/4-लेन निर्माण
कायत अनिवार्य अधिग्रहण में मेरी खातेदारी भूमि खसरा नम्बर 1800 रकबा 2.
12 बीघा में से 0.3704 हैक्टर एवं खसरा नम्बर 1850 रकबा 2 बीघा 10
विस्या में से 0.3218 हैक्टर भूमि ग्राम आसोतरा तहसील पंचपदरा जिला
बा.मेर की भूमि को अधिग्रहित किया जा रहा है।

(4) कि मेरी उक्त खातेदारी भूमि कृषि भूमि है, तथा उक्त भूमि पर कृषि
कार्य किया जाकर फसल की पैदावार ली जाती है, जिससे मेरे परिवार का
भाग पौषण होता है, तथा उक्त खातेदारी भूमि के बीचों बीच में से होकर
उक्त राष्ट्रीय राजमार्ग का निर्माण किया जा रहा है, जिससे मेरी उक्त
खातेदारी भूमि दो भागों में विभक्त हो जाएगी एवं कृषि कार्य हेतु पूर्ण रूप
से नष्ट हो जाएगी, इस कारण उक्त भूमि के किनारे पर सड़क निकालने
है। आग्रह प्रदान कराये जिससे मुझ प्रार्थी की भूमि का किसी प्रकार से कोई
नुकसान न हो।

- (5) यह कि उक्त कृषि भूमि में काश्त करने हेतु मेरे द्वारा लाखों रुपये लगाकर पानी का द्यूबवेल करवाया गया एवं जिसमें हम खातेदारों के नाम से शिलाले कनेक्शन भी लिया गया है, तथा उक्त राष्ट्रीय राजमार्ग का निर्माण 11 जाने से हमारा द्यूबवेल पूर्ण रूप से गूट हो जाएगा, जिसका नकदी में गत्यावत किया जाना असम्भव है तथा उक्त द्यूबवेल से हमारा उक्त खातादार भूमि में सिंचाई की जाती है, जिससे उक्त द्यूबवेल राष्ट्रीय राजमार्ग के निर्माण में जाने से हमारी काश्त की भूमि का सिंचाई का एक मात्र साधन समाप्त हो जायेगा। जिससे हमें भारी अपूरणीय क्षति होगी।
- (6) यह कि उक्त भूमि सिंचित है, तथा खरीफ च रबी में सिंचाई की जाती है।
- (7) यह कि गरी उक्त खातादारी भूमि काफी गींध देशी दधूल, खेजड़ी, जाल, राहिल्ला, कुम्हटीयां, बोरडी, दोटलांग बबुल के पेड़ भी खड़े हैं, जिससे उक्त भूमि के बदले मुझ प्रार्थी को पच्चास गुणा मुआवजा दिलाये जाने का आदेश प्रदान करावे।
- (8) यह कि उक्त भूमि के बदले में मुआवजे की प्रस्तावित अनुमोदित दर के पच्चास गुणा राशि हम प्रार्थीगण को दिलाई जावे। इस सम्बन्ध में मुझ प्रार्थी को आपत्ति दर्ज किये जाने का आदेश प्रदान करावे।

तथा प्रार्थी पत्र प्रस्तुत कर निवेदन है कि मेरे भूमि के अधिग्रहण होने के पक्ष में हमारी उक्त खातेदारी भूमि के बीचो बीच सरस्ता न निकाल कर सेढे पर सरस्ता निकालने लाने का आदेश प्रदान करावे एवं हम प्रार्थीगण की भूमि की डी एल सी दर से पच्चास गुणा राशि दिलाये जाने का आदेश हम प्रार्थीगण के पक्ष में एवार्ड पारित फरमावे।

इति तारीख -

जरीये प्रार्थी

सत्यमेव जयते

1. 10 माघ 2014 से प्रति



कमावन्दी (खेत/बगीचा) (प्रतिसि.पि.)

पृष्ठ संख्या 1 of 1
 पृष्ठ संख्या 1 of 1

प्लॉट का नाम :- कमावन्दी
 प्लॉट का प्रकार :- खेत/बगीचा
 प्लॉट का क्षेत्र :- 1.00
 प्लॉट का क्षेत्र :- 1.00

प्लॉट का क्षेत्र :- 1.00
 प्लॉट का प्रकार :- खेत/बगीचा
 प्लॉट का क्षेत्र :- 1.00
 प्लॉट का क्षेत्र :- 1.00

प्लॉट का क्षेत्र :- 1.00
 प्लॉट का प्रकार :- खेत/बगीचा

प्लॉट का क्षेत्र :- 1.00
 प्लॉट का प्रकार :- खेत/बगीचा
 प्लॉट का क्षेत्र :- 1.00
 प्लॉट का क्षेत्र :- 1.00

प्लॉट का क्षेत्र	प्लॉट का प्रकार	प्लॉट का क्षेत्र	प्लॉट का प्रकार	प्लॉट का क्षेत्र	प्लॉट का प्रकार	प्लॉट का क्षेत्र	प्लॉट का प्रकार
1.00	खेत/बगीचा	1.00	खेत/बगीचा	1.00	खेत/बगीचा	1.00	खेत/बगीचा
1.00	खेत/बगीचा	1.00	खेत/बगीचा	1.00	खेत/बगीचा	1.00	खेत/बगीचा
1.00	खेत/बगीचा	1.00	खेत/बगीचा	1.00	खेत/बगीचा	1.00	खेत/बगीचा

प्लॉट का क्षेत्र :- 1.00
 प्लॉट का प्रकार :- खेत/बगीचा
 प्लॉट का क्षेत्र :- 1.00
 प्लॉट का प्रकार :- खेत/बगीचा

8

सेवाने

श्री मान अधिकारी मोहन
सक्षम अधिकारी भुवि आवादी

मोहन

आपसे निवेदन है कि

- ① हमें दंडित का नक्शा दिलावे जिसमें हमारे खसरो की वास्तविक स्थिति का पता चल सके
- ② हमारे खसरो में गवान मुझ जैरामराम का राजाजी का है जो कि मुर्दा कप से जप हो रहा है व साथ में पशुओं का खसरा गज व अरुम निर्माण कार्य मुझ जैरामराम का निजी कर हो रहा है जो इसके एवज में उचित सुझावला दिलाकर सरकारी साहयता दिलाने का कुर्र करवे।
- ③ मुझ पार्थी का वृष कृषि कार्य ले परिवार का भरण पोषण होता है व साथ में वज्रो कि कपड़ा का कमा चलता है जो कि मुर्दा कप से बन्द हो जायेगा व वज्रो कि पड़ाई भी मुझ जायेगा जो मोहन से निवेदन है कि मुझ पार्थी को आर्थिक साहयता दिलावे इसमें मुझ पार्थी के बरताने 1875, 1876, 1877, 1878, 1880 & 1880 की कानूनी कमीशन नाली

Jaswant Singh
13/11/19

(केवल नकल के उपयोग के लिए)

जिसका निरादारी (चतुर्थीय) प्राप्त

21/11/19

तहसील

21/11/19

जिला

21/11/19

जमाखन्दी के अनुसार प्रविष्टियाँ

सम्बन्ध 20 75

को निरादारी के अनुसार प्रविष्टियाँ

साथ 20 25																	
को पिदावरी के अनुसार प्रविष्टियाँ																	
क्षेत्रफल	मूदा भूमि वर्ग	जमाखन्दी की संख्या	प्रविष्टियों सहित खातेदार की खतियान का नाम	उप-कायदाकार का नाम तथा उसके पिता का नाम जो कि वह निवास करने की शर्त	सिंचाई रकबा वर्गों के सहित	क्षेत्रफल सहित फसलों का ब्यौरा										न कोने गये क्षेत्रफल का ब्यौरा	टिप्पणियाँ तथा अतिरिक्त फसलों किसानों के राजस्व आदि में परिवर्तन
						फसल (सिंचाई)		रकबा (ऊर्ध्व)			एक से अधिक बार बोया गया क्षेत्रफल						
						फसल का नाम	सिंचित	असिंचित	फसल का नाम	सिंचित	असिंचित	सिंचित	असिंचित				
2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17		
0 2/12	11/11		21/11/19 जमाखन्दी 21/11/19 जमाखन्दी 21/11/19 जमाखन्दी 21/11/19 जमाखन्दी 21/11/19 जमाखन्दी			0 2/12		0 2/12	0 2/12	0 2/12							
0 2/10	31/10		जमाखन्दी			0 2/10		0 2/10	0 2/10	0 2/10							

1/2/19
11/11/19
1/2/19
11/11/19

जमाखन्दी
जमाखन्दी

शेवामे

श्रीमान अधिकारी मोहदम
सक्षम अधिकारी भूमि आवारि

विषय

ग्राम आसोतरा के खसरा नं. 1875, 1876, 1877
1878 की भूमि अधिग्रहण के सम्बंध में
मोहदमजी

प्रार्थी गण। नगराम किशोराम जेठाराम डा.
राजुकी ककमो मय. राजुकी गोकलराम सावलराम डा.
कातरामजी रियु का. कोलरामजी नेमाराम हनुमानराम डा.
कोलरामजी हिराराम डा. दुगारामजी कलकी चौधरी
निवासी आसोतरा तह पंचपदरा जिला. कांडेर द्वारा
प्रार्थना पत्र प्रस्तुत कर निवेदन है कि

- ① भागे इतना कोट में आवली 2 दो का देयकादु
जिसकी प्रती पिछे सलमन है।
- ② हमारी जमीन रोड के दोनों तरफ भा रही है। व
इसमें हमारे खसरो में रोड का मोडुमी है सो
रास्ता (हाइवे) एक तरफ लेने की कृपा करके।
- ③ रोड कि दूसरी तरफ जाने का रास्ता व सिचाई के
लिए पानी की पाइप लाईन निकाली
- ④ रोड के बीचों बीच हमारी नीची पाइप लाईन है।
सो पूर्ण रूप से नष्ट हो रही है।
- ⑤ हमारे खसरो में जो पैड बिनीत किए हैं जो
आधे पैड पिछे छोड दिए हैं सो वापस सर्वेकरके
- ⑥ के हमारे खसरा नं. 1875, 1876, 1877, 1878
जो की हमारी सिम व लुनी नदी के उफान के

समय की वहाव बसेना है तो ग्रहों पर
वहाव सेना में पुल का निर्माण करवाने की
वृथा करावे ।

- ⑦ रोड के एकदम सौदे जो कि आधा मकान का
हिस्सा हाईवे में व आधा पास में जो कि हमारे
रहने का लाभक नही रहेगा तो हमें पूरे मकान
का सर्वे का सुझाव दिलाने की वृथा करावे ।
- ⑧ हमारे परिवार बुर्बि आधारीत परिवार है तो
हमें जमीन के बदले जमीन देने की
वृथा करावे तो हमारे परिवारों का त्ररता
पौधता हो सके ।
- ⑨ हमारे खसरो का सक्षम अधिकारी से
निरक्षण करावे ताकी हमारे की असुली
कास्तु स्थली का लाभता हो सके

Jeetendra
13/02/19

संस्थान,

न्यायालय श्रीमान् उपखण्ड अधिकारी एवं
सक्षम अधिकारी, भूमि आवाप्ति (एस डी एम)
बालोतरा

प्रकरण संख्या -

तारीख प्रस्तुतीकरण -

विषय :- ग्राम आसोतरा के खसरा नम्बर 1875, 1876, 1877, 1878 की भूमि के अधिग्रहण के सम्बन्ध में आपत्ति दर्ज करने एवं दिनांक 27.12.2018 को जारी विज्ञप्ति में खसरा नम्बर 1876 दर्ज नहीं होने से एवं उक्त खसरा भूमि भारतमाला सड़क परियोजना में आवाप्त होने से उचित मुआवजा दिलाये जाने बाबत प्रार्थना पत्र।

महोदयजी,

प्रार्थीगण नवाराम, किशनाराम, जेरामराम पिसरान राजूजी, रुकमो देवा राजूजी, गोकलराम, सावलराम पि० वगतारामजी, नैमाराम, डडमानाराम पि० बोतारामजी एवं श्रीमती टीपू देवा बोतारामजी, हीराराम पुत्र डूगरारामजी जातिथान परसबो चौधरी निवासी आसोतरा तहसील पंचपदरा जिला बाड़मेर द्वारा प्रार्थना पत्र प्रस्तुत कर निवेदन है कि:-

- (1) यह कि हमारी हक मालिकाना, कब्जा सुदा खातेदारी भूमि चिस्म चाही दोयम की सरहद मौजा ग्राम आसोतरा पटवार क्षेत्र आसोतरा तहसील पंचपदरा जिला बाड़मेर खसरा नम्बर 1875 रकबा 3.09 बीघा, खसरा नम्बर 1876 रकबा 6 बीघा 01 बिस्वा, खसरा नम्बर 1877 रकबा 3.06 बीघा, खसरा नम्बर 1878 रकबा 1.12 बीघा स्थित हैं।
- (2) यह कि धारिसूचना दिनांक 20.08.2018 के अनुसार दिनांक 06.09.2018 को राजस्थान पत्रिका समाचार पत्र में प्रकाशित भारत के राजपत्र के अनुसार राजस्थान राज्य के बाड़मेर जिले में राष्ट्रीय राजमार्ग संख्या 754K के कि.मी. 381.743 से 455.243 कि.मी. (बालोतरा) तक के नूखण्ड के निर्माण (घोड़ीकरण/पेड्ड शोल्डर सहित-2लेन/4-लेन का बनाना आदि) अनुरक्षण, प्रबंधन और प्रचालन के लोक प्रयोजन के लिए अधिग्रहण हेतु सूचित किया गया है।
- (3) यह कि उपरोक्त भूमि नेशनल हाईवे नम्बर 754K के 2-लेन/4-लेन निर्माण बाबत अनिवार्य अधिग्रहण में मेरी खातेदारी भूमि खसरा नम्बर 1875 रकबा 3.09 बीघा में से 0.3778 हेक्टर एवं खसरा नम्बर 1876 रकबा 6 बीघा 01 बिस्वा खसरा नम्बर 1877 रकबा 3 बीघा 6 बिस्वा में से 0.5014 हेक्टर, खसरा नम्बर 1878 रकबा 1.12 बीघा में से 0.1208 हेक्टर भूमि ग्राम आसोतरा तहसील पंचपदरा जिला बाड़मेर की भूमि को अधिग्रहित किया जा रहा है।

26/11/19

SOM Cont

- (4) यह कि हमारी खातेदारी भूमि खसरा नम्बर 1875, 1876, 1877 खातेदारी भूमि कृषि भूमि हैं, तथा उक्त भूमि पर कृषि कार्य किया जाकर फसल की पैदावार ली जाती है, जिससे मेरे परिवार का भरण पोषण होता है, तथा उक्त खातेदारी भूमि के बीचो बीच में से होकर उक्त राष्ट्रीय राजमार्ग का निर्माण किया जा रहा है, जिससे मेरी उक्त खातेदारी भूमि दो भागों में विभक्त हो जाएगी एवं कृषि कार्य हेतु पूर्ण रूप से नष्ट हो जाएगी, इस कारण उक्त भूमि के किनारे पर सड़क निकालने हेतु आदेश प्रदान करावे जिससे मुझे प्रार्थी की भूमि का किसी प्रकार से कोई नुकसान न हो।
- (5) यह कि उक्त भूमि सिंचित है, तथा खरीफ व रबी में सिंचाई की जाती है।
- (6) यह कि उक्त कृषि भूमि के खसरा नम्बर 1878 में हमारे परिवार के रहवास हेतु रहवासीय मकान बनाये हुए हैं, जिसमें हमारा परिवार सहित रहवास है, तथा उक्त भूमि पर हमारे द्वारा लाखों रुपये लगाकर रहवास हेतु मकान निर्माण कार्य करवाया गया है, जिसकी साईज डील लम्बाई 37 फीट व चौड़ाई 20 फीट व ऊंचाई 12 फीट में पक्का निर्माण किया हुआ है एवं हमारे उक्त रहवासीय मकान चारों तरफ चार दीवारें 115 फीट लम्बी व 8 फीट ऊंचाई व चौड़ाई 2 फीट बनी हुई हैं तथा उक्त दीवार के पास ही पशुओं के चारा हेतु ठाणे लम्बाई 87 फीट व ऊंचाई 4 फीट व चौड़ाई 3.6 फीट में बनाई हुई हैं, तथा हमारी खातेदारी में आवागमन हेतु गेट लगा हुआ है, तथा उक्त दरवाजे के पास में 20 फीट लम्बी व 10 फीट ऊंचाई में दो फीट चौड़ी दीवार बनी हुई है तथा उक्त सम्पूर्ण निर्माण कार्य उक्त राष्ट्रीय राजमार्ग में नष्ट हो जायेगा, जिससे हम प्रार्थीगण को अपना रहवासीय मकान का पुनः निर्माण करवाना पड़ेगा। जिसका नकदी में मूल्यांकन किया जाना असंभव है। जिससे हम प्रार्थीगण को डी एल सी दर से पच्चास गुणा मुआवजा राशि दिलाने की कृपा करावे।
- (7) यह कि हमारी उक्त खातेदारी भूमि में सिंचाई हेतु पानी की पाईप लाइन अण्डर ग्राउंड डाली गई है, तथा उक्त भूमि आवाप्त किये जाने पर हमारी सम्पूर्ण पानी की पाईप लाइन पूर्ण रूप से नष्ट हो जाएगी।
- (8) यह कि हमारी उक्त खातेदारी भूमि काफी पौधे देशी बबूल, विलायती बबूल, खेजड़ी, जाल, रोहिड़ा, सन्दड़ा, नीम, सरस, बोरडी, के पेड़ भी खड़े हैं, जिससे उक्त भूमि के बदले हम प्रार्थी को पच्चास गुणा मुआवजा दिलाये जाने का आदेश प्रदान करावे।
- (9) यह कि पूर्व में दिनांक 06.09.2018 का जारी विज्ञप्ति में खसरा नम्बर 1875, 1876, 1877, 1878 की भूमि आवाप्ति में दर्ज की गई थी, मगर वर्तमान में दिनांक 27.12.2018 को संशोधित विज्ञप्ति जारी की गई है, उसमें खसरा नम्बर 1876 का इन्द्राज नहीं किया गया है, जबकि भारत माला परियोजना का जारी नक्शा में खसरा नम्बर 1876 की भूमि आवाप्ति की जा रही है, इस कारण उक्त आवाप्ति सुदा का भी हम प्रार्थीगण का मुआवजा दिलाया जावे।

- (10) यह कि भारतमाला सड़क परियोजना के तहत आवाप्ति के अधिकारियों के द्वारा मौके पर निशान किये गये हैं, उसने हमारी खातेदारी भूमि में काफी पेड़ को छोड़ दिये गये हैं । जिससे हम मुआवजा राशि मिलने में भारी परेशानी होगी इस कारण मौके की पूर्ण जांच करवाने हेतु हल्का पटवारी को आदेश प्रदान करावे । जिससे हमारी खातेदारी भूमि में छोड़े पेड़ का सही रूप से विश्लेषण हो सके एवं मौके की सम्पूर्ण स्थिति श्रीमान् के समक्ष आ सके ।
- (11) यह कि उक्त भूमि के बदले में मुआवजे की प्रस्तावित अनुमोदित दर के पच्चास गुणा राशि हम प्रार्थीगण को दिलाई जावे । इस सम्बन्ध में मुझ प्रार्थी की आपत्ति दर्ज किये जाने का आदेश प्रदान करावे ।

अतः प्रार्थना पत्र प्रस्तुत कर निवेदन है कि मेरे भूमि के अधिग्रहण होने के दशा में हमारी उक्त खातेदारी भूमि के बीचों बीच रास्ता न निकाल कर सेट पर रास्ता निकाले जाने का आदेश प्रदान करावे एवं हम प्रार्थीगण की भूमि की छे एल सी दर से पच्चास गुना राशि दिलाये जाने का आदेश हम प्रार्थीगण के पक्ष में एवार्ड पारित फरमावे एवं मौके की वास्तविक स्थिति का सर्वेक्षण करवाने हेतु हल्का पटवारी, आसोतरा का आदेश प्रदान करावे एवं मौके की स्थिति मंगवाकर उक्त आपत्ति के साथ संलग्न किये जाने की कृपा करावे ।

इति तारीख -

संलग्न :-

१. जमाबन्दी की प्रति

जरीये प्रार्थी

बिश्नू चारा

Jeon/Chand

जमाबन्दी (खेवट/खतोनी) (प्रतिलिपि)

फॉर्म नं.-20(बी)
(रेगिस्ट्रार नियम 103 ए)
पृष्ठ संख्या :- 1 of 2

ग्राम का नाम :- असोतरा

पट्टा नं. :- असोतरा

भू. अभिलेख :- असोतरा

सहकारी :- पंचपदरा

जिला :- बाड़मेर

राज्य सरकार का नाम/पिता का नाम

आजि निवाज के पुत्रे सहित :-

संवत् :- 2070 - 2073

भूमि धारक का नाम :- राज.सरकार

क्षेत्रफल की ईकाई :- बीघा-बिस्वा

खाता संख्या नया :- 403

खाता संख्या पुराना :- 608

नथाराम किशनाराम जैरामराम पि.राजू रुकमों बेवारारजू

गोकलराम सांवलराम पि.वगताराम नैमाराम हड़मानाराम

पि.बोताराम टीपू बेवा बोताराम हि. 1/2 हुंनाराम

पुन तेजाराम हि. 1/2 बीम कलबी सा.देह खातेदार

रहनु- SBBJ शाखा असोतरा में सांवलराम व हड़मानाराम

टीपू का हि.रहनुना.क.सं.2278,2400,2563

सं.सं. सं.सं.	क्षेत्रफल	भूमि वर्गीकरण	कृषक द्वारा संदत लगान	सिंचाई के साधन	अन्तर्गत के काम में प्रमाणित सामान्यकरण संख्या व दिनांक	टिप्पणी
1875	3-09	वा.दीपम	3-09	17.87	नामा. सं. 2788 - नि.दि. 21/11/2015 - उपहार	
1876	6-01	वा.दीपम	6-01	31.34	की स्वीकृती से ख.स. 1876 तथा 0.01 बिघा	
1877	3-06	वा.दीपम	3-06	17.09	वा.सं.सं. 31.34 क. में नथाराम किशनाराम जैरामराम	
1878	1-12	वा.दीपम	1-12	8.29	पि.राजू रुकमों बेवा राजू हि. 1/8 गोकलराम सांवलराम	
1880	2-15	वा.दीपम	2-15	14.24	पि.वगताराम हि. 1/4 नैमाराम व पुन तेजाराम टीपू	
1881	0-01	पै.मु.बेरा	0-01	0.00	बेवा बोताराम हि. 10.12/121 हुंनाराम बंद	
1882	0-15	पै.मु.बेरा	0-15	0.00	तेजाराम हि. 1/2 बीम कलबी सा.देह काम गंधावल	
1883	0-16	वा.दीपम	0-16	4.14	अपगतार हि. 5/121 खातेदार रहनु- SBBJ शाखा असोतरा	
1884	0-15	वा.दीपम	0-15	3.88	के पक्ष में सांवलराम हड़मानाराम व टीपू का हि.के	
1885	2-17	वा.दीपम	2-17	14.76	नाम दर्ज किया गया क्षेत्र खाता बदलनु	
1886	1	वा.दीपम	1	5.18	* नामा. सं. 2953 - नि.दि. 16/05/2017 - विरामत	
1887	2-17	वा.दीपम	2-17	14.76	की स्वीकृती से हुंनाराम पुन तेजाराम हि. 1/2 की	
1888	1-16	वा.दीपम	1-16	9.32	पक्ष होने में हुंनाराम हुंनाराम हि. 1/2 खातेदार के	
					नाम दर्ज किया क्षेत्र खाता बदलनु	
					* नामा. सं. 2953 - नि.दि. 16/05/2017 - विरामत	
					की स्वीकृती से हुंनाराम पुन तेजाराम हि. 1/2 की	
					पक्ष होने में हुंनाराम हुंनाराम हि. 1/2 खातेदार के	
					नाम दर्ज किया क्षेत्र खाता बदलनु	

19/1/19
औनाराम चौहान
पट्टा नं. हल्का. 7/6/19

क्र. संख्या	क्षेत्रफल	भूमि धर्तीकरण	कृषक द्वारा संयत लगान	सिंचाई के साधन	अन्तरण के काम में प्रमाणित सामान्तरकरण संख्या व दिनांक	दिनांक
कुल	13 28	28	140.90			
बनने -						

• धर्ती की श्रुति हेतु उक्त सामान्तरण सौच प्रक्रिया में है।

इस प्रमाण के साथ धर्ती की जानकारी न मिले है।

इसका अनुरोध किया जा रहा है कि आसन्न के रूप में नहीं किया जा सकता है।

अंतिमि जारी करने की तिथि :- 13/01/2019

सामान्तरकरण अंतिम दिनांक :- 20/09/2018

P-35 ~~179~~ 179
14/1/19

14/1/19

ओमाराग चौहान
पटवार, कानपुर

संबन्ध

11

न्यायालय श्रीमान् उपखण्ड अधिकारी एवं
सक्षम अधिकारी, भूमि आवाप्ति (एस डी एम)
बालोतरा

पत्राचार संख्या -

तारीख पत्राचार -

विषय - ग्राम आसोतरा के खसरा नम्बर 1875, 1876, 1877, 1878 की भूमि के
अधिग्रहण के सम्बन्ध में आपत्ति दर्ज करने एवं उचित मुआयजा
जिजाये जाने बाबत प्रार्थना पत्र।

1. पत्राचार

श्रीमान् नारायण, किशनाराम, जैवानराम पिसरान राजूजी, भावमो बेवा
मनूजी, गोवन्दराम, साधनराम पिठो वगैरारामजी, नारायण, हड़मानाराम पिठो
वगैरारामजी एवं श्रीमती टीपू बेवा पोतारामजी, हीराराम पुत्र झुगरारामजी जलियान
नन्कवी बंधारी निवासी आसोतरा तहसील पंचपदरा जिला बाड़मेर द्वारा प्रार्थना पत्र
प्रस्तुत का निवेदन है कि:-

1. कि उपर्युक्त एक नाबिकान्त कच्चा खुदा खातेदारी भूमि जिसमें 01.00 हेक्टर
का क्षेत्र शामिल है ग्राम आसोतरा, पंचपदरा जिला आसोतरा तहसील पंचपदरा
जिला के खसरा नम्बर 1875 रकबा 3.09 बीघा, खसरा नम्बर 1876
रकबा 01 बीघा 01 बिस्वा, खसरा नम्बर 1877 रकबा 3.06 बीघा, खसरा नम्बर
1878 रकबा 1.12 बीघा स्थित है।

2. कि उपर्युक्त दिनांक 20.06.2018 के अनुसार दिनांक 06.09.2018 को
राज्य सरकार द्वारा जारी पत्र में प्रकाशित भारत के राजपत्र के अनुसार
राज्य सरकार के बाड़मेर जिला में राष्ट्रीय राजमार्ग राहगा 754K के किमी
18.743 से 455.243 किमी (बालोतरा) तक के भूखण्डों में निर्माण
(सी.सी.कर्रज - ग्रेड्ड शोल्डर सहित - 2 लेन / 4-लेन का बनाना आदि) अनुरक्षण,
निर्माण और पंचालन के लिये अधिग्रहण हेतु सूचित किया
गया है।

3. कि उपर्युक्त भूमि नेशनल हाइवे नम्बर 754K के 2-लेन / 4-लेन निर्माण
सम्मत अनिवार्य अधिग्रहण में गैरी खातेदारी भूमि खसरा नम्बर 1875 रकबा 3.
09 बीघा में से 0.407 हेक्टर एवं खसरा नम्बर 1876 रकबा 01 बीघा 01
बिस्वा में से 0.723 हेक्टर, खसरा नम्बर 1877 रकबा 3 बीघा 6 बिस्वा में से
0.5165 हेक्टर, खसरा नम्बर 1878 रकबा 1.12 बीघा में से 0.1632 हेक्टर
भूमि ग्राम आसोतरा तहसील पंचपदरा जिला बाड़मेर की भूमि को अधिग्रहित
किया जा रहा है।

प्रकाश संख्या: 1878 में जारी की गई दिल्ली लम्बाई 15 फीट
चौड़ाई 15 फीट 3 इंच 12 इंच 3 इंच के समान जारी की गई 48 इंच
के बीच के लिए दिल्ली 12 1/2 15 x 3 x 3 इंच

- (4) यह कि हमारी खातेदारी भूमि खसरा नम्बर 1875, 1876, 1877 खातेदारी भूमि कृषि भूमि है, तथा उक्त भूमि पर कृषि कार्य किया जाकर फसल की पैदावार ली जाती है, जिससे मेरे परिवार का भरण पोषण होता है, तथा उक्त खातेदारी भूमि के बीचों बीच में से होकर उक्त राष्ट्रीय राजमार्ग का निर्माण किया जा रहा है, जिससे मेरी उक्त खातेदारी भूमि दो भागों में विभक्त हो जाएगी एवं कृषि कार्य हेतु पूर्ण रूप से नष्ट हो जाएगी, इस कारण उक्त भूमि के गिनतारे पर सड़क निकालने हेतु आदेश प्रदान करावे जिससे मुझे प्राप्त की भूमि का किसी प्रकार से कोई नुकसान न हो।
- (5) यह कि उक्त भूमि सिंचित है, तथा खरीफ व रबी में सिंचाई की जाती है।
- (6) यह कि उक्त कृषि भूमि के खसरा नम्बर 1878 में हमारे परिवार के रहवास हेतु एकवासीय मकान बनाये हुए हैं, जिसमें हमारा परिवार सहित रहवासी है, तथा उक्त भूमि पर हमारे द्वारा लाखों रुपये लगाकर रहवास हेतु मकान निर्माण कराये करवाया गया है, जिसकी साईज ढाल लम्बाई 27 फीट व चौड़ाई 23 फीट व ऊँचाई 12 फीट में प्रत्येक निर्माण किया हुआ है एवं हमारे पास एक एकवासीय मकान चारों तरफ से घेर दीवारों 15 फीट लम्बी व 8 फीट चौड़ाई व लम्बाई 2 फीट चौड़ाई है तथा उक्त पट्टार के पास ही पशुओं के बाले हेतु टाप लम्बाई 87 फीट व चौड़ाई 4 फीट व चौड़ाई 3.8 फीट में बनाई हुई है, तथा हमारी खातेदारी में आवागमन हेतु गेट लगा हुआ है, तथा उक्त घरवालों के पास में 20 फीट लम्बी व 10 फीट चौड़ाई में दो फीट चौड़ी कीचड़ भरी हुई है तथा उक्त सम्पूर्ण निर्माण कार्य उक्त राष्ट्रीय राजमार्ग में 100' हो जाएगा, जिससे हम प्रार्थीगण को अपना रहवासीय मकान का पुनर्निर्माण करवाना पड़ेगा। जिसका नकदी में मूल्यांकन किया जाना असंभव है जिससे हम प्रार्थीगण को डी एल सी दर से ज्यादा गुणा मुआवजा राशि मिलाने की कृपा करावे।
- (7) यह कि हमारी उक्त खातेदारी भूमि में सिंचाई हेतु पानी की पाईप लाईन काट कर साफ़ कर डाली गई है, तथा उक्त भूमि अक्षत किये जाने पर हमारी सम्पूर्ण पानी की पाईप लाईन पूर्ण रूप से नष्ट हो जाएगी।
- (8) यह कि हमारी उक्त खातेदारी भूमि काफी पौधे रशी बबूल, विलायती बबूल, खैरडी, जाल, रोहिडा, सन्देडा, नीम, सरस, बरली, के पेड़ भी लगे हैं, जिससे उक्त भूमि के बदले हम प्रार्थी को पचास गुणा मुआवजा दिलाये जाने का आदेश प्रदान करावे।
- (9) यह कि उक्त भूमि के बदले में मुआवजे की रक्कमत अनुमोदित दर के अनुसार गुणा राशि हम प्रार्थीगण को दिलाई जावे। इस सम्बन्ध में गुप्त प्रार्थी की आपत्ति दर्ज किये जाने का आदेश प्रदान करावे।
- अतः प्रार्थना पत्र प्रस्तुत कर निवेदन है कि मेरी भूमि के अधिग्रहण होने के दशा में हमारी उक्त खातेदारी भूमि के बीचों बीच सरस्ता न निकाल कर सड़क पर सरस्ता निकाले जाने का आदेश प्रदान करावे एवं हम प्रार्थीगण की भूमि की डी एल सी दर से पचास गुणा राशि दिलाये जाने का आदेश हम प्रार्थीगण के पक्ष में एवादे पालित करवावे।
- इति तारीख -

जसदे प्रार्थी

सेवामें

 श्रीमान अधिकारी मोहम्मद
 ससन अधिकारी भूमि आवारे

विषय

 पार्थिवी नैमालाम हड़मानालाम धिला वीलाजी
 धिपु केक वीलाजी नाली चोथरी कलकी
 निकली आसोतरा लह पनपदरा धिला वाडगे
 पार्थिवी पत्र पस्तुत कर निवेदन है कि

- ① मैंने 5000 कोरि वालोतरामें आवारे 3 चुकाहुं
 जिसकी पुर्ति पिछे सलगान है।
- ② हमारे सब खसरे में पैड है जो सारी चिन्हीतकारि
- ③ हमारे परिवार कृषि कार्यालय परीका है जो
 आपसे निवेदन है कि हमें जमीन के बदले
 जमीन दीलावे व हाईवे या औद्योगिक के अनुसार
 काम दिलावे ताकी हमारे परिवार का भरण-पोषण
 हो सके।

सेवामें,

न्यायालय श्रीमान् उपखण्ड अधिकारी एवं
सक्षम अधिकारी, भूमि आवाप्ति (एस डी एम)
बालोतरा

प्रकरण संख्या -

तारीख प्रस्तुतीकरण -

विषय :- ग्राम आसोतरा के खसरा नम्बर 1852 की भूमि के अधिग्रहण के
सम्बन्ध में आपति दर्ज करने एवं उचित मुआवजा दिलाये जाने बाबत
प्रार्थना पत्र।

महोदयजी

प्रार्थीगण नेमाराम, हडमानाराम पिता दोताजी, श्रीमती टीपू बेवा दोता
जातियान कलबी चौधरी निवासी आसोतरा तहसील पंचपदरा जिला बाड़मेर द्वारा
प्रार्थना पत्र प्रस्तुत कर निवेदन है कि:-

- (1) यह कि हमारी हक मालिकाना कब्जा सुदा खातेदारी भूमि किरम बारानी
अकाल की सरहद मौजा ग्राम आसोतरा पटवार क्षेत्र आसोतरा तहसील
पंचपदरा जिला बाड़मेर खसरा नम्बर 1852 रकबा 7.10 बीघा स्थित है।
- (2) यह कि अधिसूचना दिनांक 20.08.2018 के अनुसार दिनांक 06.09.2018 को
राजस्थान पत्रिका समाचार पत्र में प्रकाशित भारत के राजपत्र के अनुसार
राजस्थान राज्य के बाड़मेर जिले में राष्ट्रीय राजमार्ग संख्या 754K के किमी
381.743 से 455.243 किमी. (बालोतरा) तक के भूखण्ड के निर्माण
(बी डी करण/पेव्ड शोल्डर सहित-2लेन/4-लेन का बनाना आदि) अनुरक्षण,
प्रबंधन और प्रचालन के लोक प्रयोजन के लिए अधिग्रहण हेतु सूचित किया
गया है।
- (3) यह कि एनरोक्ड भूमि नेशनल हाईवे नम्बर 754K के 2-लेन/4-लेन निर्माण
बाबत अनिवार्य अधिग्रहण में मेरी खातेदारी भूमि खसरा नम्बर 1852 रकबा 7.
10 बीघा में से 0.1279 हैक्टर भूमि ग्राम आसोतरा तहसील पंचपदरा जिला
बाड़मेर की भूमि को अधिग्रहित किया जा रहा है।
- (4) यह कि मेरी उक्त खातेदारी भूमि कृषि भूमि है, तथा उक्त भूमि पर कृषि
कार्य किया जाकर फसल की पैदावार ली जाती है, जिससे मेरे परिवार का
भरण पोषण होता है, तथा उक्त खातेदारी भूमि के बीचो बीच में से होकर
उक्त राष्ट्रीय राजमार्ग का निर्माण किया जा रहा है, जिससे मेरी उक्त
खातेदारी भूमि दो भागों में विभक्त हो जाएगी एवं कृषि कार्य हेतु पूर्ण रूप
से गूँट हो जाएगी, इस कारण उक्त भूमि के किनारे पर सड़क निकालने
हेतु आदेश प्रदान करावे जिससे मुझ प्रार्थी की भूमि का किसी प्रकार से कोई
नुकसान न हो।

- (5) या कि उक्त भूमि सिंचित है, तथा खरीफ व रबी में सिंचाई की जाती है ।
- (6) या कि मेरी उक्त खातेदारी भूमि काफी पौधे देशी बबूल, खेजड़ी, जाल, रोहेडा, कुम्हटीयां, बीरगी, टोटलींग बबूल के पेड़ भी खड़े हैं, जिससे उक्त भूमि के बदले मुझ प्रार्थी को दस गुणा मुआवजा दिलाये जाने का आदेश प्रदान कराये ।
- (7) या कि उक्त भूमि के बदले में मुआवजे की प्रस्तावित अनुमोदित दर के दस गुणा राशि हम प्रार्थीगण को दिलाई जाये । इस सम्बन्ध में मुझ प्रार्थी की अपेक्षा दर्ज किये जाने का आदेश प्रदान कराये ।

अ.प्र. प्रार्थना पत्र प्रस्तुत कर निवेदन है कि मेरे भूमि के अधिग्रहण होने के दशा में हमारी उक्त खातेदारी भूमि के बीचों बीच रास्ता न निकाल कर सड़के पर रास्ता निकाले जाने का आदेश प्रदान कराये एवं हम प्रार्थीगण की भूमि की डी एल सी दर । दर मुना राशि दिलाये जाने का आदेश हम प्रार्थीगण के पक्ष में एवार्ड पारित पड़ेगा ।

इसके तारिख -

जारीय प्रार्थी

[Signature]

21/11/2022

21/11/22

संलग्न -

1. ज.प्र.प. की प्रति

जमाबन्दी (खेवट/बतौनी) (प्रतिलिपि)

फॉर्म नं-26(बी)
(उद्दिष्ट विवर 153 ए)
पृष्ठ संख्या - 1 of 1

सोम का नाम :- शम्भूराज
पटवारा संख्या :- आभीतार
ज. सी. वि. सं. :- जम्हा
सूचना :- राजा का
दिना :- बतौनी

सामान्य का नाम/दिना :- राजा
सूचना/विवर :- राजा का

सम्बन्ध - 2070 - 2073
भूमि धारक का नाम :- राजा, मरवा
उत्पत्ति की दिना :- बतौनी-बतौनी
सामान्य संख्या :- 435
सामान्य संख्या :- 360

सामान्य संख्या/सामान्य संख्या :- राजा का
सामान्य संख्या :- राजा का
सामान्य संख्या :- राजा का

सामान्य संख्या :- 2276, 2361

सामान्य संख्या	सामान्य संख्या	सामान्य संख्या	सामान्य संख्या	सामान्य संख्या	सामान्य संख्या	सामान्य संख्या
सामान्य संख्या	सामान्य संख्या	सामान्य संख्या	सामान्य संख्या	सामान्य संख्या	सामान्य संख्या	सामान्य संख्या
सामान्य संख्या	सामान्य संख्या	सामान्य संख्या	सामान्य संख्या	सामान्य संख्या	सामान्य संख्या	सामान्य संख्या
सामान्य संख्या	सामान्य संख्या	सामान्य संख्या	सामान्य संख्या	सामान्य संख्या	सामान्य संख्या	सामान्य संख्या
सामान्य संख्या	सामान्य संख्या	सामान्य संख्या	सामान्य संख्या	सामान्य संख्या	सामान्य संख्या	सामान्य संख्या

सामान्य संख्या/सामान्य संख्या :- राजा का

सामान्य संख्या/सामान्य संख्या :- राजा का

सामान्य संख्या/सामान्य संख्या :- राजा का

सामान्य संख्या/सामान्य संख्या :- राजा का

सामान्य संख्या

सेवामें,

श्रीमान् सक्षम अधिकारी (भूमि अवाप्ति)

एवं उपखण्ड अधिकारी, बालोतरा

जिला-बाड़मेर (राज.)

विषय:- सड़क परिवहन और राजमार्ग मंत्रालय की अधिसूचना कार्यालय
आदेश 4776 (I) दिनांक-29.11.18 के सम्बन्ध में आपत्ति बाबत
व अधिग्रहित भूमि (1 बीघा 15 बिस्वा) यानि 0.2833 हेक्टर
क्षेत्रफल बढ़ाने बाबत।

मान्यवर जी,

उपरोक्त विषय में निवेदन है कि राजस्थान राज्य के बाड़मेर जिले में एन. एच. 754 x के किलोमीटर 381.743 से किलोमीटर 455.243 (बालोतरा) के ग्राम बिटूजा तहसील पचपदरा में खसरा नंबर 886/223 रकबा 11.06 बीघा किस्म चा. अ. व खसरा नम्बर 937/316 रकबा 1.05 बीघा किस्म चा. अ. में से क्षेत्रफल 0.6473 हेक्टेयर व 0.0715 हेक्टेयर भूमि का अर्जन करने हेतु राष्ट्रीय राजमार्ग अधिनियम 1956 की धारा 3 के अंतर्गत सड़क परिवहन एवं राजमार्ग मंत्रालय के द्वारा अधिसूचना कार्यालय आदेश 4776 (I) दिनांक-29.11.18 प्रकाशित की गई। उक्त अधिसूचना के संवद में राष्ट्रीय राजमार्ग अधिसूचना 1956 की धारा 3 (क) के अन्तर्गत प्रार्थीगण सुजाराम, केवलराम पुत्रानं वंशाराम व लीला बेवा वंशाराम जाति भाली निवासी- बिटूजा तहसील पचपदरा जिला-बाड़मेर निम्न आपत्ति प्रस्तुत करते हैं:-

आपत्ति संख्या 1:-

प्रस्तावित राष्ट्रीय राजमार्ग में अवाप्त की गयी जमीन पर लगाये गये पीलर नुसार हमारी जमीन खसरा संख्या (i) 886/223 में 0.8914 हेक्टेयर व (ii) 937/316 में 0.1214 हेक्टेयर हैं जबकि आपके द्वारा अखबार में दिनांक-27.12.18 को प्रकाशित विज्ञप्ति में कमश 0.6473 हेक्टेयर व 0.0715 हेक्टेयर अंकित हैं। यदि करीब 0.2833 हेक्टेयर (1 बीघा 15 बिस्वा) भूमि का अधिक अधिग्रहण हो रहा है। इसकी जांच कराये व हमें कुल 1.0128 हेक्टेयर भूमि का मुआवजा दिलावे।

पेज 2 पर

(2)

आपत्ति संख्या 2:-

प्रस्तावित राष्ट्रीय राजमार्ग की परिधि में मेरी ^{0.8914} ~~0.8913~~ हेक्टेयर व ^{0.1214} ~~0.1215~~ हेक्टेयर कृषि भूमि आती है जिसमें पशुओं का आवास बने हुए हैं तथा मौके पर फसल खड़ी है।

इन संरचाओं के प्रभावित होने की वजह से मैं और मेरा पूरा परिवार पूर्ण रूप से भूमिहीन व बेरोजगार हो जायेंगे एवं हमारे समक्ष रोजी रोटी का संकट उत्पन्न हो जायेगा, क्योंकि मेरा पूरा परिवार कृषि आधारित आजीविका पर निर्भर है।

श्रीमानजी से निवेदन है कि उक्त मार्ग को अन्य क्षेत्र में डायवर्ट करे ताकि मैं मेरा जीवन मेरे परिवार सहित बिना किसी दुविधा के गुजार सकूँ।

आपत्ति संख्या 3 पुनर्वास व उचित मुआवजा:-

प्रस्तावित राष्ट्रीय राजमार्ग के नक्शे अनुसार मेरी लगभग 0.8914 हेक्टेयर व 0.1214 हेक्टेयर अवाप्ति क्षेत्र के अंतर्गत हैं।

श्रीमानजी से निवेदन है कि उक्त मार्ग को परिवर्ति करना संभव नहीं हो तो अवाप्त होने वाली सभी परिसम्पत्तियों का बाजार भाव अनुसार उचित मुआवजा निम्न अनुसार प्रदान करावे ताकि मैं मेरा शेष जीवन सुचारु रूप से गुजार सकूँ।

मेरी अवाप्त की गयी भूमि-का बाजार भाव 65 लाख रुपये प्रति हेक्टेयर हैं तथा मेरी करीब 1.0128 हेक्टेयर भूमि अवाप्त की जा रही हैं जिससे मुझे इस मद में न्यूनतम 70 लाख रुपये का आर्थिक नुकसान हुआ है।

मेरी उक्त अवाप्त की गयी भूमि में खेजड़ी के 4 पेड़, नीम के 4 पेड़, गुन्दा के 2 पेड़, देशी बबूल के 5 पेड़, विलायती बबूल के 5 पेड़ खते हैं जिसकी वर्तमान में कीमत राशि करीबन 3 लाख बनती है। इसके अलावा वर्तमान में फसल खड़ी है जिसमें गेहूँ, रजका की फसलें खड़ी हैं तथा तरह तरह की हरी सब्जियाँ बोई हुई हैं जिसकी वर्तमान में कीमत राशि 5 लाख रुपये बनती है।

भूमि अवाप्ति के कारण हमें यहां से दूसरे स्थान पर घर बसाने हेतु शिफ्टिंग/पलायन करना पड़ेगा जिसके पेटे हम 3,00,000/- रुपये पाने के अधिकारी हैं।

भूमि अवाप्ति के कारण मुझे व मेरे परिवार के समस्त छोटे बड़े सदस्यों को भारी मानसिक आघात लगा है जिसकी क्षतिपूर्ति का नकदी में आंकलन करना मुश्किल है मगर फिर भी मानसिक क्षति पुनर्वास आघात पेटे 50 लाख रुपये पाने के अधिकारी हैं।

(3) --

आपत्ति संख्या 4 रोजगार का संकट:-

हमारे परिवार का पुस्तैनी व एकमात्र व्यवसाय कृषि कार्य ही है। राजमार्ग के नक्शे अनुसार मेरी लगभग 6.04 बीघा भूमि अवाप्त हो रही है जिसमें मेरी आजीविका के समस्त स्रोत बंध हो जाएंगे, अतः श्रीमानजी से निवेदन है कि:-

1. मेरे परिवार के सदस्य को सरकारी नौकरी दिलवाई जावे।
2. राजमार्ग के निर्माण के दौरान विभिन्न निर्माण कार्य के द्वारा हमें विशेष कार्य दिये जाये ताकि हमारे परिवार को रोजगार मिल सके।
3. राष्ट्रीय राजमार्ग प्राधिकरण द्वारा राजमार्ग से जुड़ते हुए क्षेत्र में प्रस्तावित वाणिज्य भूखण्ड हमें विशेष प्राथमिकता से आवंटन किया जावे जैसे पेट्रोल पम्प, होटल, रेस्टोरेंट हेतु आवंटन।

अतः प्रार्थना पत्र प्रस्तुत कर श्रीमानजी से निवेदन है कि हमारी उपरोक्त समस्या को ध्यान में रखते हुए प्रार्थीयण की अवाप्त की गयी बेशकीमती जमीन जो बालोतरा शहर के नजदीक है जिसका डल.एल.सी. दर से 10 गुणा ज्यादा मुआवजा दिलाने की कृपा करावे तथा समाचार पत्र में प्रकाशित विज्ञापित से 0.2833 हेक्टेयर (1 बीघा 15 बिस्वा) भूमि पर मार्किंग की गयी है जिसकी भी अलग से मुआवजा दिलाय जावे।

इति दिनांक-4.1.2019

25	299	मिडी	डा. अमरज	0.3907(हेक्टेयर)	0.3907	12	50	
26	292	मिडी	डा. अमरज	0.1625(हेक्टेयर)	0.1625	13	53	
27	315	मिडी	डा. अमरज	0.0742(हेक्टेयर)	0.0742	नाम का नाम: भाई		
28	334	मिडी	डा. अमरज	0.7394(हेक्टेयर)	0.7394	15	15	
29	338	मिडी	डा. अमरज	0.1122(हेक्टेयर)	0.1122	11	11	
30	418	सरकार	डि.यु. वागाव	0.7174(हेक्टेयर)	0.7174	4	111	
31	731/81	मिडी	डा. अमरज	0.3451(हेक्टेयर)	0.3451	151	151	
32	742/84	मिडी	डा. अमरज	3.5975(हेक्टेयर)	3.5975	171	171	
33	745/84	मिडी	डा. अमरज	1.7178(हेक्टेयर)	1.7178	181	181	
34	746/84	मिडी	डा. अमरज	2.4535(हेक्टेयर)	2.4535	191	191	
35	749/84	मिडी	डा. अमरज	1.1087(हेक्टेयर)	1.1087	102	102	
36	750/84	मिडी	डा. अमरज	0.2299(हेक्टेयर)	0.2299	203	203	
37	84	मिडी	डा. अमरज	17.9061(हेक्टेयर)	17.9061	206	206	
38	885/23	मिडी	डा. अमरज 4.48	0.7254(हेक्टेयर)	0.7254	207	207	
39	887/223	मिडी	डा. अमरज 10.52	1.7128(हेक्टेयर)	1.7128	209	209	
40	888/223	मिडी	डा. अमरज 1.70	0.2759(हेक्टेयर)	0.2759	242	242	
41	891/224	मिडी	डा. अमरज 5.48	0.0783(हेक्टेयर)	0.0783	254	254	
42	897/236	मिडी	डा. अमरज	0.5851(हेक्टेयर)	0.5851	257	257	
43	937/316	मिडी	डा. अमरज 0.72	0.1129(हेक्टेयर)	0.1129	389	389	
44	938/316	मिडी	डा. अमरज 1.52	0.2458(हेक्टेयर)	0.2458	395	395	
45	939/316	मिडी	डा. अमरज 0.02	0.0036(हेक्टेयर)	0.0036	396	396	
46	992/334	मिडी	डा. अमरज	0.9372(हेक्टेयर)	0.9372	404	404	
47	993/334	मिडी	डा. अमरज	0.0044(हेक्टेयर)	0.0044	406	406	
नाम का नाम: हुंदाजी							407	407
1	10	मिडी	डा. दीपक	3.4128(हेक्टेयर)	3.4128	408	408	
2	25	मिडी	डा. दीपक	0.0704(हेक्टेयर)	0.0704	417	417	
3	25	मिडी	डा. दीपक	2.2538(हेक्टेयर)	2.2538	418	418	
4	28	मिडी	डा. दीपक	1.1928(हेक्टेयर)	1.1928	419	419	
5	29	मिडी	डा. दीपक	1.4906(हेक्टेयर)	1.4906	420	420	
6	31	सरकार	डि.यु. वागाव	0.3396(हेक्टेयर)	0.3396	421	421	
7	41	मिडी	डा. दीपक	0.2635(हेक्टेयर)	0.2635	422	422	
8	42	मिडी	डा. दीपक	1.5126(हेक्टेयर)	1.5126	423	423	
9	44	मिडी	डा. दीपक	5.6525(हेक्टेयर)	5.6525	424	424	
10	47	मिडी	डा. दीपक	0.0945(हेक्टेयर)	0.0945	425	425	

(5)

सेवामें,

श्रीमान उपखण्ड अधिकारी
बालोतरा

विषय:- राष्ट्रीय उच्च मार्ग हेतु की जा रही भूमि अवाप्ति के संबंध में।

महोदयजी,

उपरोक्त विषयान्तर्गत निवेदन है कि केन्द्रीय राष्ट्रीय राजमार्ग प्राधिकरण द्वारा प्रस्तावित राजमार्ग अमृतसर-गुजरात सुपर एक्सप्रेस हाईवे जो कि ग्राम बिठूजा से निकल रहा है इस संबंध में हम काश्तकारों की तरफ से निम्नानुसार आपत्तियां आपके कार्यालय में प्रेषित हैं:-

1306/232 = 11.12 4er
1310/585 = 1.01

1. यह है कि मैंने कुल भूमि खसरा नम्बर..... रकबा..... में से 4.0
भूमि सड़क निर्माण हेतु अवाप्त की जा रही है। 12.1 3rd 4er
2. यह है कि हमारी कृषि भूमि बेशकीमती भूमि है यहां पर हर प्रकार की सब्जिया एवं फसले यथा फुलगोभी, पत्तागोभी, हरीमिर्च, पालक, धनिया, बैंगन, मिण्डी, प्याज, तौरु, लौकी, ग्वाड़फली तथा जीरा, गेहूं, बाजरा, मूंग, मोठ, सरसों, अरण्डी, रिजका आदि की भरपूर पैदावार होती है। यहां का मुख्य कार्य कृषि एवं पशुपालन है जो काश्तकारों का एक मात्र आजीविका का साधन है। इस सड़क निर्माण से हमारे राजी-रोटी की समस्या उत्पन्न हो जायेगी।
3. यह है कि हमारा मुख्य कार्य कृषि एवं पशुपालन होने से पशुओं की संख्या भी ज्यादा है इनके लिए चारे की समस्या मुख्य रूप से उत्पन्न हो जायेगी।
4. यह है कि सड़क हेतु अवाप्त की जाने वाली भूमि पर 04 पेड़ पीछे खड़े हैं जिसके कटने पर पर्यावरण का क्षति पहुंचेगी।
5. यह है कि मैंने खेत में फसल को पानी देने हेतु 6 वर्ष पूर्व पाईप लाईन डाली गई थी जिसकी लम्बाई 275 मीटर है तथा जिस पर 6 होदी भी बनाई गई थी। पाईप पाईन एवं होदी निर्माण पर कुल 2.00 लाख रुपये लागत आई थी जो सड़क निर्माण के कारण अनुपयोगी हो जायेगी।

6. यह है कि करीब 10 वर्ष पूर्व हमारे निवास हेतु 40 गुणा 50 फीट में पक्का मकान का निर्माण करवाया था जिस पर करीब 18.00 लाख रुपये की लागत आयी थी। मेरे निवास स्थल से यह सड़क मार्ग 70-80 फीट पर निकल रहा है। सड़क पर वाहनों के अत्यधिक आवागमन के कारण भारी मात्रा में वायु प्रदूषण एवं ध्वनि प्रदूषण होगा जिससे यहाँ पर रहना मुश्किल हो जायेगा तथा मजबूर होकर अन्यत्र पलायन करना पड़ेगा।
7. यह है कि यहाँ की इतनी बेशकीमती भूमि के गुणवत्तायुक्त एवं उपजाऊ होने तथा नगर परिषद् बालोतरा के समीप होने के बावजूद भूमि की सरकारी बाजार दर बहुत कम है यानी न के बराबर है।
8. यह है कि उपरोक्त बिन्दुओं को ध्यान में रखते हुए हमारी मांगे निम्नानुसार है:-
 - i. कृषि भूमि बेशकीमती होने के कारण हमें मुआवजा राशि कम से कम 11-12 लाख रुपये प्रति बीघा दिलवायी जावे ताकि अन्यत्र काश्त की जमीन खरीद कर कृषि एवं पशुपालन व्यवसाय कर सकें। एवं हमारे पारिवारिक सदस्य बेरोजगार न हो सकें।
 - ii. कृषि कार्य में पानी की आपूर्ति हेतु वर्तमान कीमतों को देखते हुए 3.00 लाख रुपये दिलवाये जावे ताकि नई पाईप लाइन लगवाई जा सके।
 - iii. अन्यत्र जमीन खरीदने के कारण कृषि कार्य सम्पादित करने हेतु कृषि विद्युत संबंध देने में प्राथमिकता दी जावे एवं विद्युत मांग राशि कम ली जावे
 - iv. पर्यावरण सुरक्षा हेतु उचित मुआवजा राशि दिलवायी जावे ताकि नये पेड़ पीछे लगाकर पर्यावरण बढ़ाया जा सके।
 - v. हमारे रहने हेतु मकान की आवश्यकता रहेगी जिसके निर्माण हेतु 30.लाख रुपये की सहायता राशि दिलवायी जाये।

मुझे आशा ही नहीं बल्कि पूर्ण विश्वास है कि हमारी वाजिब मांगों पर गहन विचार विमर्श कराते हुये सहानुभूति बरताकर उपरोक्तानुसार उचित मुआवजा राशि दिलवाने का कष्ट करावे। ताकि हमें रोजी-रोटी एवं आजीविका के साधनों हेतु आने वाली समस्या से निजात मिल सके।

सिद्धि
महोदय
उपायुक्त श्री कोलार
उपायुक्त विहृण्ड



जमाबन्दी (खेवट/खतोनी) (प्रतिलिपि)

प्रपत्र पी-26(बी)
(विधिसे नियम 153 ए)
पृष्ठ संख्या :- 1 of 1

ग्राम का नाम :- बिठूजा
पटवार हल्का :- बिठूजा
भू.अभि.नि.क्षेत्र :- आसोतरा
तहसील :- पंचपदरा
जिला :- बाड़मेर

सम्बत :- 2072 - 2075
भूमि धारक का नाम :- राज.सरकार
क्षेत्रफल की ईकाई :- बीघा-बिस्वा
खाता संख्या नया :- 187
खाता संख्या पुराना :- 745

काश्तकार का नाम/पिता का नाम
जाति निवास के पते सहित :-

जगाराम बल्ल कोलाराम कौम कुम्हार सा.देह खातेदार
।रहूत-SBBJ शाखा आसोतरा के पक्ष मो.ना.क.स.2472,2503

खमरा संख्या	क्षेत्रफल	भूमि वर्गीकरण	कृषक द्वारा सदस्य लगान	सिंचाई के साधन	अन्तरण के क्रम में प्रमाणित नामान्तरकरण संख्या व दिनांक	टिप्पणी
1306/332	11-12	चा.अव्वल	11-12	49.30		
1310/565	1-01	बा.अव्वल	1-01	0.46		
कुल	2	12-13	12-13	49.76		
खगरे :-						

यह प्रपत्र केवल प्रार्थी की जानकारी के लिये है।

इसका उपयोग किसी भी न्यायालय में साक्ष्य के रूप में नहीं किया जा सकता है।

प्रतिलिपि जारी करने की तिथि:- 12/04/2018

नामान्तरकरण अद्यतन दिनांक:- 11/09/2017

NIC

सेवामें

(6)

श्रीमान भूमि अवाप्ति अधिकारी (एस.डी.ओ.)
बालोतरा

विषय - राष्ट्रीय राजमार्ग संख्या NH734K के कि.मी. 381.743 से कि.मी. 455.243
(बालोतरा) तक के निर्माण में अवाप्ति की जा रही भूमि के त्रुटि सुधार के संबंध
में।

महोदयजी,

उपरोक्त विषयान्तर्गत निवेदन है कि भारत का राजपत्र संख्या 4776 दिनांक
03.12.2018 के दिनांक 27.12.2018 के दैनिक भास्कर अखबार में प्रकाशित की गई भूमि
अवाप्ति की सूचना ने राजपत्र की क्रम संख्या 134 में खसरा संख्या 1307/332 रकबा
1.2859 मेरे भाई श्री जगाराम पुत्र श्री कोलाराम के नाम प्रकाशित हुआ है जबकि यह
खसरा राजस्व रेकॉर्ड में मेरे नाम दर्ज है जिसका त्रुटि सुधार किया जायें।

अवाप्ति की जा रही भूमि में मेरे खेत में 22 पेड़ हैं जबकि मात्र 12 पेड़ों पर
सर्वे के दौरान टैग लगाये गये हैं। इस लिए शेष सभी 10 पेड़ों पर टैग लगा कर कुल
22 पेड़ों का मुआवजा दिलवाया जायें। तथा भूमि अवाप्ति उपरान्त दी जाने वाली
मुआवजा राशि एक मुहल दिलवायो जायें ताकि मिलने वाली राशि से अन्यत्र काश्त हेतु
भूमि खरीदी जा सके।

मुझे आशा ही नहीं बल्कि पूर्ण विश्वास है कि आप मेरी उचित जायज मांगों पर गौर
फरमायेंगे।

भवदीय

कुमाराम

(कुमाराम पुत्र श्री कोलाराम)

बिजुजा

9-1-13

सेवानें

श्रीमान उपखण्ड अधिकारी
बालोतन

विषय:- राष्ट्रीय उच्च मार्ग हेतु की जा रही भूमि अवाप्ति के संबंध में।

महोदयजी,

उपरोक्त विषयान्तर्गत निवेदन है कि केन्द्रीय राष्ट्रीय राजमार्ग प्राधिकरण द्वारा प्रस्तावित राजमार्ग अमृतसर-गुजरात सुपर एक्सप्रेस हाईवे जो कि ग्राम बिंदूजा से निकल रहा है इस संबंध में हम कारशतकारों की तरफ से निम्नानुसार आपत्तियां आपके कार्यालय में प्रेषित है:-

1307/332 = 11.03 बीघा

1309/565 = 1.99 बीघा

1. यह है कि मेरे कुल भूमि खसरा नम्बर..... रकबा 12.2 बीघा में से 6.0 बीघा भूमि सड़क निर्माण हेतु अवाप्त की जा रही है।
2. यह है कि हमारी कृषि भूमि बेशकीमती भूमि है यहां पर हर प्रकार की सब्जिया एवं फसलें यथा फुलगोभी, पत्तागोभी, हरीमिर्च, पालक, धनिया, बैंगन, भिण्डी, प्याज, तीरु, लौकी, खारफली तथा जीरा, गेहू, बाजरा, मूंग, मटर, सरसों, अरमई, सिजका आदि की भरपूर पैदावार होती है। यहां का मुख्य कार्य कृषि एवं पशुपालन है जो कारशतकारों का एक मात्र आजीविका का साधन है। इस सड़क निर्माण से हमारे राजी-रोटी की समस्या उत्पन्न हो जायेगी।
3. यह है कि हमारे पास आजीविका हेतु मुख्य रूप से कृषि कार्य एवं पशुपालन होने से दूसरे अन्य गैर कृषि कार्य करने में सक्षम नहीं है तथा आजीविका हेतु यहां से पलायन करने हेतु मजबूर होना पड़ रहा है।
4. यह है कि इस सड़क निर्माण से मेरे खेत का शेष त्रिभुजनुमा हिस्सा सड़क के उस पार बचता है जिस पर कृषि कार्य पानी की आपूर्ति के बिना संभव नहीं है।
5. यह है कि हमारा मुख्य कार्य, कृषि एवं पशुपालन होने से घरों की संख्या भी ज्यादा है इनके लिए धाने की समस्या मुख्य रूप से उत्पन्न हो जायेगी।
6. यह है कि सड़क हेतु अवाप्त की जाने वाली भूमि पर 2.2 बीघा में 10 बीघा छड़ है जिसके कटने पर पर्यावरण का क्षति पहुंचेगी।

7. यह है कि मेरे खेत में फसल को पानी देने हेतु 8 वर्ष पूर्व पाईप लाईन डाली गई थी जिसकी लम्बाई 275 मीटर है तथा जिस पर 6 हादी भी बनाई गई थी। पाईप लाईन एवं हादी निर्माण पर कुल 20 लाख रुपये लागत आई थी जो सड़क निर्माण के कारण अनुपयोगी हो जायेगी।
8. यह है कि करीब 10 वर्ष पूर्व हमारे निवास हेतु 25 गुणा 50 फीट में पक्का मकान का निर्माण करवाया था जिस पर करीब 8.00 लाख रुपये की लागत आयी थी जो हमारे पलायन के कारण अनुपयोगी हो जायेगा तथा हमें अन्यत्र दूसरा मकान बनाना पड़ेगा जो महंगाई के इस दौर में करीब 20.00 लाख रुपये में भी संभव नहीं है।
9. यह है कि यहां की इतनी देशकीमती भूमि के गुणवत्तायुक्त एवं उपजाऊ होने तथा नगर परिषद् बालोतरा के समीप होने के बावजूद भूमि की सरकारी बाजार दर बहुत कम है यानी न के बराबर है।
10. यह है कि उपरोक्त बिन्दुओं को ध्यान में रखते हुए हमारी मांगे निम्नानुसार हैं:-
 - i. कृषि भूमि देशकीमती होने के कारण हमें मुआवजा राशि कम से कम 11-12 लाख रुपये प्रति बीघा दिलवायी जावे ताकि अन्यत्र काश्त की जमीन खरीद कर कृषि एवं बहुउद्यम व्यवसाय कर सकें। एवं हमारे परिवारिक सदस्य बेरोजगार न हो सकें।
 - ii. कृषि कार्य में पानी की आपूर्ति हेतु वर्तमान कीमतों को देखते हुए 3.00 लाख रुपये दिलवाये जावे ताकि नई पाईप लाईन लगवाई जा सके।
 - iii. अन्यत्र जमीन खरीदने के कारण कृषि कार्य सम्पादित करने हेतु कृषि विद्युत संबंध देने में प्राथमिकता दी जावे एवं विद्युत मांग राशि कम ली जावे।
 - iv. पर्यावरण सुरक्षा हेतु उचित मुआवजा राशि दिलवायी जावे ताकि नये पेड़ पौधे लगाकर पर्यावरण बचाया जा सके।
 - v. हमारे रहने हेतु मकान की आवश्यकता रहेगी जिसके निर्माण हेतु 20 लाख रुपये की सहायता राशि दिलवायी जावे।

मुझे आशा है कि नई राज्य सरकार के द्वारा है कि हमारे बाजिब मांग पर गहन विचार देने पर ध्यान देते नहतु-होते बाजिब मांग के अनुसार उचित मुआवजा राशि

7. यह है कि नीचे खेत में फसल को पानी देने हेतु 6 वर्ष पूर्व पाईप लाईन डाली गई थी जिसकी लम्बाई 275 मीटर है तथा जिस पर 6 चांदी भी बनाई गई थी। पाईप लाईन एवं छोटी निर्माण पर कुल 2.00 लाख रुपये लागत आई थी जो सड़क निर्माण के कारण अनुपयोगी हो जायेगी।
8. यह है कि करीब 10 वर्ष पूर्व हमारे निवास हेतु 25 गुणा 50 फीट में पक्का मकान का निर्माण करवाया था जिस पर करीब 8.00 लाख रुपये की लागत आयी थी जो हमारे पलायन के कारण अनुपयोगी हो जायेगा तथा हमें अन्यत्र दूसरा मकान बनाना पड़ेगा जो महंगाई के इस दौर में करीब 20.00 लाख रूपयों में भी संभव नहीं है।
9. यह है कि यहां की इतनी बेशकीमती भूमि के गुणवत्तायुक्त एवं उपजाऊ होने तथा नगर परिषद बालोतरा के समीप होने के बावजूद भूमि की सरकारी बाजार दर बहुत कम है यानी न के बराबर है।
10. यह है कि उपरोक्त बिन्दुओं को ध्यान में रखते हुए हमारी मांगे निम्नानुसार हैं:-
 - i. कृषि भूमि बेशकीमती होने के कारण हमें मुआवजा राशि कम से कम 11-12 लाख रुपये प्रति बीघा दिलवायी जावे ताकि अन्यत्र काश्त की जमीन खरीद कर कृषि एवं पशुपालन व्यवसाय कर सकें। यदि हमारे परिवारिक सदस्य बेरोजगार न हो सकें।
 - ii. कृषि कार्य में पानी की आपूर्ति हेतु वर्तमान कीमतों को देखते हुए 3.00 लाख रुपये दिलवाये जावे ताकि नई पाईप लाईन लगवाई जा सके।
 - iii. अन्यत्र जमीन खरीदने के कारण कृषि कार्य सम्पादित करने हेतु कृषि विद्युत संबंध देने में प्राथमिकता दी जावे एवं विद्युत मांग राशि कम ली जावे।
 - iv. पर्यावरण सुरक्षा हेतु उचित मुआवजा राशि दिलवायी जाय ताकि नये पेड़ पौधे लगाकर पर्यावरण बचाया जा सके।
 - v. हमारे रहने हेतु मकान की आवश्यकता रहेगी जिसके निर्माण हेतु 20 लाख रूपयों की सहायता राशि दिलवायी जाये।

महोदय की नई दृष्टि एवं विचार है कि हमारे बाजिब मांग पर गहन विचार दिखाने के लिए उन्होंने बनाने पर उनके अनुसार उचित मुआवजा राशि

दिलवान का लक्ष्य कर रहे हैं। हमें इस सच को सही से समझना है और
वाली समस्या से निजात मिल सके

भवदीय

कुमाराम

कुम्हाराम पुत्र श्री कोलारामजी प्रजापत
निवासी बिरुजा तहसील पंचपदरा
जिला बाड़मेर



जमाबन्दी (खेवट/खतोनी) (प्रतिलिपि)

पृष्ठ संख्या - 1 of 1

ग्राम का नाम :- विठ्ठल
पटवार हल्का :- विठ्ठल
भू.अभि.नि.क्षेत्र :- आसोतगा
तहसील :- पंचपदगा
जिला :- बाहमनगर

सम्बन्ध :- 2072 - 2075
भूमि धारक का नाम :- राज.भरकार
क्षेत्रफल की इकाई :- बीघा-चिम्टा
पुता संख्या नया :- 86
पुता संख्या पुराना :- 745

दाख्तकार का नाम/पिता का नाम

कुमाराम बन्द बालाराम जीम कुम्हार सा.देह खातेदार
रजि.नं.-SBBJ शाखा आसोतगा के पक्ष मोता.क.स.2472,2503

जानि निवास के पते सहित :-

सूचना संख्या	क्षेत्रफल	भूमि वर्गीकरण	कृषक द्वारा संयत संग्रह	सिंचाई के साधन	अन्तर्गत के रूप में प्रमाणित नानान्तर्गत संख्या व दिनांक	टिप्पणी
1307/332	11-03	वा.अ.व.व.व.	11-03	47.39		
1309/565	1-09	वा.अ.व.व.व.	1-09	0.84		
कुल	2	12-12	12-12	48.03		
अग्रिम :-						

यह प्रपत्र केवल प्रार्थी की जानकारी के लिये है।

इसका उपयोग किसी भी न्यायालय में साक्ष्य के रूप में नहीं किया जा सकता है।

प्रतिलिपि जारी करने की तिथि :- 12/04/2018

नमान्तर्गत अग्रिम दिनांक :- 11/09/2017

NIC

सेवार्थ,

श्रीमान् सक्षम अधिकारी (भूमि अवाप्ति)
एवं उपखण्ड अधिकारी, बालोतरा
जिला-बाड़मेर (राज.)

विषय:- सड़क परिवहन और राजमार्ग मंत्रालय की अधिसूचना कार्यालय
आदेश 4776 (J) दिनांक-29.11.18 के सम्बन्ध में आपत्ति बाबत।

मान्यवर जी,

उपरोक्त विषय में निवेदन है कि राजस्थान राज्य के बाड़मेर जिले में एन. एच. 754 K के किलोमीटर 381.743 से किलोमीटर 455.243 (बालोतरा) के ग्राम बिंदूजा तहसील पंचपदरा में खसरा नंबर 887/223 रकबा 11.06 बीघा किस्म चा. अ. व खसरा नंबर 938/316 रकबा 1.06 बीघा किस्म चा. अ. में से क्षेत्रफल 1.5461 हेक्टेयर व 0.2104 हेक्टेयर भूमि का अर्जन करने हेतु राष्ट्रीय राजमार्ग अधिनियम 1956 की धारा 3 के अंतर्गत सड़क परिवहन एवं राजमार्ग मंत्रालय के द्वारा अधिसूचना कार्यालय आदेश 4776 (J) दिनांक-29.11.18 प्रकाशित की गई। उक्त अधिसूचना के संबंध में राष्ट्रीय राजमार्ग अधिसूचना 1956 की धारा 3 (क) के अन्तर्गत प्रार्थी कपुराराम पुत्र रामाराम जाति माली निवासी- बिंदूजा तहसील पंचपदरा जिला-बाड़मेर निम्न आपत्ति प्रस्तुत करते हैं:-

आपत्ति संख्या 1:-

प्रस्तावित राष्ट्रीय राजमार्ग की परिधि में मेरी लगभग सम्पूर्ण कृषि, भूमि, रहवासीय मकान, कृषि कुआं, पशुओं का आवास, पानी का टांका, टयुबवेल व होद इत्यादी आते हैं।

इन संरचनाओं के प्रभावित होने की वजह से मैं और मेरा पूरा परिवार पूर्ण रूप से भूमिहीन व बेरोजगार हो जायेंगे एवं हमारे समक्ष रोजी रोटी का संकट उत्पन्न हो जायेगा, क्योंकि मेरा पूरा परिवार कृषि आधारित आजीविका पर निर्भर है।

श्रीमानजी से निवेदन है कि उक्त मार्ग को अन्य क्षेत्र में डायवर्ट करें ताकि मैं मेरा जीवन मेरे परिवार सहित बिना किसी दुविधा के गुजार सकूँ।

आपत्ति संख्या 2 पुनर्वास व उचित मुआवजा:-

प्रस्तावित राष्ट्रीय राजमार्ग के नक्शे अनुसार मेरी लगभग सम्पूर्ण कृषि भूमि रहवासीय मकान, कृषि कुआं, पशुओं का आवास, पानी का टांका, टयुबवेल व होद व सभी प्रकार की परिसम्पतियां अवाप्ति क्षेत्र के अंतर्गत हैं।

श्रीमानजी से निवेदन है कि उक्त मार्ग को परिवर्तित करना संभव नहीं हो तो अवाप्ति होने वाली सभी परिसम्पतियों का बाजार भाव अनुसार उचित मुआवजा निम्न अनुसार प्रदान करावे ताकि मैं मेरा शेष जीवन सुचारु रूप से गुजार सकूँ।

मेरी अवाप्ति की गयी भूमि का बाजार भाव 65 लाख रुपये प्रति हेक्टेयर है तथा मेरी करीब 2 हेक्टेयर भूमि अवाप्ति की जा रही है जिससे मुझे इस मद में न्यूनतम 1 करोड़ 30 लाख रुपये का आर्थिक नुकसान हुआ है।

मेरी अवाप्ति की भूमि में 1195 वर्गफिट भाग में पक्का रहवासीय मकान निर्मित हैं जिसमें मेरा सपरिवार रहवास चला आ रहा है जिसमें खुल्ला निर्माण कार्य 437 वर्गफिट, टीन शेड निर्मित मकान 448, भूमिगत पानी का टैंक 1750 वर्गफिट, पशुओं को रखने का बाड़ा/तबेला 450 वर्गफिट, टयुबवेल, पम्पसेट, केबल पाईप, ओपन वेल (कुआं), कुआं से निकले वाला पानी का बड़ा होद, बिजलीघर इत्यादी निर्मित हैं जिसकी वर्तमान में कुल कीमतन राशि रुपये 62 लाख रुपये बनती है।

मेरी उक्त अवाप्ति की गई भूमि में खेजड़ी के 8 पेड़, नीम के 6 पेड़, गुन्दा के 1 पेड़, देशी बबूल के 2 पेड़, करंज का 1 पेड़, विलायती बबूल के 5 पेड़ खड़े हैं जिसकी वर्तमान में कीमत राशि करीबन 4 लाख बनती है। इसके अलावा 12 बीघा भूमि में वर्तमान में फसल खड़ी है जिसमें गेहूँ, रजका की फसलें खड़ी हैं तथा तरह तरह की हरी सब्जीयां बोई हुई हैं जिसकी वर्तमान में कीमत राशि 5 लाख रुपये बनती है।

भूमि अवाप्ति के कारण हमें यहाँ से दूसरे स्थान पर घर बार बसाने हेतु शिफ्टिंग/पलायन करना पड़ेगा जिसके पेटे हम 3,00,000/- रुपये पाने के अधिकारी हैं।

भूमि अवाप्ति के कारण मुझे व मेरे परिवार के समस्त छोटे बड़े सदस्यों को भारी मानसिक आघात लगा है जिसकी क्षतिपूर्ति का नकदी में आकलन करना मुश्किल है मगर फिर भी मानसिक क्षति पुनर्वास आघात पेटे 50 लाख रुपये पाने के अधिकारी हैं।

आपत्ति संख्या 3 रोजगार का संकट:-

हमारे परिवार का पुरतनी व एकमात्र व्यवसाय कृषि कार्य ही है। राजमार्ग के नक्शे अनुसार मेरी लगभग 12 बीघा भूमि अवाप्ति हो रही है एवं रहवासी मकान सहित कृषि कुआं/टयुबवेल भी अवाप्ति हो रही हैं। मेरी आजीविका के समस्त स्रोत बंध हो जायेंगे, अतः श्रीमानजी से निवेदन है कि:-

(3)

1. मेरे परिवार के सदस्य को सरकारी नौकरी दिलवाई जावे।
2. राजमार्ग के निर्माण के दौरान विभिन्न निर्माण कार्य के द्वारा हमें विशेष कार्य दिये जाये ताकि हमारे परिवार को रोजगार मिल सकें।
3. राष्ट्रीय राजमार्ग प्राधिकरण द्वारा राजमार्ग से जुड़ते हुए क्षेत्र में प्रस्तावित वाणिज्य भूखण्ड हमें विशेष प्राथमिकता से आवंटन किया जावे जैसे पेट्रोल पम्प, होटल, रेस्टोरेंट हेतु आवंटन।

आपत्ति संख्या 4 अंडर पास/कैटल पास:-

प्रस्तावित राजमार्ग के नक्शे अनुरूप मेरी जमीन दो भागों में विभाजित हो रही है एवं शेष बची जमीन मार्ग के दोनों ओर स्थित रहेंगी। मेरे परिवार में 12 भैंसे (पशुधन) हैं। कृषि कार्यों व पालतु पशुओं को लाने ले जाने व सिंचाई हेतु सुरक्षित व सुगमन व्यवस्था का प्रावधान रखने की व्यवस्था डिजायन में रखने की कृपा करावे। सिंचाई हेतु पानी की पाईप लाइन सड़क के आर-पार गुजर सकें इसकी व्यवस्था करावे।

अतः प्रार्थना पत्र प्रस्तुत कर श्रीमानजी से निवेदन है कि हमारी उपरोक्त समस्या को ध्यान में रखते हुए प्रार्थी की अवाप्त की गयी बेशकीमती जमीन जो बालोतरा शहर के नजदीक है जिसका डल.एल.सी. दर से 10 गुणा ज्यादा मुआवजा दिलाने की कृपा करावे।

इति दिनांक-4.1.2019

सेवामें,

श्रीमान सक्षम अधिकारी (भूमि अवाप्ति)
एवं उपखण्ड अधिकारी, बालोतरा
जिला बाड़मेर (राज.)

विषय :- सड़क परिवहन और राजमार्ग मंत्रालय की अधिसूचना कार्यालय
आदेश (4086 (अ)) के सम्बन्ध में आपत्ति बाबत
4776(3) दि. 29-11-18
मान्यवरजी,

उपरोक्त विषय में निवेदन है कि राजस्थान राज्य के बाड़मेर जिले में एन.एच. 754 के ~~के~~ किलोमीटर 381.743 से किलोमीटर 455.243 (बालोतरा) के लिए ग्राम बिदुजा तहसील पंचपदरा में खसरा नंबर 887/223 रकबा 11.06 बीघा किस्म चा. अ. व खसरा नंबर 938/316 रकबा 1.06 बीघा किस्म चा.अ में से क्षेत्रफल ^{1.546} (1.7126) हेक्टेयर व ^{0.2468} (0.2468) हेक्टेयर भूमि का अर्जन करने हेतु राष्ट्रीय राजमार्ग अधिनियम 1956 की धारा 3(क) के अंतर्गत सड़क परिवहन एवं राजमार्ग मंत्रालय के द्वारा अधिसूचना कार्यालय आदेश ^{4086(अ)} (4086(अ)) दिनांक ²⁹⁻¹¹⁻¹⁸ (29-11-18) प्रकाशित की गई। उक्त अधिसूचना के संबंध में राष्ट्रीय राजमार्ग अधिसूचना 1956 की धारा 3(क) के अन्तर्गत प्रार्थी कपुराराम पुत्र रामाराम जाति माली निवासी बिदुजा तहसील पंचपदरा जिला बाड़मेर निम्न आपत्ति प्रस्तुत करते हैं :-

आपत्ति संख्या 1 :-

कि

प्रस्तावित राष्ट्रीय राजमार्ग की परिधि में मेरी लगभग सम्पूर्ण कृषि भूमि, रहवासीय मकान, कृषि कुंआ, पशुओं का आवास, पानी का टांका, टयुबवेल व होद इत्यादी आते हैं।

इन संरक्षाओं के प्रभावित होने की वजह से मैं और मेरा पूरा परिवार पूर्ण रूप से भूमिहीन व बेरोजगार हो जायेंगे एवं हमारे समक्ष रोजी रोटी का संकट उत्पन्न हो जायेगा, क्योंकि मेरा पूरा परिवार कृषि आधारित आजीविका पर निर्भर है।

श्रीमानजी से निवेदन है कि उक्त मार्ग को अन्य क्षेत्र में डायवर्ट करें ताकि मैं मेरा जीवन मेरे परिवार सहित बिना किसी दुविधा के गुजार सकूँ।

Ch 51217

पेज न. 2

आपत्ति संख्या 2 पुनर्वास व उचित मुआवजा :-

प्रस्तावित राष्ट्रीय राजमार्ग के नक्शे अनुसार मेरी लगभग सम्पूर्ण कृषि भूमि, रहवासीय मकान, कृषि कुआ, पशुओं का आवास, पानी का टांका, टयुबवेल व होद व सभी प्रकार की परिसम्पतियाँ अवाप्ति क्षेत्र के अंतर्गत है।

श्रीमानजी से निवेदन हैं कि उक्त मार्ग को परिवर्तित करना संभव नहीं हो तो अवाप्ति होने वाली सभी परिसम्पतियों का बाजार भाव अनुसार उचित मुआवजा निम्न अनुसार प्रदान करावे ताकि मैं मेरा शेष जीवन सुचारु रूप से गुजार सकूँ।

मेरी अवाप्ति की गयी भूमि का बाजार भाव 85 लाख रुपये प्रति हेक्टेयर है तथा मेरी करीब 2 हेक्टेयर भूमि अवाप्ति की जा रही है जिससे मुझे इस मद में न्यूनतम 1 करोड़ 30 लाख रुपये का आर्थिक नुकसान हुआ है।

मेरी अवाप्ति की भूमि में 1195 वर्गफिट नाग में पक्का रहवासीय मकान निर्मित है जिसने मेरा सपरिवार रहवास चला आ रहा है, जिसमें खुल्ला निर्माण कार्य 437 वर्गफिट, टीन शीट निर्मित मकान 448, भूमिगत पानी का टैंक 1750 वर्गफिट, पशुओं को रखने का बाड़ा/तबेला 450 वर्गफिट, टयुबवेल, पम्पसेट, केबल पाइप, ओपन वेल (कुआ), कुआ से निकलने वाला पानी का बड़ा होद, बिजलीघर इत्यादी निर्मित है जिसकी वर्तमान में कुल कीमतन राशि रुपये 62 लाख रुपये बनती है।

मेरी उक्त अवाप्ति की गयी भूमि में खेजड़ी के 8 पेड़, नीम के 6 पेड़, गुन्दा के 1 पेड़, देशी बबूल के 2 पेड़, करंज का 1 पेड़, विलायती बबूल के 5 पेड़ खड़े हैं जिसकी वर्तमान में कीमत राशि करीबन 4 लाख बनती है। इसके अलावा 12 बीघा भूमि में वर्तमान में फसल खड़ी है जिसमें बाजरी, जवार, रजका की फसलें खड़ी है तथा तरह तरह की हरी सब्जियाँ बोई हुई हैं जिसकी वर्तमान में कीमत राशि 5 लाख रुपये बनती है।

भूमि अवाप्ति के कारण हमें यहां से दूसरे स्थान पर घर बार बसाने हेतु शिफ्टिंग/पलायन करना पड़ेगा जिसके पेटे हम 3,00,000/- रुपये पाने के अधिकारी हैं।

भूमि अवाप्ति के कारण मुझे व मेरे परिवार के समस्त छोटे बड़े सदस्यों को भारी मानसिक आघात लगा है जिसकी क्षतिपूर्ति का नकदी में आंकलन करना मुश्किल है मगर फिर भी मानसिक क्षति पुनर्वास आघात पेटे 50 लाख रुपये पाने के अधिकारी हैं।

आपत्ति संख्या 3 रोजगार का संकट :-

हमारे परिवार का पुश्तैनी व एकमात्र व्यवसाय कृषि कार्य ही है। राजमार्ग के नक्शे अनुसार मेरी लगभग 12 बीघा भूमि अवाप्त हो रही है एवं रहवासी मकान सहित कृषि कुआ/टयुबवेल भी अवाप्त हो रही है। मेरी आजीविका के समस्त स्रोत बंद हो जायेंगे, अतः श्रीमानजी से निवेदन है कि:-

1. मेरे परिवार के सदस्य को सरकारी नौकरी दिलवाई जावे।
2. राजमार्ग के निर्माण के दौरान विभिन्न निर्माण कार्य के द्वारा हमें विशेष कार्य दिये जाये ताकि हमारे परिवार को रोजगार मिल सके।
3. राष्ट्रीय राजमार्ग प्राधिकरण द्वारा राजमार्ग से जुड़ते हुए क्षेत्र में प्रस्तावित वाणिज्य भूखण्ड हमें विशेष प्राथमिकता से आवंटन किया जावे जैसे पेट्रोल पम्प, होटल, रेस्टोरेंट हेतु आवंटन।

आपत्ति संख्या 4 अंडर पास/केटल पास :-

प्रस्तावित राजमार्ग के नक्शे अनुरूप मेरी जमीन दो भागों में विभाजित हो रही है एवं गेब बच्चे जमीन मार्ग के दोनों ओर स्थित रहेगी। मेरे परिवार में 12 बैसे (पशुधन) है। कृषि कार्यों व पालतु पशुओं को लाने ले जाने व सिंचाई हेतु सुरक्षित व सुगमन व्यवस्था का प्रावधान रखने की व्यवस्था डिजायर्डन में रखने की कृपा करावे। सिंचाई हेतु पानी की पाईप लाईन सड़क के आर-पार गुजर सके इसकी व्यवस्था करावे।

अतः प्रार्थना पत्र प्रस्तुत कर श्रीमान से निवेदन है कि हमारी उपरोक्त समस्या को ध्यान में रखते हुए प्रार्थी की अवाप्त की गयी बेशकीमती जमीन जो बालोतरा शहर के नजदीक है जिसका डी.एल.सी. दर से 10 गुणा ज्यादा मुआवजा दिलाने की कृपा करावे।

दिनांक 22.9.2018

क.पु.रा.रा.प.

५. बल नकल उपयोग के लिए

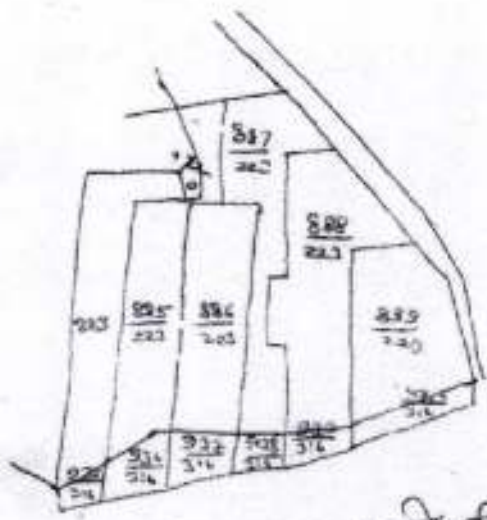
प्रज्ञा गणपती काउन्सिल, पञ्चपदस (हनुमान जंजीरी)
फोन: 9166214471, 9829232221

जगदीश (छत्तीसी) ग्राम (क.क.क.)	पटवार क्षेत्र (क.क.क.)	भू-अभिलेख निकाश क्षेत्र (क.क.क.)	वसतिग	राजस्थान संघ 2012 से 2017 तक

[illegible]



आंशिक नक्शा जिह्वा
 भू-माली - विहवा
 पैमाना - १" = २०० फीट



सही जमीन

पत्र सं. ५०३
 १/१/७३



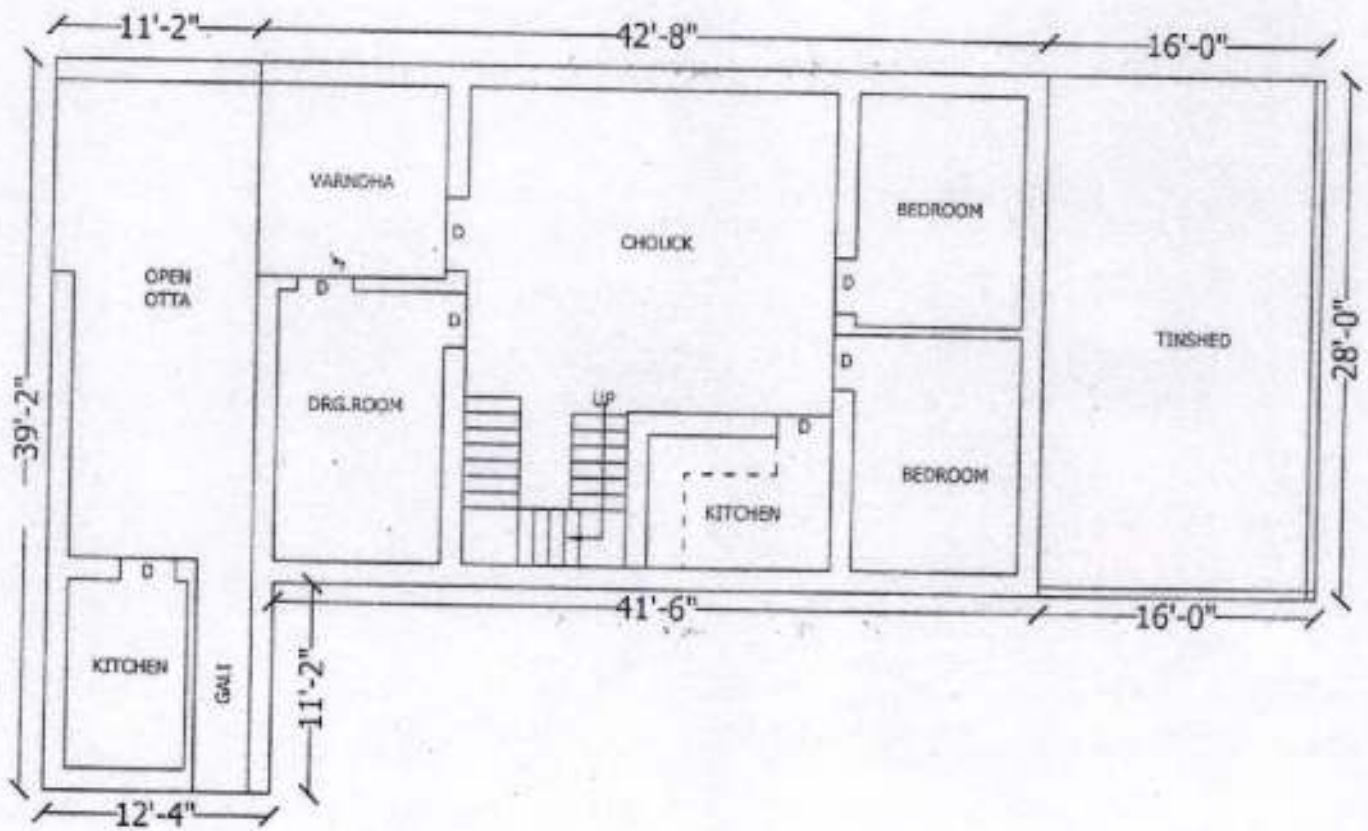
जयपाल कौर
 पटवारी (भू.अ.)
 तहसील पंचपदरा

श्री कपुराराम पुत्र श्री रामारामजी, जाति-माली
गांव- बिटूजा, जिला-बाड़मेर (राज.)

INFLUENCED AREA

BUILDING Const. AREA = 1194.65 Sqft. = 29,86,625.00 /-
OPEN Const. AREA = 437.33 Sqft. = 4,37,330.00 /-
TINSHED Const. AREA = 448.00 Sqft. = 4,48,000.00 /-
WATER TANT = 1750.00 Sqft. = 5,25,000.00 /-

TOTAL = 43,96,955.00 /- Rupeese



राजस्थान सरकार
कार्यालय जिला कलक्टर, बाड़मेर

क्रमांक-प.40() (1) सामान्य / 2018 / 477

दिनांक :- 10/01/2019

प्रेषित :-

क्षेत्रीय अधिकारी,
राजस्थान प्रदूषण नियंत्रण मण्डल
बालोतरा

JE (b)
Caf

विषय:- Regarding conduction of Public hearing for "construction of 4/6 lane Access Control (NH 754 K) length of 208.200 Km from Dhadhaniya Sasan, District Jodhpur, to near Sanchoe, Rajasthan-Gujarat Boarder, District Jalore, Rajasthan for Barmer District by M/S National Highways Authority of India (NHAI)."

प्रसंग:- आपका पत्र क्रमांक-RPCB/RO/Balotra/PH/1276 दिनांक 5.12.2018

विषयान्तर्गत प्रासांगिक पत्र के संदर्भ में लेख है कि मैसर्स भारत के राष्ट्रीय राजमार्ग प्राधिकरण द्वारा भारत माला परियोजना के तहत 4/6 लेन पहुंच नियंत्रण राष्ट्रीय राजमार्ग संख्या 754k का निर्माण राजस्थान राज्य में धधानीया सासन जिला जोधपुर से राजस्थान-गुजरात सीमा के पास सांचौर जिला जालोर तक निर्माण हेतु प्रस्तावित परियोजना विस्तार के लिए भारत सरकार के पर्यावरण प्रभाव आंकलन हेतु भारत सरकार के पर्यावरण एवं वन मंत्रालय, नई दिल्ली द्वारा जारी अधिसूचना दिनांक 10.4.1997 एवं संशोधित अधिसूचना दिनांक 14.9.2006 तथा दिनांक 01.12.2009 के अन्तर्गत लोक सुनवाई की जानी है।

उक्त लोक सुनवाई दिनांक 13.02.2019 को प्रातः 11:00 बजे से सांय तक अटल सेवा केन्द्र ग्राम पंचायत आसोतरा तहसील पंचपदरा में निर्धारित की जाती है। उक्त लोक सुनवाई में अद्योहस्ताक्षरकर्ता की ओर उपस्थित होने हेतु अपर कलक्टर, बाड़मेर को प्रतिनिधि मनोनीत किया जाता है। पर्यावरण स्वीकृति हेतु लोक सुनवाई के लिये क्षेत्रीय अधिकारी, राजस्थान राज्य प्रदूषण नियंत्रण बोर्ड, बालोतरा नियमानुसार अपने स्तर पर सभी संबंधित सदस्यों को सूचित करेंगे।

(+4)

(हिमांशु गुप्ता) 10/01/19
जिला कलक्टर, बाड़मेर

क्रमांक-प.40() (1) सामान्य / 2018 / 472- 476

दिनांक:- 10/01/19

प्रतिलिपि:-

1. अपर कलक्टर, बाड़मेर
2. उपखण्ड अधिकारी, बालोतरा/सिणधरी/सिवाना/गुडामालानी को सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित है।

(+4)
10/01/19
जिला कलक्टर, बाड़मेर

2578
18-01-2019

Photographs for public hearing in Barmer district





**Public Hearing Details - Issues raised and their response
at Barmer District on Dated: 13.02.19**

S.No.	Questions asked by Public	Answer by Project Proponent
1.	Shankar, village- Asotra, said that my tube well and trees are coming in the middle of the road, what compensation will be given for that.	Compensation for the tube well and trees will be paid as per NH act and as decide by competent authority.
2.	Anwar Farooq Hada Social Worker from Asotra asked what arrangements have been made in this project to go from one field to another. What arrangements have been made in this project for those roads that is coming in the middle of the expressway?	34 nos. of LVUPs, 85 nos. of SVUPs, 26 nos. of VUPs, 09 nos of interchanges have been proposed on the road to pass from one farm to another, so that the farmers does not face any difficulty. The details have been presented in section 2.7.4 and 2.7.5 of Chapter 2 in EIA/EMP report.
3.	Khetaram Patel Asotra asked that what arrangements have been made for those revenue roads coming in the project and is there any provision of service lane.	The attention will be given to revenue road, and the service lane has also been arranged in this road by which the public will not face any problem.
4.	Jairam Patel Sarpanch Asotra said that we get unemployed if our land has been taken, so what arrangements have been made by proponent?	The proper compensation will be given to the land owner, so that they can buy other land or do their own business. First Preference will be given to local who impacted by land acquisition for employment during construction period.
5.	Monaram Asotra asked that what will be the height and width of the underpass so that our vehicle does not face trouble to travel. Monaram asked that is any connectivity given to the villagers for expressway.	The height of the underpass would be 21 feet and the width would be 20 feet, which would not cause any disruption to the arrival of vehicles. He also responded that a way would be given to the villagers, so that they could take advantage of this project.
6.	Khetaram Patel said that toll should free for the villagers, is proponent has made provision for the villagers? Khetaram said that due to project the noise pollution will increase which will have impact on nearby school children's, so what provision made for that.	No consideration has been made about this so far but keeping the problem of farmers in mind, passes will be provided to locals as per NH act. Noise barriers will be installed near schools if noise level will increase the stipulated limits and wide leaves tree will be planted along the road, which will prevent sound pollution and thus will not affect the children who are studying nearby. The impacts and its mitigation measures have been presented in Chapter 5 of EIA/EMP report.
7.	Anwar Village Asotra asked about the provision for water bodies such as river and nallah.	It has been noticed that proper arrangements have been made for any obstruction in any river or stream by providing culverts/bridges. 10 nos of Major bridges, 20 nos of Minor Bridges and 282 + 40 additional nos of culverts have been proposed for the expressway to avoid any impact in the water level
8.	Mr. Anil Singh Mehla SDM Balotra said that there are cut-off paths on the Jahan where NHAI definitely give underpass.	34 nos. of LVUPs, 85 nos. of SVUPs, 26 nos. of VUPs, 09 nos of interchanges have been proposed.
9.	Pope Singh village Asotra asked that his tank is coming in expressway what compensation will be given to him.	After the survey by revenue official proper compensation would be given.

Annexure VIII

CER

Year wise break- up for CER

[illegible]

Form 2

Form-2

APPLICATION FOR PRIOR ENVIRONMENTAL CLEARANCE

S. No.	Item	Details
1.	Whether it is a violation case and application is being submitted under Notification No. S.O.804(E) dated 14.03.2017 ? Details of Project: (a)Name of the project(s) (b)Name of the Company / Organisation (c)Registered Address (d)Legal Status of the Company (e)Joint Venture	No Construction of 4/6 lane Access Control National Highway No. 754K from Dhadhaniya Sasan (Jodhpur district) to Rajasthan-Gujarat Border near Sanchore (District-Jalore) in the state of Rajasthan National Highways Authority of India G-5 & 6, Sector-10, Dwarka, New DELhi-110075,South West,Delhi-110075 No
2.	Address for the correspondence: (a)Name of the Applicant (b)Designation (Owner/ Partner/ CEO) (c)Address (d)Pin code (e)E-mail (f)Telephone No. (g)Fax No. (h)Copy of documents in support of the competence/authority of the person making this application to make application on behalf of the User Agency .	Geneeral Manager NIL 110075 biswajit@nhai.org 25093543 Annexure-Uploaded Copy of documents in support of the competence/authority
3.	Category of the Project/Activity as per Schedule of EIA Notification,2006: (a)Project/Activity (b)Category (c)Proposal Number (d)Master Proposal Number(Single Window) (e)EAC concerned (for category A Projects only) (f)Project Type	7(f) Highways A IA/RJ/NCP/94687/2018 SW/94686/2019 New Construction Projects and Industrial Estates Fresh EC
4.	Location of the Project: (a)Plot/Survey/Khasra No. (b)Pincode (c)Bounded Latitudes (North) (d)Bounded Longitudes (East) (e)Survey of India Topo Sheet No. (f)Uploaded Topo Sheet File (g)Maximum Elevation Above Means Sea Level(AMSL) (h)Uploaded (kml) File (i)Distance of Nearest HFL from the project boundary within the study area (j)Seismic Zone	Project expressway takes from design Ch. -1+142 at 343041 FROM 24.664342 To 26.320147 FROM 71.746350 To 72.596897 H44C15 Copy of Topo Sheet File 55 Copy of Kml File 0 2
5.	(a)Number of States in which Project will be Executed (b)Main State of the project	1 Rajasthan

Details of State(s) of the project

S. No.	State Name	District Name	Tehsil Name	Village Name
(1.)	Rajasthan	Jodhpur	Jodhpur	Deogarh
(2.)	Rajasthan	Barmer	Pachpadra	Golasan
(3.)	Rajasthan	Jalore	Sanchore	Dhadhaniya Sasan

6.	Details of Terms of Reference (ToR): (a)Whether TOR is mandatory for submitting application (b)MoEF&CC / SEIAA File Number (c)Date of Apply of TOR (d)Date of Issue of TOR / Standard ToR (e)Previous TOR Letter	Yes 10-51/2018-IA.III 10 Jul 2018 12 Sep 2018 Copy of Previous TOR letter
7.	Details of Public Consultation: (a)Whether the Project Exempted from Public Hearing? (b)Whether details of Public Hearing available? (c)Whether Public hearing was presided over by an officer of the rank of Additional District Magistrate or above	No Yes Yes

7.1. Details of Public Hearing

S. No.	Details of Advertisement	Details of Public Hearing	Venue	Location Details	No. of People Attended	Issues Raised	Designation of Presiding Officer	Other Designation of Presiding Officer
(1.)	Date of Advertisement : 22 Dec 2018 Copy of advertisement : Copy of Advertisement	Copy of Public Hearing : Copy of Public Hearing Date : 28 Jan 2019 Distance of Public Hearing Venue from the Proposed Project : 2	State Secondary School	State : Rajasthan District : Jodhpur Tehsil : Jodhpur Village : Dhadhaniya Bhayala	70	Land compensation amount	Others	Additional District Collector Jodhpur

8. Details of Project Configuration/Product:

8.1. Project Configuration

S. No.	Plant/Equipment/Facility	Configuration	Remarks
(1.)	N/A	N/A	N/A

8.2. Product

S. No.	Product/Activity (Capacity/Area)	Quantity	Unit	Other Unit	Mode of Transport / Transmission of Product	Other Mode of Transport / Transmission of Product
(1.)	N/A	0	Others	N/A	Others	N/A

9. In case of Expansion / Modernisation / One Time Capacity Expansion (only for Coal Mining) / Expansion under Clause 7(ii) / Modernisation under Clause 7(ii) / Change of Product Mix under Clause 7(ii):

Details Not Applicable

9.1. Details of Consent to Operate

(i)Whether Consent to operate obtained ?	NA
(ii)Copies of all Consent to operate obtained since inception	NA
(iii)Date of Issue	N/A
(iv)Valid Upto	N/A
(v)File No.	NA
(vi)Application No.	NA
(vii)Copy of Consent to operate valid as on date	NA

10. Project Cost:

(a)Total Cost of the Project at current price level (in Crores)	4043
(b) Funds Allocated for Environment Management (Capital) (in Crores)	33.8
(c) Funds Allocated Towards CER (Corporate Environment Responsibility) (in Crores)	20.2
(d) Funds Allocated for Environment Management Plan (EMP) (Recurring per Annum) (in Crores)	16.9

11. Whether project attracts the General Condition specified in the Schedule of EIA Notification ?

No

12. Whether project attract the Specific Condition specified in the Schedule of EIA Notification ?

No

13. Raw Material / Fuel Requirement:

(a)Proposed quantity of raw material/fuel	7483017.32
(b)Existing quantity of raw material/fuel	N/A
(c)Total quantity of raw material/fuel	7483017.32

13.1. Raw Material / Fuel Profile

S. No.	Raw Material / Fuel	Quantity	Unit	Other Unit	Source (incase of Import. please specify country and Name of the port	Mode of Transport	Other Mode of Transport	Distance of Source from Project Site (in Kilometres) (In case of import, distance from the	Type of Linkage	Other Type of Linkage	Uploaded Copy of Linkage

					from which Raw Material / Fuel is received)			port from which the raw material / fuel is received)			
(1.)	Bitumen	122593.786	Others	Cum	Nearby project area	Road		10	Linkage		Copy of Linkage
(2.)	Cement	571508.045	Others	Cum	Nearby project area	Road		10	Linkage		Copy of Linkage
(3.)	Coarse Sand	4571809.322	Others	Cum	Mine quarry	Road		10	MoU		Copy of Linkage
(4.)	Sand	2217106.167	Others	Cum	Mine quarry	Road		10	MoU		Copy of Linkage

14.	Baseline Data : (a)Period of Base Line Data Collection FROM 01 Apr 2018 To 30 Jun 2018 (b)Season Pre-Monsoon										

14.1. No. of ambient Air Quality (AAQ) monitoring locations : 15											
S. No.	Criteria Pollutants		Other Criteria Pollutants		Unit	Maximum Value	Minimum Value	98 Percentile Value	Prescribed Standard		
(1.)	PM2.5				Micro Gram per Meter Cube	40.8	22.2	39.2	60		
(2.)	NOx				Micro Gram per Meter Cube	22.8	8.6	22.2	80		
(3.)	PM10				Micro Gram per Meter Cube	98.5	54.2	97.8	100		
(4.)	SO2				Micro Gram per Meter Cube	16.5	6.5	15.9	80		

14.2. No. of Ground Water monitoring locations : 5									
S. No.	Criteria Pollutants	Other Criteria Pollutants	Heavy Metal	Unit	Other Unit	Maximum Value	Minimum Value	Desirable Limit	Maximum Permissible Limit
(1.)	pH			NA		7.92	7.28	6.5	8.5
(2.)	TSS			mg/l		0	0	0	0
(3.)	Total Hardness			mg/l		896.60	799.90	200	600
(4.)	Fluoride			mg/l		0.72	0.54	1	1.5
(5.)	Heavy Metals		Zn	mg/l		0.08	0.04	0.3	0.3
(6.)	Chlorides			mg/l		861	796	250	1000
(7.)	TDS			mg/l		2422.70	2265.40	500	2000

14.3. No. of Surface Water monitoring locations : 3							
S. No.	Criteria Pollutants	Other Criteria Pollutants	Unit	Other Unit	Maximum Value	Minimum Value	Classification of inland water body
(1.)	BOD		mg/l		24.2	6.0	C
(2.)	COD		mg/l		80.0	23.1	C
(3.)	DO		mg/l		5.9	4.0	C
(4.)	pH		NA		7.45	6.9	C

14.4. No. of Ambient Noise monitoring locations : 15					
S. No.	Parameter	Unit	Maximum Value	Minimum Value	Prescribed Standard
(1.)	Leq(Day)	A-weighted decibels(dB(A))	62.4	50.2	65
(2.)	Leq(Night)	A-weighted decibels(dB(A))	53.2	37.8	55

14.5. No. of Soil Sample Monitored locations : 15					
S. No.	Parameter	Unit	Other Unit	Maximum Value	Minimum Value
(1.)	pH			6.88	6.44

	(c)Government Land (d)Revenue Land (e)Other Land Total Land	75.50 0 0 1730.16			
21.	<u>Present Land Use Breakup of the Study Area in Ha:</u> (a)Agriculture Area (b)Waste/Barren Land (c)Grazing/ Community Land (d)Surface Water Bodies (e)Settlements (f)Industrial (g)Forest (h)Mangroves (i)Marine Area (j)Others : N/A Total	1492.731 0 0 220.51 3.7 0 13.219 0 0 0 1730.16			
22.	Land requirement for various activities				
S. No.	Description of Activity / Facility / Plant / Others	Others	Land Requirement	Remarks	
(1.)	Green belt		416.5		
	Total		416.5		
23.	<u>Ecological and Environmental Sensitivity (Within 10 Km):- WLS-Wild Life Species; NPA-Notified Protected Area; ESAs-Eco Sensitive Areas; ESZs-Eco Sensitive Zones :</u>				
23.1.	Details of Ecological Sensitivity :				
S. No.	Details of Ecological Sensitivity	Name	Distance from the Project (Km)	Remarks	
(1.)	NPA	N/A	0	N/A	
(2.)	Critically Polluted Area	N/A	0	N/A	
(3.)	Wildlife Corridors	N/A	0	N/A	
(4.)	ESAs	N/A	0	N/A	
(5.)	WLS	N/A	0	N/A	
(6.)	Corridors	N/A	0	N/A	
(7.)	ESZs	N/A	0	N/A	
23.2.	Details of Environmental Sensitivity :				
S. No.	Details of Environmental Sensitivity	Other Details of Environmental Sensitivity	Name	Distance from the Project (Km)	Remarks
(1.)	Defence Installations		N/A	0	N/A
(2.)	Forest		Protected Forest	0	along crossing of rail/road/canal
(3.)	Archaeological Sites		N/A	0	N/A
23.3.	(a)Whether Noc / Permission from the competent authority is required? (b)Whether NBWL recommendation is required?	No No			
24.	<u>Forest Land:</u> Whether any Forest Land involved? (a)Forests Clearance Status (b)Legal Status of Forest Land	Yes Application for Forest Clearance yet to be submitted Protected			
25.	<u>Tree Cutting:</u> (a)No. of Trees Cut for the Project (if Forest Land not Involved) (b)Details of Tree Cutting and Planting of Trees	5909 Copy of Details of Tree Cutting and Planting of Trees			
26.	<u>Land Acquisition Status:</u> (a)Acquired Land(Ha) (b)Land yet to be acquired(Ha) (c)Status of Land acquisition if not acquired	1730.16 0 N/A			
27.	<u>Rehabilitation and Resettlement (R&R):</u> (a)No. of Villages (b)No. of Households (c)No. of PDFs (Project Displaced Families) (d)No. of PAFs (Project Affected Families)	77 2238 370 2238			

	(e)Funds Allocated for R&R(in Rs) (f)Status of R&R	2396.24 In-Progress
28.	Details of Presence of Schedule-I Species: (a)Whether there is Presence of Schedule-I Species ? (i)Details of Schedule-I Species (b)Whether conservation plan for Schedule-I Species has been prepared ? (c)Whether conservation plan for Schedule-I Species has been approved by competent authority ?	Yes Peacock No No
29.	Details of Presence of Water Bodies in Core Area: (a)Whether there is Presence of Water Bodies in Core Area ? (i)Details of Water Bodies in Core Area (b)Whether there is Diversion Required ? (c)Whether permission has been obtained from competent authority ?	Yes 179 Wells No No
30.	Details of Presence of Water Bodies in Buffer Area: (a)Whether there is Presence of Water Bodies in Buffer Area ?	No
31.	Manpower Requirement: (a)Permanent Employment-During Construction (b)Permanent Employment-During Operation (c)Temporary Employment- During Construction (d)Temporary Employment- During Operation (e)No. of working days (f)Total Manpower	100 100 700 200 340 1100
32.	Green Belt in Ha: (a)Total Area of Green Belt (b)Percentage of Total Project Area (c)No. of Plants to be Planted (d)Funds Allocated for Plantation (e)Uploaded Green Belt plan	416.5 24.07 124800 187200000 Copy of Green Belt Plan
33.	Project Benefits	
S. No.	Type of Project Benefits	Details of Project Benefits
(1.)	Social	Employment Generation
(2.)	Environmental	Faster transportation will ultimately lead to massive savings in the form of reduced wear and tear of vehicles, reduced vehicle operating costs (VOCs) and total reduction in transportation costs etc.

34. CRZ Specific Details : Not Applicable

35. Sector Specific Details For New Construction Projects and Industrial Estates

S. No.	Item	Details
1.	Details of Building Construction: (a)Maximum Height of the Building (Meters) (b)Total No. of Flats to be Build (c)No. of Buildings (d)Total plot area (sqm) (e)Total built up area (sqm)	0 0 0 0 0
2.	Foreshore Facilities and/or Marine Disposal: (a)Whether Project Involves Foreshore Activities and/or marine Disposal?	No
3.	Rain Water Harvesting: (a)No. of Storage (b)Capacity (c)No. of Recharge Pits (d)Capacity	0 0 0 0
4.	Parking: (a)Details of 4 Wheeler/ 2 Wheeler Parking	N/A
5.	Energy Saving Measures: (a)Source/Mode	N/A

	(b)Percentage (c)Quantity	0 0
6.	Other details: (a)Details of impact on Water Bodies and Drainage patters of catchment area (b)Details of Traffic Density Impact Assessment and Modelling Study (c)In case Underground Tunnel Project below the Forest Land - Subsidence Impact Study report	179 wells and 5 ponds Copy of Details of Traffic Density Impact Assessment and Modelling Study Copy of Underground Tunnel Project below the Forest Land - Subsidence Impact Study report

7.	Type of Industries to be established with Industrial Estate as per their category A/B		
S. No.	Type of Industry	No. of Units	Category A/B
NIL			
8.	Length of the alignment		208.242
9.	<u>Details Bridges/ROB/Interchanges,Flyovers,Vehicle Underpass and Pedestrian Underpass</u> (a)Total No. of Bridges (b)Total No. of ROB (c)Total No. of Interchanges (d)Total No. of Flyovers (e)Total No. of Vehicle Underpass (f)Total No. of Pedestrian Underpass (g)Details of other utilities rail and road corridors		
			30 1 9 0 19 0 SVUP - 85 LVUP - 34, Culverts - 282

Additional Detail Sought: NIL ,w ,**3**.NIL

S. No.	Item	Details
36.	<u>Details of Court Cases:</u> (a)Whether there is any Court Cases pending against the project and/or land in which the project is proposed to be set up ?	No
37.	<u>Details of Direction Issued under Environment (Protection) Act / Air (Prevention & Control of Pollution)) Act / Water (Prevention & Control of Pollution) Act:</u> (a)Whether any Direction issued under EPA Act/Air Act/Water Act ?	No
38.	<u>Details of EIA Consultant:</u> (a)Have you hired Consultant for preparing document? (i)Accreditation No. (ii)Name of the EIA Consultant (iii)Address (iv)Mobile No. (v)Landline No. (vi)Email Id (vii)Category of Accreditation (viii)Sector of Accreditation (ix)Validity of Accreditation (x)Uploaded Certificate of Accreditation certified by QCI/NABET	Yes NABET/EIA/1619/IA 0018 Enviro Infra Solutions Pvt. Ltd. 301,302 & 305, SRBC, Plot No. INS - 12, Sector - 9,Vasundhara, Ghaziabad. (U.P.) - 201012 9818922344 0120415118 eis@enviroinfrasolutions.com A New Construction Projects and Industrial Estates 09 Nov 2019 Copy of Certificate of Accreditation
39.	<u>Documents to be Attached:</u> (a)Uploaded Copy of EIA/EMP Report (b)Uploaded Copy of Risk Assessment Report (c)Uploaded Copy of Feasibility Report/ Detailed Project Report(DPR) /Detailed Engineering Report /Detailed Conceptual Plan /Approved Mining Plan (d)Uploaded Copy of Final Layout Plan (e)Uploaded Cover Letter (f)Uploaded Copy of documents in support of the competence/authority of the person making this application to make application on behalf of the User Agency (g)Uploaded Additional File	Copy of EIA/EMP Copy of EIA/EMP(Annexures) Copy of EIA/EMP(Plans/Figures) Copy of Risk Assessment Copy of Feasibility Report/ Detailed Project Report(DPR) /Detailed Engineering Report /Detailed Conceptual Plan /Approved Mining Plan Copy of Final Layout Plan Copy of Cover Letter Copy of documents in support of the competence/authority of the person making this application to make application on behalf of the User Agency NA

Undertaking

I hereby give undertaking that the data and information given in the application and enclosures are true to be best of my knowledge and belief. And I am aware that if any part of the data and information found to be false or misleading at any stage, the project will be rejected and clearance given, if any to the project will be revoked at our risk and cost. In addition to above, I hereby give undertaking that no activity/ construction/ expansion has since been taken up.

	Name of Applicant Designation	Geneeral Manager

	Name of Company (Applicant Name should not be given here)	National Highways Authority of India
	Address	G-5 & 6, Sector-10, Dwarka, New DELhi-110075