GOVERNMENT OF INDIA

MINISTRY OF ROAD TRANSPORT AND HIGHWAYS

(MoRT&H)

GREEN NATIONAL HIGHWAYS CORRIDOR PROJECT

(GNHCP)

RESETTLEMENT ACTION PLAN

For

Rehabilitation and Upgradation to 2-lane configuration of Hamirpur-Mandi section (Km 141.000 to Km 250.592) of NH-70 in the State of Himachal Pradesh under Green National Highways Corridor Project (GNHCP) with the loan assistance of World Bank.

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ABBREVIATIONS

B.P.L : Below Poverty Line

BP : Bank Policy

B.S.R :Basic Schedule of Rates

HLARRP :Himachal Pradesh Land Acquisition, Resettlement and Rehabilitation Policy

C.O.I :Corridor of Impact

C.P.R. :Common Property Resources

RRO :Rehabilitation and Resettlement Officer

CD :Cross Drainage

Ch. :Chainage

CW : Carriageway

DLC :District Level Committee

EP :Entitled Person

EA :Executing agency

ESMF :Environment and Social Management framework

GP :Gram Panchayat

GoH :Government of Himachal Pradesh

GDP :Gross Domestic Product

GRC :Grievance Redressal Committee

Ha :Hectare

HH : Household

IEC :Information Education Communication

Km. :Kilometer

RTFCTLARR : Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement

LHS : Left Hand Side

m. : Meter

Max. : Maximum

Min. : Minimum

MoRT&H : Ministry of Road Transport and Highways

N.G.O. : Non-Government Organization

NRRP : National Resettlement and Rehabilitation Policy, 2007

N.H.A. : National Highways Act

NH : National Highways

NHDP : National Highways Development Project

GNHCP : Green National Highway Corridor Project

OD : Operational Directive

SCHM **:** Suggestion Complain Handling Mechanism

CHAPTER ES EXECUTIVE SUMMARY

ES1. PROJECT INTRODUCTION

Ministry of Road Transport & highway have taken initiatives to develop about 6,000 km length of National Highways (NHs) to 2-lane NH standards by widening / strengthening / construction of missing links by December, 2014 following the Corridor Development Approach by exploring the possibility of securing World Bank Loan and also through budgetary allocations. A total of 84 projects have been identified under this Program, comprising 33 projects for a total length of about 3,770 km and 51 projects for a total length of about 2,245 km for funding through World Bank Loan and budgetary allocations respectively.

In order to enhance economical, safe and environment friendly movement of passenger and goods vehicles it becomes necessary to enhance a good road network facility. This would also improve the socio-economic, industrial and agriculture activities in the region and this would simultaneously help in economic growth of the country.

The preparation of the project was under taken according to the World Bank guidelines and the PCC has been monitoring the project. The inspection reports, feasibility report & Draft DPR had been submitted. Vide letter no. RW/NH-12013/28/2010/SP(D-3)/P-9 dated 16.01.2014. It has been informed by Superintending Engineer MoRTH, New Delhi that vide Ministry's OM No. RW/NH/12013/28/2010/SP (D/3)/P-9 dated 02.05.2013 it has been decided that CE project zone-1 in the Ministry would decide further course of action.

The total length of the project is 109.952 Km passing through Hamirpur and Mandi districts. The existing highway NH-70 alignment passes through Middle to North Eastern part of Himachal Pradesh. The Existing project road passes through hilly21 terrain. This RAP report pertains to Hamirpur-Mandi section of NH-70 (Km 141.00 to Km 265.00 total 124 Kms, in the State of Himachal Pradesh.

ES2. PROJECT DESCRIPTION

The project road starts at km 141 near Govt. Subhash Chandra Bose Memorial College (Hamirpur) and ends at km 265 near Sant Nirankari Satsang Bhawan at Pulghrat Bridge (Mandi). Total length of the existing road is 124.0 km and proposed will be 109.592 km. However, land acquisition is proposed for 104 km length and in the remaining 5 km length only some repair work is proposed because already this part has been developed as 2-lane with paved shoulder. The project road traverses through 2 district (Hamirpur and Mandi), 6 Tehsils (Hamirpur, Bhoranj, Sarkaghat, Dharmpur, Kotli & Mandi) and 97 villages. The proposal for rehabilitation and up-gradation to 2- lane with earthen/paved shoulder. The proposed improvements are given in **Table ES-**1:

Table ES-1: Proposed improvement for Project Road

S.No	Particulars	Existing	Proposed
1	Project Stretch	Km 141 to km 265	km 141 to 250.592
2	Road Length	124.0 km	109.592 km

S.No	Particulars	Existing	Proposed
3	Carriageway	3.75 m to 7 m	7.0 m + earthen shoulders 7.0 m+ paved shoulders
4	ROW (m)	5m to 20 m	10 m in habitations and 15m in open areas and realignment portions.
5	Realignments	–	25 nos. in 10.926 km length
6	Junctions	77	75
8	Bus Shelter	72	40
9	Truck Lay bay	–	2
10	Major Bridges	1	1
11	Minor Bridges	7	7
12	Culverts	487	497
13	Toll Plaza	–	2 nos. (km 150/051 and Km 244/751)

ES3. SOCIO ECONOMIC PROFILE OF THE PROJECT AREA

Census survey was conducted for those households whose residential/commercial/other structures are to be impacted. The Census survey results indicate that male and female ratio is 2487/2312. Majority of the surveyed families are Hindu followed by Muslim. Majority of families speak Hindi as mother tongue followed by people who speak Himachali. Majority of surveyed families are joint in nature and most of the members are married. About 95.78 % of impacted households are literate and 4.22% are illiterate. So far as educational attainment is concerned 18.11% are educated up to primary class, 24.40% are educated up to Middle, 36.41% are educated up to higher secondary, 10.36% have studied up to graduate level, 4.37% have studied up to post-graduate level and 0.61% have studied technical education. As mentioned in census data 2011, sex ratio of Hamirpur and Mandi districts are 1095 and 1007 respectively, and literacy rate is 88.15 and 81.5 in Hamirpur and Mandi districts. It is established that there is no significant impact on tribal population in the entire project stretch except a random number of 9 PAPs falling under Schedule Tribe who are losing their structures.

ES4. LAND ACQUISITION, PROJECT IMPACTS AND INVENTOERY LOSSES

This project requires 155.2223 hectare land for the proposed up gradation. Out of 155.2223 ha, 50.5164 ha land is under government possession, 59.7059 ha forest land and remaining approx.45 (44.9823) hectare of land is under private ownership with 3953 Plots. Census survey reveals that a total of 5602 plots will be impacted. Out of 5602 plots 3953 are private plots and remaining 1649 are govt. plots. Due to land acquisition, 1487 structures will be impacted. Out of 1487 structures, 1366 are the private structures and remaining 121 are govt. structures.

Socio-economic profile of the project affected households has been worked out on the basis of census & socio-economic survey conducted for affected structures only. The landowners were not available for survey for various reasons e.g, shifted to a different place, not living in the neighbouring villages, living in a different State however, details of landowners shall be verified and furnished during land acquisition.

. The cut-off dates for census survey is 26th Oct., 2019. Census survey establishes that 1487 Nos. structures are getting affected which includes 1366 private structures and 121 CPRs. Out of total 1366 structure owners, only 1303 were available for survey. The information of the remaining 63 families will be collected during the verification of R&R data during RAP implementation by the appointed NGO.

Widening and Improvement of this project will be impacting 533 residential structures including 25 cattle sheds, 410 commercial, 423 residential cum commercial and 121 others (religious, community & Govt. Structures).

Vulnerable Population has been identified as defined in the Resettlement Policy Framework for the project. They include below poverty line (BPL), women headed household (WHH), schedule caste (SC), schedule tribes (ST), Divyang (disabled). A total of 426 households have been identified as vulnerable.

ES5. RESETTLEMENT POLICY FRAMEWORK & ENTITLEMENT MATRIX

A Resettlement Policy Framework has been prepared by the Ministry of Road, Transport & Highways of Government of India for Green National Highways Corridor Project (GNHCP). This RPF includes resettlement and rehabilitation principles and approach which is to be followed in minimizing and mitigating adverse impacts likely to be caused by the project implementation, entitlements as per eligibility criteria and commensurate to the type and nature of impact, institutional arrangements, monitoring and evaluation and grievance redressal mechanism etc.

ES6. PUBLIC INFORMATION AND CONSULTATIONS

Public information and consultations were held during the social screening, census survey stages. The different techniques of consultation with stakeholders were used during project preparation, viz., public meetings, group discussions, interactions with affected households, media interactions etc. The consultations have also been carried out with special emphasis on the vulnerable and women groups. It ensured participation of potential project affected persons (PAPs), local community and other stakeholders.

A total 5 numbers of structured/formal Consultations were conducted in 2018 at 5 places in Hamirpur and Mandi districts and during census survey in 2019 various informal consultations with PAPs and other stakeholders were also carried out for firming up data/information of the Project impact. *During RAP implementation various consultations shall be carried out to verify Project impact on PAPs losing land as well as structures. Public consultations/Stakeholders' consultations will be carried out at regular intervals throughout the project period and shall be documented.*

During consultations brief description about the project, road development agency, involvement of the funding agency, likely adverse impacts and positive impacts, employment generation, etc were discussed. Concerns, views and suggestions expressed by the participants during these consultations have been shared with design team for minimizing the impacts wherever possible. District level Consultations were held at 5 places during the project preparation.

Concerns and apprehensions expressed by the community covered compensation amount for land, structure and other assets, impacts on structures, impacts on sources of earning, road accidents, etc. Overall, project affected persons and other stakeholders are in favor of the proposed project. The community perceives that the project will help development in the area and also generate employment

opportunities.

ES7. ANALYSIS OF ALTERNATIVES AND MINIMIZATION OF IMPACTS

The analysis of alternatives has been made on the basis of "Long term Scenario with projects and long term scenario without project" in terms of social impacts. The methodology that has been adopted for the evaluation of the alternate alignment route for construction of Project Road and the selection is based on engineering, economic, environmental and social considerations have been highlighted. There are 25 nos. realignment have been proposed after the comparative study between existing and realignment on the basis of detail study regarding social, economic and environment aspect.

ES8. GENDER ISSUE & WOMENS PARTICIPATION

173 nos. female households are to be getting affected due to structure demolition. In the impacted households 13.28 % are female. Socio-economic parameters like literacy, work force participation rate and general health conditions etc. reveal that social status of women is low respectively, thereby brought forward the scope of considering the households headed by women as vulnerable. Participation of women has been envisaged specifically in the pre-planning and planning stages. These include: inclusion of women members as investigators/facilitators in the NGO/Consultancy firm for RAP implementation; encouragement in evaluate the project outputs with specific gender indicators. All assistance would be paid in a joint account in the name of both the spouses; involvement in construction activities by provision of preference in labor opportunities, temporary Housing, health centre, day crèches, and wherever feasible, primary educational facilities could be extended.

ES9. REHABILITATION & RESETTLEMENT BUDGET

Based on the Entitlement Matrix, the R&R budget for the Hamirpur-Mandi Road Project has been estimated. It comprises of two broad components namely compensation and assistance. The total Land, Structure, Administrative and Assistance budget for the project works out to be **Rs. 503.87 Crore** of which **Rs. 311.64 Crore** is towards compensation for land, cost of structures is **Rs.107.59 Crore**, Costs for R&R Assistances is **77.60 Crore** and Administrative expenses of **1.43 Crore**.

ES10. INSTITUTIONAL ARRANGEMENT FOR RAP IMPLEMENTATION

Institutional arrangements for the implementation of RAP have been made fixed by making it a part of the RPF. The Institutional Arrangements will be set up at three levels viz., MoRTH (Central Govt.), State Level and Sub-Project Level on partnership model wherein concerned agencies at different levels supplement and complement each other efforts. The key elements of institutional arrangements are co-operation/ support, collaboration and sharing of responsibilities with clearly defined roles, involvement of key stakeholders and vertical and horizontal linkages amongst different agencies.

ES11. GRIEVANCE REDRESSAL MACHANISM

Any disputes or grievances will be addressed through the grievance redressal mechanism proposed here. 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

on LA and R&R through consultations and negotiations. There will be one GRC for each PIU. The GRC will comprise six members headed by a retired Revenue Officer/Social Welfare Officer not below Group I officer rank . Other members of the GRC will include the concerned Project Director-cum-Executive, 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 PAPs 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 PAPs. The decision of the GRC will not be binding to PAPs. The decision of the Grievance Committees will not be binding on the DPs and they will have the option of taking recourse to court of law, if s/he so desires at his or her own expense.

ES12. RAP IMPLEMENTATION SCHEDULE

The construction tenure of the corridor is 24 months. The on-ground rehabilitation and resettlement exercises and handing over the encumbrance free stretch for civil works will take 5 months and afterwards, the NGO will carry out awareness programs on road safety, HIV/AIDS prevention campaign, repeat training for PAPs, facilitate overall monitoring, etc.

ES13. MONITORING AND EVALUATION (M&E)

The overall purpose of the monitoring is to keep track of the implementation processes and progress, achievement of performance targets fixed in the annual work plans, learning lessons and taking corrective actions to deal with emerging constraints and issues.

The evaluation study will focus on assessing whether the overall objectives of the project are being met and will use the defined impact indicators as a basis for evaluation. Reports on the progress of RAP and TDP implementation including mobilization of staff members, opening of site offices, etc of the project would be prepared by Implementation agency and submitted to the R&R officer at sub-project level. The Monthly Progress Report shall be prepared by the Implementation agency. Quarterly Progress Reports shall be prepared by LA cum SDO, and six monthly progress reports shall be prepared by M&E agency. Evaluation Report shall be prepared by the M&E agency at the end of the project implementation as part of the project completion report.

The Resettlement Policy Framework (RPF) stipulates hiring services of an external agency (third party) for monitoring and evaluation of RAP implementation. This means the project authority through an external agency will carry out monitoring and evaluation from the subsequent month of the mobilization of RAP IA at project site. Internal monitoring will be carried out by the Social Officer of Project Coordination Unit (PCU) with assistance from R&R officer and RAP IA whereas external monitoring and evaluation will be carried by the third party engaged for the purpose. This will help monitor project activities closely. Regular monitoring by undertaking site visits and consultations with PAPs will help identify potential difficulties and problems faced in the implementation and accordingly help take timely corrective measures including deviations, if needed.

Components of monitoring will include performance monitoring i.e., physical progress of the work and impact monitoring and external evaluation. Indicative indicators to be monitored related to performance are provided in the following sections. In case during the project implementation, if some other indicators are found relevant they will also be considered for monitoring.

CHAPTER-1: INTRODUCTION

1.1 Project Background

The road transport of India carries 70% of freight and 85% passenger of total traffic annually. National Highway constitutes 2% of the road network but carry about 40% of the total traffic. The number of vehicles is growing steadily and corresponding increase in goods vehicle is very fast in last five years. This congests the existing National Highways.

In order to enhance economical, safe and environment friendly movement of passenger and goods vehicles it becomes necessary to enhance a good road network facility. This would also improve the socio-economic, industrial and agriculture activities in the region and this would simultaneously help in economic growth of the country.

The Ministry of Road Transport and Highways (MORTH), has commissioned the Consultancy Services of THEME Engineering Pvt. Ltd, Jaipur, for Preparation of Detailed Project Report for Rehabilitation and Upgrading to 2 lanes/2 lane with paved shoulders configuration and strengthening of Hamirpur- Mandi Section (Km 141- Km 265) of NH-70 in the state of Himachal Pradesh (Package no: SP/D/3).

The total length of the project is 109.952 Km passing through Hamirpur and Mandi districts. The existing highway NH-70 alignment passes through Middle to North Eastern part of Himachal Pradesh. The Existing project road passes through hilly terrain. This RAP report pertains to Hamirpur-Mandi section of NH-70 (Km 141.00 to Km 265.00 total 124 Kms), in the State of Himachal Pradesh. The location map of the project road is depicted below in **Figure 1.1.**

The project under consideration is one of the stretches identified in the state of Himachal Pradesh out of 33 road corridors selected under NHIIP. The project consists of preparation of Detailed Project Report for Rehabilitation and Upgrading to 2 lane/ 2 lane with paved shoulder configuration and strengthening of Hamirpur-Mandi section of NH-70 (Km 141.00 to Km 265.00 total 124 Kms).

1.2 Benefits of the Project

The proposed project corridor shall have tangible and non-tangible benefits. The proposed project shall contribute to reduce in road traffic and road stress, fuel consumption, air pollution, travel time, vehicle operating cost, accidents and road maintenance. The proposed road shall increase mobility, better accessibility to facilitates the influence area, increase economic stimulation in the micro region of infrastructure, increase business opportunities, improve aesthetics and image of the city.

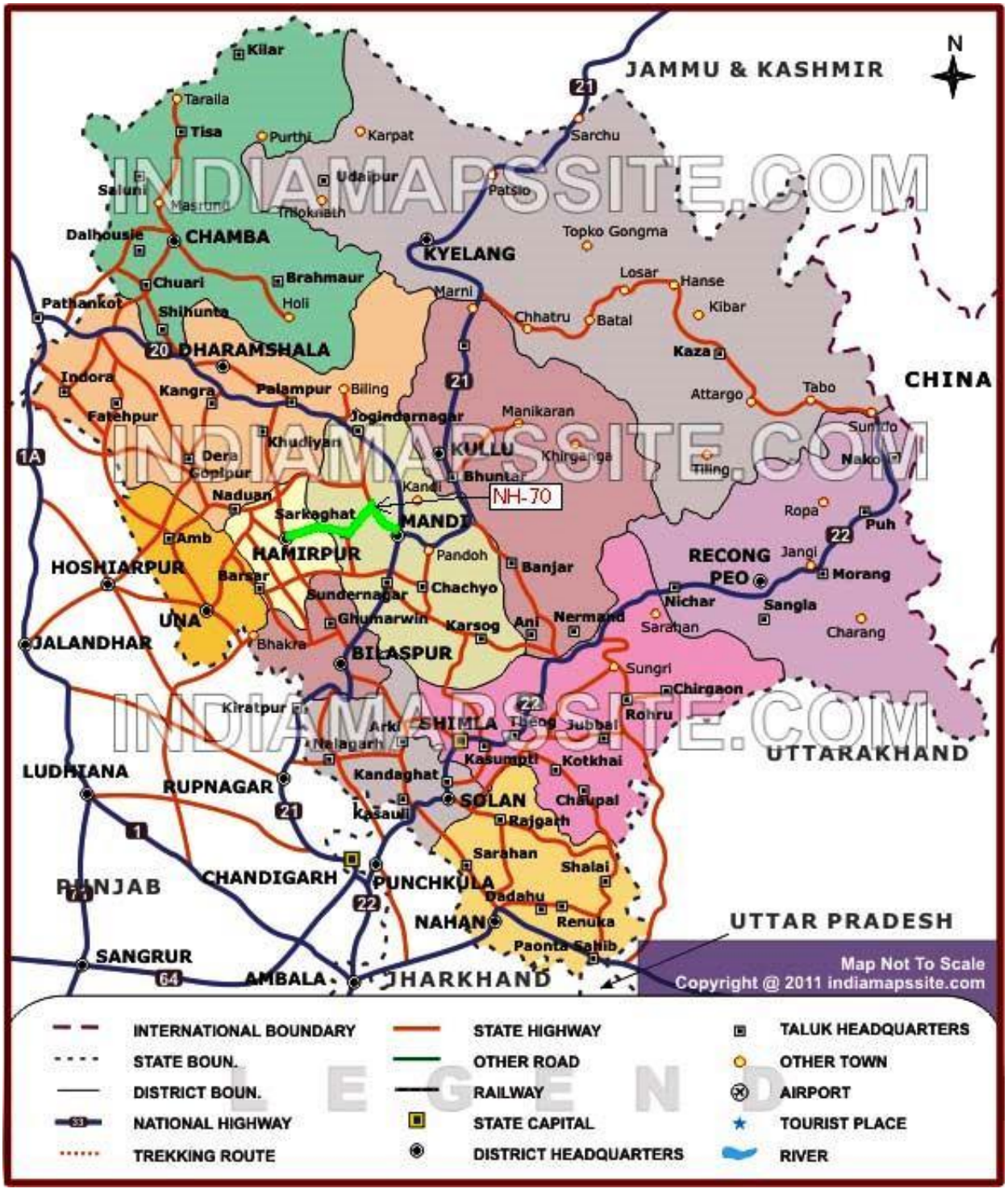


Figure1.1: Location Map of the Project Road

The proposed road project lies on hilly region and due to poor road geometry, sharp horizontal and vertical curves, and poor safety measures need to be upgraded. This stretch provides road connectivity to remote areas, tourist as well as religious spots such as Tauni Devi Temple, Awah Devi Temple, Kamla Fort in Dharampur, Shiv Dwala Temple, Ardhanareshwar Temple, Panchvaktra Mahadev Temple, Bhootnath Temple, Trilokinath Temple, vegetable & market in Mandi, under constructed 119 MW NTPC plant in Kotli, under constructed agro based Mushroom & bamboo industries in Dharmpur etc. It's also provide alternative route for Chandigarh-Mandi NH and Hamirpur-Jahu-Rewalsar-Mandi routes, in

condition of heavy snow/rain fall or heavy landslides. Due to above mentioned reasons Rehabilitation and Up-gradation of existing single/inter mediate/2-lane to to 2 lanes/2 lane with paved shoulders configuration and strengthening of Hamirpur- Mandi section (Km 141- Km 265) is taken up.

The project is aimed to benefit the local population by increasing tourism, reducing travel time. This project will also make the journey safe in the state and the highway will be beautified. The major benefits of the proposed road:

- Will reduce road length between Hamirpur to Mandi to 109.592 km from the existing 124 km reducing travel time up to 02 hours.
- Will create access to better healthcare facilities for the people.
- Will reduce the number of road accidents and ensure free flow of traffic.
- Will give boost to tourism/ religious tourism in the area.
- A single multi axle vehicle travelling on this stretch shall economize the fuel consumption and wear and tear by 50%, thus increasing efficiency.
- Will substantially reduce environmental pollution.
- Perishable commodities such as horticulture, agriculture and floriculture produce which have a key role to play in economic health of the state can be transported faster.
- The project will also generate direct and indirect employment opportunities to the local people of the area.
- Proper implementation with international good practices would help in demonstrating sustainable road sector development practices.
- Enhancement measures such as rain shelters, parking areas, planting of trees and religious property rehabilitation will also benefit local communities.
- Bio- engineering interventions through the project would help in slope protection even in some of the existing degraded areas.

1.3 Project Description

The road from Jalandhar to Mandi via Hoshiarpur, Nadaun, Hamirpur, Awah Devi, Tauni Devi, Sarkaghat and Dharampur has been designated as National Highway No -70 and was declared as National Highway during the year 1999 by Govt. of India vide notification no. PW/NH/14012/2/99 Dated 07.07.1999. The Total length of this NH -70 is 265.00 Kms, out of which 58.4 Kms (From Jalandhar to Himachal State Border Km 0 to Km 58.4) falls in Punjab State and remaining 206.60 Km (From Punjab State border to Mandi, Km 58.4 to Km 265.00) falls in Himachal State.

The proposed road project is of inescapable, valued and volatile strategic importance as it connects sensitive border region of India with Tibet/China. The project road corridor takes off from km 141/0 of NH 70 at Hamirpur and ends at km 265/0 at Mandi. The latitude and longitude of the project road are as follows:

- Start point (Hamirpur): 31°42'56.68"N, 76°32'29.73"E
- End Point (Mandi): 31°41'14.54"N, 76°56'7.05"E

Existing Features

Land Use

The land use pattern is variable from village developments to rural agricultural areas, semi-rural open areas with occasional roadside dwellings and small businesses are scattered at some locations on the project road. Major part of the project road passes through Hilly areas on one side and valley on the other side of the project road.

The land use types have been identified as follow for the project road:

Built-up	Lower density of urban development; road side business alongside the roadway,
Rural	A rural environment with isolated individual houses, schools, businesses alongside to the roadway.
Agricultural	Mainly cultivated land, with or without isolated thatched farmsteads.
Forest	Forest and Reserve Forest

Reserve Forest

In the project area reserve forest demarcated is in a length of 25 km approx. The chainage wise details are being collected from the survey / forest department. The detailed information is submitted in EIA / EMP report.

Water Body

There are, 25 nos. Bowris, 21 nos. Khatris (rain water percolation well), 8 nos. small river/Khad and 44 nos. natural spring. Location and other details of above mentioned water bodies are given in EIA/EMP Report.

Existing Right of Way (RoW)

The existing RoW varies from 5.0 meter to 20 meter and details are provided in Annexure 2.1.

Proposed Right of Way (RoW)

The details of Existing Road Chainage, Design Chainage and proposed RoW are presented in Table below:

Details of Chainage and Proposed ROW					
S.NO.	**Existing Chainage**		**Design Chainage**		**Proposed ROW (m)**
	Start	**End**	**Start**	**End**	
1	141+000	146+00	141+000	146+00	As similar to existing ROW
2	146+00	147+081	146+00	146+835	10.8
3	147+081	147+890	146+835	147+250	15

4	147+890	148+650	147+250	148+000	10.8
5	148+650	149+650	148+000	148+700	15
6	149+650	150+066	148+700	149+400	10.8
7	150+066	151+500	149+400	150+425	15
8	151+500	152+750	150+425	151+625	10.8
9	152+750	153+800	151+625	152+625	15
10	153+800	153+970	152+625	152+825	10.8
11	153+970	155+330	152+825	153+675	15
12	155+330	156+790	153+675	155+000	10.8
13	156+790	157+250	155+000	155+350	15
14	157+250	161+000	155+350	158+970	10.8
15	161+000	163+000	158+970	160+800	15
16	163+000	163+850	160+800	161+225	10.8
17	163+850	165+000	161+225	162+200	15
18	165+000	165+200	162+200	162+400	10.8
19	165+200	166+045	162+400	163+145	15
20	166+045	166+320	163+145	163+450	10.8
21	166+320	170+475	163+450	167+425	15
22	120+475	170+875	167+425	167+770	10.8
23	170+875	171+750	167+770	168+500	15
24	171+750	172+120	168+500	168+845	10.8
25	172+120	177+175	168+845	173+830	15
26	177+175	179+710	173+830	176+330	10.8
27	179+710	182+000	176+330	178+300	15
28	182+000	182+400	178+300	178+700	10.8
29	182+400	183+475	178+700	179+825	15
30	183+475	183+835	179+825	180+100	10.8
31	183+835	193+285	180+100	187+950	15
32	193+285	193+467	187+950	188+145	10.8
33	193+467	262+850	188+145	249+115	15
34	262+850	End	249+115	250+590	15

1.4 Scope of Impact

1.4.1 Land Acquisition and Resettlement

The proposed road project requires land acquisition, the acquisition of land for the project shall displace people from their home, livelihood and business base. The efforts have been made to keep land requirement to the barest minimum by so choosing the alignments that the acquisition of private property is minimal. The proposed project will involve acquisition of 155.22 hectare of land. Out of 155.2223 ha, 50.7059 ha land is under government possession, 59.7059 ha forest land and approx. 45 hectare of land is under private ownership. Out of 5602 plots, 3953 are private plots and remaining 1649 are govt. plots. Due to land acquisition, 1487 structures will be impacted. Out of 1487 structures, 1366 are the private structures and remaining 121 are govt. structures.

A total of 5602 plots getting affected which includes 3953 private plots and remaining 1649 are govt. plots. Out of 3953 private plots getting affected, 2738 titleholders are losing only their land, 1215 titleholders are losing both land and structures. Due to land acquisition, 1487 structures will be impacted, out of which 1366 private structures (1215 titleholders and 151 non-titleholders) and remaining 121 are govt. structures. The acquisition of land for the proposed project involves relocation of shops, commercial-cum-residential buildings, residential buildings and hutments along the corridor. Compensation for land acquisition, resettlement and rehabilitation shall be considered as per Right to Fair Compensation and Transparency in land acquisition, Rehabilitation and Resettlement Act, 2013(RTFCTLARR Act) guidelines for environmental and social consideration.

1.4.2 Minimizing Resettlement

Attempts have been made during the detailed design of the project preparation to minimize the land acquisition, resettlement and adverse impacts on people in the project area through suitable engineering design. Steps have already been made to confine the project area in the government land and in available Right of Way (ROW) where feasible. This has been done with proper consultation with the local people and affected communities. Their suggestions have been incorporated in the design whenever technically feasible. However there will be some unavoidable land acquisition for which adequate compensation has been considered for the proposed work the following specific measures are taken to minimize resettlement in this project:

- Selection of the project sites and its various components in the government land;
- Proper engineering design to avoid and minimize displacement and hence resettlement.
- Prefer open land instead of habitation and building structures.

1.5 Objective of Resettlement Action Plan

The Resettlement Action Plan (RAP) is based on the principle that the population affected by the proposed road project will be assisted to improve their living standards. The RAP is project specific and it has been prepared in accordance with the RTFCTLARR Act 2013 of the Government of India guidelines for Environmental and Social Consideration. The RAP is based on the general findings of the census survey, field visits, and meetings with various project affected persons in the project area. The primary objective of the RAP is to identify impacts and to plan measures to mitigate various losses of the Project while the specific objectives are as follows:

- To prepare an action plan for the project affected people for improving or at least retaining the living standards in the post resettlement period;

- To outline the entitlements for the affected persons for payment of compensation and assistance for establishing the livelihoods;
- To develop communication mechanism to establish harmonious relationship between PIU and Project Affected Persons (PAPs);
- To ensure adequate mechanism expeditious implementation of R&R.

1.6 Study Approach and Methodology

1.6.1 Background

The objective of Resettlement Action Plan (RAP) is to prepare a complete inventory of structures, affected families and persons, to identify social impacts, and to prepare Resettlement Action Plan (RAP). In order to capture data for the present exercise, both primary as well as secondary sources were systematically tapped. As a part of RAP, census surveys have been conducted in the Corridor of Impact (CoI) zone to identify the affected structures, families/persons and list out the adverse impacts of the project.

1.6.2 RAP Preparation Process

Resettlement action plan is required when the project results in either physical or economic displacement of the people. Resettlement plan must ensure that the livelihoods of people affected by the project are restored to levels prevailing before inception of the project. While preparing an effective RAP, the consultant followed some essential components and steps which are (i) identification of socio-economic impacts of the project;(ii) public/community consultation;(iii) legal framework for land acquisition and compensation;(iv) entitlement policy and matrix;(v) organizational responsibilities;(vi) relocation and resettlement;(vii) income restoration; and (viii) implementation schedule;(ix) detail R&R budget; and (x) monitoring, evaluation and reporting.

The approach that was adopted to conduct social impact assessment and to prepare RAP is described below and is structured on the scope of work as mentioned in the Term of Reference (TOR). The SIA which includes RAP has been prepared with special reference to the guidelines of RTFCTLARR Act 2013. Steps involved in the study have been described in detail in the following paragraphs:

- Study of relevant documents, reports and project alignment drawing.
- Site visits and information dissemination about the project
- Enumeration of structures
- Analysis of socio-economic survey data
- Consultations and meetings with PAFs,
- Community/Public Consultations

1.6.3 Approach and Methodology for RAP

Phase-1: Pre-Survey Activities

Literature Review & Preliminary Consultations

- Detail Project Report
- Project Alignment Drawing
- Social Impact Assessment Report
- National & State Policy on Land Acquisition, Rehabilitation & Resettlement

- Discussion with PIU officials

Phase-2: Survey of PAFs/PAPs & Implementation System

Project Affected Families/ Persons/ Communities

- Inventory survey of affected families and properties
- 100% Census survey among the affected families/ persons
- One to one household interview
- Public consultation
- FGDs with PAFs, Vulnerable group
- Discussion with officials of concerned department

Implementation Arrangements

- Analysis of legal policy and regulation
- Discussion with PIU officials on implementation of RAP
- Content analysis
- Field work arrangement, data collection, analysis & draft RAP report

Phase-3: Post Survey activities, Analysis Report

Data Analysis and SIA Report

- Data tabulation and analysis plan
- Data coding and entry
- Finalization of RAP report structure
- Analysis of survey results
- Prepare and submission of draft RAP report

Consultation on RAP Report

- Assist authority in conducting public hearing/ consultations
- Consultation on RAP findings with affected people, civil societies, NGOs etc.
- Review & comments from PIU and World Bank
- Incorporation of comments and submission of final SIA report

1.6.4 Reconnaissance

Teams comprising of social scientists, engineers and environmental planners undertook reconnaissance of proposed road project. The purpose of the reconnaissance was to have an overview of the likely extent of impact on people because of the impending development of the road.

1.6.5 Data from Secondary Sources

Secondary sources information was collected from a number of quarters such as from Census data, Statistical hand book, concerned departments, and a host of other literature. Thus, the secondary sources information complemented the primary data elicited through field survey from the affected people and

other stakeholders. Understanding was created about the physical, social, economic, and cultural set-up of the project area before undertaking detailed field investigations.

1.6.6 Site Visit and Information Dissemination

The field visits and studies were conducted during 16thSeptember –12thOctober 2019. Team visited the sites along with EA/PIU officials to verify the alignment drawings on the ground and to identify the affected areas. After identifying the affected areas officials consulted with different stakeholders at the project area and organized meetings with them to generate awareness about the project. During site visit it was found that majority of people are likely to be affected at Kotli, Padchu, Tauni Devi, Awah Devi and Sarkaghat area. The survey team begins by holding community meetings in these areas that are affected and have to be enumerated. Information about the road project and the survey procedure (from the numbering of structures to filling out forms) was shared with the community.

1.6.7 Census Survey of Structure

Before the actual household Census survey, all the structures that were likely to be affected by the project were identified and were enumerated considering the ROW and its alignment drawing prepared by the consultant. The census was conducted through door-to-door personal interview. The census questionnaire was pre-tested (**Annexure 1.1** for details of the census questionnaire) each and every structure within the ROW was identified. The location, size and shape, type of construction of the structures were recorded. Names of the owners, addresses, possession of legal documents (if any, towards the claim of property), and tenure status were also recorded. The cut of date for the census survey is 26thOctober 2019. During RAP implementation the census data of the PAPs shall be verified by appointed NGO/RAP Implementation Consultant

1.6.8 Baseline Socio- Economic Survey

After enumeration of the structures likely to be affected in the project area, household socioeconomic survey was carried out to assess impact of the proposed corridor on socioeconomic conditions of affected families. The household social survey was carried out with the help of a pre-tested "Household Questionnaire". The aspects covered in the Questionnaire were identification particulars of PAFs/PAPs, social profile, family details, occupation, source of income, family expenditure, document proofs, household assets, information on affected structure, commercial/self-employment activities, employment pattern, opinion and views of PAPs on project and resettlement and rehabilitation. Most part of the questionnaire has been pre-coded except those reflecting the opinion and views of PAP, which have been left open-ended. A copy of Questionnaire for Census Household Survey is presented in **Annexure1.1.**

1.6.9 Compilation and Verification of Data

Survey forms duly filled were consolidated and entered into a database. This information was updated on a regular basis as and when data for incomplete forms were filled in. The data was later verified during 3D verification (during the duration of Nov. to Dec. 2019).

1.6.10 Data Analysis and Report Writing

Once the data was collected and finalized with all the necessary changes, analysis of collected data was done for different sections.

1.6.11 Community and Public Consultation

Preliminary public consultations and discussions were conducted by study team with the help of PIU officials through community meetings with PAPs as well as general public at particular locations. The objective of conducting public consultation was to obtain the views and suggestions of the potentially affected persons to minimize adverse social impacts. The consultation process involved various sections of affected persons such as traders, women, kiosks and other inhabitants. Special care was taken during the study to hold discussions with women group to elicit the adverse effects they are anticipating due to the project and their suggestions in this regard for mitigating the foreseeable adverse effects. During public consultations, issues related to land acquisition, compensation, income restoration, employment generation, information flow, grievance redressal, safety, role of administration etc. were discussed. The methods which were adopted for conducting public consultation were (i) Walk-through informal group consultation (ii)Public meetings, (iii)Focus Group Discussions (FGD) with different groups of affected people (iv)In-depth individual interviews, (v)Discussions and interviews with key informants, (vi)Sharing the opinion and preferences of the PAPs.

1.7 Structure of The Report

The SIA study and preparation of RAP requirement is to assess and analyze the impacts on the properties, people and key stakeholders and prepare a mitigation plan to minimize, mitigate and compensate the affected people for their losses. It, thus requires identification of broad categories of affected properties and project affected people (PAPs) including assessment of beneficial and adverse social impacts.

To meet the above requirements, this report has been organized in following Chapters:

Chapter 1: Introduction

Chapter 2: Project Description

Chapter 3: Socio-Economic Profile of the Project Area

Chapter 4: Land Acquisition, Project Impacts and Inventory Losses

Chapter 5: Resettlement Policy Framework & Entitlement Matrix

Chapter 6: Public Information and Consultation

Chapter 7: Analysis of Alternatives and Minimization of Impacts

Chapter 8: Gender Issue & Women Participation

Chapter 9: R&R Budget

Chapter 10: Institutional Framework for RAP Implementation

Chapter 11: Grievance Redressal Mechanism

Chapter 12: RAP Implementation Schedule

Chapter13: Monitoring and Evaluation

CHAPTER 2: PROJECT DISCRIPTION

2.1 Project Background

Ministry of Road Transport & Highways (MoRTH), Government of India (GoI) has decided to take up various National Highway Corridors for augmentation of capacity for safe and efficient movement of traffic by strengthening and upgrading to required width. Some of these highways are proposed to be taken up through the assistance from World Bank. The basic proposition includes strengthening of road pavement in addition to widening to 2- lane with paved/earthen shoulder standards.

Under consideration of above mention projects the present project is the preparation of Rehabilitation and Up-gradation of existing single/intermediate/2-lane to 2-lane with paved/ earthen shoulder from km 141 to km 265 of Hamirpur-Mandi, Section of NH –70 in the state of Himachal Pradesh. The proposed length is 109.952 (km 141.0 to km 250.592) and exiting length is 124.0 km. The Proposed length is shorter than existing road length due to curve improvements and realignments in proposed alignment. In the proposed 109.952 km length, approx. 5 km length (from km 0.0 to km 5) is taken only for overlaying. The project is divided into three packages as detailed below:

Pkg. No.	**Place**		**Existing Chainage**		**Total Existing Length (km)**	**Design Chainage**		**Total Proposed Length (km)**
	From	**To**	**From**	**To**		**From**	**To**	**(km)**
I	Garna-Gallu	Padchu	Km 141.000	Km 184.758	43.758	Km 141.000	Km 181.000	40.000
II	Padchu	Hukel	Km 184.758	Km 217.014	32.256	Km 181.000	Km 208.95	27.950
III	Hukel	Mandi	Km 217.014	**Km 265.550**	48.536	Km 208.950	Km250.592	41.642

2.2 Type of Project

The proposed project is Rehabilitation and Up-gradation of existing Hamirpur-Mandi stretch in the state of Himachal Pradesh. The proposed project includes various activities viz. up-gradation of road configuration, improvement of road geometry, improvement in horizontal & vertical curves, improvements in road drainage system, repairing or reconstruction of existing CD structures, proposed new CD structures, development of new road safety measures etc.

2.3 Project Details

The proposed highway project is lies in Himachal Pradesh and it's confined within 5 to 20 m width of ROW. Encroachers, squatters and those whose land is being acquired for the development of the road, are mostly among affected people within available ROW for realignments and for geometric improvements. The main project details are provided in **Table 2.1.**

2.4 Project Location

The Project stretch starts near Hamirpur at km 141 (31°42'56.68"N, 76°32'29.73"E) and ends near Mandi

at km 265 (31°41'14.54"N, 76°56'7.05"E) as shown in **Figure 2.1.**

2.5 Existing Project Attributes

2.5.1 Existing Road Configuration

Existing road consists of 1.70 km 2-lane, 10 km Intermediate lane and 101.70 km single lane sections. Details of various sections are given in **Table 2.2.**

Table 2.1: Details of Project Road

S. No.	Type	Features
1	Existing ROW available	Varies from 5.4-20 m
2	Existing Carriageway	Varies from 3-7m 2-lane- 1.70 km (1.5%) Intermediate Lane - 10.00 km (8.8%) Single lane - 101.70 (89.7)
3	Existing No. of Junctions and Intersection	There are 77 nos. of Junctions are existing on project road. Major junctions involved are NH, SH and MDR intersecting with the project road. Village and other roads intersecting with project have been considered as minor junctions.
4	Existing Pavement Condition	Good -19.82 km Fair – 49.00 km Poor – 36.30 km Very Poor – 8.28 km
5	Utilities	OFC line, Electric power supply line and Telephone line are running parallel, crossing the project road at many locations. Shifting of utilities may be required during Improvement of existing project road.
6	Existing Bridges and Culverts	There is only one major bridge on Sonkhad (Shivdwala) (Total span length > 60m) in km 193.736. There exist 8 minor bridges on various Khads and natural falling streams from side hills on this project road. All minor bridges are having single span arrangement either of RCC 'T' beam/RCC slab or steel truss. RCC Slab - 33 Nos. Hume Pipes - 345 Nos. Stone Scuppers - 107 Nos. Flush Causeway - 2 Nos Total 487 Nos.
7	Connectivity	The project highway will increase interconnectivity among SH-39, 19, 32, MDR-26 and other associated intermediate

		roads. Trade of local produce like agriculture, milk and small scale industrial products (handicraft & textiles) will increase. This is very important road project for the development of the Kot, Daroghan, Tauni Devi, Ambi, Bahal, Badehru, Awah Devi, Cholthara, Kothi, Sangroh Kurd, Bhuana, Rakhoh, Sarkaghat, Alyana, Dham Sera, Kotli, Parchhu Hukkal, Laungani, Dharmpur, Hawani, Thana, kumnarda, Ladhar, Balahar, Batahar, Bahin, Chera, Panjethi and other associated villages with NH-70.
8	Settlements	The project highway has got settlements throughout its length with more than 28 major and minor habitations.
10	Topography	The Project Highway traverses through hilly terrain
11	Hydrology and Drainage pattern	Cross drainage will taken be care by 1 nos. major bridges, 6 nos. minor bridges, and 497 nos. culverts. The cross sections and longitudinal sections of stream/Nalah, HFL has been collected from local enquiry during detailed site investigation.

Start Point

End Point

Figure 2.1 : Starting and End Point of Project Stretch

Table 2.2: Details of Road Sections

S.No	Description of Lane	Length in km.	Existing ROW (m).	Abutting Land Use
1	Single	101.700	5.4 to 20	Mostly steep terrain hills
	Intermediate	10.000	5.4 to 20	Urban, scattered built up and open land
	Two lane	6.700	5.4 to 20	Urban, scattered built up and open land
Source: Site Inventory conducted by THEME engineering Pvt. Ltd. 2010-11.				

2.5.2 Existing ROW

The existing available ROW varied from 5.4m to 20m. Length wise details of existing ROW are provided in **Annexure 2.1.**

2.5.3 Embankment Height and Pavement Condition

All entire project road length lies on hilly terrain. The existing road alignment is not as per IRC standard. The grade and the curves are very steep. The side slope of the existing embankment varies 1.5:1 to 2:1.

Pavement Condition: Pavement condition of the existing road has been taken based upon crack area, pot-hole area, and raveling area. **P**avement condition has been divided into three categories, Good, Fair and Poor. Summary of **p**avement condition is presented in **Table 2.3**.

Table 2.3: Summary of **p**avement condition

Pavement Condition	**Length (km)**	**% age Length**
Good	19.82	17.5
Fair	49.00	43.2
Poor	36.30	32.0
Very Poor	8.28	3.3
Source: Site Inventory conducted by THEME engineering Pvt. Ltd. 2010-11.		

Pavement Roughness Survey: Roughness survey was carried out using TRL's Car Mounted Bump Integrator. The Summary for Roughness survey data is given in **Table2.4.**

Table 2.4: Summary for Roughness Value

Ranges of Road condition / Roughness(mm/km) and Road Length		
Good	Fair	Poor
3000 - 4000	4000 – 5000	> 5000
17.800	51.020	44.580
Source: Site Inventory conducted by THEME engineering Pvt. Ltd. 2010-11.		

2.5.4 Road Side Drain

The roadside drains / longitudinal drains are observed in built-up sections and unlined earth ditches in open areas. The condition of unlined drains is mostly poor except at some stretches. Inventory & condition of the existing longitudinal drains and water logging locations have been shown in T**able 2.5**.

Table 2.5: Location of Road Side Drains

Left Side Drainage			**Right Side Drainage**		
FROM	**To**	**DRAINAGE (LINED/ UNLINED)**	**FROM**	**To**	**DRAINAGE (LINED/ UNLINED)**
187/925	188/475	Lined -475m	145/940	146/440	LINED-60m
188/475	188/975	Lined	191/925	192/380	Lined-330m
188/975	189/425	Lined	192/380	192/880	Lined-320m
189/425	189/975	Lined	192/880	193/295	Lined-275m
189/975	190/400	Lined	193/775	194/260	Lined-160m
190/400	190/900	Lined	194/260	194/760	Lined-325m
190/900	191/425	Lined	201/290	201/960	Lined-100m
191/425	191/925	Lined-275m	218/275	218/775	Unlined
191/925	192/380	Lined	218/775	219/300	Unlined
192/380	192/880	Lined-245m	219/300	219/750	Unlined
193/295	193/775	Lined-130m	219/750	220/150	Unlined
200/425	200/790	Lined-290m	220/150	220/500	Unlined
200/790	201/290	Lined-110m	220/500	220/950	Unlined
242/000	242/460	Lined -285m	220/950	221/300	Unlined
242/460	242/950	Lined	221/300	221/750	Unlined
242/950	243/400	Lined	221/750	222/100	Unlined
243/400	243/900	Lined	222/100	222/675	Unlined
243/900	244/340	Lined	222/675	223/000	Unlined
244/340	244/850	Lined	223/000	223/425	Unlined
244/850	245/240	Lined	223/425	223/900	Unlined
245/240	245/700	Lined	223/900	224/400	Unlined
245/700	246/180	Lined	224/400	224/900	Unlined
246/180	246/650	Lined	224/900	225/410	Unlined
246/650	247/100	Lined	225/410	225/900	Unlined
247/100	247/600	Lined	225/900	226/370	Unlined
247/600	248/040	Lined	232/000	232/475	Unlined
248/040	248/500	Lined	232/475	232/975	Unlined
248/500	248/910	Lined	232/975	233/450	Unlined

Left Side Drainage			Right Side Drainage		
FROM	**To**	**DRAINAGE (LINED/ UNLINED)**	**FROM**	**To**	**DRAINAGE (LINED/ UNLINED)**
248/910	249/350	Lined	233/450	233/970	Unlined
249/350	249/870	Lined	235/900	236/300	Lined-300m
249/870	250/350	Lined	236/300	236/785	Lined-285m
250/350	250/800	Lined	236/785	237/250	Lined-215m
250/800	251/250	Lined	237/250	237/765	Lined -165m
251/250	251/700	Lined	237/765	238/200	Lined
251/700	252/150	Lined	238/200	238/760	Lined
252/150	252/625	Lined	238/760	239/250	Lined -465m
252/625	253/000	Lined	239/250	239/710	Lined
253/000	253/510	Lined	239/710	240/200	Lined
253/510	254/000	Lined	240/200	240/660	Lined
Source: Site Inventory conducted by THEME engineering Pvt. Ltd. 2010-11.					

2.5.5 Road Geometry

Since the present road has been declared as NH in the year 1999, prior to that it was combination of SH, MDR & DDR, hence the existing geometric of the project road is quite deficient. In relative terms, the horizontal geometry is more deficient than the vertical geometric. The status of existing geometric is presented in Tables given **Table 2.6**:

Table 2.6: Summary of Existing Horizontal Curves

Sl. No.	Range of Radius of Curve		No. of Curves	% of Total
	From	To		
1	0	20	337	18.98
2	20	30	612	34.46
3	30	50	495	27.87
4	50	70	90	5.07
5	70	100	187	10.53
6	100	300	45	2.53
7	300	>300	10	0.56
Total			1776	100%

Sl. No.	Range of Radius of Curve		No. of Curves	% of Total
	From	To		
Source: Site Inventory conducted by THEME engineering Pvt. Ltd. 2010-11.				

The tabular data shows that 53.44% curves are less than minimum radius of 30m while 27.87% curves are having radius between 30m to 50m. There are 58 nos. hair pin bends also exist.

2.5.6 Junctions

In the entire length of road **77** nos. of Junctions are observed. Details are presented in **Annexure 2.2**:

2.5.7 Cross Drainage Structures

On the existing road, cross drainage is maintained through 8 bridges (1 minor and 7minor) and 487 culverts.

Major Bridges

Structures having a length of more than 60.0m are called major bridges. There is one major bridge along the road.

Minor Bridges

Structures having a length of more than 6.0m and up to 60.0m are called minor bridges. There are 7 no. of Minor Bridges exists along the project road.

Culverts

As defined in IRC:5-1998, Culvert is a cross drainage structure having a total length of 6.0 meters or less between the inner faces of the dirt walls or extreme vent way boundaries measured at right angles thereto. A total of 487 culverts are exists on project road. Out of which 33 nos. are slab/stone slab culverts, 345 nos. are pipe culverts, 2 nos. are causeway and the remaining 107 are Scuppers. Details of CD structures are given in **Table** 2.7;

Table 2.7: Details of Major and Minor bridges.

	Chainage (km)	Span Arrangement No. x span (m)	Carriageway width(m)	Total width of Bridge(m)	Total Length of Bridge(m)	Remarks
Major Bridge						
1	195+463	1x28.7+1x47.2+1x28.7	4.25	5.20	104.75	RCC Girder, On Sone Khad Crossing,
Minor Bridges						
1	184+364	1 x 41.95	4.35	5.05	43.4	**Steel Truss**, on Padchoo Khad

	Chainage (km)	Span Arrangement No. x span (m)	Carriageway width(m)	Total width of Bridge(m)	Total Length of Bridge(m)	Remarks
Major Bridge						
2	185+717	1 x 12.20	3.8	5.6	12.7	RCC T-Beam, On Tor Nallah Crossing
3	197+361	-	-	-	-	-
4	230+228	1 x 6.1	6.0	3.4	6.8	RCC Solid Slab, On Nallah Crossing
5	235+318	1 x 19.75	4.3	5.1	20.45	RCC T-Beam, On Nallah Crossing
6	238+933	1 x 19.75	4.1	5.3	22.5	RCC Girder, On Nallah Crossing
7	240+486	1 x 31.75	4.2	5.2	32.4	Steel Truss Girder,On Khad Crossinf0
Source: Site Inventory conducted by THEME engineering Pvt. Ltd. 2010-11.						

Existing **Minor Bridge at km 238/933** is having span arrangement of 1x19.75 RCC T-Beam girder superstructure and stone masonry in substructure and foundation. As per the condition survey and visual inspection as the Bridge condition holds fair but possess inadequate carriageway width.

Existing **Minor Bridge at km 240/486,** is having span arrangement of 1x31.75 PSC girder superstructure and stone masonry in substructure and foundation. As per the condition survey and visual inspection as the Bridge condition holds fair but possess inadequate carriageway width.

From the above details the Minor Bridges between km145/950 to km 259/350 has been proposed for reconstruction.

Water Storage pits for Drinking Water (Khaatary/Bowaris)

Water storage pits locally known as “Khaatary” is a traditionally rain water harvesting structures, which is the source for drinking water, available all along the stretches, the locations of Khaatarys are given in **Table 2.8.**

Table 2.8: Details of Rain water harvesting structures “Khaatary/Bawadi & Water Percolation Well”

S.N.	Existing km	Nome of Environment Sensitive Item	Side
1.	151.814	Water Bawdi	RHS
2.	153.050	Water Bawadi	LHS
3.	154.550	Water Bawadi	RHS

S.N.	Existing km	Nome of Environment Sensitive Item	Side
4.	156.500	Water Bawadi	RHS
5.	156.970	Water Percolation Well	RHS
6.	158.100	Water Percolation Well	RHS
7.	159.000	Water Percolation Well	LHS
8.	159.010	Water Percolation Well	LHS
9.	160.350	Water Percolation Well	RHS
10.	160.350	Water Percolation Well	RHS
11.	160.364	Water Percolation Well	RHS
12.	160.380	Water Percolation Well	RHS
13.	160.384	Water Percolation Well	RHS
14.	160.392	Water Percolation Well	RHS
15.	160.392	Water Percolation Well	RHS
16.	160.392	Water Percolation Well	RHS
17.	160.392	Water Percolation Well	RHS
18.	160.397	Water Percolation Well	RHS
19.	160.403	Water Percolation Well	RHS
20.	160.410	Water Percolation Well	RHS
21.	160.415	Water Percolation Well	RHS
22.	160.415	Water Percolation Well	RHS
23.	168.800	Water Bawadi	LHS
24.	169.290	Water Bawadi	RHS
25.	176.211	Water Bawadi	RHS
26.	181.007	Water Bawadi	RHS
27.	184.556	Water Bawadi	LHS
28.	189.410	Water Bawadi	LHS
29.	197.670	Water Bawadi	RHS
30.	204.010	Water Bawadi	RHS
31.	210.980	Water Bawadi	RHS
32.	210.990	Water Bawadi	RHS
33.	225.950	Water Bawadi	RHS
34.	230.326	Water Bawadi	RHS
35.	231.473	Water Bawadi	RHS
36.	237.600	Water Bawadi	RHS
37.	239.385	Water Bawadi	RHS
38.	240.285	Water Bawadi	RHS

S.N.	Existing km	Nome of Environment Sensitive Item	Side
39.	242.00	Water Bawadi	RHS
40.	249.500	Water Bawadi	RHS
41.	251.700	Water Bawadi	LHS
42.	256.599	Water Bawadi	LHS
43.	260.814	Water Bawadi	RHS
44.	261.823	Water Bawadi	RHS
45.	263.050	Water Bawadi	RHS
46.	266	Water Bawadi	RHS
Source: Site Inventory conducted by THEME engineering Pvt. Ltd. 2018-19.			

2.5.8 Existing Way side Utilities

Along the existing road alignment, various types of wayside utilities like electric pole, telephone line, optical fiber cable, hand umps, overhead transmission transformer, water tap and Bawadi are observed. Summary of existing wayside utilities is given in **Table 2.9.**

Table 2.9: Summary of existing wayside utilities

S.N	Utility Item	LHS	RHS
1	Blectric Pole	231	101
2	Belephone Pole	263	89
3	Optical fiber Cable	45	42
4	Hand Pump	40	40
5	Over Head Transmission	61	46
6	Transformer	15	12
7	Water Tap	2	7
8	Bawadi	8	38
9	Khatri	19	30

Source: Site Inventory conducted by THEME Engineering Pvt. Ltd. 2018-19.

2.5.9 Existing Way side Amenities

Details of wayside amenities along the existing road alignment are given in **Table 2.10.** There are 72 nos. bus shelters, 25 nos. rain shelters and 31 nos. schools/collages.

Table 2.10: Details of Wayside Amenities

S.No.	Items	RHS	LHS
1	Temple	15	12
2	School/College	15	16
3	Hospital	2	2

4	Bus - Shleter	48	24
5	Teashops	19	17
6	Dhaba	4	4
7	Rain Shelter	13	12
8	Others	21	

Source: Site Inventory conducted by THEME Engineering Pvt. Ltd. 2018-19.

2.5.10 Base/Present Traffic

Annual average daily traffic (AADT)

AADT is the base year (2011) traffic. This is a product of ADT and seasonal factor. Seasonal variation factor for each month should be calculated by taking ratio of sale of petrol and diesel in respective months and average annual monthly sale of fuel. Since the traffic survey were conducted in rainy season, and appropriate data on fuel sales in the vicinity of the project road was not available, the consultants proposed to undertake a 3 day traffic count in the **third week of October** to estimate the AADT. The seasonal correction factors are estimated based on the volume count data in August and October. Thus the AADT estimated is presented in **Table 2.11.**

Table 2.11: AADT at all Sections

Type of Vehicles		**km145**	**Km 179**	**Km 225**	**Km 259**
Car		840	615	71	962
LCV		246	210	15	82
Bus	Mini	155	111	0	91
	Full	45	61	16	107
Truck	2-Axle	163	99	4	86
	3-Axle	1	0	1	0
	Multi-Axle	0	0	0	0
Agri. Tractor	Without Trailer	6	3	0	1
	With Trailer	65	25	0	20
Ambulance Fire Tender Funeral Van		4	1	0	2
2-Wheeler		1005	854	52	1286
3-Wheeler		42	14	6	268
Cycle		21	19	7	19
Cycle Rikshaw		3	0	0	0
Total Vehicles		2597	2012	172	2924
Total PCUs		2936	2145	194	2814

Tollable PCUs	2069	1577	157	1801

Peak Hour Traffic

From the observed traffic peak hour has been estimated in third week of October and are presented in **Table 2.12.**

Table 2.12: Peak Hour Traffic at all stations

S.No	Location	Peak Hour factor	Peak Hour
1	At 145.000 Km	7.02	9 am – 10 am
2	At 179.000 Km	8.69	10 am - 11 am
3	At 225.000 Km	7.69	9 am -10 am
4	At 259.000 Km	8.17	9 am - 10 am

Projected Traffic

In present case total corridor traffic is just the normal traffic as no consideration of Induced and diverted traffic is taken. Projected traffic is presented in **Tables 2.13**.

Table 2.13: The Projected traffic along the Project Road

Year	Section1		Section2		Section3		Section4	
	AADT (PCU)	Lane Configuration	AADT (PCU)	Lane Configuration	AADT (PCU)	Lane Configuration	AADT (PCU)	Lane Configuration
2010	2936	SL	2145	SL	194	SL	2814	SL
2011	3237		2377		214		3133	
2012	3580		2638		239		3490	
2013	3961		2929		266		3889	
2014	4386		3254		297		4335	
2015	4860		3615		332		4833	
2016	5387		4018		370		5390	
2017	5881	IL	4395		407		5923	IL
2018	6422		4809		446		6509	
2019	7017		5263		490		7155	
2020	7669	2L	5761	IL	538		7866	2L
2021	8385		6309		591		8650	
2022	9171		6910		650		9514	
2023	9866		7439		701		10297	

Year	Section1		Section2		Section3		Section4	
	AADT (PCU)	Lane Configuration	AADT (PCU)	Lane Configuration	AADT (PCU)	Lane Configuration	AADT (PCU)	Lane Configuration
2024	10619		8011		757		11146	
2025	11434		8630		817		12070	
2026	12316		9300		882		13073	
2027	13272		10026		953		14163	
2028	14307		10813		1030		15349	
2029	15429		11665		1114		16638	
2030	16645		12588		1204		18039	
2031	17963		13589		1303		19564	
2032	19393		14675	2L	1410		21222	
2033	20944		15853		1526		23027	
2034	22628		17130		1652		24991	
2035	24455		18517		1790		27129	
2036	26439		20022		1939		29456	
2037	28593		21657		2101	IL	31989	
2038	30934		23432		2278		34749	
2039	33477		25360		2470		37754	
2040	36242		27455		2679		41028	

Delineation of Traffic Zones

The travel characteristics would be incomplete without an understanding of the interaction patterns between spatial units. Travel desire patterns analysed from the origin-destination surveys indicate the interaction levels between various spatial entries of people and freight. For analysis of O-D data collected from field, it is required to code it for origin and destination. For this purpose, a zoning system was adopted. The zoning was done in three levels i.e. local, district and state level. All-important towns and traffic generators on the project corridor were assigned local zones and were given separate codes. Next, immediate influence areas of project road were then considered and nearby districts were delineated as separate district level zones. Finally, states beyond the influence area were aggregated broadly into state level zones. In all, thus the Zoning system is presented in **Table 2.14.**

Table 2.14: O-D Zoning Details

Zone No	Zone Name	Dist/State	Remarks
1	Hamirpur	Hamirpur dist.	Along the project Road in Himachal Pradesh
2	Awa Devi		

Zone No	Zone Name	Dist/State	Remarks
3	Sarkaghat	Mandi dist.	
4	Kalkhal		
5	Rewalsar		
6	Naina Devi		
7	Mandi		
8	Bhatta	Hamirpur dist.	Rest of Himachal Pradesh
9	Dosarka		
10	Naduan		
11	Tira sujanpur		
12	Doraha		
13	Jungleberi		
14	Barsar		
15	Bhota		
16	Rest of Hamirpur Dist.		
17	Sundernagar	Mandi Dist	
18	Jogindernagar		
19	Chail Chowk		
20	Rest of Mandi Dist.		
21	Bilaspur	Bilaspur Dist.	
22	Ghumarwain		
23	Rest of Bilaspur Dist.		
24	Amb	Una Dist.	
25	Una		
26	Rest of Una Dist.		
27	Solan	Solan Dist.	
28	Rest of Solan Dist.		
29	Shimla	Sirmaur dist.	
30	Rest of Shimla dist.		
31	Sirmaur Dist.	Sirmaur Dist.	
32	Kangra Dist.	Kangra Dist.	
33	Kullu Dist.	Kullu Dist.	

Zone No	Zone Name	Dist/State	Remarks
34	Chamba dist.	Chamba dist.	
35	Kyelang dist.	Kyelang dist.	
36	Lahul and Spiti dist.	Lahul and Spiti dist.	
37	Reckongpeo dist.	Reckongpeo dist.	
38	Punjab	Rest of India	
39	J&K		
40	Uttrakhand		
41	Haryana, Delhi		
42	Uttar Pradesh, Bihar		
43	Rajasthan, Gujarat		
44	Maharashtra, Madhya Pradesh, Goa		
45	Chhattisgarh, Jharkhand, Orissa, West Bengal		
46	Sothern States		
47	North Eastern States		

2.5.11 Road Accident data analysis

Accident data for last 5 years was collected from different police stations along the project road on NH-70. This 5 years data provides an adequate source of analysis about accidents in project road reach. Accident data relates to number of accidents for different sections. The accident details are furnished in **Table 2.15.**

Table 2.15: Accident Characteristics along the project Road

Accident Data along the Project Road: At Hamirpur	
Year	**No. of Accidents**
2005-2006	3
2006-2007	4
2007-2008	3
2008-2009	4
2009-2010	4
Accident Data along the Project Road: At Mandi	
Year	**No. of Accidents**
2007-2008	5

2008-2009	8
2009-2010	2

Based on analysis of accidents for the past 5 years, it can be seen that there are no location of sever accident where the ASI exceeds the accident threshold value.

2.6 PROPOSED DESIGN IMPROVEMENT

2.6.1 Proposed Right of Way

The proposed road configuration is 2-lane with paved at settlement portion and earthen shoulder at open areas. As per the requirement of 2-lane with paved and unpaved shoulder, 15 ROW is required at open area, realignments & curve improvement portions, and 10 m ROW at settlements & markets portions. Chainage wise details of PROW are given in **Annexure 2.3.**

2.6.2 Proposed Carriageway Configuration

The existing signal/intermediate/2-lanes carriageway is for 2- lane with paved/earthen shoulder. Width of carriageway and shoulder adopted in Normal Scenario and Constraint Scenario, is given in **Table 2.16.**

Table 2.16: Proposed Carriageway and Shoulder Width

Scenario	Component of Roadway	IRC Recommendation, as per		Adopted for Project Road
		IRC:SP:48-1998	IRC:SP:74-2009	
Normal Scenario	Shoulder on Hill side	0.9 m	1.0 m	1.0 m
	Carriageway	7.0 m	7.0 m	7.0 m
	Shoulder on Valley side	0.9 m	2.0 m	2.0 m
	Total Roadway*	8.8 m	10.0 m	10.0 m
Constraint Scenario	Shoulder on Hill side	0.9 m	1.0 m	1.0 m
	Carriageway	7.0 m	7.0 m	7.0 m
	Shoulder on Valley side	0.9 m	2.0 m	2.0 m
	Total Roadway*	8.8 m	10.0 m	10.0 m

2.6.3 Road Widening Scheme

The availability of RoW is not uniform along the project road and it varies 5.4 to 20 m. In order to minimize the environmental and social impacts, concentric and eccentric widenings are proposed as per the availability of land. A total of 36.646 km length is proposed for concentric widening, 13.085 km length for LHS widening, 37.151 km length for RHS widening, 11.072 km for realignment and 11.138 km length is proposed for curve improvement. Details of proposed widening scheme are provided in **Annexure 2.4.** Various types of TCS (TCS-1, TCS-2, TCS-3, TCS-4 and TCS-5) have been used in the proposed road alignment. The details of widening scheme with TCS used in proposed alignment, are given in **Table 2.17.**

Table 2.17: Details of widening scheme with TCS

Typical Cross Section	Applicability	Cross-Sectional Elements
Type - 1 (Fig 5.1)	Both Side Hill (Cut Portion)	Total width of Roadway – 11.250 m (Inclusive of drain on both side) • Carriageway – 7.00 m • Both side Granular shoulder – 1.0 m • Both side Lined Drain – 1.125 m
Type – 2 (Fig 5.2)	One Side Hill other side Valley	Total width of Roadway – 11.525 m (inclusive of drain and parapet) • Carriageway – 7.00 m • Hill side Granular shoulder – 1.0 m • Hill side Lined drain – 1.125 m • Valley Side Earthen Shoulder – 2.0 m • Parapet on Valley side – 0.40 m
Type – 3 (Fig 5.3)	Both Side Valley (Both side Retaining wall)	Total width of Roadway – 11.80 m (inclusive of parapet on both side) • Carriageway – 7.00 m • Both Side Earthen Shoulder – 2.0 m • Both side Parapet – 0.4 m
Type – 4 (Fig 5.4)	Plain section	Total width of Roadway – 12.00 m • Carriageway – 7.00 m • Both side Earthen Shoulder – 2.50 m
Type – 5 (Fig 5.5)	Built up section	Total width of Roadway – 10.80 m (inclusive of both side Covered Drain) • Carriageway – 7.00 m • Both side Granular shoulder – 0.9 m • Both side Covered Drain – 1.00 m

TCS type 1 is adopted for sections having both side hill with both side kerb and channel drain or where whole road is in cutting, TCS Type 2 is adopted where there is one side hill having kerb and channel drain and other side valley, TCS type 3 is provided in sections where there is both side valley, TCS type 4 is adopted where there is plain terrain and TSC type 5 is adopted in built up sections.

2.6.4 Horizontal Curve Improvement

The horizontal curves have been designed in accordance with the requirements stipulated in IRC: 38-1988 (Design Table for Horizontal Curves for Highways) and each curve has consist of a circular arc spiral transitions between the arc and the straights. Reverse curves, compound curves and hair pin bands have been provided as per the procedure laid down in hill road manual. Proposed horizontal curve have been designed in the range of 5 to 500 m radius with 5 to 50 km /hours design speed of on various curves. Various type of horizontal curves along with length, are listed in **Table 2.18.**

Table 2.18: Summary of Proposed Horizontal Curves

S.No.	Radius (m)	Curve Length (m)
1	5	10.35
2	10	199.48
3	13	33.21
4	15	1738.23
5	17	30.91
6	18	62.41
7	20	4949.57
8	25	6811.81
9	30	11942.2
10	35	1414.07
11	40	4485.16
12	45	361.48
13	50	8895.1
14	60	3010.64
15	70	622.8
16	75	273.11
17	80	2550.11
18	90	185.93
19	100	4490
20	120	103.1
21	150	670.05
22	200	1555.34
23	250	145.17
24	300	330.06
25	500	132.76

2.6.5 Regiment and Curve Improvement

In lieu the minimization the demolition of settlements and straight the sharp curves, realignment and curve improvement are proposed at 114 nos. locations. Summary of realignment and curve improvement is given in **Table 2.19** and details are provided in **Annexure 2.4.**

Table 2.19: Curve Improvement and Realignment

S.N.	Item	Locations	Length (m)
1	Realignment	25	10926
2	Curve improvement	89	11138

2.6.6 Road Geometry

The entire geometric design has been based on the ground modelling by highway design software MOSS/ MX. The design of proposed alignment for 2- lane has been carried out by using various design modules contained in "MX". **(a) HORIZONTAL ALIGNMENT:** The summary of proposed horizontal curves is given in **Table 2.20**:

Table 2.20: Summary of Proposed Horizontal Curves

Sl. No.	Range of Radius (m) of Curve		No. of Curves	% of Total
	From	To		
1	0	20	246	14.50
2	20	30	607	35.79
3	30	50	452	26.65
4	50	70	99	5.84
5	70	100	222	13.09
6	100	300	64	3.77
7	300	>300	6	0.35
Total			**1696**	**100%**

The provision of extra widening at curves has been adopted, where ever required, as per specifications. Extra widening provided by increasing the width at uniform rate along transition curve and full width given along circular curve.

(b) VERTICAL ALIGNMENT / GRADIENT: The summary vertical alignment is given in **Table 2.21**.

Table 2.21: Summary of Proposed Vertical Alignment

S. No.	Grade Range (%)		Length		Remarks
	From	To	Km	% of Total Length	
1	0.0	1.0	20.974	20.02%	Within Ruling Gradient
2	1.0	2.0	17.499	16.70%	
3	2.0	3.0	13.62	13.00%	
4	3.0	4.0	10.299	9.83%	
5	4.0	5.0	9.652	9.21%	
6	5.0	6.0	18.911	18.05%	
7	6.0	7.0	12.74	12.16%	Limiting
8	7.0	8	1.072	1.02%	Exceptional
	Total		**104.767**	**100%**	

At some places exceptional vertical gradient is adopted due to difficult site constraints and limitations. At these places, passing places has provided to facilitate the traffic. The **Table 2.22** of such passing places is given below:

Table 2.22 : Crawling Lane / Passing Areas

S. No.	Location	Grade (%)
1	180+402	8.00%
2	188+772	8.00%
3	188+843	8.00%
4	189+177	8.00%
5	189+268	8.00%
6	189+398	8.00%
7	189+492	8.00%
8	189+613	8.00%

Proposed geometric design standard used for the project is given in **Table 2.23.**

Table 2.23: **Proposed geometric design standard**

S. No.	Geometric Element	IRC Standards		Proposed
		Mountainous terrain	Steep terrain	
1	Design Speed (Km/hr)			
	Ruling	50	40	40
	Minimum	40	30	30
	Exceptional	-	-	Up to 20
2	Carriage Way Width (m) 2 lane carriageway	7.0	7.0	As per TCS
3	Shoulder width (m)			
	(i) Paved hard shoulder	2 X 0.9	2 X 0.9	
	(ii) Earth hard shoulder	2 X 0.9	2 X 0.9	
4	Formation width (m)			As per TCS
	(i) Two lane carriageway	8.8	8.8	
	(ii) Two lane with paved shoulder	10.6	10.6	
5	Right of way (ROW) m			
	open areas…….Normal	24	24	15
	Exceptional	18	18	-
	Built up areas……Normal	20	20	10
	Exceptional	18	18	-
6	Camber/Cross fall (In straight section)			
	Thin bituminous surfacing	2-2.5%	2.0-2.5%	2.5%
	High type bituminous surfacing	1.7 - 2%	1.7 - 2.0%	
	Shoulders	Min 3% or 0.5% more than pavement	Min 3% or 0.5% more than pavement	3.5%
7	Minimum Curve Radius (Area not effected by snow)			

S. No.	Geometric Element	IRC Standards		Proposed
		Mountainous terrain	Steep terrain	
	Ruling (m)	80	50	50
	Absolute (m)	50	30	30
	Note :- Radius are for ruling design speed and minimum design speed respectively			
8	Superelevation not bound by snow	limiting to 10%	limiting to 10%	limiting to 10%
9	Stopping sight distance (m)			
	For Design Speed 40 Km/hr	45	45	45
	30 Km/hr	30	30	30
10	Min. Vertical Curve Length (M)			
	For Design Speed 40 Km/hr	20	20	20
	upto 35 Km/hr	15	15	15
11	Gradient			
	Ruling	5% (1 in 20)	6% (1 in 16.7)	6%
	Limiting	6% (1 in 16.7)	7% (1 in 14.3)	7%
	Exceptional	7% (1 in 14.3)	8% (1 in 12.5)	8%
12	Hair Pin Bends			
	Minimum Design speed (Km/hr)	20	20	20
	Minimum Roadway width at apex	11.5	11.5	11.5
	Minimum Radius for inner curve	14	14	14
	Minimum Length of transition curve	15	15	15
	Maximum Gradient	2.5% (1 in 40)	2.5% (1 in 40)	2.50%
	Minimum Gradient	0.5% (1 in 200)	0.5% (1 in 200)	0.50%
	Superelevation	10% (1 in 10)	10% (1 in 10)	10%
13	Extra widening on Curve (m) (2 - lane)			
	Radius of curve up to 40 m	1.5	1.5	1.5
	41-60 m	1.2	1.2	1.2
	61-100 m	0.9	0.9	0.9
	101-300 m	0.6	0.6	0.6
	Above 300 m	Nil	Nil	Nil

2.6.7 Pavement Design

The flexible type of pavement has been adopted for widening of existing carriageway as well as for new construction of realigned carriageway. Separate design for widening/new carriageway and strengthening of existing carriageway has been carried out. As per the guide lines issued by MoRTH for preparation of

draft detailed project report and cost estimates of NHIIP projects, the design period has been taken as end of year 2030 with construction period of 3 years. Details of Pavement Composition are given in **Table 2.24.**

Table 2.24: Adopted Pavement Composition

Design (km)	Pavement Layers (mm)					
	SDBC	BC	DBM	WMM	GSB	Total
Km 141.000 to km 145.825	25	-	50	250	150	475
km 145.825 to km 193.075	-	40	50	250	150	490
Km.193.075 to km 224.400	25	-	50	250	150	475
Km.224.400 to km 250.592	-	40	50	250	150	490

Design of Overlay: The existing pavement was evaluated with a view to work out the overlay requirement on the existing carriageway and to provide new crust in additional lane. Benkelman Beam deflection studies were carried out along both outer edges of the carriageway as per IRC 81-1997.

The deflections were measured, as per procedure detailed in IRC: 81-1997. Overlay design has been carried out based on statistical analysis of all measurement. The overlay thickness for the total project road is considered with average BM 50 mm as PCC, DBM 50 mm and BC 40 mm, except from km.193.075 to 224.400 in which 25 mm SDBC with 50 mm DBM has been considered.

2.6.8 Improvement in Roadside Drainage

On the project road V Shaped drain of size 60x (40 to 60) mm depth is existing and functioning efficiently. In the project road Kerb and channel of 60 x 20 cm sized drain has been taken. Rectangular drains (covered) have been proposed in urban area details are given in **Table 2.25**:

Table 2.25: Covered drain in Urban Area

S. No.	**Design Chainage**		**Length**
	From		
1	145+825	146+850	1025
2	147+250	148+000	750
3	148+700	149+400	700
4	150+425	151+625	1200
5	152+625	152+800	175
6	153+675	155+000	1325
7	155+400	158+975	3575
8	160+800	161+225	425
9	162+200	162+400	200

10	163+150	163+450	300
11	167+425	167+775	350
12	168+500	168+850	350
13	173+825	176+300	2475
14	178+300	178+700	400
15	179+800	180+100	300
16	187+950	188+150	200
17	207+600	208+000	400
18	211+400	211+575	175
19	214+000	214+300	300
20	219+700	219+975	275
21	231+050	231+525	475
22	234+400	234+800	400
23	235+275	235+700	425
24	236+225	236+475	250
25	238+500	239+200	700
26	245+150	245+400	250
27	245+600	245+850	250
28	246+125	246+400	275
29	247+600	248+050	450
		Total	**18375**

2.6.9 Embankment Raise

Embankment is raised as per requirement. Summary of embankment height is given in **Table 2.26.**

Table 2.26: Summary of Embankment Height

S.No.	Embankment Height (m)		Length (m)
	From (m)	To (m)	
1	0	1	25
2	1.1	2	400
3	2.1	3	800
4	3.1	4	4800
5	4.1	5	3425
6	5.1	6	2700
7	6.1	7	2400
8	7.1	8	1675
9	8.1	9	1025
10	9.1	10	1500

11	10.1	11	1100
12	11.1	12	550

2.6.10 Junction Improvement

There are 77 nos. of Junctions are existed on project road and proposed junctions are 75. Major junctions involved are intersection of NH, SH and MDR. Village and other roads intersections have been considered as minor junctions. Two junctions have been dropped out of 77 Nos. due to realignment near Mandi. Summary of proposed junction is given **Table 2.27** and details are provided in **Annexure 2.5.**

Table 2.27: Summary of proposed junction

S.N.	Type of Junction	Numbers
1	Minor	64
2	Major	4
3	+ Junction	3
4	T-Junction	3
5	Y-Junction	62

2.6.11 Cross Drainage Structures

Culverts

After careful examination of existing cross drainage structure, site conditions, hydraulic calculations and alignment (plan and profile) of the project road, improvement proposals have been prepared. Out of 487 culverts 8 culverts are retained with minor repair, 297 culverts are considered for reconstruction, 163 culverts are to be widened, 19 culverts are to be abandoned on account of realignment and 10 new culverts have been added. Details of the Improvement proposal are given in **Table 2.28.**

Bridges

On the basis of the site condition, hydraulic calculation and alignment (plan and profile) of the project it has been recommended that all the Bridges (1 Major & 7 Minor Bridges), are to be constructed as new due to realignment less width of carriage way having no space for by pass during construction. The details of each bridge (dropped / reconstructed) with reasons is given in Table 2.29.

Table 2.28: Details of Summary – Replaced, Rehabilitated, Repaired and New

S.N.	Types of structure	Existing Structures	Proposed						Proposed Structures	Remarks
			Retained/ Repair/ Rehabilitation	Replaced	Widen	Reconstruction	Abandoned	New + Replaced		
1	Slab Culverts	33	0	0	0	0	4	0	4	6 Nos of Slab Culverts are replaced by Box culverts
2	Pipe Culverts	345	8	0	148	283	9	6	454	6 Nos of Pipe Culverts are Proposed due to change of alignment
3	Box Culverts	0	0	0	15	14	0	4	33	4 Nos of Box Culverts are Newly Proposed due to change of alignment
4	Stone Scupper	107	0	0	0	0	6	0	6	101 Nos.Stone Scupper are replaced by Pipes Culverts
5	Causeway	2	0	0	0	0	0	0	0	Both Causeway are replace by Pipe Culverts
	Total	487	8	0	163	297	19	10	497	

Table 2.29: Details of Proposed Bridges

Detail of Cross-Drainage Work												
S. No.	**Types of structure**	**Existing Chainage**	**Design Chainage**	**Exis-ting Struc-tures**	**Proposed**						**Proposed Structures**	**Remarks**
					Retained/ Repair/ Rehabili-tation	**Re-placed**	**Widen**	**Recon-struction**	**Abandoned**	**New Con-struction**		
1	**Minor bridge**	184+364	180+619	1	0	0	0	1	-	-	1	Change of Alignment

2	**Minor bridge**	185+717	181+800	1	0	0	0	1	-	-	1	Change of Alignment
3	**Major bridge**	195+463	189+755	1	0	0	0	1	-	-	1	Change of Allignment
4	**Minor bridge**	230+288	220+283	1	0	0	0	1	-	-	1	Change of Alignment
5	**Minor bridge**	235+318	224+703	1	0	0	0	1	-	-	1	Change of Alignment
6	**Minor bridge**	238+933	228+016	1	0	0	0	1	-	-	1	Change of Alignment
7	**Minor bridge**	240+486	229+381	1	0	0	0	1	-	-	1	Change of Alignment
	Total			7	0	0	0	7	0	0	7	

2.7 Slope Protection Measures

Various slope protection measures are adopted to protect the slopes at CD structures and high embankment locations.

2.7.1 Stone Pitching

Stone pitching is the conventional erosion control for bridge abutments and is preferred solution to reduce erosion. Availability of stones is posing a great challenge from an environmental and commercial standpoint. 14625 m length in LHS and 8175 m length in RHS is proposed for stone pitching to protect the slopes.

2.7.2 Retaining walls

A retaining wall is a structure designed and constructed to resist the lateral pressure of soil, when there is a desired change in ground elevation that exceeds the angle of repose of the soil. Retaining walls are relatively rigid walls used for supporting the soil mass laterally so that the soil can be retained at different levels on the two sides. A total of 20850 m long retaining wall is proposed at various locations. Abstract of retaining wall is given in **Table 2.30**.

Table 2.30: Abstract of Retaining Wall

S.No.	Section Height	Package 1 km 141.000 to km 188.450	Package 2 km 188.450 to km 208.950	Package 3 km 208.950 to km 250.592	Total Length of Retaining wall
1	3.5m	1325	525	1250	3100 m
2	4.0m	1275	225	1050	2550m
3	4.5m	975	175	625	1775m
4	5.0m	775	375	675	1825m
5	6.0m	1775	325	900	3000m
6	7.0m	1550	425	625.00	2600m
7	8.0m	1225	125	475.00	1825m
8	9.0m	475	100	250.00	825m
9	10.0m	950	375	275.00	1600m
10	11.0m	700	350	125.00	1175m
11	12.0m	400	75	100.00	575m
Total Length		11425	3075	6350	20850m

2.7.3 Vertiver Grass and Geo Textiles

Vertiver is a special type of grass which can be grown in a wide variety of soil such as clayey, sandy, silty, gravely types or in other words from least erodible to highly erodible soils. This type of grass does not require any special maintenance.

A geo-textile is typically defined as any permeable textile material used to increase soil stability, provide erosion control or aid in drainage. More simply put, if it is made of fabric and buried in the ground it is probably a geo-textile. It is the combination of planer polymeric reinforcement (geogird) & steel wire mesh in order to build high MSE Walls to control the soil erosion or landslides on critical curt slope.

A total of 8350 m length at different locations is proposed to protect the slopes through use of Vertiver Grass and Geo Textiles. Vertiver grass is proposed for 18120 sq. meter area, Geo-textile Material is for 37280 sq. meter area and Geo-girid & steel are proposed for 4080 sq, meter area. Area wise details of Vertiver Grass and Geo Textiles are given in **Table 2.31** and km wise details are provided in **Table 2.32.**

Table 2.31: Details of Vertiver Grass and Geo Textiles

S.No.	Item	Height	Length	Area
1	Vertiver grass	5	2520	12600
2		8	690	5520
3	Geo-textile Material	8	4660	37280
4	Geo-gird & Steel	8.5	480	4080
		Total	8350 m	59480 sq. m

Table 2.32: Km wise details of bioengineering slope protection

S.No.	Chainage		Length (m)
	From (m)	To (m)	
1	151900	152450	550
2	152800	153400	600
3	176650	176920	270
4	180200	180600	400
5	182200	183000	800
6	188350	189000	650
7	180670	181150	480
8	210100	210600	500
9	211800	211900	100

10	213200	213800	600
11	218600	218700	100
12	233300	233500	200
13	242200	242500	300
14	246000	246300	300
15	247900	248100	200
16	210100	210600	500
17	211800	211900	100
18	213200	213800	600
19	218600	218700	100
20	233300	233500	200
21	242200	242500	300
22	246000	246300	300
23	247900	248100	200
	Total Length		**8350 m**

2.8 Road Safety Measures

There are two types of strategies in designing for the road safety work, are accident reduction and accident prevention. In the former, we generally use the previous accident data on existing roads to influence the designs of behavior of the road user. In the latter, we apply expertise for safe design including both geometric design and material design. In this project various type of safety considerations have been incorporated, are given below:

- Design standards for whole project uniformly applied essential from the view point of road user's safety and the smooth flow of traffic.
- Both horizontal and vertical geometry are given importance at all stages.
- The designs are consistent and the standards proposed for the different elements are compatible with one another and abrupt changes in the design speed were avoided.
- "Ruling" standards are followed and "Minimum" standards are followed for safety considerations only where serious restrictions encountered by technical or economic considerations.

2.8.1 Sign Board

Providing and fixing of retro- reflectorised cautionary, mandatory and informatory sign as per IRC: 67 made of encapsulated lens type reflective sheeting vide clause 801.3, fixed over aluminum sheeting. There are various types of signboards at various locations; 1030 nos. speed limit boards near the locations of habitations, education institutions & hospitals, 80 nos. octagon sign boards (Stop Boards) near major/minor junctions & villages, 12 nos. over head sign board for truss and vertical support, 8 nos. over head sign board

for toll plaza, 15011 nos. delineators, 5729 cats eye at curves & 4403 on road edges. Summary of the sign boards proposed for this project are given **Table 2.33**.

Table 2.33: Summary of the signboards

		Unit	Pkg-1	**Pkg-2**	**Pkg-3**	**Total**
1	***90 cm equilateral triangle***					
	School	***Nos***	46	2	6	**54**
	On Junction	***Nos***	94	16	26	**136**
	Left/right turn	***Nos***	1230	642	1418	**3290**
	Steep Ascent/steep descent	***Nos***	88	90	92	**270**
2	***60 cm equilateral triangle***	***Nos***	26	30	2	**58**
3	***60 cm circular***					
	Speed Limit for Speed lesser than 20 Kmph	***Nos***	252	314	464	**1030**
4	***80 mm x 60 mm rectangular***					
	Petrol Pumps	***Nos***	0	0	2	**2**
	Hospital	***Nos***	2	0	4	**6**
	Bus Shelters	***Nos***	48	6	26	**80**
5	***90 cm high octagon (STOP)***					
	on Major X junction	***Nos***	4	0	0	**4**
	on Major Y Junction	***Nos***	6	0	3	**9**
	on Major T Junction	***Nos***	0	0	0	
	at Village	***Nos***	48	6	26	**80**
6	***Direction and Place Identification signs***					
	150 Cm x 120 Cm Rectangular					
	Place Identification(For Villages)	***Nos***	24	3	13	**40**
	120 Cm x 75 Cm Rectangular					
	Direction (Major Junctions)	***Nos***	3	0	1	**4**
	90Cm x 60 Cm Rectangular					
	Direction (Minor Junctions)	***Nos***	44	8	12	**64**
	Slogan Boards 80Cm x 60 Cm Rectangular as per Requirement	***Nos***	42	20	42	**104**
6	**Providing and erecting overhead signs**					
	Truss and Vertical Support	***Nos***	3	0	1	**4**
	For Toll PlazaT (russ and Vertical Support)					
	For Over head sign board	***Nos***	4	0	4	**8**

	For cantilever sign board	***Nos***	4	0	4	**8**
	Toll rate & exempted vehicle (2 x 2)	***Nos***	4	0	4	**8**
	Aluminium alloy plate for over head sign	***Nos***	6	0	2	**8**
	For Toll Plaza (Aluminium alloy plate for over head sign)					
	For Vehicle wise toll rates board & Exempted Vehicle board (2 X 2)	***Nos***	4	0	4.00	**8**
	Over Head Sign Board	***Nos***	2	0	2.00	**4**
	Cantilever toll plaza boards	***Nos***	2	0	2.00	**4**

2.8.2 Road Markings and Delineators

Road marking (Lane/centre line/edge line/ transverse marking /Zebra Crossing and any other markings) shall be carried out with hot applied thermoplastic paints conforming to ASTM D36/BS-3262 (Part - I) and as per IRC Standard. As per the IRC guidelines 840 sq. m Zebra crossing (near the locations of junctions, bus bays, truck lay byes and villages), 956 sq.m. hazard making at culverts, and 31430 sq.m. edge line making are proposed for batter road safety. 15011 nos. delineators, 5729 cats eye at curves and 4403 on road edges are also proposed. Summary of road marking and delineators are given in **Table 2.34.**

Table 2.34: Summary of road marking and delineators

		Unit	Pkg-1	**Pkg-2**	**Pkg-3**	**Total**
7	**Supplying and installation of delineators**	***Nos***	5530	2851	6630	**15011**
8	**Supply of Shevron sign of size 600x450 mm**	***Nos***	2460	1284	2836	**6580**
9	**Supply & Fixing of Cat's Eye**					
	In Curves					
	On centerline (12 m c/c)	***Nos***	2023	1215	2491	**5729**
	On Edges (24 m C/C both side)	***Nos***	1683	834	1886	**4403**
10	**"W" : Metal Beam Crash Barrier**	***Rmt***	33447	14500	22320	**70267**
11	**Providing and laying of hot applied thermoplastic compound**					
	For Centre Line (Total Straight Length)	**Sqm**	747.70	349.60	633.87	**1731.2**
	For Centre Line (Total Curve Length)	**Sqm**	805.75	272.5	767.75	**1846**
	For Centre Line (Firm line of Total Sharp Curve Length)					
	For Splayde Double Line	**Sqm**	815.80	912.40	1454.20	**3182.4**
	For Hatched Marking in between the Two Splayde Double Line	**Sqm**	407.90	456.20	727.10	**1591.2**
	Edge line	**Sqm**	12787.50	6150.00	12492.60	**31430.1**

	Zebra Crossing					
	on Major X junction	**sqm**	42.00	0	0	**42**
	on Major Y Junction	**sqm**	63.00	0	31.50	**94.5**
	on Major T Junction	**sqm**	0	0	0	
	at Village	**sqm**	504.00	63.00	273.00	**840**
	Stop Lines					
	on Major X junction	**sqm**	2.80	0	0	**2.8**
	on Major Y Junction	**sqm**	4.20	0	2.10	**6.3**
	on Major T Junction	**sqm**	0	0	0	
	at Village	**sqm**	33.60	4.20	18.20	**56**
	For Bus Bays	**sqm**	496.80	62.10	269.10	**828**
	For Truck Lay Bye	**sqm**	81.82	81.82	0	**163.6**
12	**Hazard marker**					
	For Culverts	***Nos***	270	218	468	**956**
13	**Bus Bays**	***Nos***	24	3	13	**40**
14	**Truck Lay Bye**	***Nos***	1	1	0	**2**
15	**Toll Plaza**	***Nos***	1	0	1	**2**
16	**5th kilometre stone**	***Nos***	8	4	9	**21**
17	**Ordinary Kilometer stone**	***Nos***	35	16	33	**84**
18	**Hectometer stone**	***Nos***	170	82	166	**418**

2.8.3 W-Beam crash barrier

The W-Beam crash barrier details were explained and advised to follow IRC: 5 and IRC: SP: 73. W-Beam crash barrier ends the “tapered” details are advised to be replaced with crash attenuators type ends. The spacing of posts for the crash barrier shall be kept between 1800mm to 2000mm. the deflection space behind the crash barrier rails of around 800mm to 1000mm shall be ensured for proper function. Crash barriers have been provided where the height of embankment is more than 3m for 30m length on either side of the approaches of the bridge. Total 22.800 Km length (14.625 km in LHS and 8.175 km in RHS) have been identified in the project section for provision of W-Beam Metal Crash Barrier.

2.9 Road Side Amenities

For the batter development of passenger services 40 nos. bus bays are proposed as per IRC: 80-1981. The shelter structure will be structurally safe and functional so as to protect the waiting passengers adequately from sun, rain and wind. Locations of the Bus Bays / Shelter are given in **Table 2.35.**

Table 2.35: Proposed Locations of Bus Bays & Bus Shelters

S. No.	Location	Name of Village
1	146+425	Kot
2	151+177	Touni Devi
3	152+762	Bari Mandir
4	153+858	Jhanikar
5	154+418	Barara
6	155+147	Sapnehra
7	156+662	Panjot
8	157+882	Samirpur
9	158+985	Sangroh
10	160+846	Awah Devi
11	162+963	Cholthra
12	165+066	Kagaloo
13	166+610	Ropar
14	167+836	Jabrali
15	168+730	Rakoh
16	170+666	Morgalu
17	172+643	Tatoj
18	174+449	Sarkaghal
19	176+498	Jamsai
20	177+839	Parsada
21	179+999	Damshera
22	181+184	Parchoo
23	184+896	Hukal
24	188+286	Longni
25	190+062	Shivdwala
26	200+500	Baroti
27	207+000	Koti
28	220+214	Lagdhar
29	224+601	Roproo
30	228+043	Salater

31	232+988	Kotli
32	234+623	Saigaloo
33	235+675	Sai
34	236+545	Chaloh
35	237+407	Deonal
36	239+251	Sathol
37	240+163	Raprahal
38	241+841	Fatewahal
39	243+601	Depdjar
40	245+331	Talayar

2.9.1 Proposals for Truck Lay byes

Two-truck lay bye are proposed at km 173/639 near Sarkaghat and at km 193/062 near Dharampur. Truck Lay Bye shall be set out where sufficient suitable land shall be available.

2.9.2 Lighting

The Lighting requirements will be provided as per IS-1944 (1&2) and IS-1944 (V & VI) for intersections, bus stops, truck laybye, urban area and areas of civic Importance. The Lighting requirements shall be as per IS: 1944(1 & 2)-1970.

2.9.3 Landscaping and Arboriculture

IRC: SP: 21-2009 "Manual on Landscaping" shall guide the plantation of rows of trees with staggered pitch on either side of the road. The choice of the trees shall also be made as per the same code.

2.9.4 Toll Plaza

Two toll plaza are proposed and user facilities like dirking water facilities, toilets, first aid, emergency services etc. will be also provided at the location of toll plaza (existing km 119.230 and km 178.500).

CHAPTER –3: SOCIO-ECONOMIC PROFILE PROJECT AREA

3.1 Introduction

Himachal Pradesh is spread across valleys with many perennial rivers flowing through them. Almost 90% of the state's population lives in rural areas. Agriculture, horticulture, hydropower and tourism are important constituents of the state's economy. The hilly state is almost universally electrified with 99.5% of the households having electricity as of 2016. The state was declared India's second open- defecation -Free State in 2016. According to a survey of CMS – India Corruption Study 2017, Himachal Pradesh is India's least corrupt state.

Himachal Pradesh is one of the well literate states in India. Literacy rate among population age seven and above is 83% compared with 73% for India as a whole. The literacy rate is 91% for males and 77% for females. Notably the gender gap in literacy in state is not significant as compared to that of India. The total population of H.P. was 6,864,602 out of which 3,481,873 were males (50.72 %) and 3,382,729 (49.28%) were females as per 2011 census.

3.2 Project Road Status

A good road network helps in the success of all development activities, including movement of people, goods and also has effect on education, health, social welfare, cultural diversification and maintenance of the region. The roadside socio-economic condition is variable from rural developments to rural agricultural areas, semi-rural open areas with occasional roadside dwellings and small businesses scattered throughout the route. There is ribbon development at some locations along the road with small settlements. Majority of the project road passes through rural area with steep terrain. During Initial socio-economic assessment, the land use types are identified as follow:

Categories of Land Use

Category	Characteristics
Urban	Major town with buildings extending from the roadside to the larger adjacent area for a significant distance. Town like Kot, Tauni Devi, Awah Devi, Sarkaghat and Dharampur are covered in this category.
Built-up	Lower density of urban development; road side businesses alongside the roadway, primarily a ribbon development formed by continuous string of successive building units.
Rural with steep terrain	A rural environment with isolated individual houses, schools, businesses alongside to the roadway.

3.3 Socio- economic status of Project Influence Districts

Project Influence Area has been considered as the districts abutting the project roads where the impact of road improvements would be greater. The improvement of the project roads would also benefit the people and the economic activities that are located away from the abutting districts; such locations can be identified through O-D survey and other road user's survey. However, due to the closeness of the abutting districts from the project roads, these have been taken as part of the PIA. The Project Road passes through Hamirpur and Mandi districts of HP which have small tribal pockets but there is no significant impact on the tribal population in the proposed project road.

3.4.1 Hamirpur district

Hamirpur district is located in the south-western part of the state and constitutes a part of Central Himachal Pradesh micro region. Presently district has five tehsils viz. Hamirpur, Barsar, Bhoranj, Nadaun and Tira Sujanpur and two sub-tehsils of Dhatwal with headquarters at Bijhri and Galore. The district is divided into four Revenue Sub-divisions namely Hamirpur, Barsar, Nadaun and Bhoranj having their headquarters at the same place. The district has further been divided into six Development Blocks for the purpose of development such as Hamirpur, Bijhri, Bhoranj, Nadaun , Tira Sujanpur and Bamson. District Map of Hamirpur district is given in **Figure 3.1.**

Hamirpur district occupies the 1st position in terms of sex ratio among the districts of the state with 1,095 females against 1,000 males as compared to 972 females per 1,000 males of state average. Population density of this district is 407 persons per sq.km and stands at 1st position among the district of the state. Hamirpur district occupies 7th rank among the districts of the state in terms of literate population. This district is also known for its attractive tourist destinations. Hamirpur, Tira Sujanpur, Nadaun and Temple of Deothsidh Baba Balak Nath are the famous places of tourist interest in the district. Details of Socio-economic status of Hamirpur district are given in **Table 3.1.**

3.4.2 Mandi district

Mandi district is located in the micro-region of Central Himachal Pradesh covering the districts of Kangra, Hamirpur, Una, Mandi and Kullu Districts which falls in Himachal Pradesh Himalaya sub-region of the northern mountains region. This district is divided into seven sub-divisions of Mandi, Chachyot, Jogindarnagar, Padhar, Sarkaghat, Sundarnagar and Karsog and 17 tahsils/sub-tahsils. District Map of Mandi district is given in **Figure 3.2.**

Mandi is the second largest district in terms of population. It has 3rd rank in terms of sex-ratio in the state and 7th rank in terms of literacy among all the district of state. The literacy rate of this district is 81.5 per cent in comparison to state average of 82.8 per cent. Mandi Tahsil has the highest rural population while Sandhol sub-tahsil has lowest rural population in the district. Lad Bharol tahsil has the highest sex-ratio

while Bali Chowki sub-tahsil has the lowest sex-ratio in the district. Details of Socio- economic status of Mandi district are given in **Table 3.1.**

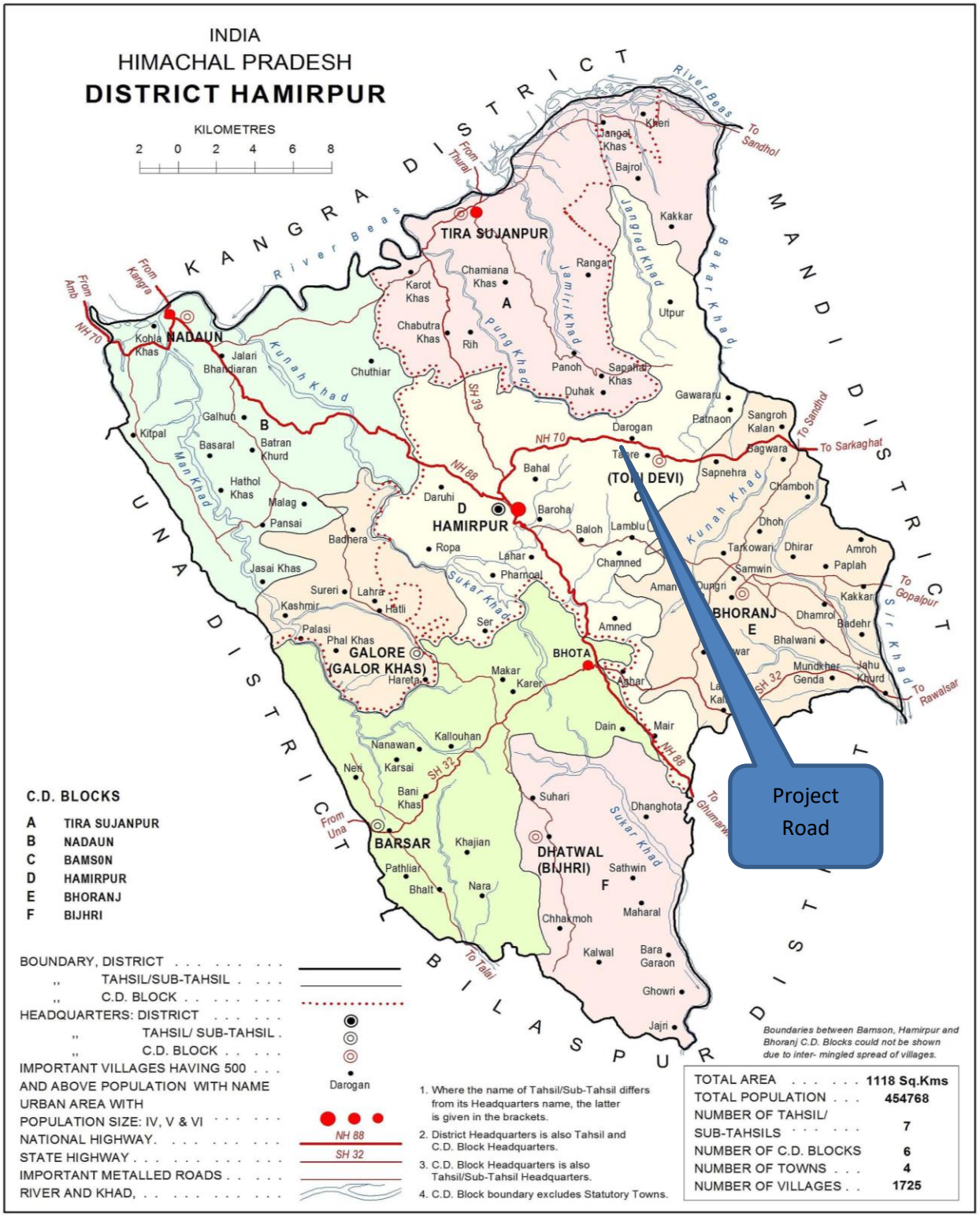


Figure 3.1: District Map of Hamirpur district

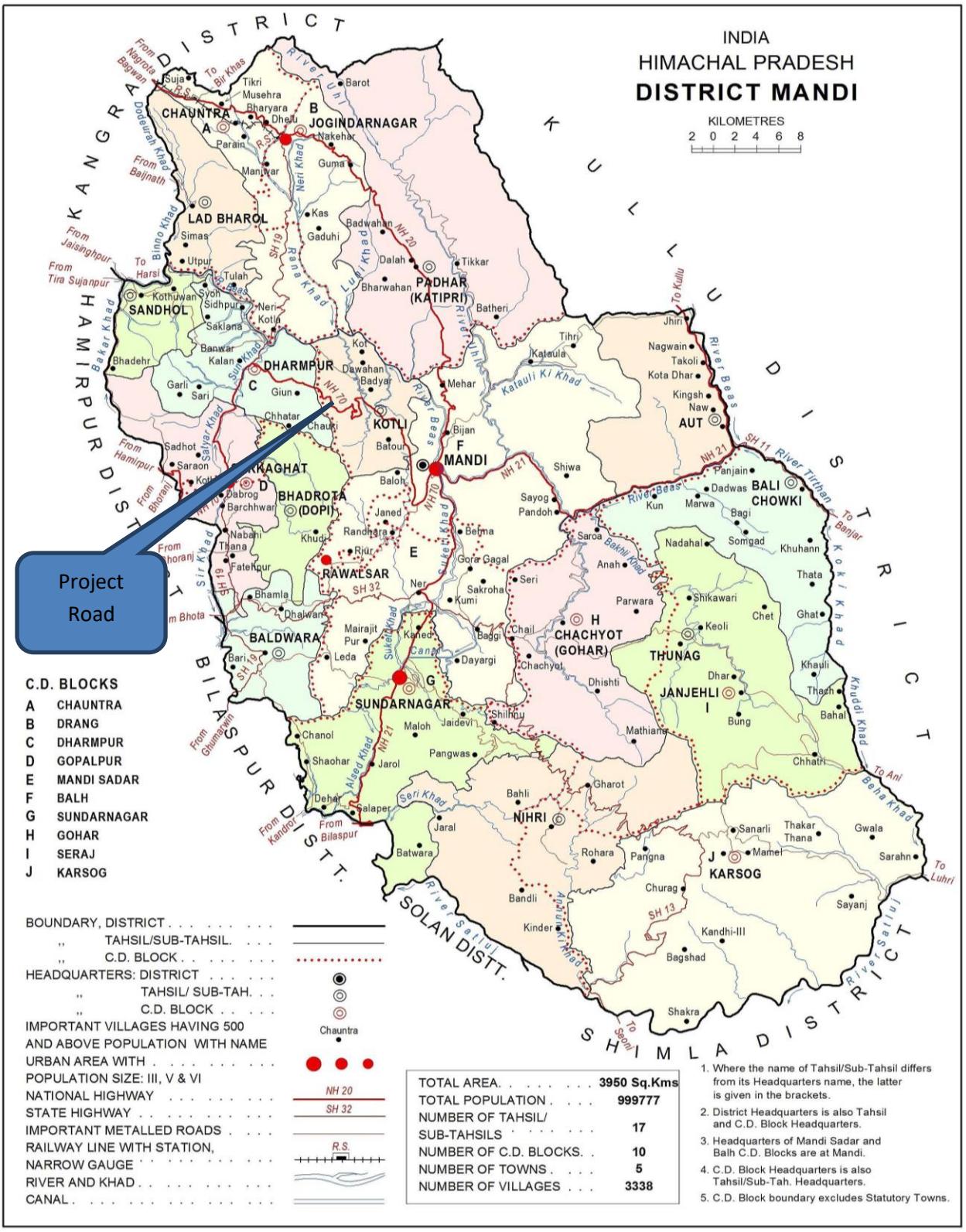


Figure 3.2: District Map of Mandi district

Table 3.2: Details of Socio- economic status of Hamirpur and Mandi districts

Demography Attributes	Population /Village or Town	Himachal State		Hamirpur District		Mandi District	
Number of Villages	Total	20,690		1,725		3,338	
	Inhabited	17,882		1,671		2,850	
	Uninhabited	2,808		54		488	
Number of Towns	Statutory	56		4		5	
	Census	3		-		-	
	Total	59		4		5	
Number of Households	Normal	1,479,208		105,391		218,765	
	Institutional	3,137		81		278	
	Houseless	935		47		102	
Population Total	Persons	6,864,602		454,768		999,777	
	Males	3,481,873		217,070		498,065	
	Females	3,382,729		237,698		501,712	
Rural	Persons	6,176,050		423,338		937,140	
	Males	3,110,345		200,748		466,050	
	Females	3,065,705		222,590		471,090	
Urban	Persons	688,552		31,430		62,637	
	Males	371,528		16,322		32,015	
	Females	317,024		15,108		30,622	
Sex Ratio (Number of females per 1000 males)	Total	972		1,095		1,007	
	Rural	986		1,109		1,011	
	Urban	853		926		956	
Percentage Urban Population		10.03		6.91		6.27	
Area (in sq Km.)		55673		1118.00		3950.00	
Density of Population (Persons per sq Km.)		123		407		253	
Decadal Population Growth 2001-2011		Number	%	Number	%	Number	%
	Persons	786,702	12.94	42,068	10.19	98,433	10.92
	Males	393,933	12.76	20,477	10.42	50,193	11.21
	Females	392,769	13.14	21,591	9.99	48,240	10.64
Literates	Persons	5,039,736	82.8	358,091	88.15	723,747	81.53

	Males	2,752,590	89.53	180,555	94.36	393,669	89.56
	Females	2,287,146	75.93	177,536	82.62	330,078	73.66
Scheduled Castes	Persons	1,729,252	25.19	109,256	24.02	293,739	29.38
	Males	876,300	25.17	53,727	24.75	147,250	29.56
	Females	852,952	25.21	55,529	23.36	146,489	29.20
Scheduled Tribes	Persons	392,126	5.71	3,044	0.67	12,787	1.28
	Males	196,118	5.63	1,531	0.71	6,345	1.27
	Females	196,008	5.79	1,513	0.64	6,442	1.28
Workers and Non-Workers							
Total Workers (Main and Marginal)	Persons	3,559,422	51.85	241,931	53.20	572,671	57.28
	Males	2,043,373	58.69	118,724	54.69	297,464	59.72
	Females	1,516,049	44.82	123,207	51.83	275,207	54.85
(i) Main Workers	Persons	2,062,501	30.05	126,153	27.74	284,154	28.42
	Males	1,438,989	41.33	75,390	34.73	185,609	37.27
	Females	623,512	18.43	50,763	21.36	98,545	19.64
(ii) Marginal Workers	Persons	1,496,921	21.81	115,778	25.46	288,517	28.86
	Males	604,384	17.36	43,334	19.96	111,855	22.46
	Females	892,537	26.39	72,444	30.48	176,662	35.21
Non-Workers	Persons	3,305,180	48.15	212,837	46.80	427,106	42.72
	Males	1,438,500	41.31	98,346	45.31	200,601	40.28
	Females	1,866,680	55.18	114,491	48.17	226,505	45.15
Category of Workers (Main & Marginal)							
(i) Cultivators	Persons	2,062,062	57.93	147,103	60.80	387,944	67.74
	Males	906,154	44.35	47,050	39.63	162,116	54.50
	Females	1,155,908	76.24	100,053	81.21	225,828	82.06
(ii)Agricultural Labourers	Persons	175,038	4.92	8,824	3.65	15,822	2.76
	Males	103,060	5.04	4,001	3.37	8,096	2.72
	Females	71,978	4.75	4,823	3.91	7,726	2.81
(iii)Workers in household industry	Persons	58,719	1.65	3,347	1.38	7,134	1.25
	Males	37,167	1.82	2,126	1.79	4,777	1.61
	Females	21,552	1.42	1,221	0.99	2,357	0.86
(iv) Other Workers	Persons	1,263,603	35.5	82,657	34.17	161,771	28.25

	Males	996,992	48.79	65,547	55.21	122,475	41.17
	Females	266,611	17.59	17,110	13.89	39,296	14.28
Source: District Census Book of Himachal Pradesh 2011.							

CHAPTER-4: LAND ACQUISITION, PROJECT IMPACTS AND INVENTOERY LOSSES

4.1 Introduction

This project will require 155.2223-hectare land for the proposed upgradation. Out of 155.2223 ha, 50.5164 ha land is under government possession, 59.7059 ha forest land and remaining approx. 45 hectare of land is under private ownership with impact on 3953 plots .

Socio-economic profile of the project affected households has been worked out on the basis of census & socio-economic survey conducted for affected structures only. The cut-off dates for census survey is 26th Oct., 2019. Provision shall be kept in the budget for those who were not found affected during the Census survey within cut-off date of 26th October, 2019 but might get affected later due to unavoidable project specifications. They will be addressed through additional/supplementary micro plans to be prepared by NGO/Authority Engineer during RAP implementation.

Census survey establishes that 1487 Nos. structures are getting affected which includes 1366 private structures and 121 CPRs. Out of total 1366 structure owners, only 1303 were available for survey. Thus, the socio-economic analysis given in this chapter includes information of only 1303 available households. The information of the remaining 63 families could not be collected due to non-availability of any member of the affected household during the socio-economic survey, hence shall be collected during RAP implementation by the RAP implementation agency / NGO.

4.2 Project Impact

4.2.1 Land Requirement and Acquisition

Land Availability

The existing road consists of single lane, intermediate and 2-lane. Based on detailed field verification with the help of revenue maps, it has been found that the land width in project section is varying between 5.4 to 20 m. The chainage wise existing ROW details collected from Revenue and PWD department is attached as **Annexure-2.1**.

In the proposed project, a total of 5602 plots will be affected. Out of 5602 plots, 3953 are private plots and remaining 1649 are govt. plots. Land is to be acquired for junction improvement, curve improvements, widening and for dumping purposes. In total 93 villages consisting of approximately 126015 population (where widening is proposed) are there along the road and 84 villages consisting of approximately 113820 population will be affected due to land acquisition. Item wise requirement of private land is given in **Table 4.1.**

Table 4.1: Item wise requirement of private land

Sr. No.	Particulars	Land Area (ha.)	Percentage
1	Road widening / curve improvements	43.68	97.07
3	Truck lay-by	1.32	2.93

Total	**45.00**	**100.00**

Source: *As per LA Plan (3D), 2020*

4.2.2 Impact on land

The project requires acquisition of approx. 45 ha of private land and the acquisition is being done as per the provisions of "The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013" and National Highway Act 1956. Other than private land, 50.5164 ha govt. land will be required for this project. Village wise details of affected private land is given in Table **4.2**.

Table 4.2: Details of village wise affected Private Land

S.No.	Package No.	Village	Area In Hect.
1.	**Package-I** (from Existing km 141 to km 184.758)	Droghan	2.3862
2.		Thana	0.5221
3.		Darkoti	0.3382
4.		Tapre	0.2459
5.		chahad	0.42
6.		Chaatrail	0.2669
7.		Bari	0.8851
8.		Jhanikar	0.8046
9.		Barada	0.4097
10.		Saphneda	0.5408
11.		Panjot	0.4895
12.		Lalyyar	0.1943
13.		Tikkari	0.0862
14.		Gughedi	0.0796
15.		Samirpur	0.5307
16.		Sangroh Kalan	1.6168
17.		Bagwada	0.9725
18.		Saron	0.8043
19.		Kothi	0.9885
20.		Ropad	0.54
21.		Dodar	0.1734
22.		Panyarwin	0.0927

23.		Kalot	0.2626
24.		Rakoh	0.4878
25.		Bhalwan	0.3061
26.		Tathih	0.2481
27.		Laka	0.0592
28.		Sarkaghat	0.0303
29.		Jamsai	0.0086
30.		Chowk	0.0961
31.		Sarouri	0.0031
32.		Alyana	0.0351
33.		Gadyara	0.047
34.		Parsada Hawani	0.0059
35.		Damshehra	0.1454
36.		Karnohal	0.0059
37.		Parchhu	0.0386
Sub Total of Pkg-1			**15.1678 ha**
38.	Package-II (from Existing km 184.758 to km 217.014)	Hukkal	0.749
39.		Khelag	0.7734
40.		Tryamla	0.1982
41.		Longni	0.5328
42.		Riyur	0.0886
43.		Kalwahan	1.7841
44.		Bhatour	0.5399
45.		Kumharda	2.715
46.		Sihan	0.8643
47.		Paihad	0.0309
48.		Riyur	0.8102
49.		Banal	3.0506
50.		Dharampur	0.0072
51.		Hawani	1.9223
52.		Thana	1.2504
53.		Lungran	0.1171

54.		Banerdhi	2.2998
55.		Jhareda	0.5302
Sub-Total of Pkg-II			**18.2640 ha**
56.	Package-III (from Existing km 217.014 to km 265.550)	Banog/1	0.0488
57.		Satahan/18	0.0914
58.		Dhawali Badehar/19	0.1007
59.		Lagadhar/16	0.0834
60.		Saploh/21	0.7358
61.		Surwari Uparli/22	0.3847
62.		Sain/21	0.2158
63.		Kushmal/24	0.171
64.		Dhaniyara/25	0.0807
65.		Balahar/26	0.453
66.		Fagla/77	0.5805
67.		Kotli/74	0.4118
68.		Kasan/17	0.1221
69.		Nalsan/71	0.1699
70.		Sai/52	0.3887
71.		Chaloh8/68	0.3464
72.		Satohal/64	0.4893
73.		Bohin/61	0.0056
74.		Paprahal/59	0.0442
75.		Chela/60	0.4844
76.		Fatewahan/358	0.4586
77.		Manthala/357	0.3322
78.		Maswadi/356	0.2947
79.		Ghera/354	0.1103
80.		Talyahad/360	0.87
81.		Madwahan/364	1.7162
82.		Sanyaradh/363	1.0354
83.		Chadyara/346	0.5613

84.		Maloun	0.3387
85.		Ludhiyana	0.4249
Sub-Total Pkg-III			**11.5505 ha**
Total of Pkg-I, II &III			**44.9823= Approx. 45 ha**
Source: *As per LA Plan (3D), 2020*			

4.2.3 Type of affected plots

In the private affected plots, 1527 are barren land plots with structures, 277 are barren land plots without structures, 84 are agriculture land plots with structures and remaining 2065 are agriculture land plots without structures. Package wise details of impacted plots are given in **Table 4.3.**

Table 4.3: Details of Affected Plots

S.No	Package Details	Affected Private Plots				Govt. Plots details	Package Wise Total Plots
		Barren Plots with Structure	Barren Land	Agricultural Land	Agricultural plots with Structures		
1	Pkg-I	177	645	744	43	597	2206
2	Pkg-II	9	290	740	12	352	1403
3	Pkg-III	91	592	581	29	700	1993
Sub Total		277	1527	2065	84	1649	5602

Source: 3 D notification, 2020

4.2.4 Extent of impact on land

Due to the land acquisition, some families will become landless or will be reduced to the status of a “small” or “marginal” farmer. Approx. 45 hector land is to be acquired for this project from 3953 plots. 470 families may be become landless or small” or marginal” farmer due to acquisition of their agriculture plots > 75 % or complete 100% area of their plots.

As per Entitlement Matric, all 470 displaced households and persons will be entitled to a combination of compensation packages and resettlement assistance. During implementation a detail training need assessment shall be carried out based on the level of education and/or skill sets of the household as nominated for skill training. After identifying the PAPs, those found eligible for Government welfare schemes (not yet taken benefit of the same) shall be facilitated and linked to the schemes and for others, local trainers, resource persons or training institutes shall be identified with the knowledge of PIU. Package wise details of landless or “small” or “marginal” farmer are given in **Table 4.4.**

Table 4.4: Package wise details of landless or “small” or “marginal” farmer

S.No	Farmer Status	Package-I	Package-2	Package-3	Total
1	landless or is reduced to the status of a "small" or "marginal" farmer,	164	148	158	470

4.2.5 Impacts on Structures

As per the Census survey, a total of 1487 structures are getting affected due to project activities with 1366 private structures (including 25 cattle sheds), and 121 CPRS. Out of 1366 affected private structure owners, 1215 are Titleholders and 151 are non-title holders. A total of 4799 people is getting affected due to structure demolition and this figure does not include the family members of 63 households who were not available during census survey. A total of 121 CPRs will be affected which include 24 religious structures like, Peepal tree temples, cemetery and temples, are 97 Government structure like school, colleges, police chouki, hospital, govt. offices, hand pump, bus stop etc. People were consulted relocation and reconstruction of the CPRs. The 12 schools getting affected are mostly losing the boundary wall, entrance gates and toilets of the schools with not much impact on the main building. Package wise details of impacted structures is given in **Table 4.5**.

Table 4.5: Impact of the project on affected structures

S.No.	Impact Category	Properties	Likely Impact			
			Total Impacted structures (including all packages)	Impacted in Pkg-1	Impacted in Pkg-2	Impacted in Pkg-3
A	**Private Structure**	Residential (including 25 cattle sheds)	533	332	97	105
		Commercial	410	281	28	100
		Residential+ Commercial	423	294	28	101
		Total (A)	**1366**	907	153	306
B	**Common Property Resources**					
B1	**Religious**	Temple	19	12	1	6
		Samsan Ghat (burial spots)	3	2	1	0
		Peepal Tree Temple (Shrine)	2	2	0	0
		Sub Total (B.1)	**24**	**16**	**2**	**6**
B2	**Government**	School	12	9	1	2
		Inter College	3	3	0	0

		Police Chouki	1	1	0	0
		Govt. Offices	18	13	2	3
		Govt Hospital	1	1	0	0
		Bus Shelter	19	13	2	4
		Public Toilet	2	1	0	1
		Pond/Bawadi	6	6	0	0
		Hand Pump	32	31	1	0
		Water Supply Tank	2	2	0	0
		Road Circle	1	1	0	0
		Sub Total (B.2)	**97**	**81**	**6**	**10**
		Total (B.1+B.2)	**121**	**97**	**8**	**16**

Source: Census Survey, October 2019

4.2.6 Typology of Structure

In this proposed project, total 1487 are to be impacted. Out of 1487 structures 1240 are permanent, 188 are semi-permanent and remaining 59 are temporary structures. **Table 4.6** gives the details of Impact on structures by typology.

Table 4.6: Details of Impact on structures by typology

Name of the Location (District) LHS	**Type of Construction**			**Sub Total**
	Permanent	**Semi-Permanent**	**Temporary**	
Pkg-I	830	140	36	1006
Pkg-II	130	14	15	159
Pkg-III	280	34	8	322
Total	**1240**	**188**	**59**	**1487**
Source; *Census Survey, Oct., 2019*				

4.2.7 Extent of Impact on Properties

In the Pkg-I, II and III total 586 structure are partially while 780 are full impacted. In the impacted structures fully impacted structures are more than partially impacted because in the hill region house are constructed on slopes so that majority of the partially impacted structures are unsafe and ultimately these structures will be demolished. Details of Extent of Impact on properties are given in **Table 4.7.**

Table 4.7: Type and Details of Partially Affected Properties

No. of Pkg.	**Residential**		**Commercial**		**Resi. Cum Com.**		**Sub Total**
	Partially Impacted	**Fully Impacted**	**Partially Impacted**	**Fully Impacted**	**Partially Impacted**	**Fully Impacted**	

Pkg-I	144	188	135	146	126	168	907
Pkg-II	31	66	5	23	8	20	153
Pkg-III	52	53	45	55	40	61	306
Total							**1366**

4.3.6 Status of ownership of impacted structures

Status of ownership of impacted structures is given in **Table 4.8.** It is found that out of all a total of 472 TH and 128 NTH are losing their livelihood due to loss of structure.

Table 4.8: Status of Ownership (Excluding 121 CPR)

Name of the Location (District) LHS	Status		
	Titleholder	Encroacher	Total
Pkg-I	768	139	907
Pkg-II	147	6	153
Pkg-III	300	6	306
Total	1215	151	1366
Source; *Census Survey, Oct., 2019*			

4.3 Socio Economic Profile of Project Affected Households

Census and Socio Economic Survey was conducted for only those households who are losing their structure due to proposed road widening and strengthening. As per the survey of affected structures, a total of 1366 households will be affected due to the proposed project, out of which information for 63 households could not be collected as they were not available during the survey. As per the Census survey, 1303 affected households consists of 4799 persons (family members of affected households) with an average family size of 4 members approx. Out of the 4799 PAPs, 51.8233% are male and 48.1767% are female. The socio-economic profile of the affected structures households is analyzed and presented in the following sections.

Out of 1303 project affected households 870 are in Package-I (from Existing km 141 to km 184.758), 147 are in Package –II (from Existing km 184.758 to km 217.014) and remaining 246 are in Package-III (from Existing km 217.014 to km 265.550).

In the 1303 surveyed families, majority belongs to Hindu population (>99%) followed by Muslim population of <1%. It is also found that majority of the families are joint families i.e, 63 % and remaining 37% are nuclear.

Out of 1303 PAFs surveyed, 1096 belongs to General Category, 19 to Other Backward Castes (OBC), 179 to SC and only 9 belongs to ST.

The social development of a region is signified by many indices. One of which is literacy status of the population. The literacy rate (read, write and understand) in the affected households is around 95.78%. As per the information collected during the census survey, it is found that maximum of 36.91% are educated upto higher secondary level and 4.37% have completed graduate and postgraduate respectively. The details are provided in **Table 4-9.**

Table 4-9: Socio-cultural characteristics of the affected households

Item	Description	Project Affected Household					Project Affected Person				
		No. of Affected Household (Whole Length)	**% of total (Whole Length)**	**Pkg-1** (from Existing km 141 to km 184.758)	**Pkg-2** (from Existing km 184.758 to km 217.014)	**Pkg-3** (from Existing km 217.014 to km 265.550)	**Number of Affected person**	**% of total**	**Pkg-1**	**Pkg-2**	**Pkg-3**
Population	Male	-	-	-	-	-	2487	51.82	1720	261	506
	Female	-	-	-	-	-	2312	48.18	1635	237	440
	Total	**-**	**-**	**-**	**-**	**-**	**4799**	**100**	**3355**	**498**	**946**
Religious Group	Hindu	1299	99.69	867	146	246	4752	99.02	3340	494	946
	Muslim	4	0.31	3	1	0	47	0.98	15	5	0
	Total	**1303**	**100**	**870**	**147**	**286**	**4799**	**100**	**3355**	**498**	**946**
Social Group	General	1096	84.11	712	127	257	4010	83.56	2803	416	790
	OBC	19	1.46	14	1	4	96	2.0	67	10	19
	SC	179	13.74	138	18	23	650	13.54	454	67	128
	ST	9	0.69	6	1	2	43	0.90	31	5	9
	Total	**1303**	**100**	**870**	**147**	**286**	**4799**	**100**	**3355**	**498**	**946**
Type of Family	Nuclear	482	37	322	54	106	NA	NA	NA	NA	NA
	Joint	821	63	548	93	180	NA	NA	NA	NA	NA
	Total	**1303**	**100**	**870**	**147**	**286**					
Education level of HH	Illiterate	253	5.27	37	6	12	252	5.28	177	27	50
	Primary Schooling	433	9.02	158	27	52	430	9.02	303	45	85
	Upper Primary Schooling	858	17.88	221	37	73	852	17.87	600	89	170
	High School	1950	40.63	321	54	105	1938	40.64	1363	202	383
	Graduate	809	16.86	90	15	30	804	16.86	566	84	159
	Post Graduate	403	8.40	38	6	12	400	8.39	281	42	79

	Technical	93	1.94	5	2	2	93	1.95	65	9	20
	Total	**4799**	**100**	870	147	286	**4799**	**100**	**3355**	**498**	**946**
Note: Total impacted household are 1366 and out 1366, 63 household were not available at site so they could not be included in this Census survey and only 1303 house hold are included in this survey.											
Source: *Census Survey, October 2019*											

4.4 Economic Profile

The occupation pattern shows that primarily structure owners are engaged in Business sector comprising of 37.22% of the total available PAHs (1303 nos.). This is followed by 5.14% are cultivator, 8.60% are agriculture labour, 9.21% are Daily Wage Earner, 22.64% are Salaried persons, and 17.19% are engaged in other professions.

Details of the occupation of the project affected families whose structure will be impacted, are given in **Table 4-10.** The level of household income among the HHs within the RoW illustrate that an overwhelming majority of 40.22 %, have an income level between 10000-15000 per month followed by 15% of HHs earning 5000-10000 per month, 29.99 % of HHs earning 15000-20000 per month and 10.02 % of HHs earning more than 20000 per month. The proposed improvement will considerably reduce the travel time between the Hamirpur-Mandi. This will facilitate growth of more economic activities, access to better economic prospect outside the area and hence increase of income opportunities.

Table 4-10: Occupational pattern and income profile of affected households

Item	Description	Number of HHs	% of total
Occupation of HHs	Cultivator-1:	67	5.14
	Agricultural Labour	112	8.60
	Daily Wage Earner	120	9.21
	Salaried	295	22.64
	Business	485	37.22
	Other	224	17.19
	Total	**1303**	**100**
Family Monthly Income	>5000	65	4.99
	5001-10000	196	15.04
	10001-15000	521	39.98
	15001-20000	391	30.01
	<20000	130	9.98
	Total	**1303**	**100**
Source: Census Survey, October 2019			

4.5 Vulnerable Group

Vulnerable families constitute that percentage of the population which is denied the opportunity to fully explore and utilize its abilities and thus enjoy a quality of life. These people are left behind in today's advancing economy and need special attention and care. Thus, below poverty line (BPL), women headed household (WHH), schedule caste (SC), schedule tribes (ST), Divyang (disabled) are considered in vulnerable groups.

As regards vulnerability among PAFs, out of 1303 PAH's, 426 belongs to vulnerable category which include 173 women headed households, 179 families Scheduled Castes, 9 Scheduled Tribes and 65 families belonging below the line of poverty (BPL). The details of the vulnerable category are given in **Table 4-11.**

Table 4-11: Vulnerable Category along the Road

Type of vulnerable groups	**Number for Total Length**	**% of Total impacted Families**	**Number for Pkg-I** (from Existing km 141 to km 184.758)	**Number for Pkg-II(**from Existing km 184.758 to km 217.014)	**Number for Pkg-III**(from Existing km 217.014 to km 265.550)
Woman Household	173	40.61	144	13	16
SC	179	41.02	138	18	23
ST	9	2.11	6	1	2
BPL	65	15.26	30	20	15
Total	**426**	**100.00**	**318**	**52**	**56**
Source; Census Survey, October 2019					

4.6 Conclusion

The census survey analysis of the project affected persons reveals their dependency on the project corridor. This dependency is either in the form of place for residence, for livelihood generation or for transportation. Livelihood Restoration Plan (LRP) shall be worked out during implementation through a detail training need assessment which will be based on the level of education and/or skill sets / preferences of the PAPs. After identifying the PAPs, those found eligible for Government welfare schemes shall be facilitated and linked to the schemes and for others, local trainers, resource persons or training institutes shall be identified with the knowledge of PIU.

Affected people shall be consulted at every stage of the project planning and implementation. Their worries and suggestions shall be taken into account and the negative impacts shall be mitigated. The social impact management measures shall be implemented during the various stages of the project viz. Pre-construction Stage, Construction Stage and Operational Stage. During the Census surveys and public meetings, it was observed that majority of owners of commercial and residential structures in congested market areas have demands for realignments or bypasses. As per the available space, land availability and geometry various realignments have been proposed to reduce the impacts upon houses and live hood. Project Affected households have given views to take minimum land for this road projects, and demands of cash compensation for of impacted structures and acquired land.

CHAPTER-5: RESETTLEMENT POLICY, FRAMEWORK AND ENTITLEMENT MATRIX

5.1 Introduction

This chapter of the report discusses about the existing law and regulations of the country and state those are applicable to the proposed project. It is imperative to analyze the Acts and bylaws to understand the legalities and procedures in implementing project and identifying the gaps and area where there is a need for strengthening to comply with the World Bank policy on resettlement and rehabilitation of project affected persons.

The aim of the project is to establish and provide better connectivity of various existing National Highways in the country. Most of the infrastructure work planned for this Green National Highway Corridor project will take place within the existing Right of Way (RoW) except at some of the congested villages/settlements where Curve improvements proposed and at locations where minor improvements are required for accommodating road safety measures.

5.2 Applicable Legal and Policy Framework

This chapter discusses about the existing law and regulations of the country those are applicable to the proposed road project. It is very important to analyze the Acts and Policies to understand the legalities and procedures in implementing project and to identify the gaps and area where there is a need for strengthening to comply with guidelines for Environmental and Social Consideration of project affected people. Therefore, the legal framework in which the proposed road project will be implemented with respect to social issues for environmental and social consideration has been summarized in this chapter. The applicable laws on land acquisition, rehabilitation and resettlement for the proposed road project are:

TABLE 5.1: APPLICABLE LEGAL AND POLICY FRAMEWORK

S. No.	Acts, Notifications and policies	Relevance to this Project	Applicability
1.	**RTFCTLARR Act, 2013**	Land required, R&R for the project shall be acquired and provided as per the provision of this Act.	Applicable via Himachal Pradesh Relevant Rules
2	**The Provisions of the Panchayat (Extension to the scheduled Areas) Act, 1996**	One of the important provisions of this act states "the Gram Sabha or Panchayat" at the appropriate level shall be consulted before making the acquisition of land.	Applicable
3	**World Bank OP 4.12Involuntary Resettlement**	The project entails land acquisition though, at a low scale for widening, curve improvements, junction improvements etc. It would also adversely affect	Applicable

		structures used for various purposes, livelihood of people) mainly earning their livelihood by means of petty shops, and providing various services). Many of them have been operating from the government land. Thus, both title holders and non-title holders alike would be affected as a consequence of the project.	
4	**National Highways Act, 1956**	Land acquired for the project shall be acquired as per the provision of this act.	Applicable
5	**The Right to Information Act, 2005**	The Act provides for setting out the practical regime of right to information for citizens to secure access to information under the control of public authorities, in order to promote transparency and accountability in the working of every public authority, the constitution of a central Information Commission and State Information Commissions and for matters connected therewith or incidental thereto.	Applicable

5.3 Comparative analysis of applicable policy

For the purpose of development, maintenance and management of national highways, a special law, the National Highways Act (NH Act), 1956 has been promulgated in India. This act provides for acquiring land through a "competent authority", which means any person or authority authorized by the Central Government by notification in the official Gazette to perform functions of the competent authority for such areas as may be specified in the notifications.

National Policy specifies that the compensation award shall be declared well in time before displacement of the affected families. Full payment of compensation (section 3H under NH Act) as well as adequate progress in resettlement shall be ensured in advance of the actual displacement of the affected families. National and State policy also requires that the compensation and assistance to PAPs (other than capacity building support for livelihood restoration) be provided prior to any displacement or start of civil works.

Both the National Policy and the Himachal Pradesh Land Acquisition Act on rehabilitation and resettlement aim to see that involuntary resettlement should be avoided or minimized, wherever feasible, exploring all viable alternative project designs, and where displacement is unavoidable, people losing assets, livelihood or other resources shall be assisted in improving or at a minimum regaining their former status of living at no cost to themselves.

Also, Central and State policy requires consultation with PAPs during planning and implementation of resettlement action plan and public disclosure of drafts. Once the draft is prepared it is to be made available at a place accessible to, and in a form, manner and language understandable to the displaced or affected

people and local NGOs. RTFCTLARR Act, 2013, also requires disclosure of draft SIA, RAP and other project reports followed by Public Hearing as per project requirement. Based on the detailed comparative analysis of the above discussed applicable legal and policy framework, key differences identified between these policies which needs to be addressed under the Resettlement Policy Framework (RPF) is listed below:

5.4 Resettlement Policy Framework

The RPF for the GNHCP has been prepared based on the findings of Social Survey Report (SSR) covering initial impact assessment and review of applicable legal and policy framework discussed above.

In order to address the adverse impacts of land acquisition and involuntary resettlement, MoRTH, Govt. of India recognised the need for the development of Resettlement Policy Framework. Review of Social Screening Reports (SSRs) reveal that applicable legal and administrative procedures vary from State to State and also there are gaps between Resettlement and Rehabilitation Policies of the country and certain states and the Bank's Resettlement Policy. Hence, there is a need to understand the critical elements of the existing legal and policy framework and agree on a mechanism that will address the key social issues and formulate a specific policy framework for the project to bridge the major gaps to conform to the provisions of World Bank's operational policies related to Involuntary Resettlement. This policy framework will help expedite the process and facilitate consistent preparation of RAPs across all project roads in different states.

The purpose of preparing a RPF is to:

a) Bring commonality in resettlement and rehabilitation benefits under the project.

b) Bridge the gap between Bank's policy on Involuntary Resettlement and LARR, 2013.

c) Bring together and built upon the current good practices in terms of procedures to address more systematic and institutional issues.

d) Establish institutional arrangements at project, state and central level (MoRTH) for the implementation of RAP.

e) Establish mechanism for Redressal of grievances; and monitoring and evaluation, etc.

5.4.1 Definitions

Various definitions of resettlement policy framework items such as agricultural labourers, agricultural land, below poverty line (BPL) or BPL family, corridor of impact (COI), cut-off date, encroacher, entitled person (EP), holding, kiosk, land acquisition, landowner, marginal farmer, non-agricultural labourer, non-titleholder, notification, occupier, project affected area, project affected family, project affected person (PAP), project displaced person (PDP), project affected household (PAH), replacement cost, small farmer, squatter, tenant, titleholder, vulnerable group, wage earner etc. are given **Annexure 5.1.**

5.5 Resettlement principles and Eligibility Criteria

Based on the above analysis of government provisions and requirements as per World Bank IR policy the broad resettlement principle for this project shall be the following:

- Proposed highway improvement and strengthening work will take place mostly on the existing alignment and within the available RoW or at locations where curve improvement is necessary to incorporate required safety measures;
- The involuntary resettlement and adverse impacts on persons affected by the project would be avoided or minimized as much as possible exploring viable options;
- Where it is not feasible to avoid resettlement, resettlement activities should be conceived and executed as sustainable development programs, providing sufficient investment resources to enable the persons displaced by the project to share in project benefits;
- Efforts should be made to improve their livelihoods and standards of living or at least to restore them, in real terms, to pre-displacement levels or to levels prevailing prior to the beginning of project implementation, whichever is higher;
- Displaced persons should be meaningfully consulted and should have opportunities to participate in planning and implementing resettlement programs;
- Replacement land shall be an option for compensation in the case of loss of land. In case of unavailability of replacement land, cash-for-land with compensation on replacement cost option will be made available to the PAPs;
- Compensation for loss of land, structures and other assets will be based on full replacement cost and will be paid before physical displacement of PAPs including transaction costs;
- In the event of necessary relocation, PAPs shall be assisted to integrate into host communities;
- All land acquisition for the project would be done as per the National Highways Act, 1956. Additional assistance would be provided to the PAPs for meeting the replacement cost of the property;
- The un-economic residual land remaining after land acquisition will be acquired by the project. The owner of such land/property will have the option to seek acquisition of his entire contiguous holding/ property provided the residual land is less than the average land holding of the district;
- Any structure/asset rendered unviable/unsafe because of the project shall also be considered as affected and entitlements shall be extended accordingly;
- The affected persons who does not own land or other properties, but have economic interests or lose their livelihoods will be assisted as per the policy principles described in this document;
- Cut-off date for titleholders will be the date of publication of notification under Section 3A of the National Highways Act, 1956. For non-titleholders who has not any legal holding of the occupied

land such as squatters and encroachers the date of project **census survey** or a similar designated date declared by the executing agency will be considered as **cut-off date**;

- An entitlement matrix for different categories of people affected by the project has been prepared and provisions will be kept in the budget for those who were not present at the time of census survey. However, people moving in the project area after the cut-off date will not be entitled to any compensation or assistance;
- Vulnerable groups (PAPs below poverty line (BPL), the landless, disabled, elderly persons, women and children, indigenous peoples) will be identified and given additional support and assistance under the project;
- All common property resources (CPR) lost due to the project will be reconstructed or compensated by the project;
- Information related to the preparation and implementation of resettlement plan will be disclosed to all stakeholders and people's participation will be ensured in planning and implementation;
- Appropriate grievance Redressal mechanism will be established at sub-project, state and central levels to ensure speedy resolution of disputes;
- An effective monitoring and evaluation mechanism will be established to ensure consistent implementation of resettlement activities planned under the project including third party monitoring.

5.6 Entitlement Matrix

All persons affected by the project and meeting the cut-off date requirements will be entitled to a combination of compensation packages and resettlement assistance depending on the nature of ownership rights on lost assets and scope of the impacts:

a. Compensation for the loss of land, crops/trees at their replacement cost;
b. Compensation for structures (residential/ commercial) and other immovable assets at their replacement cost;
c. Assistance in lieu of the loss of business/ wage income and income restoration assistance;
d. Assistance for shifting and provision for the relocation site (if required), and
e. Rebuilding and/ or restoration of community resources/facilities
f. Additional Support to Vulnerable Families

An **Entitlement Matrix,** delineated in **Table 5.2** has been developed to summarize entitlements.

Table 5.2**:** Entitlement Matrix (All awards below shall be exempt from income tax, stamp duty and fees)

. **Sl. No.**	**Impact**	**Entitled Unit**	**Entitlement Details**
A.Loss of Private Agricultural, Home-Stead & Commercial Land			
1	Loss of Land (agricultural, homestead, commercial or otherwise) within the Corridor of Impact (COI)	Titleholder/owner/families with traditional land right/occupiers	For all land acquired under NH Act; Compensation/lease amount shall be calculated and payable in accordance with Sections 26 to 30 and Schedule I of RFCTLARR Act 2013 i. **Partial Impact on Land:** In case only part of any land plot is affected, and its owner desires the whole plot be acquired on grounds that the plot has become uneconomic or has been severed due to LA (under Section 94 and Note C), the competent authority can award compensation for remaining part of the plot or award 25% of actual value upto of the remaining land holding as additional compensation, allowing the owner to retain the remaining land plot, if agreeable. For all land acquired under NH Act; or direct purchase or acquisition of missing land parcels/plot (MoRT&H circular date 28th December, 2017), Rehabilitation and Resettlement Assistance shall be as follows (Schedule II of Act 2013): ii. If as a result of land acquisition, the land owner becomes landless or is reduced to the status of a “small” or “marginal” farmer, assistance amount of Rs. 6 lakhs OR Annuity policies that shall pay not less than two thousand rupees per month for each affected land owner for twenty years with appropriate indexation to the Consumer Price Index for Agricultural Labourers. iii. Each land owner shall be given a one-time "Resettlement Allowance" of Rs. 60,000/- only.

. **Sl. No.**	**Impact**	**Entitled Unit**	**Entitlement Details**
			iv. Refund of stamp duty and registration charges incurred for replacement land to be paid by the project; replacement land must be bought within a year from the date of payment of compensation to project affected persons
B.Loss of Private Structures (Residential/Commercial)			
2	Structure within the Corridor of Impact (CoI)	Title Holder/ Owner	i. Compensation in accordance with Sections 26 to 30 and Schedule I of RFCTLARR Act 2013 ii. Right to salvage material from affected structures iii. Three months advance notice to vacate structure iv. For those losing cattle shed, a one-time assistance of Rs. 28,000/- would be payable v. For each affected family of an artisan or self-employed or own non-agricultural land, that is displaced and must relocate, a one-time assistance of Rs. 28,000/- would be payable; and vi. One-time subsistence grant of Rs. 40,000/- for each displaced family who are displaced and require to relocate; vii. One-time financial assistance of Rs. 60,000/- for each affected family towards shifting/transportation cost for shifting of the family, building materials, belongings and cattle viii. Refund of stamp duty and registration charges for purchase of new alternative houses/shops at prevailing rates on the market value as determined. Alternative houses/shops must be bought within a year from the date of payment of compensation ix. For a house lost, a constructed house shall be provided as per the Indira Awas Yojana

. **Sl. No.**	**Impact**	**Entitled Unit**	**Entitlement Details**
			Specifications or equivalent cost of the constructed house in lieu, shall be payable. x. In case of partial impact, 25% additional award to be paid on compensation award for the affected part of the structure to enable damage repair where the owner/occupier of his/her own will, interested to retain the remaining part of the structure, provided the unimpaired continuous use of the such structure is possible without hazards.
3	Structure within the Corridor of Impact (CoI)	Tenants/ Lease Holders	i. Registered lessees will be entitled to an apportionment of the compensation payable to structure owner as per applicable local laws. ii. One-time financial assistance of Rs. 60,000/- as transportation. iii. Three months' notice to vacate structures.
C. Loss of Trees and Crops			
4	Standing Trees, Crops within the Corridor of Impact (CoI)	Owners and beneficiaries (Registered/ Un-registered tenants, contract cultivators, leaseholders & sharecroppers	i. Cash compensation as estimated under Section 29(3) of Act to be paid at the rate estimated by: • The Forest Department for timber trees • The State Agriculture Extension Department for crops • The Horticulture Department for fruit/flower bearing trees. ii. Three months advance notice to project affected persons to harvest fruits, standing crops and removal of trees, or compensation in lieu as determined above. Registered tenants, contract cultivators & leaseholders & sharecroppers will be eligible for compensation for trees and crops as per the agreement document between the owner and the beneficiaries.

. **Sl. No.**	**Impact**	**Entitled Unit**	**Entitlement Details**
			Un-registered tenants, contract cultivators, leaseholders & sharecroppers will be eligible for compensation for trees and crops as per mutual understanding between the owner and the beneficiaries.
D. Loss of Residential/ Commercial Structures to Non-Title Holders			
5	Structures within the Corridor of Impact (CoI) or Govt. land	Owners of Structures or Occupants of structures (Encroachers, Squatters) identified as per Project Census Survey	**For loss of House** i. Compensation at PWD BSR without depreciation for structure ii. One-time resettlement cost of Rs. 28,000 /- iii. Shifting/transportation assistance of Rs. 60,000/- iv. Encroachers shall be given three months' notice to vacate occupied land or cash assistance at replacement cost for loss of structures. v. Right to salvage the affected materials **For loss of shop** i. Compensation at PWD BSR without depreciation for structure ii. One-time subsistence grant of Rs. 40, 000/- iii. Onetime rehabilitation grant of Rs. 28,000/- iv. Shifting/transportation assistance of Rs. 60,000/- v. Encroachers shall be given three months' notice to vacate occupied land or cash assistance at replacement cost for loss of structures. vi. Right to salvage the affected materials
6	Loss of employment in non-agricultural activities or daily agricultural	Livelihood loser	Subsistence allowance equivalent to Minimum Wages/Minimum Agricultural Wages[1] for 3 months Only agricultural labourers who are in fulltime / permanent employment of the landowner, or those affected full time employees of the business, will be eligible for this assistance.

[1] As per rates issued by Department of Labor, Government of project state for different skills and trades

. **Sl. No.**	**Impact**	**Entitled Unit**	**Entitlement Details**
	wages or other wage workers		*Seasonal agricultural labourers will not be entitled for this assistance.*
F. Additional Support to Vulnerable Group			
7	Families within the Corridor of Impact (CoI)	Vulnerable affected families	i. One-time Resettlement Allowance of Rs. 60,000/- ii. Training for skill development. This assistance includes cost of training and financial assistance for travel/conveyance and food. iii. Additional Subsistence Grant of Rs. 60,000/- for displaced families belonging to **Scheduled Caste and tribe Category** iv. Displaced vulnerable households will be linked to the government welfare schemes, if found eligible and not having availed the scheme benefit till date. v.
G. Loss of Community Infrastructure/Common Property Resources			
8	Structures & other resources (e.g. land, water, access to structures etc.) within the Corridor of Impact (CoI)	Affected communities and groups	Reconstruction of community structure and common property resources, will be done in consultation with community
H. Temporary Impact During Construction			
9	Land and assets temporarily impacted during construction	Owners of land and assets	i. Compensation for temporary impact during conversion e.g. diversion of normal traffic, damage to adjacent parcel of land/assets (crops, trees, structures, etc.) due to movement of heavy machinery and plant site ii. Contractor shall bear the cost of compensation of any impact on structure or land due to movement of machinery during

. **Sl. No.**	**Impact**	**Entitled Unit**	**Entitlement Details**
			construction or establishment of construction plant. iii. All temporary use of land outside ROW, would be done based on written approval/ prior approval landowner and contractor

CHAPTER-6: PUBLIC INFORMATION AND CONSULTATIONS

6.1 Background

Public consultation is a continuous process throughout the project period-project preparation, implementation, monitoring and evaluation stages. The sustainability of any infrastructure development project depends on the participatory planning in which public consultation plays major role. To ensure peoples 'participation in the planning phase of this project and to treat public consultation and participation as a continuous two way process, numerous events were arranged at various stages of project preparation. Aiming at promotion of public understanding and fruitful solutions of developmental problems such as local needs and problem and prospects of resettlement, various stakeholders i.e., displaced persons, government officials, local community leaders, people and elected representatives of the people are consulted through community meetings, focus group discussions, individual interviews and formal consultations. The project will therefore ensure that the displaced population and other stakeholders are informed, consulted, and allowed to participate actively in the development process.

Keeping in mind the significance of consultation and participation of the people likely to be affected or displaced due to the proposed project, public consultation has been taken up as an integral part of social and environmental assessment process. Consultation was used as a tool to inform and educate stakeholders about the proposed action both before and after the development decisions were made. It assisted in identification of the problems associated with the project as well as the needs of the population likely to be affected. This participatory process helped in reducing the public resistance to change and enabled the participation of the local people in the decision making process. Initial public consultation has been carried out in the project areas with the objectives of minimizing probable adverse impacts of the project and to achieve speedy implementation of the project through generating awareness among the community about the benefits of the project.

6.2 Consultation and Participation

Consultation with PAPs is the starting point to address involuntary resettlement issues concerning land acquisition and resettlement. People affected by resettlement may be apprehensive that they will lose their livelihoods and communities. Participation in planning and managing resettlement helps to reduce their fears and gives PAP's an opportunity to participate in key decisions that affect their lives. The initial step for consultation and participation is to identify the primary and secondary stakeholders and sharing information about the proposed road project with the local and affected people.

Public information and consultation was carried out during the project preparation stage in the form of public meeting, Focus Group Discussion (FGD), in-depth interviews and individual consultations. The consultation process ensured that the likely project affected persons (PAPs), local community and other stakeholders were informed in advance to participate and consult actively. This serves to reduce the

insecurity among local community and likely PAPs opposition for the project because of transparency in the consultation process. The purpose of consultations was to inform people about the project, their issues, concerns and preferences, and allow them to make meaningful choices. Consultations will also be carried out during the implementation, monitoring and evaluation stage. Concerns, views and suggestions expressed by the participants during these consultations have been presented in the following sections. The outcomes of consultations have been shared with design team to incorporate in design wherever possible.

6.3 Objectives of the Consultation

The main objective of the consultation process is to inform the PAPs about the anticipated benefits, negative impacts and mitigation measures of the project. The objectives of public consultation as part of this proposed road project are:

- Disseminate information to the people about the project in terms of its activities and scope of work; and understand the views and perceptions of the people affected and local communities with reference to land acquisition or loss of property and its due compensation.
- Understand views of affected people on land acquisition and resettlement options and generate idea regarding the expected demand of the affected people;
- Identify contentious local issues which might jeopardize the implementation of the project;
- Identify and assess major economic and social information and characteristics of the project area to enable effective social and resettlement planning and its implementation.
- Resolve issues related to impacts on community property and their relocation.
- Establish transparent procedures for carrying out proposed works;
- Create accountability and sense of local ownership during project implementation;
- Establish an understanding for identification of overall developmental goals and benefits of the project.

6.4 Tools for Consultation

During preparation of SIA and RAP preliminary public consultations and discussions were conducted by study team with the help PIU officials through community meetings with PAPs as well as general public and group discussions at particularly Project Affected Areas (PAAs).

The following methods were adopted for conducting public consultation:

- Walk-through informal group consultation at project affected areas.
- Public meetings
- Focus Group Discussions (FGD) with different groups of affected people including residential and traders.
- In-depth individual interviews
- Discussions and interviews with key informants
- Sharing the opinion and preferences of the PAPs

6.5 Level of Consultations

At preliminary stage of SIA, public consultations were conducted at different levels namely individual, group, community, and institutional level. Types of consultations done with various participants using different tools including, interviews with government officials, individual consultations, key informant interviews, focus group discussion, stakeholder consultations, etc, are presented in **Table 6.1**.

Table 6.1: Level and Type of Consultation

Level	Type	Key Participants
Individual	Door to Door personal contact during census survey.	People along the project corridor including those that are impacted directly or indirectly
Individual	Local level consultation	People along the project corridor
Settlement	Focus Group Discussion with local women , Community meeting	PAPs, Women, Local leader, Small Business Entrepreneurs(SBEs)Kiosks etc.
Institutional	Stakeholder discussion	Revenue dept., horticulture dept., forest department, agriculture dept., tourism dept. etc.

6.6 Consultation at Project Affected Area

Public consultation meetings were organized at 05 places namely Kotli, Padchu, Sarkhaghat, Tauni Devi and Awah Devi. The details of consultation in project affected area are given in **Table 6.2**.Simultaneously stakeholder consultation was conducted various govt. dept. and unions. Summary of stakeholder consultations is given in **Table 6.3** and detail is provided in **Annexure 6.1.**

Major Recommendation and Outcomes of Public Consultations

In the public consultation at Awah Devi, Kotli, Padchhu, Tauni Devi, Sarkaghat local public suggested that:

- Every affected religious property (partially or fully) should be modified/ relocated and enhanced properly prior to the commencement of work;
- Compensation rates should be as par at market rates;
- Proposed road may be concern for safety measures specially for women and children;
- Pedestrian and cattle passing should be provided at every habitations;
- Additional assistance for employment/ income restoration for locals;
- Cross drainage should also be provided; and
- More consultations should be conducted during project implementation phase and public participation in the project also;

Major Recommendation and Outcomes of Public Consultations

- In future, transportation of agriculture based material/produce transportation will be increase resulting in vehicle load therefore pavement should be good.
- Vehicle crossing/ passing spots should be developed.
- Provision for rest areas.
- Ornamental plants, Soil binder plants & grass species and shadow tree species should be preferred in compensatory plantation through project.
- Present and future traffic composition and related traffic load data should used for highway designing.
- Land acquisition for the proposed project should be as per requirement and Government guidelines will be followed.
- Availability of labour in nearby villages should be preferred for construction work of proposed road.
- It would also benefits to the owner and transporter as it will minimize the operating cost of the vehicles.

Table 6.2: Summary of Public Consultation

S No.	Date	Place	Issue Raised	Resolution	No of Participants and Photo
1.	**20.09.2018**	**Kotli**	• It was suggested that as this road is through middle of the main market so utmost care should be taken during construction of works. • Speed breakers and installation of solar lights must be proposed in the project proposal. • Public facilities should be developed under project	• Utmost care with safety during construction works and to deal with any arising issue regular consultation with stakeholders will be practiced. • Speed breakers will be built as per IRC guidelines. • Solar lights at require places will be installed as per IRC guidelines.	No of Participants: 22  

2.	**21.09.2018**	**Padchu**	• Gram Pradhan of the village ***Mr Kamlesh Kumar*** suggested that a public ground which is available nearby village can be used as dumping place for debris during construction phase and after construction phase is over it should be leveled and as per requirement such as playing ground, public /individual function or helipad in emergency. • Play ground of G S Sec School, ***Sajao, Peeplu*** can also be used as dumping place and after leveling it can be used by school children as playground. • A downstream check dam can be developed in nearby *Nala* of village which overflows during rainy season and stored water can be used for agricultural purpose • Barbed wire fencing which is done by *Gram Panchayat* earlierif necessary can be removed and should be fixed at suitable place with village consultation	• The suggestion was also overwhelmed by the present participants at the meeting. It also feels feasible but will be done after technical and environment clearance and if possible can be linked with MNREGA programme. • Technical advice will be asked before selecting the site and if feasible can be done as part of corporate social responsibility (CSR). • It was again a good suggestion as this could be a solution to landslides and to deal with water scarcity in harvesting season. The idea will be put before technical team and only after then it will be finalized with consultation with nearby residents and village community. For better proposal prospect it will be forwarded to Forest, Irrigation and District Development Office. If	No of Participants: 18 nos.

				found feasible can also be covered under ESR. • Feasible and should be done.	 

					
3.	**21.09.2018**	**Sarkaghat**	• Compensation on market rate should be given to every Residential/ Commercial owner of affected person • If possible bypass should be proposed in ***Sarkaghat*** which linked other roads of the area as well, • A site available at ***Kangoglu,Tuddy*** and near ***Veterinary hospital*** can be used as dumping zone during construction phase and after completion and leveling it can be used as playground or Helipad, • Public facilities should be developed during construction	• Procedures would be followed as per Government and multilateral funding agencies guidelines. • This suggestion is not feasible but to regard this suggestion technical advice will be given importance. • All technical procedures will be followed before finalizing and implementing this suggestion. If found feasible can be linked with MNREGA program.	No of Participants: 16 nos. 

				• This is one of the feasible suggestions and will be given upper most priority.	
4.	**22.09.2018**	**Tauni Devi**	• Participants suggested that every affected religious property (partially or fully) must be modified/ relocated and enhanced properly prior to the commencement of work, • Taxi stand of ***Tauni Devi*** should be developed, • Retaining wall of two (02) schools at ***Tauni Devi*** to ***Chowk*** should be rebuild, • Public facilities should be developed during construction, • Site as Dumping zone at ***Darkoti*** (Police Chowki) can be used and after leveling it can be used as play ground,	• It is recommended that all the structures likely to be affected need to be modified or relocated at new places as the case is in consultation with local community. The cost of construction/ relocation will be borne through project. • Beautification will be done as per IRC guidelines. • Will be done and covered under civil work construction. • Will be given upper most priority under CSR. • The suggestion also feels feasible but will be done after technical and	No of Participants: 35 nos. 

			• Inspection should be done for re-alignment of ***Uhal Chowk (Tauni Devi)***	environment clearance and if possible can be linked with MNREGA programme. • As the drawings for the road project are finalized taking utmost care and following all available options, the suggestion is not found feasible.	
5.	**23.08.2018**	**Awah Devi**	• Proposed bypass at place ***Chothra*** should be postponed and present /road should be widened, • Space available at Government Middle School ***Shroan*** can be used as dumping zone and after leveling it can be used as playground by students, • Taxi stand should be developed and modification and beautification of water source available at Middle School, ***Shroan*** should be done, • Every affected family of the proposed project should be taken in confidence before starting construction work	• The bypass proposed at ***Chothra*** is finalized after rigorous field work by technical team. Road widening cannot be the option and solution. So the idea was dropped. • The suggestion feels feasible but will be done after technical and environment clearance and if possible can be linked with MNREGA programme/ Corporate Social Responsibility head. • Suggestion was good and utmost care will be taken during construction period.	No of Participants: 14 nos. 

				Consultation with stakeholders will be a regular feature of this project proposal.	

Table 6.3: Stakeholder consultations

S. No.	Name & Designation of Stakeholder	Mode of Interaction And Venue	Finding of Interaction	Remark	Photograph of the Interaction
1.	Name:- Mr. Vikrant Kapoor , Deputy Director District Udyog Center Mandi	Mode:- By Personal Interaction Place:- Mandi Date:- 19.09.2018 Time:- 1:25 PM	***(A) Production of Local Products:-*** ❖ Handloom: In Himachal Pradesh, handloom industry plays a very important role in the state economy. The uniqueness and	❖ Road should be good with better connectivity. ❖ The proposed road project will be beneficial for local producer as the produce will reach the	

	Mobile:-9418050364 & 9816228716		specialty in weaving makes them famous on the national and international levels. ❖ The handloom sector is the most important earning sector after agriculture providing direct and indirect employment to the locals. ❖ In recent years, two handloom clusters have been sanctioned for the districts of Chamba and Mandi. Together, these will benefit over 1000 artisans of the area. ***(B) Under construction Power Plant near Kotli:-*** ❖ 119 MW Hydroelectric Power plant	destination in minimum time. ❖ It would also benefits to the owner and transporter as it will minimize the operating cost of the vehicles.	Photo:  

2.	Name:- Mr. B. D. Sharma & Mr. NavinGoshla (District Agriculture Office) Mobile:- 9418048899	Mode:- By Personal Interaction Place:- Mandi Date:- 19.09.2018 Time:- 11:50AM	***(A)***The main cereals cultivated in Himachal Pradesh agriculture are wheat, maize, rice, and barley. Mandi district is among the major producers of wheat, maize, and rice. ***(B)***Agriculture Development Project Scheme: - Going on in Mandi District (along Mandi-Kullu NH). Off season vegetable cultivation is going on in following places:- ❖ Ball Velley ❖ Siraj Velley ❖ Crasock ❖ Katola Velley ❖ Off season vegetable from the area is transported to Chandigarh, Jalandhar, Pathankot and Delhi for good prices. ❖ Route used for transportation:- **(a)** Hamirpur – Una **(b)** Buta - Una	❖ In future transportation of agriculture based material/produce transportation will be increase resulting in vehicle load therefore pavement should be good. ❖ Vehicle crossing/ passing spots will be developed. ❖ Provision for rest areas.	 

			❖ A soil testing lab is available at Sunder Nagar area for soil testing purposes as well as to benefit the farmers of surrounding area ❖ In addition to fruits, vegetable and flower cultivation is undertaken for off season supplies to the plains, while the mushroom cultivation is being taken up even by the landless for the augmentation of their income. ❖ Dharampur is major area for mushroom production ❖ In Dharampur JICA funded programme is also running for organic farming (Zero Burst natural farming without using chemical,		

			fertilizers and pesticide)		
3.	Name:- Mr. Bhumi Singh & Mr. Sher Singh (Regional Officer) Mobile:- 7018288186 & 9418019017	Mode:- By Personal Interaction Place:- Saighu Near Kotli Date:- 20.09.2018 Time:- 1:20 - 1:40	❖ Distinct vegetation zones of Mixed Deciduous Forests , Bamboo, Chil, Oaks, Deodar, Kail, Fir and Spruce, are found in the forests of Himachal Pradesh. Forests of the state are rich in vascular flora, which forms the conspicuous vegetation cover. ❖ There are no Khair species trees along the Hamirpur – Mandi National	❖ Ornamental plants, Soil binder plants & grass species and shadow tree species will be preferred in compensatory plantation through project.	

			Highway. It is found in the interior areas of deep forest. ❖ There are no fixed or define location of wild animal crossing spot on proposed road project. ❖ Presence of Leopard is generally found in Ghandhiru forest block and they generally do not cross the NH.		 

4.	Name:- Mr. Arun Kumar (President) Local Businessman (with Vyapar Mandal Kotli) Mobile:- 9418408650	Mode:- By Personal Interaction Place:- Kotli Date:- 20.09.2018 Time:- 10:15 - 10:30	❖ Two laning of Hamirpur-Mandi will be beneficial for local market as it will be convenient to transport local goods to nearby markets as well as to also transport goods to the area from there. ❖ Will also increase employment in the area.		 

5.	Name:- Mrs. Priti Bhandhari D.F.O Hamirpur District Mobile:- 8219698742 and Local Ranger for project NH area – Mr. Ravi Chander (R.O. Hamirpur)	Mode:- By Personal Interaction Place:- Hamirpur Date:- 22.09.2018 Time:- 12:17	❖ There is no specific route of Leopard crossing to the NH ❖ There are some spots where monkey menace is active		
6.	Name:- Mrs. Dr. Jeena (District Horticulture Officer) Mobile:- 9418183875	Mode:- By Personal Interaction Place:- Hamirpur Date:- 21.09.2018 Time:- 01:45 pm	❖ She suggested flower and ornamental plants for proposed highway project.		

7.	Name:- Truck union and Various Truck Drivers	Mode:- By Meeting Place:- Mandi Date:- 29.09.2018 Time:- 11:45 am	❖ By the up gradation and strengthening of existing NH-70 from Hamirpur to Mandi will increase transportation of goods, vegetables, fruits from Mandi to Dharmpur, Jogindernagar, Sarkaghat, Baijnath by Trucks. ❖ This road project will save 3-4 hour of traveling time as well as operating cost of vehicles. ***Tourism Spot/Religious Place in nearby location of Mandi:-*** ❖ Laghu Haridwar ❖ Shitla Mata complex ❖ Kandabattan ❖ Sikari Devi ❖ Jangali ❖ Kersock ❖ Tata Pani ❖ Kamru Nag ❖ Devidar ❖ Brasar	❖ Present and future traffic composition and related traffic load data has been used for highway designing.	

			❖ Barrot ❖ Rivalsar lake ❖ Kanilah Fort ❖ Chhoti Kashi ❖ Nature Park-Jidi ❖ Hanogi Mata Temple ❖ Jhadol (Sundar Nagar)		
8.	District Collector ; Hairpur	Mode:- By Meeting Place:- Hamirpur Date:- 10.10.2018 Time:- 11:45 am	❖ Issues related to availability, nature and ownership of land along the proposed alignment.	❖ Land acquisition for the proposed project will be as per requirement and Government guidelines will be followed.	

9.	Prem Kumar Dhumal (Ex CM Himachal Pradesh)	Mode:- By Personal Interaction Place:- Hamirpur Date:- 21.10.2018 Time:- 01:45	❖ Local Issues related to employment, education, health facilities etc.	❖ Availability of labour in nearby villages will be preferred for construction work of proposed road.	

6.7 Information Disclosure and Consultation

During social survey, meetings and focus group discussions were conducted to get wider public input from the primary and secondary stakeholders. The roadside communities, particularly the affected small business enterprises, took tremendous interests in the meetings. Information disclosure is persuaded for effective implementation and timely execution of RAP. For benefits of PAPs and community in general SIA including RAP report will be disclosed and available to the local residents at all times for perusal and photocopying of the same will also be permitted. Disclosure of the SIA report will be informed to the public through announcements on the local daily newspapers in English and Hindi and through stakeholder consultations. During project implementation, Social Management Unit (SMU) will provide information related to entitlement policy and various options to the PAPs and community through its Public Information Centre. Social Management Unit (SMU) will also prepare an information brochure in local language, i.e., Hindi, explaining the RAP, the entitlements and the implementation schedule.

6.8 Women's participation in consultations and out comes

Public consultation, interaction and discussion were held with Local women, various women govt. officials, self-help groups and College Students along the project road emphasizing issues on Women safety and Women empowerment (photos are given below). The participants were requested to express their views and any other suggestions for this road project. Questionnaire used in the public consultation regarding Women safety & Empowerment and Answers by female participants has been given in this report. The details of discussion and suggestions put forward during this meeting are summarized below:

	
Date and Venue: on 21.09.2018 near Panchayat Bhawan, Padchu.	**Date and Venue:** on 22.09.2018 near Kotli Village.
Issuse Discussed: • Woman employement in road construction. • Impact of land acquistion on livestock and agriculture.	Issuse Discussed: • Approaches from road to houses during road construction. • Debris/muck disposal sites.

• Amount of compensation for and acquisition. • The major part of the stretch depends on the hand-pumps for its water needs; the issue of replacement of hand-pumps attains a very special significance in context of the women • The women feel that their mobility will increase as market & relative's places will be easily accessible for them as better road condition will induce more transport vehicles to operate. More shops, markets will open within the village approach area and as a result they will get quality leisure time at their disposal .	• Local employment generation duirng road construction phase. • Women participation in road construction works. • BPL Woman House Holds should be minimum displaced

6.9 Community Participation during Project Implementation

The effectiveness of the RAP is directly related to the degree of continuing involvement of those affected by the project. Several additional rounds of consultations with PAPs will be required during RAP implementation. Consultations during resettlement plan implementation shall involve disclosure of information, offer and choice of options if any. Another round of consultation will be organized when compensation and assistance are provided and actual resettlement start.

The following set of activities will be undertaken for effective implementation of the plan:

- SMU will conduct information dissemination sessions in the project area and solicit the help of the local community/ leaders and encourage the participation of the PAP's in RAP implementation.
- Consultation and focus group discussions will be conducted at the affected areas with the vulnerable groups like women, families of BPL, Scheduled Castes and Scheduled Tribes to ensure that the vulnerable groups understand the process and their needs are specifically taken into consideration.
- PIU, SMU with the help of NGO will organize public meetings, and will appraise the communities about the progress of RAP implementation. Regular update of the program of resettlement component of the project will be placed for public display at the project offices.
- PIU, SMU and field offices will maintain an ongoing interaction with PAPs to identify problems and undertake remedial measures.

CHAPTER 7: ANALYSIS OF ALTERNATIVES AND MINIMIZATION OF IMPACTS

7.1 General

The mandate of the current project is to widen the existing road to 2 lanes with provision of paved shoulder in the built-up sections and hence there no alternative site is involved. However, the chapter discusses on the "With" and "Without" project scenarios. It also, discusses the methodology that has been adopted for the evaluation of the alternate alignment route for construction of Project Road and the selection is based on engineering, economic, environmental and social considerations have been highlighted. The minimization of social impacts by considering design alternatives determines the extent of mainstreaming of the social component. This chapter looks at the decisions made during the project when alternatives were available and describes the rationale behind each decision.

7.2 "With" and "Without" Project Scenario

Keeping in view the site conditions and the scope of development of the area, the 'with' and 'without' project scenarios have been considered. The project will have multiple benefits. The project will increase the potential of the area and fast connectivity between Himachal Pradesh, Uttarakhand and Haryana. Some horticulture units in Dharampur and one hydro power plant in Kotli are under construction phase. With" project scenario positive impact includes: The Proposed Road will improve connectivity for tourists visiting various famous religious and pilgrimage destinations in H.P., such as the Tauni Devi Temple, Awah Devi Temple, Sujanpur Fort in Hamirpur, Kamlah Fort in Dharampur, Janitri Temple Kotli near Lagdhar, and the pilgrimage site of Rewalsar. Better connectivity would enable work force participation and tourism related activities in the region. The project road will help to connect various agro production centres, vegetable markets (mandis), and milk collection centres;

Hence the "With" project scenario with minor reversible impacts is an acceptable option than the "Without" project scenario. The implementation of the project therefore will be definitely advantageous to achieve the overall development of the economy and progress of the region.

By looking at the **Table 7.1**, it can be concluded that "With" project scenario positive/beneficial impacts will enhance social and economic development of the region compared to the "Without" project scenario, which will further deteriorate the present environmental setup and quality of life.

Table 7.1: 'With' and 'Without' Project Scenario

Sr. No	Parameters	Without Project Impacts		With Project Impacts	
		Positive	Negative	Positive	Negative

1.	All weather Accessibility	-	Due to improper line drains, damage and blockage of CD structures, poor slope stability and blockage of road during monsoon season.	• Road drainage and CD structures will be improved. • Road will be accessible throughout year since drainage will be improved along all sections.	
2.	Road Safety/ Accident rate	-	Road safety measures like sign boards, road width, crash barrier, Parapet walls, vehicle crossing space etc. are improper as compared to requirement.	**For the road safety, following measures are proposed:** • 1030 nos. speed limit boards near the locations of habitations, education institutions, hospitals etc. • 80 nos. octagon sign boards (Stop Boards) at the locations of major & minor junctions and villages. • 22.800 km long W metal crash barrier. • 840 sq. m Zebra crossing near the locations of junctions, bus bays, truck lay byes and villages. • 956 sq.m. hazard making at culverts. • 31430 sq.m. edge line making. • 12 nos. overhead sign	

				board for truss and vertical support, and 8 for toll plaza. • 15011 nos. delineators • 5729 cats eye at curves and 4403 on road edges. • Realignments at 25 locations and curve improvement at 89 locations • Improvement in road geometry and pavement conditions.	
3.	Transportation/ vehicle maintenance /operating cost	–	Operating and maintenance cost of vehicles running on the exist road is very high due to very bad pavement condition. More wear & tear because of frequent application of sudden brakes.	Operating and maintenance cost of vehicles will significantly reduce with smooth road and more comfortable driving at critical sections due to section improvement.	
4.	Travel time / increased speed	-	Travel time is more due to poor road geometry and traffic conjunction at market areas viz. Tauni Devi, Awah Devi, Sarkaghat, Kotli, Dharmpur, Balahar and Panjethi.	Reduction in travel time and speed will increase.	
5.	Change in Land use pattern	Area proposed to be diverted for realignment and curve improvement, is under agriculture, open & forest land.	–	–	Minor change in land use pattern will take place at realignment and curve improvement locations.

6.	Loss of property and livelihood		There are various markets along the road.	Project may provide job/ livelihood opportunities to people through commercial establishment in area due to good connectivity with other cities and towns.	1487 properties likely to be affected. Out of the total properties affected, 552 are residential, 406 are commercial and 363 are residential cum commercial. 116 community structures including 21 religious structures and 85 are community structures.
7.	Change in Environmental quality during construction	–	High noise level, high emission of particulate matter & gaseous pollutants due to slow speed of vehicles/traffic congestion and poor road surface.	–	**1.** Temporary degradation of air quality due to emission from hot mix plant, stone crusher, generator and other machinery during construction. **2.** Machinery will cause noise pollution **3.** Construction

					spills, wastes, degraded materials will cause deterioration of soil quality and surface water.
8.	Change in the Environmental quality after construction	–	Deterioration of air quality through dust, gasses and noise pollution because of vehicles speed and congestions.	Less Noise pollution because of ease in congestion and diversion of traffic through bypass.	-
9.	Loss of vegetative cover	–		Losses of 59.71 ha forest area	Compensatory plantation will enhance vegetative cover of area after 3-4 years.
10.	Access to basic facilities such as Markets, schools, Hospitals etc.	–	Difficulty in accessing the basic facilities due to hilly terrain and insufficient safety measures.	Easy access to basic facilities due to fine road and road safety measures.	
11.	Employment opportunities & local economy growth.	–	Very limited business opportunities. Very poor economic condition of local public due to hilly terrain and insufficient safety measures.	More business opportunities will be create and life style will be improved due to well connectivity with major cities like Mandi, Una, Dharmpur, Jogindra Nagar, Kullu, Manali, Dharmshala, Jalander, Chandigarh etc.	-
12.	Others (Fuel consumption, Tourism, Prostitution)	–	Increase in fuel consumption, dust pollution because of rough road	1. Fuel consumption will be reduced due to smooth road 2. Tourism opportunity may be developed at Hamirpur, Tauni Devi, Awah Devi, Dharmpur, Dharmshala, Mandi	Prostitution can take place in case of tourism as economic condition of most of inhabitants is very poor.

				etc.	

The potential benefits of the proposed road improvements are substantial and far- reaching both in terms of the geographical spread and time.

7.3 Analysis of Alternatives Alignment

An alternative route analysis was made by considering three routes between Hamirpur and Mandi. During analysis, the existing ROW, settlement along the road, the potential impact on private assets etc. were considered to decide on the best route to be considered for this project. These three main Options (routes) from Hamirpur to Mandi, are discussed below below:

Option I: Hamirpur to Mandi via Tauni Devi, Awah Devi & Dharmpur.

The proposed route from km 141.o to km 265 including 5 km overlaying part is passing through two district (namely Hamirpur and Mandi), six Tehsil (Namely Hamirpur, Bhoranj, Sarkaghat, Dharmpur, Kotli and Mandi) and 93 villages **(Figure 7.1)**. The existing ROW is varied 5.4 to 20m. This route provides excess to various markets and tourist spots Viz. Tauni Devi, Awah Devi, Dharmpur Sarkaghat and Mandi. Total length of this route is approx. 124.0 km and proposed length after realignment & curve improvement it will be approx. 104 km. Total land acquisition is approx. 152.2223 ha and required forest land is 59.7059 ha. Total number of affected structures are 1487. Total cost for 2-lane through this route is approx. Rs 6168.17 Million.

Option II: Hamirpur to Mandi via Dosarka, Bhareri, Chamdruhi, Dalli, Sarkaghat and Dharmpur.

Sarkaghat to Mandi stretch is overlap on NH70 but Hamirpur to Sarkaghat via Chandruhi is separate. This route passes through two districts (namely Hamirpur and Mandi), seven Tehsil (Namely Hamirpur, Bhoranj, Bamson, Sarkaghat, Dharmpur, Kotli and Mandi) and more than 100 villages. The existing ROW is varied 5 to 10 m except Sarkaghat to Mandi portion where available ROW varied from 5.4 to 20 m. In the Hamirpur to Chamdruhi section, no major pilgrim or tourist spot are exist and more hill cutting is also required as compared to NH-70 route. In this route more structures demolition, more forest and private lands are required as compare to Hamirpur to Sakaghat section via Tauni Devi because available ROW is low and total cost will be also high in comparison to Option I. Hamirpur to Mandi via Dosarka, Bhareri, Jahu, Rawalsar section is given in **Figure 7.2**. Total length of this option is approx. 128 km.

Option III: Hamirpur to Mandi via Dosarka, Bhareri and Jahu-Rawalsar

Total length of this route option is approx 87 km and it fly over NH103, SH-32 and Rawalsar-Mandi Road **(Figure 7.3)**. Major part of this route (NH-103 and SH-32) is already developed as 2-lane and intermediate lane so there is no need to further development of this route. If this route is taken up than village, markets, Mandies, tourist spots which are connected through NH-70, will not be developed.

After the examination it is concluded that Option I is more feasible in term of number of benefited people, need of projects, total PCUs, quantity transported goods, number of stations for goods loading/unloading, generation of employments, required land, structure demolition etc.

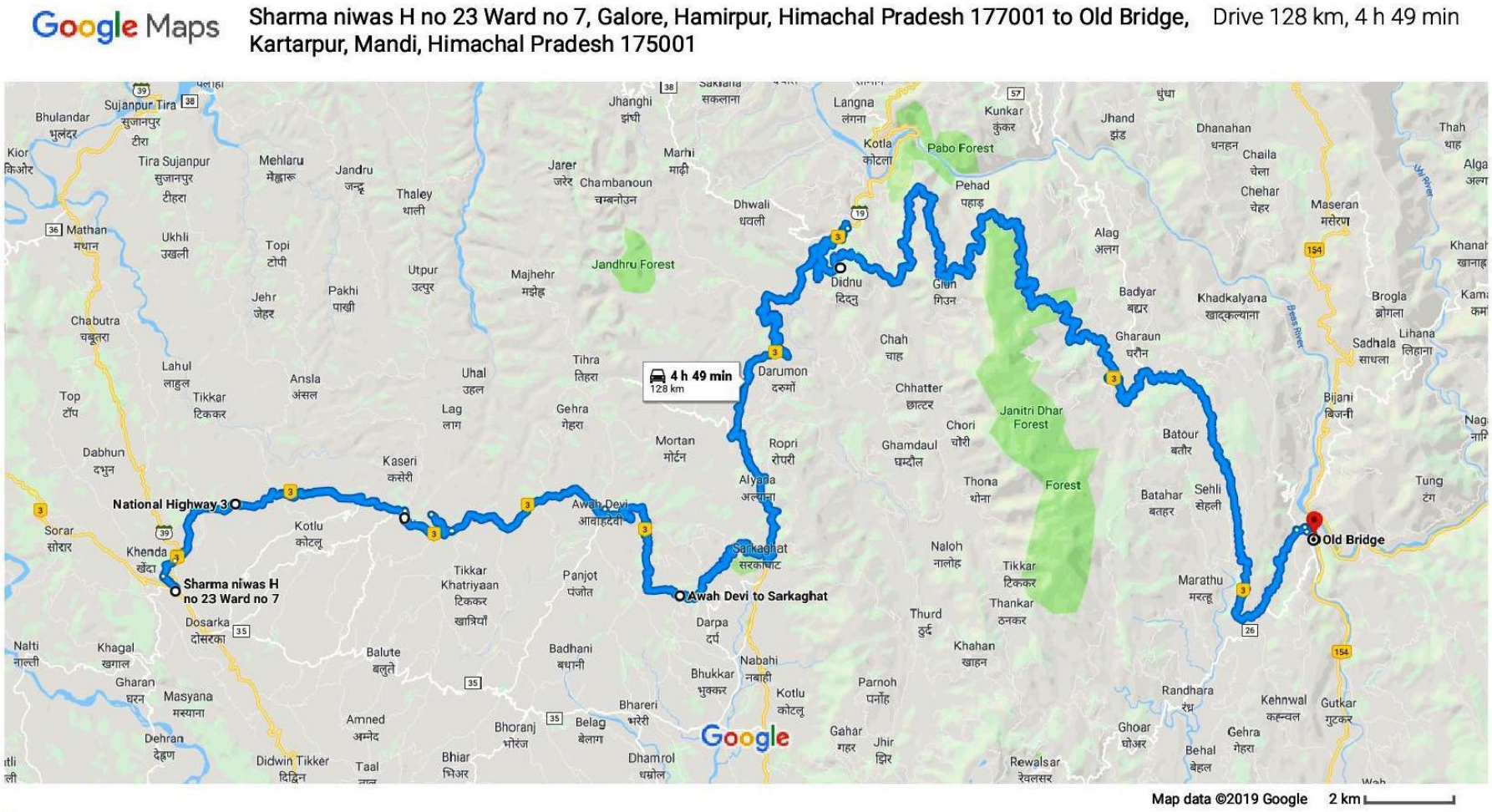


Figure 7.1: Hamirpur to Mandi via Tauni Devi, Awah Devi, Dharmpur.

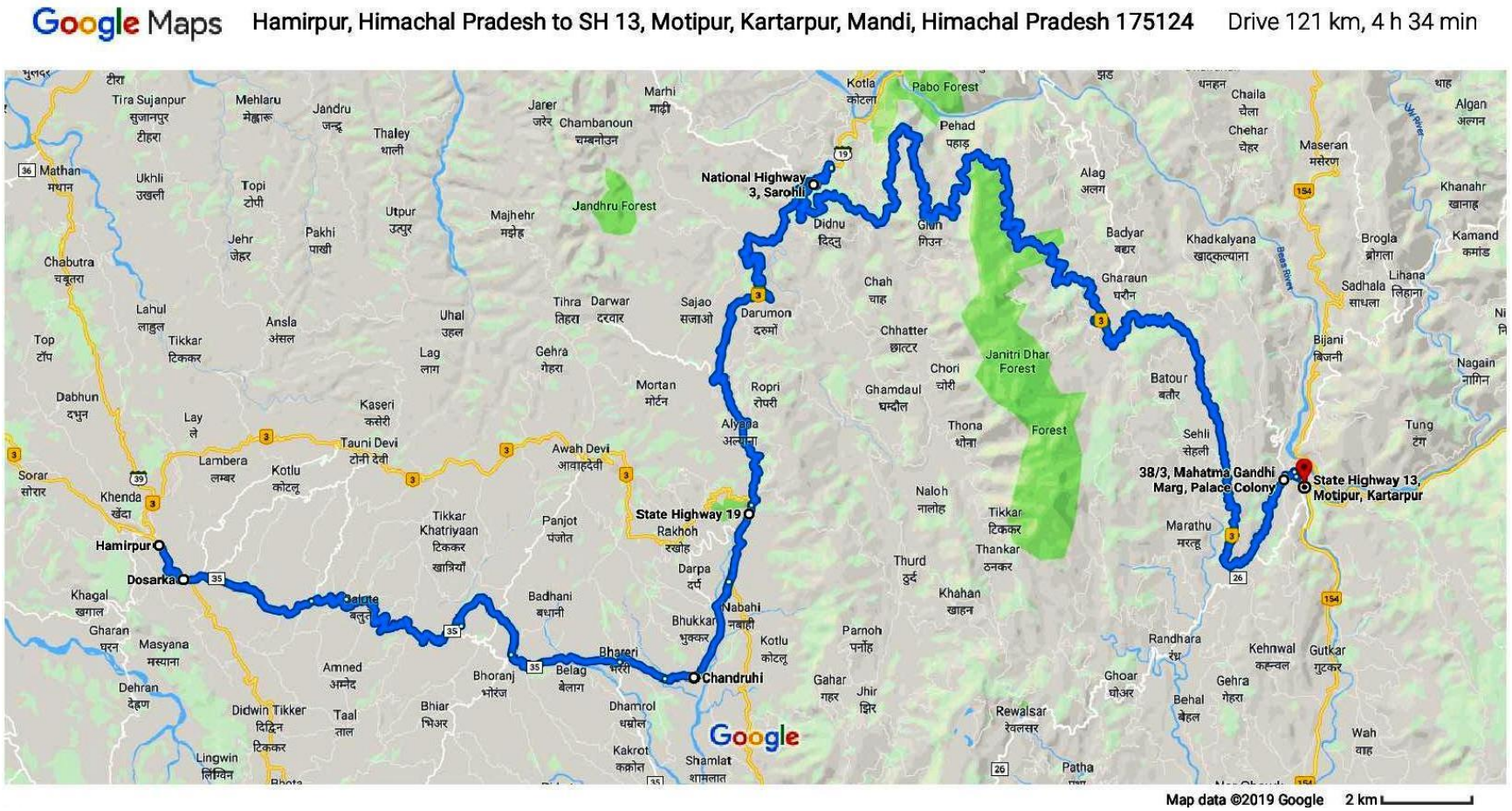


Figure 7.2: Hamirpur to Mandi via Dosarka, Bhareri, Chamdruhi, Dalli, Sarkaghat, Dharmpur.

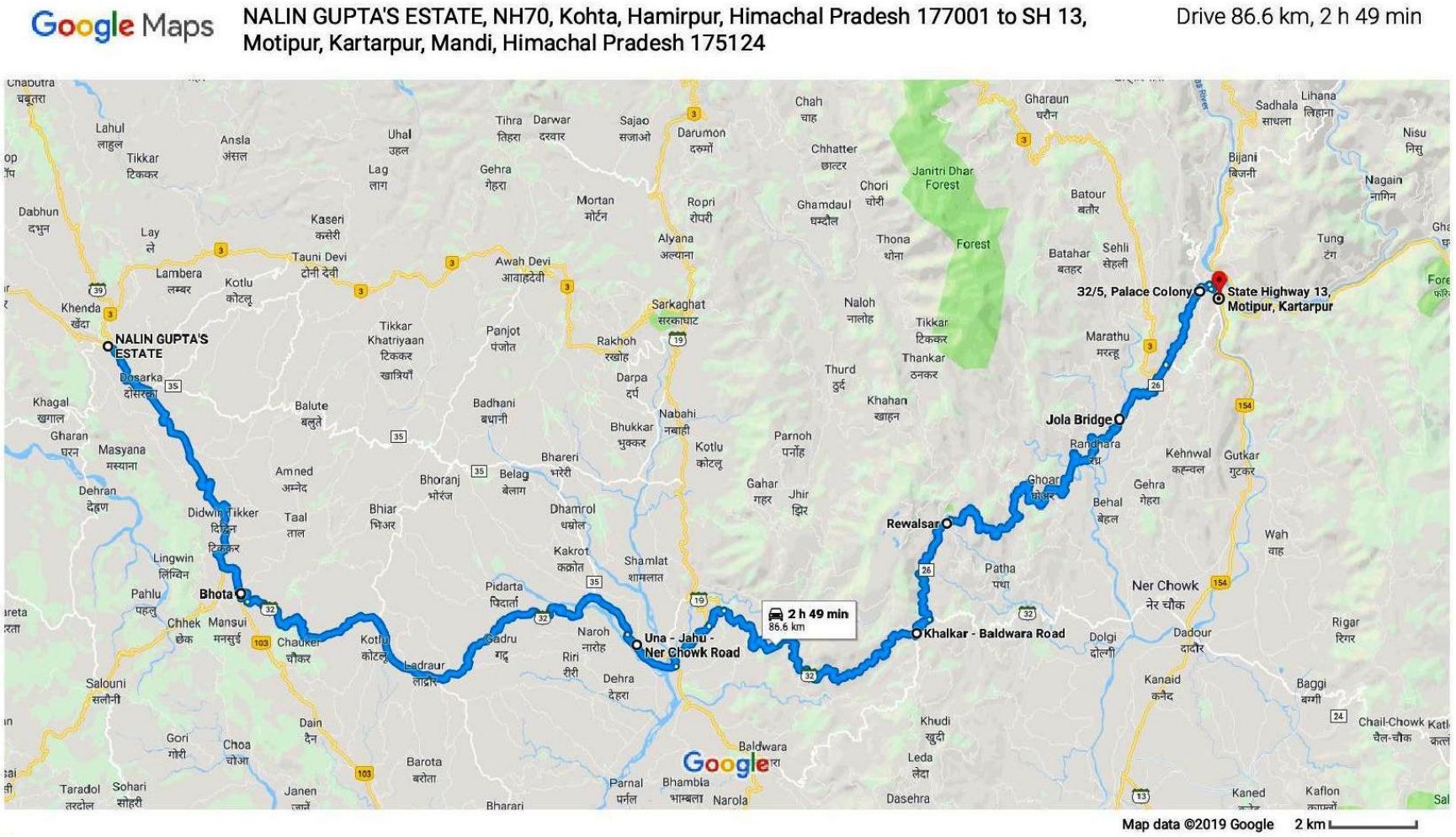


Figure 7.3: Hamirpur to Mandi via Dosarka, Bhareri, Jahu-Rawalsar

7.4 Analysis of Alignments for Major Realignments

A total of 25 nos. are proposed to improve the horizontal geometrics of the project road. Realignments are proposed on the basis of availability of ROW, road geometry, number of structures within required ROW etc. Only two options (one existing and one proposed options) are proposed for this highway. Details of Analysis of major realignments are given in **Table 7.2**.

7.5 Why three or more alternatives for realignment are not applicable for this highway

The project road having a total length of 109 Km is passing through mountainous and steep terrains. Road inventory surveys shows that around 53.44% curves are less than minimum radius of 30m while27.87% curves are having radius between 30m to 50m. There are 58 No'shair pin bends also. There horizontal curves are proposed to be improved. Hence, due to presence of steep terrain, availability of limited land and involvement of huge amount of cutting of rocks provision of any further realignments are not feasible. Also, Provision of this will lead to heavy amount of land acquisition and increased project cost.

Table 7.2: Analysis of Alignments for Major Realignments

S.No.	Name of Place	Chainage	Available RoW on Existing Road	Proposed ROW width on Realignment	Impacted Structures on existing road		Impact Structures on Proposed Realignment	LHS/RHS side of Realignment	Reason for Realignment
					LHS	RHS			
1.	Droahgan	147+200 to 147+800	6-10	15 m	10	9	1	LHS	Curve Improvement
2.	Droahgan	148+800 to 149+700	6-9	15m	45	30	0	RHS	Curve Improvement and insufficient RoW.
3.	Thana	150+00 to 151+00	6-8	15 m	1	3	0	LHS	Curve Improvement
4.	Darkoti	151+200 to 151+300	6-8	15 m	7	8	6	LHS	Curve Improvement
5.	Tapra (Near Tauni Devi)	152+500 to 152+00	7-8	15 m	-	-	2	RHS	Sharp Curve Improvement
6.	Chahar	152+900 to 153+200	6-8	15 m	8	29	4	LHS	-Sharp Curve Improvement, -Insufficient RoW and -Dense habitation
7.	Baree	154+00 to 154+300	6-8	15 m	4	5	5	LHS	Improve the hair pin bend
8.	Baree	154+700 to 155+200	7-8	15 m	-	-	1	LHS	Sharp Curve Improvement
9.	Sapnehra	156+700 to 157+100	7-8	15 m	29	26	5	LHS	-Insufficient RoW and

									-Dense habitation
10.	Tikkri	159+00 to 159+200	8	15 m	5	13	1	LHS	Sharp Curve Improvement Insufficient RoW
11.	Sangroh Kala	161+050 to 161+800	5	15 m	16	33	8	RHS	Insufficient RoW Habitation
12.	Bagwara/ Awahdevi	162+050 to 163+100	5	15 m	16	38	6	LHS	Dense habitation Insufficient RoW
13.	Saroan	164+700 to 164+800	6-7	15 m	4	12	0	LHS	Sharp Curve Improvement
14.	Saroan-Cholbhara Market	165+300 to 166+050	5-6	15 m	89	49	0	RHS	Dense habitation Insufficient RoW
15.	Alyana	181+500 to 181+800	10-11	15 m	0	0	0	RSH	Curve Improvement
16.	Parchu	185+900 to 186+00	10-13	15 m	-	-	1	RHS	Curve Improvement
17.	Hukal	188+950 to 189+400	8-10	15 m	1	16	1	LHS	Dense habitation Insufficient RoW
18.	Khaildra	190+900 to 191+700	10-12	15 m	10	7	4	LHS	Curve Improvement
19.		193+050 to 193+250	8-10	15 m	9	5	2	LHS	Curve Improvement

20.	Reyut	195+300 to 195+50	5-6	15 m	-	-	1	LHS	Improve of hair pin band Construction of new bridge on river due to old and insufficient passing space.
21.	Baroti/ Thana	207+600 to 208+600	5-6	15 m	79	77	2	LHS	Dense habitation Insufficient RoW
22.	Satrahan	225+400 to 226+250	6-8	15 m	26	1	0	LHS	Dense habitation Insufficient RoW
23.	Kushgal	238+700 to 239+100	8-11	15 m	12	28	1	RHS	Dense habitation Insufficient RoW
24.	Kasaan	245+300 to 245+400	8-10	15 m	8	3	1	RHS	Curve Improvement
25.	Mandi (Bypass)	262+900 to End Point	6-12	15 m	146	245	6	RHS	Dense habitation Insufficient RoW

CHAPTER 8: GENDER ISSUE & WOMEN'S PARTICIPATION

8.1 General

There are important aspects related to women that need to be addressed. Women are going to experience socio-economic impacts due to acquisition of land for the project and during the construction//implementation phase.

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., are mentioned in other Sections of the Report also.

Global Context: Recent estimates by the World Health Organization indicate that 35 percent, or one in three women worldwide have experienced some form of physical or sexual assault. GBV is an expression of gender inequality that prevents women and their families from escaping poverty, drains public resources and impedes human development and economic productivity.

National Context: Women and girls in India today continue to experience multiple forms of violence, across multiple intersections, including of religion, caste, class, abilities and sexual orientation. In India, the global data on gender violence is complemented by NFHS (National Family Health Survey (NFHS4), 2015-16 at the national level which shows that 30 percent of women have experienced physical violence since age 15, and 6 percent have ever experienced sexual violence in their lifetime. 33 percent of ever-married women have experienced physical, sexual, or emotional spousal violence. Despite this, only 14 percent of women who have experienced physical or sexual violence by anyone have sought help to stop the violence.

8.2 Legal and policy environment for women's safety

8.2.1 National Instruments

Some of the key policies and laws pertaining to gender-based violence in India include the following:

- **National Policy for the Empowerment of Women**[2] Year of adoption:2001.
- India has signed and ratified **Convention on Elimination of Discrimination against Women (CEDAW)**[3]**.** Since then, the national policy for Women 2016 and other policies and amendments on acts has been reflecting the principles highlighted in the related international conventions The goal of this Policy is to bring about the advancement, development and empowerment of women.

[2] "Draft National Policy for Women 2-16_0.pdf" on http://wcd.nic.in/sites/default/files

The **Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013**, is introduced to prevent and provide redressal of complaints of sexual harassment. One of the main provisions in this act is that it calls for constituting an Internal Complaints Committee at each office or branch with 10 or more employees/workers.

- The **Protection of Women from Domestic Violence Act, 2005**[4] defines domestic violence, describes the powers and duties of protection officers, service providers and lists the procedures for obtain reliefs.

8.2.2 Other Instruments related to the Project

8.3 World Bank Good Practice Note

This Good Practice Note[5] was prepared to assist Task Teams in establish in general approach to identifying risks of GBV, in particular sexual exploitation and abuse and sexual harassment, that can emerge in IPF with major civil works contracts and to advise Borrowers accordingly on how to best manage such risks. The GPN builds on World Bank experience and good international industry practices, including those of other development partners.

This GPN sets out good practice for task teams on identifying, assessing and managing the risks of GBV in the context of Bank-financed IPF projects in any World Bank Global Practice that involve major civil works, defined here as civil works large enough to be carried out by a contractor, i.e., not small-scale projects such as community-driven development investments which often involve self-construction by beneficiary communities.

8.4 Proposed Action Plan

Based on the gender risk assessments, field consultations and findings, the level of GBV risk was found to be 'Moderate'. To address any potential risks, a GBV action plan (see below) has been prepared out lining the key actions and responsibilities of project partners. This plan will also be a part of Gender Action Plan (GAP) to be prepared by RAP Implementation Consultant.

Table 8.1: GBV Action Plan

S. No.	Particular	Actions	Responsibility
1	Policy for GBV	Prepare IEC material in the local language for policy against Sexual harassment at workplace and display in strategic locations	MoRTH, Contractor
2	Training staff on GBV	Capacity building of staff on GBV	MoRTH, Contractor
3	Training focal social specialists	Ongoing capacity building of social specialists	MoRTH
4	GBV in safety Induction	Inclusion of GBV in safety induction	Contractor

5	GBV in Tool Box Talk and task Briefing	Inclusion of GBV in Tool Box Talk and Task Briefing	Contractor
6	Developing a Code of Conduct for GBV	Signing of the CoC by all labourers	Contractor
7	GBV in Community interface	Orienting and building awareness of the community on GBV prevention, reporting and response mechanisms.	Contractor
8	Stakeholder consultations	Continuous stakeholder consultation will be carried out in the adjoining villages to inform the community about GBV risks and redressal mechanisms	Contractor
9	Monitoring	To be integrated into projects safeguards monitoring (PMC, SESMRC). Focused monitoring of identified hotspots	MoRTH
10	Strengthen institutional linkages with other departments and response actors for GBV risk mitigation and response	Leveraging existing institutional mechanisms (WCD, police, local NGO's) for GBV risk mitigation and response	Contractor

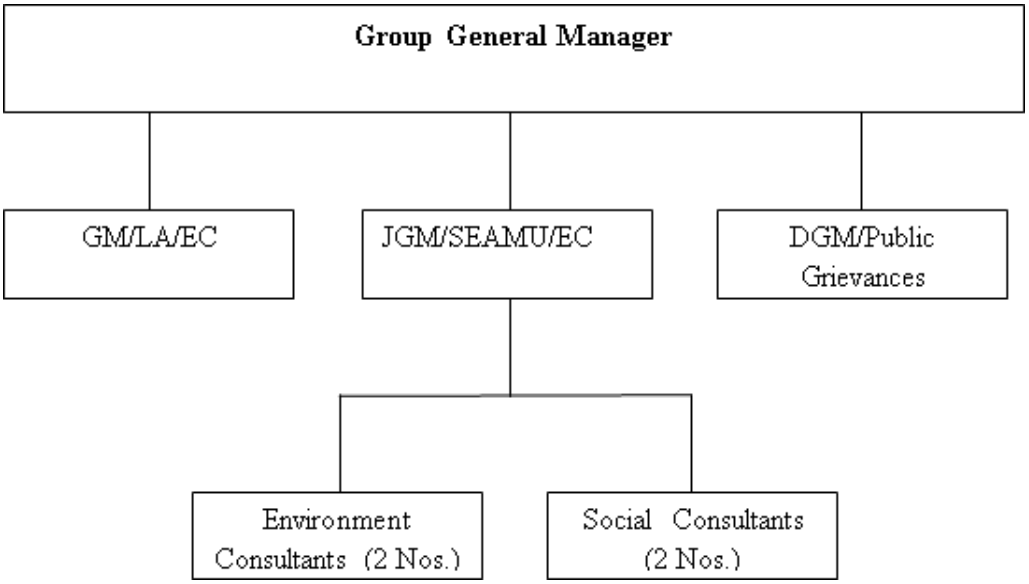
8.5 GBV Prevention and Response Actors

8.5.1 Identification of Service Providers and Assessment of capacities

The key stakeholders and response actors identified to support the project are MoRTH, Contractor, Local NGO's, State Women and Child Development, State Health and Family Welfare and State Police Departments. Gender risk assessments indicated moderate level of GBV risk. A GBV action plan has been prepared to address the potential risks. This plan will also be a part of Gender Action Plan (GAP) to be prepared by RAP Implementation Consultant/NGO.

8.5.2 MoRTH: Social and Environmental Management Unit (SEMU)

MoRTH will established a social and environmental management unit for overseeing management of environmental and social safeguard measures. The unit is headed by a Group General Manager at the corporate level supported by General Manager/ LA/ Joint General Manager SEMU, and Deputy General Manager-grievances, as depicted in the figure below-


Group General Manager
GM/LA/EC
JGM/SEAMU/EC
DGM/Public Grievances
Environment Consultants (2 Nos.)
Social Consultants (2 Nos.)

8.6 Impact on Women

Out of 2312 females (including owner of houses household and household family members) 173 women households are getting affected by the project. Socio-economic parameters like literacy, work force participation rate and general health conditions etc. reveals that social status of women is low respectively, thereby brought forward the scope of considering the households headed by women as vulnerable Low awareness level coupled with insignificant role in decision making at household and community level further poses constraints for women and other vulnerable groups to access the opportunities created by the project equitably. The changes caused by relocation tend not to have equal implications for members of both sexes and may result in greater inconvenience to women. Due to disturbance in production systems, reduction in assets like land and livestock, women may have to face additional challenge of running a household on limited income and resources. This may force women as well as children to participate in involuntary work to supplement household income, which may also lead to deteriorate social capital/network of women and men alike hence making them more vulnerable to both social hazards. It is therefore important to assess status of project affected women and other vulnerable groups, their potential impacts, and accordingly, design an appropriate strategy/ plan.

8.7 Women Headed Household

Women headed households are found to be less in number in the project area. The percentages of such families affected are around 11.63%. 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 category. **Table 8.2** shows that 173 women headed households are getting affected from demolition of structured.

Table 8.2: Affected Women Headed Households

Affected Women Headed Household	Project Districts			Total
	Pkg-1	Pkg-II	Pkg-III	
	144	13	16	173

Source; *Census Survey, Oct., 2019*

8.8 Women involvement in development process through empowerment

The development experience of at least two decades shows that it is equally necessary to consult women and offer them choices, in 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 for taking part in the consultation process.

- Each field team of the NGO shall include at least one women investigator / facilitator.
- 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.
- 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.
- For monitoring and evaluation, there should bioscope for women' 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.
- The Monitoring & Evaluation team(s) shall constitute – 33% women. 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.

8.9 Involvement of women in construction activities

The construction works for widening and strengthening the 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.

8.10 Provisions in the construction camp for women

A GBV risk assessment was carried out and the risk level was found to be 'Moderate'. Based on the findings, a, GBV Action Plan has been prepared to strengthen the prevention and response measures to address GBV related issues throughout the project lifecycle. Furthermore, the Action Plan aims to draw up an effective risk mitigation and response strategy for GBV in the project.

The provisions mentioned under this section will specifically help all the women and children living in the construction camp.

8.10.1 Temporary Housing

During the construction the families of labourers /workers should be provided with residential accommodation suitable to nuclear families.

8.10.2 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, 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.

8.10.3 Day Crèche Facilities

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 canleavebehindtheirchildreninsuchacrècheandworkforthedayintheconstruction activities.

8.10.4 Proper Scheduling of Construction Works

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.

8.10.5 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. Reference shall be drawn from The National Law of 'The child labour (Prohibition and Regulation) Act 1986' that prohibits the employment of children below the age of 14 years. Ideally age is verified by the date of birth certificate from the school last attended by the applicant or any other recognized educational institution in absence of other validated age proof.

8.10.6 Special Measures for Controlling STD/AIDS/Covid-19

Awareness and sensitization camps for the target people, both in the construction camp and neighboring villages as well, and supply of condom sat concession rate to the male workers may help to large extent in this respect. Specific guidelines to control Covid-19 infection are given below:

श्रम एंव रोज़गार विभाग (हि0 प्र0)

सत्यमेव जयते
हिमाचल प्रदेश सरकार

कार्यालय ज्ञापन

बिषय:– कोरोना वायरस की रोकथाम के लिए एहतियात बारें।

यह सर्वविदित है कि कोरोना वायरस को फैलने से काफी हद तक रोका जा सकता है, यदि इसकी रोक्थाम हेतू सर्वसाधारण एहतियाती उपाय अपनाए जाते है। अत: निम्नलिखित सलाह/परामर्श दिया जाता है।

1. उचित सफाई रखी जाए। सैनटाईजर या हाथ धोने हेतू व्यवस्था सरकारी भवनों मे प्रदेश पर यदि व्यवहारिक हो, मुहैया करवायी जाए। सैनटाईजर साबुन और चलते पानी की व्यवस्था/सुविधा वाशरूम में उपलब्ध करवाई जाए।

2. कर्मचारी जिनमे फ्लू के बुखार या सांस लेने मे समस्या आदि के लक्षण पाए जाते है, को अवकाश में सक्षम अधिकारी से अनुमति लेकर जाने के लिए सलाह दी जा सकती है वह अधिकारी निर्धारित ईलाज घर पर ईलाज करवाएं। बुजुर्ग कर्मचारी/गर्भवती महिला कर्मचारी और वह कर्मचारी जो कि चिकित्सा शर्तो को रेखांकित करते हो को अतिरिक्त सावधानी लेने हेतू सलाह दी जाए।

3. आगतुको के प्रदेश मे प्रतिबन्ध,कटौती तथा विनियमित करने और उचित जांच सूनिश्चित की जाए।

4. केवल महत्वपूर्ण बैठकें ही आयोजित की जाए। विडियो कॉनफ्रैन्स सुविधा का अधिक से अधिक उपयोग किया जाना चाहिए। सरकारी यात्रा को कम किया जाना चाहिए

5. डाक का वितरण और प्राप्ति कार्यालय भवन के प्रवेश पर एक जगह से विशेष व्यवस्था कर दी जाए। पत्राचार ईमेल के द्वारा अधिक से अधिक किया जाए।

6. कार्यालय में स्थित सभी जिंम, मनोरजंन स्थल और करेचिज बन्द किए जाए।

7. सभी कर्मचारियों को व्यक्तिगत् स्वच्छता और सामाजिक दूरी बनाने, बार–2 हाथ धोने, अनावश्यक यात्रा न करने, नाक और मुँह छींकते और खाँसते समय रूमाल या टीशू पेपर से ढकने बारे सलाह दी जाए। उन्हें हाथ न मिलने तथा सार्वजनिक रूप से न थूकने बारे सलाह दी जाए।

8. सबसे महत्वपूर्ण, कर्मचारियों को अफवाह न फैलाने वारे व दैहशत पैदा न करने बारे भी सलाह दी जाए।

आदेश द्वारा
आयुक्त श्रम एंव निदेशक रोज़गार ।

8.11 Status of current referral system in case of reporting of incidence of safety and harassment

In the project area currently, very rare incidents are reported of such kind relating Gender based violence/ harassment of women/ violence against Children. However, if the kind of incidents persist, there are Police stations, active community-based organizations and women-led groups int towns along the existing road alignment as support providers as well as Panchayat Bhavans in villages to address such problems.

8.12 Recommended Actions for Gender Issues

Provisions for participation of women have to be created by following the recommendations given below:

- It is to be seen while engaging NGOs that, women members as a key person are there.
- Each field team of the NGO should include at least one women investigator/facilitator.
- The Monitoring team(s) should constitute 33%women.
- The Evaluation team(s) should constitute 33%women.
- As a precondition the contractors should assure employing a woman inspector of works, not below the rank of Senior Engineer.
- Cases of compensation to women should be handled with care and concern considering their non- forward nature of interacting.
- All compensation sand assistances 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.
- Create scope for income earning for the women of host communities along with the affected women.
- If possible, create job opportunities for local women in the constructional activities.
- Provide all the facilities for the welfare of women and children in construction camps.
- Special measures to be taken in restricting abuse of women and child labour in the construction camps/activities.

CHAPTER 9: REHABILITATION & RESETTLEMENT BUDGET

9.1 R&R Budget

Based on the Entitlement Matrix, the R&R budget for NH 70 has been finalized and is presented in this chapter. The budget is indicative of outlays for the different expenditure categories and may be required to be updated during the project implementation. The R&R budget includes the cost of structure, land cost, R&R assistance to be provided to the affected people, replacement cost of religious and community property etc. It comprises of two broad components namely compensation and assistance. Compensation for land, structures and assistances will be given as per entitlement matrix.

9.2 Compensation cost for land acquisition

Land will be acquired in accordance with provisions of Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 and while determining the compensation for land, the competent authority will be guided by the provisions of Sec 26, Sec 27, Sec 28, Sec 29 and Sec 30 of RFCTLARR Act, 2013. The compensation includes, the multiplying factor of 1.25-2.00 times on the land value being the higher of the guideline value or average of higher 50% of sale deed rates for the preceding 3 years or any rates consented for PPP or private projects. I addition, 100% solatium will be added. Following are the criteria in assessing and determining the market value of the land: Higher of

i) market value as per Indian Stamp Act, 1899 for the registration of sale deed or agreements to sell, in the area where land is situated; or
ii) average sale price for similar type of land, situated in the nearest village or nearest vicinity area ascertained from the highest 50% of sale deeds of the preceding 3 years; or
iii) Consented amount paid for PPPs or private companies.

The market value in rural areas shall be multiplied by a factor as notified by Govt. of Himachal, Plus 100% solatium and 12% additional on basic market value from date of 3A notification to award. In 3D awards different DLC rates of urban and rural areas area are used for compensation of acquired land and based on that an average basic cost Rs. 21786251 has been calculated for calculation of tentative land cost.. Abstract of 3D awards and DLC Rates are given in **Annexure 9.1.** Approx. 45 ha private land is to be acquired. Details of acquired land and compensation are given in **Table 9.1.** The cost of the standing crops of the affected agriculture field will be decided by revenue in consultation of agricultural and horticulture departments at the time of RP implementation as per the provisions of entitlement matrix.

Table 9.1: Summary of Cost for Land Acquisition

Sl. No.	**Particulars**	**Unit of Entitlement**	**Cost of Complete Length (in Rs)**	**Pkg-I**	Pkg-II	**Pkg-III**
1	Basic Land Rate (average DLC) (In INR)	INR/Hectare	1786251	1786251	1786251	1786251

2	Total Private Land (in Hectare.)	in Hectare	5	15.1678	8.264	1.5505
3	Basic Land Cost (In INR)	INR	80381289	30449497.9	97904088.3	51642092.2
4	Land cost after applying multiplication Factor	1.5	470571934	95674246.9	96856132.4	77463138.3
5	Solatium @100%	100%	470571934	95674246.9	96856132.4	77463138.3
6	Additional Interest on land rate	12% per Annum	76468632	9480909.63	1622735.89	5295576.59
Total Land Cost (Sub-total A) In Rupees			3116386257	1050829403	1265335001	800221853.1
Total Land Cost (Sub-total A) In USD			40856447.11	13776583.64	16588794.93	10491068.54

9.3 Cost of structure

The estimated cost of structures has been finalized on the basis of Census survey of the properties likely to be affected. The cost estimates for structures are based on rates from document of CPWD Plinth Area Rates, 2019 and HPPWD SOR 2019. The cost estimation is based on current rates which might get revised at a later stage. The estimated cost of the properties/ structures being affected has been figured out in the **Table 9.2.**

Table 9.2: Estimated cost of the structures

S. N.	**Details of Structures**	**Rate/ Sq. Mt/R.M (CPWD Plinth Area Rates, 2019 and HPPWD SOR 2019)**	**Package Wise Affected Structure Area (sq.m)**			**Cost of Affected Structure Area (Rs.)**		
			Pkg-I	**Pkg-II**	**Pkg-III**	**Pkg-I**	**Pkg-II**	**Pkg-III**
1	Temporary Structure (Title Holder)	9,000	656.25	608	286.6	5906250	5472000	2579400
2	Permanent Structure (Title Holder)	19,500	28105.24	7206.35	8071.665	548052180	140523825	157397467.5

3	Semi-Permanent Structure (Title Holder)	19,500	2316.7	54	666.19	45175650	1053000	12990705
4	Temporary Structure (Non-Title Holder)	9,000	99.5	135	0	895500	1215000	0
5	Permanent and Semi-Permanent Structure (Non-Title Holder)	19,500	2687	153	0	52396500	2983500	0
6	Compound Wall	9,000	20	0	140.75	180000	0	1266750
	Sub-Total					652606080	151247325	174234322.5
6	Contingency @ 10%					65260608	15124732.5	17423432.25
	Package Wise Total Cost (Rs.)					717866688	166372057.5	191657754.8
	Sum of Total Package Wise Cost (in Rupees)					1,07,58,96,500.25		
	Sum of Total Package Wise Cost (in USD)					14105218.30		

9.4 R&R Assistance

R&R assistance costs are calculated by using Census survey data and applicable Entitlement Matrix of Resettlement Policy Framework (RPF) and is presented in **Table 9.3**. With the acquisition of land and the demolition of the residential and commercial structure, many families would be adversely affected. RTFCTLARR Act, 2013 has provisions for assistances to be provided to the affected people to restore their livelihood. A tentative cost that would be incurred while providing these assistances to the affected people has been calculated and briefed in **Table 9.3.** The details of assistance amount will be updated at the implementation stage.

Table 9.3: Estimated Cost of the R&R Assistance

		Unit	**Rate**	**Affected Numbers**			**Package wise Compensation (Rs.)**			**Total Compensation**
S. No.	**Item**			**Pkg-I**	**Pkg-II**	**Pkg-III**	**Pkg-I**	**Pkg-II**	**Pkg-III**	

1	If the Affected family becomes landless or is reduced to the status of a "small" or "marginal" farmer, assistance amount will be paid	One time	600000	164	148	158	98400000	88800000	94800000	282000000
2	Each affected family shall be given a "Resettlement Allowance"	One time	60,000	1609	1051	1293	96540000	63060000	77580000	237180000
	Loss of Private Structures (Residential/Commercial) to Title-holders									
3	Cattle Shed	Each Cattle Shed	28000	0	12	13	0	336000	364000	700000
4	One time subsistence allowance	Each affected Family	40000	768	147	300	30720000	5880000	12000000	48600000
5	One time Financial allowance	Each affected Family	60000	768	147	300	46080000	8820000	18000000	72900000
6	Loss of Livelihood	Commercial Structure	28000	262	42	115	7336000	1176000	3220000	11732000
	Loss of Residential/ Commercial Structures to Non-Title Holders									
7	One time subsistence allowance	Commercial Structure	40000	51	3	2	2040000	120000	80000	2240000
8	One time Shifting/Transportation assistance	Each affected Family	60000	138	6	7	8280000	360000	420000	9060000
9	Resettlement/ rehabilitation	Resi. and comr. Structure	28000	138	6	7	3864000	168000	196000	4228000
	Additional Support to Vulnerable Group									
10	Resettlement Allowance	One time	60,000							

	BPL			30	20	15	1800000	1200000	900000	3900000
	WHH			144	13	16	8640000	780000	960000	10380000
	SC			138	18	23	8280000	1080000	1380000	10740000
	ST			6	1	2	360000	60000	120000	540000
11	Additional Subsistence Grant for Scheduled Caste and Schedule Tribes category	One time	60,000	144	19	25	8640000	1140000	1500000	11280000
	Sub-Total						320980000	172980000	211520000	705480000
	Contingency @ 10%						32098000	17298000	21152000	70548000
	Total (in Rupees)						353078000	190278000	232672000	776028000
	Total (in USD)						4628923.20	2494582.64	3050376.45	10173882.29

9.5 Administrative, NGO, Monitoring & Other Expenses

The cost related to NGO recruitment will be about 50 Lac, External monitor will be about 30 Lacs, Administrative expenses of PIU will cost around 5 lac, Execution Cost of GBV, LMP & SEP will cost about 30 lacs. The total administrative Cost will **be 1.43** Cr. including other expenses and contingency as indicated in **Table 9.4.**

Table 9.4: Estimated Administrative Costs

S. No.	Item	Unit	Rate	Quantity	Total
1	NGO Recruitment	LS	50,00,000	1	50,00,000
2	External Monitor	LS	30,00,000	1	30,00,000
3	Administrative Expenses PIU	LS	5,00,000	1	5,00,000
4	Disclosure Expenses	LS	5,000	10	50,000
5	Training for PIU and PMU Staff	LS	1,00,000	5	5,00,000
6	Execution Cost of GBV, LMP & SEP	LS	30,00,000	1	30,00,000
7	Grievance Redressal Mechanism	LS	10,00,000	1	10,00,000
	Sub-Total	1,30,5 0,000			
	Contingency @ 10%	13,05,000			
	Total (in Rupees)	**1,43,55,000**			
	Total (in USD)	**188196.92**			

9.6 Relocation and enhancement of religious and community structures

The census survey showed that about 24 are religious structures like, temples, shrines and cemetery, and 97 are Government structure like school, colleges, police chouki, hospital, govt. offices, hand pump, bus stop etc. The relocation and enhancement cost of the religious and other community structures have been taken as lump-sum amount on the basis of market cost and calculation is indicated in **Table 9.5.**

Table 9.5: Estimated cost of Common Property Resources

S. No.	Type of Structures	L.S.	Number of impacted Structures			Rehabilitation Cost (Rs.)		
			Pkg-I	Pkg-II	Pk-III	Pkg-I	Pkg-II	Pk-III
1	Temple Lump sum	400000	12	1	6	4800000	400000	2400000
2	Shrine (Tree Temple) Lump sum	100000	2	0	0	200000	0	0
3	Samshan Ghat	100000	2	1	0	200000	100000	0
4	Hand pumps	300000	31	1	0	9300000	300000	0
5	Bawadi	400000	6	0	0	2400000	0	0
7	Bus Stop/Public Toilet	200000	14	2	5	2800000	400000	1000000
8	School/Nagar Palika/Police Chowki/Gowdam /Inter College/Govt. Offices/Road Circle	700000	30	3	5	21000000	2100000	3500000
	Sub-Total		97	8	16	40700000	3300000	6900000
	Contingency @ 10%					4070000	330000	690000
	Package Wise Total					44770000	3630000	7590000
	Total (in Rupees)					5,59,90,000		
	Total (in USD)					734040.10		

9.7 Total R&R budget for the project including land, structures, administrative and assistance costs

The total Land, Structure, Administrative and Assistance budget for the project works out to be **Rs. 503.87 Crore** of which Rs. 311.63 Crore is towards compensation for land, cost of structures is Rs.107.59 Crore, costs for R&R assistances is 77.60 Crore, administrative expenses of 1.43 Crore and cost of community property resources is 5.6 Crore. The details of the budget are summarizing in **Table 9.6** below.

Table 9.6: Summary of Total R&R Budget

S. No.	Description	Pkg-I	Pkg-II	Pkg-III
1	Cost of Land Acquisition	1050829403	1265335001	800221853.1

2	Structure Cost as per Schedule of rates of CPWD/HPPWD	717866688	166372057.5	191657754.8
3	R&R Assistance as per RPF Entitlement Matrix	353078000	190278000	232672000
4	Administrative, NGO, Monitoring & other expenses	4785000	4785000	4785000
5	Cost of Community Property Resources	44770000	3630000	7590000
Total R&R Budget		2171329091	1630400059	1236926608
Grand Total (in Rupees)		5,03,86,55,757.35		
Grand Total (in USD)		66057784.71		

CHAPTER 10: INSTITUTIONAL FRAMEWORK FOR RAP IMPLEMENTATION

10.1 Introduction

Institutional arrangements for the implementation of RAP have been made fixed by making it a part of the RPF. The Institutional Arrangements will be set up at three levels viz., MoRT&H (Central Govt.), State Level and Sub-Project Level on partnership model wherein concerned agencies at different levels supplement and complement each other efforts. The key elements of institutional arrangements are co-operation/ support, collaboration and sharing of responsibilities with clearly defined roles, involvement of key stakeholders and vertical and horizontal linkages amongst different agencies. The institutional arrangement is depicted in **Figure 10.1.**

Figure 10.1: Institutional Arrangement for RAP Implementation

The institutional arrangements to manage and implement Resettlement Action Plan & Tribal Development Plan/Vulnerable Communities Development Plan will be set up at three levels viz., Central, State and Sub-Project Level. These are presented below:

10.2 Central Level

At Central Level, the Chief Engineer (EAP), MoRTH, Govt. of India will be overall responsible for the implementation of RPF. CE (EAP) will have all delegated administrative and financial decisions with regard to implementation of the project as well as land acquisition, RAP including TDP/VCDP implementation. It will include further augmenting the capacity of MoRTH with regard to resettlement and rehabilitation and management of other social issues. CE(EAP) will be assisted by a team comprising EE designated as Social Officer and a suitable number of technical and secretarial staff. MORTH also will engage a Social Development Specialist (SDS) either as individual consultant or through Project Management Consultant (PMC), to work with EAP and assist Social Officer. The EAP will be responsible for ensuring training, guidance, and recommendations for handling policy and implementation issues at the state and sub-project levels in compliance with RPF. The Social Development Specialist either individually or with PMC will provide policy and strategic assistance to EAP on social issues including land acquisition and rehabilitation and resettlement. The designated Social Officer will be specifically responsible for implementation of RAP & TDP. The Social Officer will ensure that all social safeguards issues are complied with as per the RPF. The roles and responsibilities of the SDS would broadly include the following:

(i) Ensure adequate staffing at state and sub-project level to ensure timely implementation of RAP.

(ii) Guide and supervise in matters related to resettlement and rehabilitation & TDP to state and sub-project level offices.

(iii) Ensure preparation and disclosure of SIA ,RAP including TDP/VCDP and Land Acquisition Plan for sub projects as per RPF.

(iv) Ensure free, prior and informed consultation with tribal families along the project and also ensure that sufficient supporting documentation is maintained.

(v) Co-ordinate with state government departments in matters related to implementation of RAP &TDP.

(vi) Interactwithimplementationagenciesatstateandsub-projectlevelonaregular basis.

(vii) Undertake field visits as and when required.

(viii) Facilitate necessary help needed at site with regards to LA and R&R issues.

(ix) Compile data related to resettlement and rehabilitation & TDP activities received from field offices and update Chief Engineer (CE)and suggest suitable measures to be taken.

(x) Ensure budgetary provision for resettlement and rehabilitation of PAPs and relocation, rehabilitation and reconstruction of common property resources (CPRs)

and implementation of &TDP.

(xi) Ensure timely release of budget for implementation of RAP&TDP.

(xii) Monitor implementation of RAP including TDP carried out by the agency through RRO at sub project level.

(xiii) Ensure third party audit of RAP & TDP implementation; and

Perform other roles and responsibilities related to implementation of RAP including TDP as assigned by the CE (EAP) from time to time.

10.3 State Level

At State Level, Al and Acquisition cum Social Development Officer (LA cum SDO) would be appointed in the Project Coordination Unit (PCU) headed by Nodal Officer. Additional sociologist as individual consultant will also be engaged to assist LA cum SDO in states as required, particularly in states with larger share of sub projects such as Andhra Pradesh, Himachal Pradesh, Uttar Pradesh etc. The roles and responsibilities of the LA cum SDO would broadly include the following:

(i) Facilitate preparation and implementation of land acquisition and RAP including TDP in compliance with RPF;

(ii) Ensure consultation and stakeholder participation in finalisation of RAP including TDP;

(iii) Guide and supervise RAP including TDP implementation at sub-project level;

(iv) Interact with RAP implementation support agencies and undertake field visits for first-hand information;

(v) Co-ordinate with various government departments in matters related to implementation of RAP &TDP;

(vi) Check implementation of RAP including TDP/VCDP carried out by the agency from time to time by undertaking site visits and consultations with PAPs;

(vii) Facilitate and cooperate in third party audit of RAP & TDP implementation;

(viii) Guide and supervise the RAP implementing agency to roll out HIV prevention activities;

(ix) Ensure a well -functioning GRM including “confidential” handling of complaints relating to Gender Based Violence;

(x) Compile data on LA progress and RAP implementation activities received from field offices and update EAP, MoRTH and suggest suitable measures to be taken; and Perform other roles and responsibilities related to implementation of RAP including TDP/VCDP as assigned by the EAP, MoRTH from time to time

10.4 Sub-Project Level

A Project Implementation Unit (PIU) comprising officials of State PWD will be constituted at sub project level and headed by the Superintending Engineer/Executive Engineer–who will be designated as Project Director. The PIU will be responsible for the project execution including RAP & TDP/VCDP 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 and TDP at site. Additional sociologist as individual consultant will also been gaged to assist RRO as required. RRO will assist Project Director at PIU in all matters related to resettlement and rehabilitation. The roles and responsibilities of the Resettlement and Rehabilitation Officer are asunder:

(i) Ensure RAP including TDP implementation with assistance from implementation agency as per the time line agreed upon.

(ii) Interact with RAP implementation agency on a regular basis.

(iii) Undertake field visits with implementation agency from time to time.

(iv) Co-ordinate with district administration and other departments in matters related to implementation of R&R.

(v) Facilitate necessary help needed at site with regard to LA and R&R, HIV issues to implementation agency.

(vi) Ensure distribution of Resettlement and Rehabilitation Policy and entitlement matrix for the project to PAPs.

(vii) Ensure preparation and distribution of photo identity cards.

(viii) Ensure and attend meetings organised by implementation agency on thematic areas related to resettlement and rehabilitation policy and entitlements and awareness generation including aspects relating to GBV.

(ix) Ensure inclusion of PAPs who could not been enumerated during census but have documentary evidence to be included in the list of PAPs.

(x) Ensure preparation of identity cards, and approval from the PCU and distribution of the same to PAPs.

(xi) Ensure timely preparation of micro-plan from RAP implementation agency and approval from PCU.

(xii) Ensure disbursement of resettlement and rehabilitation assistance in a transparent manner.

(xiii) Participate in meetings related to resettlement and rehabilitation issues.

(xiv) Facilitate in opening of joint account of PAPs.

(xv) Ensure release of compensation and assistance before taking over the possession of land for start of construction work.

(xvi) Ensure relocation, rehabilitation and reconstruction f CPRs before dismantling through proper mechanism.

(xvii) Ensure development of resettlement sites, where required.

(xviii) Attend and participate in Grievance Redress Committee meetings for redressal of grievances of PAPs and other committees involving R&R matters,

(xix) Liaison with government and other agencies for inclusion of PAPs in employment and income generation programme/scheme.

(xx) Ensure that tribal families get equal opportunity to participate during implementation and become overall beneficiaries in the project.

(xxi) Prepare monthly progress report related to physical and financial progress of implementation of RAP including TDP & submit to PCU.

(xxii) Provide all necessary information and data related to R&R on monthly basis to designated Social Officer at Central Level through Project Director.

(xxiii) Carry out any other work related to resettlement and rehabilitation that may be entrusted from time to time by the PCU for compliance of R&R.

10.5 RAP Implementing Support Agency at Sub-Project Level

The Project Authority CE(EAP), MoRTH to implement RAP for each of the sub-project, will engage the services of NGOs/Consultancy firms having experience in resettlement and rehabilitation issues. Broad roles and responsibilities of implementation agency would be as:

(i) The RAP implementation agency will be the main link between the Project Authority and PAPs,

(ii) Shall be responsible for verification of PAPs as prepared by the DPR consultants,

(iii) Under take public information campaign along with RRO at the commencement of the RAP&TDP,

(iv) Develop rapport with PAPs,

(v) Distribute pamphlets of R&R Policy including Entitlement Matrix to PAPs, Panchayat Raj Institutions, and concerned Govt. Offices in the project area, etc.

(vi) Include PAPs who could not been umerated during census cum socio-economic survey and certification from R& Officer,

(vii) Distribute identity cards for PAPs,

(viii) Prepare and submit micro-plan to RRO for approval from PCU,

(ix) Organize consultations at regular interval with PAPs with regard to resettlement and rehabilitation,

(x) Organize training program for skill up gradation of the PAPs,

(xi) Assist PAPs in all matters related to compensation and R&R,

(xii) Assist and facilitate aggrieved PAPs (for compensation and assistance) by bringing their cases to GRC,

(xiii) Facilitate in opening of joint account of PAPs,

(xiv) Generate awareness about the alternative economic livelihood and enable PAPs to make informed choice ,

(xv) Consultations with PAPs regarding the choice of resettlement (i.e. self or assisted), development of resettlement site, participation of women, etc.

(xvi) Identify training needs of PAPs for income generation and institutions for imparting training,

(xvii) Undertake outreach activities for HIV prevention for awareness and behavior change as per RAP,

(xviii) Hold consultations with local people and Panchayat Raj Institutions with regard to relocation, rehabilitation, reconstruction of affected CPRs as well as provision of new facilities under the project,

(xix) Participate in various meetings relating to RAP and TDP/VCDP preparation and implementation,

(xx) Submit monthly progress report, and

(xxi) Undertake any other activities that may be required for the implementation of RAP & TDP, etc.

10.6 Replacement Cost Committee at District Level

A committee at district level will be constituted to fix the replacement cost **of** land in case of lands acquired through Direct Purchase method or Land lease, structures and other properties (trees, crops and other assets, tubewell, handpump, etc).The committee may be chaired by the District Collector/ Dy. Commissioner or his designated representative (not below the rank of SDM), Project Director-cum-Executive Engineer of the concerned PIU, District Agriculture Officer, Range Officer (Forest Department, if required), an independent certified valuer, Executive Engineer of the concerned District, elected representative (MLA) of the concerned area and Team Leader of RAP implementation agency.

The highest value of land obtained by the three methods mentioned in Section 26 and Schedule

1 of RFCTLARR will be presented by the Project Authority and approved by the committee as the replacement cost. Similarly, latest schedule of rates of the concerned districts shall be used for obtaining replacement cost of structures. For items not available in the schedule of rates, for those

items market rates shall be collected from three different sources and then replacement cost shall be fixed by the committee. For replacement costs of crops, trees and other such items similar methods will be followed.

The committee will be constituted through an executive order and or other suitable instrument within one month (30 days) from the date of mobilization of RAP implementation agency at site.

10.7 Training and Capacity Building at Project and Sub-project Level

Training and development of project staff is an integral part of project implementation. A training needs identification shall be carried out at Corporate, Regional and Site level, based on which focused training modules will be developed in the first six months of project implementation;

(i) Strengthening in house capacity to implement the provisions of RAP &TDP,

(ii) Creating awareness, providing the tools for implementation of RAP & TDP, strategy and accompanying set of management procedures to all departments,

(iii) Developing competence of key officials to provide training at respective level.

Based on skill requirement/improvement at all levels for proper implementation of RAP, a training programme focusing project implementing partners at Centre, State and field PIU shall be developed which will be implemented by the PMU, MoRTH in the next two years. These training programs, which will be zeroed down after a quick training needs assessment, are to be conducted with the help of local and national training institutions and experts in various aspects of social management. MoRTH will also identify courses offered by the premier institutions in India and abroad on social management and inter-phase with identified programme. Provision for separate budget has been made for this activity. The budget reported under “institutional” head includes the cost estimates of training programs discussed above.

CHAPTER 11: GRIEVANCE REDRESSAL MECHANISM

11.1 Need for Grievance Redress Mechanism

The Resettlement Policy Framework (RPF) mandates formation of Grievance Redressal Mechanism in order to resolve disputes in an effective manner and at the door steps of the PAPs. Compensation and assistance as per eligibility is provided in the entitlement matrix of the approved RPF. Grievance of PAPs will be brought to the grievance redress committee for redressal. The decision of the GRC will be binding, unless vacated by court of law.

11.2 Grievance Redressal Committee (GRC)

The GRC will be constituted by the Project Authority with the aim to settle as many disputesaspossibleonLAandR&Rthroughconsultationsandnegotiations.Therewill be one GRC for each PIU. The GRC will comprise six members headed by a retired Revenue Officer/Social Welfare Officer not below Group I officer rank. Other members of the GRC will include the concerned Project Director-cum-Executive, 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 PAPs 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 PAPs. The decision of the GRC will not be binding to PAPs. ***The decision of the Grievance Committees will not be binding on the DPs and they will have the option of taking recourse to court of law, if she/he so desires at his or her own expense***. Broad functions of GRC are as under:

(i) Record the grievances of PAPs, categorize and prioritize them and provide solution to their grievances related to resettlement and rehabilitation assistance.

(ii) 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 PAPs. Fix a time frame within the stipulated time period of 45 days for resolving the grievance.

(iii) Inform PAPs through implementation agency about the status of their case and their decision to PAPs and Project Authority for compliance.

(iv) In case of grievances/complaints relating to GBV, ensure confidentiality and appropriate referral to mapped service providers.

The GRC will be constituted within 3 months by an executive order from competent authority (centre/ state) from the date of mobilization of RAP implementation agency.

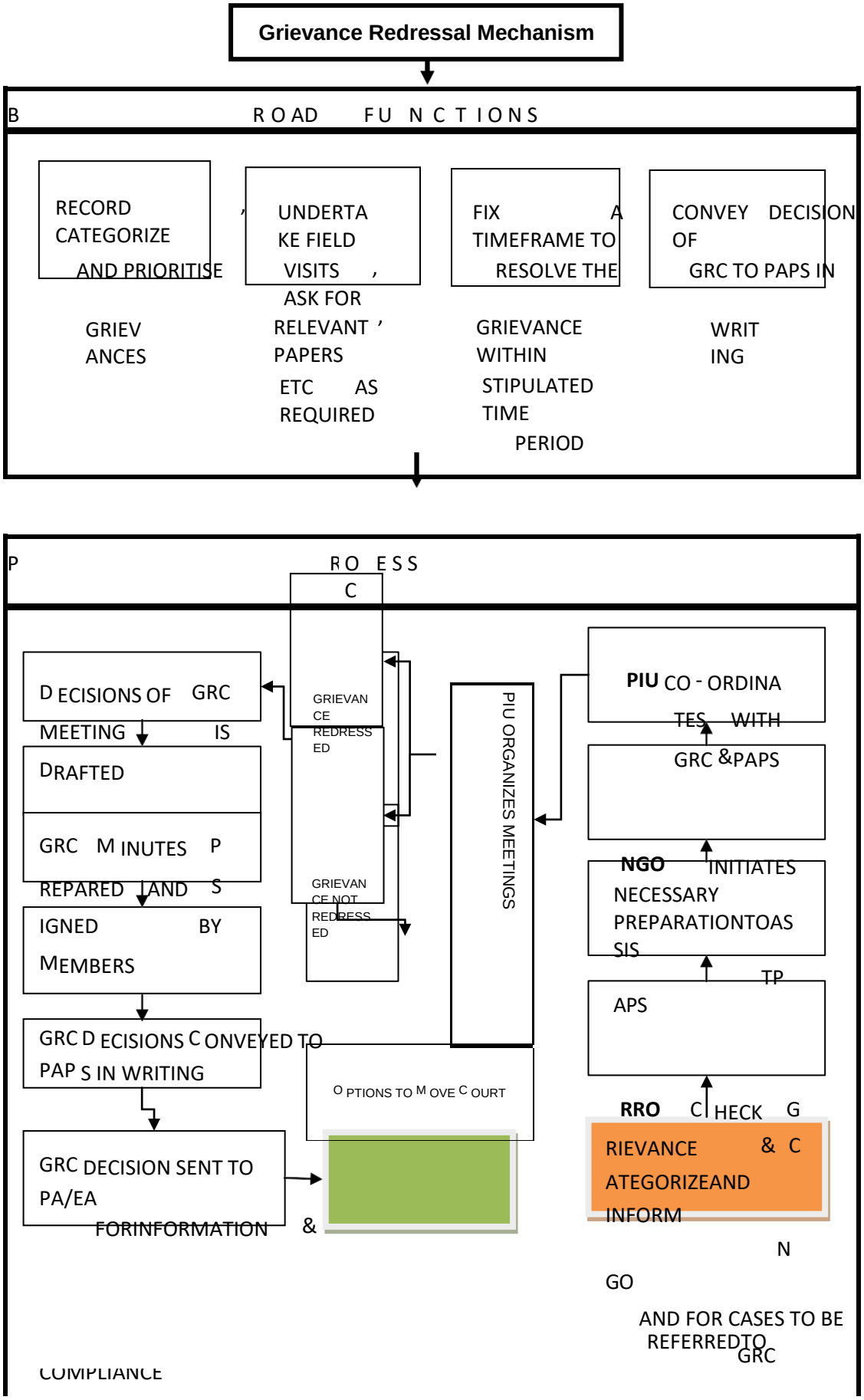
The RRO will persuade the matter with assistance from implementation agency in identifying the suitable persons from the nearby area for the constitution of GRC. Secretarial assistance will be provided by the PIU as and when required. The flow diagram **(Figure 11.1)** shows the entire process of grievance redressal.

PAPs will be fully made aware about the GRM for effective, inexpensive and amicable settlement of claims for compensation and assistance by holding meetings with PAPs, public meetingsanddistributingleafletscontainingsalientfeaturesandproceduresofGRM.TheRAP IA will assist the PAPs in getting their record of rights updated in case of disputes related to land. The RRO with support from RAP IA will make all possible efforts for amicable settlement. The RAP IA will document all cases brought to GRC and maintain the records of the proceedings of the grievance redressal committee meetings.

11.3 Suggestion and Complaint Handling Mechanism (SCHM)

The MoRTH recognizes the importance of this and hence intends to establish a SCHM for the GNHCP. The communication channels to report project related complaints/concerns will be disclosed at all levels of institutions—MoRTH, State and Sub-project levels.

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 proactively 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. 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. Therefore, MoRTH has agreed to establish SCHM as a good practice to address public concerns pertaining to various issues. SCHM will report all project related LA and R&R of the PAPs for redressal through the concerned PIU or GRC as appropriate.


Grievance Redressal Mechanism
B ROAD FU N C T I O N S
RECORD CATEGORIZE AND PRIORITISE GRIEV ANCES
UNDERTA KE FIELD VISITS , ASK FOR RELEVANT ' PAPERS ETC AS REQUIRED
FIX A TIMEFRAME TO RESOLVE THE GRIEVANCE WITHIN STIPULATED TIME PERIOD
CONVEY DECISION OF GRC TO PAPS IN WRIT ING
P RO E S S C
D ECISIONS OF GRC MEETING IS DRAFTED
GRC M INUTES P REPARED AND S IGNED BY MEMBERS
GRC D ECISIONS C ONVEYED TO PAP S IN WRITING
GRC DECISION SENT TO PA/EA FORINFORMATION &
GRIEVAN CE REDRESS ED
GRIEVAN CE NOT REDRESS ED
O PTIONS TO M OVE C OURT
PIU ORGANIZES MEETINGS
PIU CO - ORDINA TES WITH GRC &PAPS
NGO INITIATES NECESSARY PREPARATIONTOAS SIS TP APS
RRO C HECK G RIEVANCE & C ATEGORIZEAND INFORM N GO
AND FOR CASES TO BE REFERREDTO GRC
COMPLIANCE

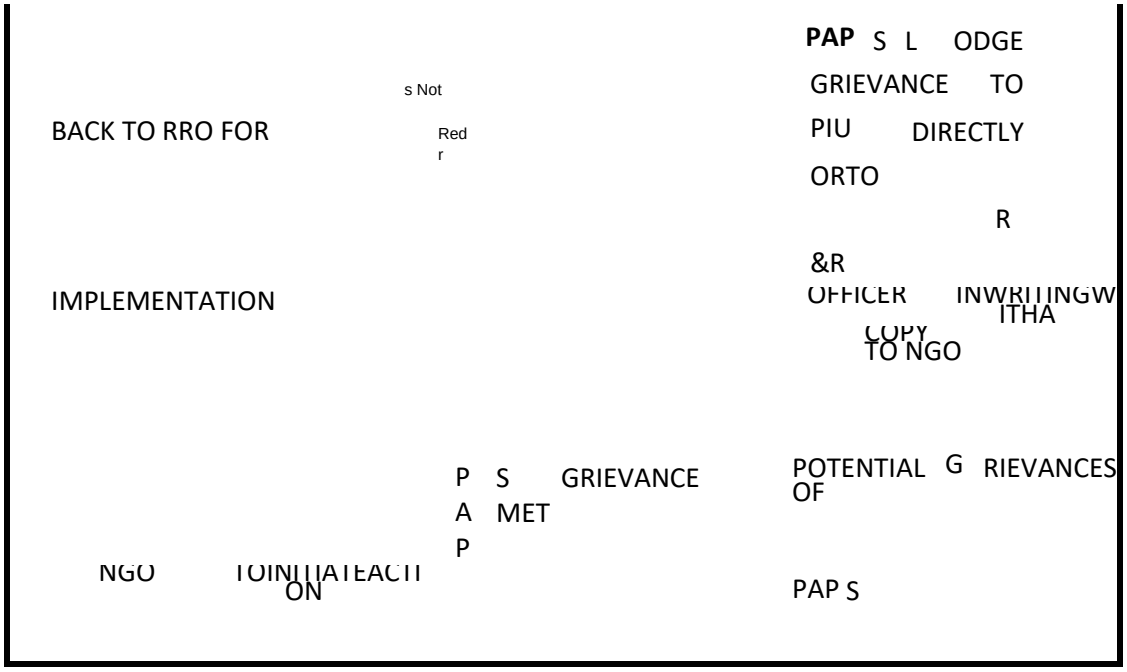


Figure 11.1: Grievance Redressal Mechanism

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.

11.4 Training and Capacity Building – at Project and Sub-project Level

Training and development of project staff is an integral part of project implementation. A training needs identification shall be carried out at Corporate, Regional and Site level, based on which focused training modules will be developed in the first six months of project implementation;

- Strengthening in house capacity to implement the provisions of RAP,
- Creating awareness, providing the tools for implementation of RAP, strategy and accompanying set of management procedures to all departments,
- Developing competence of key officials to provide training at respective level.

Based on skill requirement/improvement at all levels for proper implementation of RAP, a training programme focusing project implementing partners at Centre, State and field PIU has been developed which will be implemented by the PMU, MoRT&H in the next two years. These training programs, which will be zeroed down after a quick training needs assessment, are to be conducted with the help of local and national training institutions and experts in various aspects of social management. MoRT&H will also identify courses offered by the premier institutions in India and abroad on social management and inter-phase with identified programme. Provision for separate budget has been made for this activity. The budget reported under "institutional" head includes the cost estimates of training programs discussed above.

CHAPTER 12: IMPLEMENTATION SCHEDULE

12.1 Coordination with civil works and certification

Implementation of RAP will include land acquisition, and resettlement and rehabilitation (R&R) activities. The implementation process will cover (i) identification of cut-off date and notification; (ii) verification of properties of PAPs and estimation of their type and level of losses and distribution of identity cards; (iii) preparation of PAPs for relocation through consultation, however, the process of consultation will continue throughout the RAP implementation and (iv) relocation and resettlement of the PAPs.

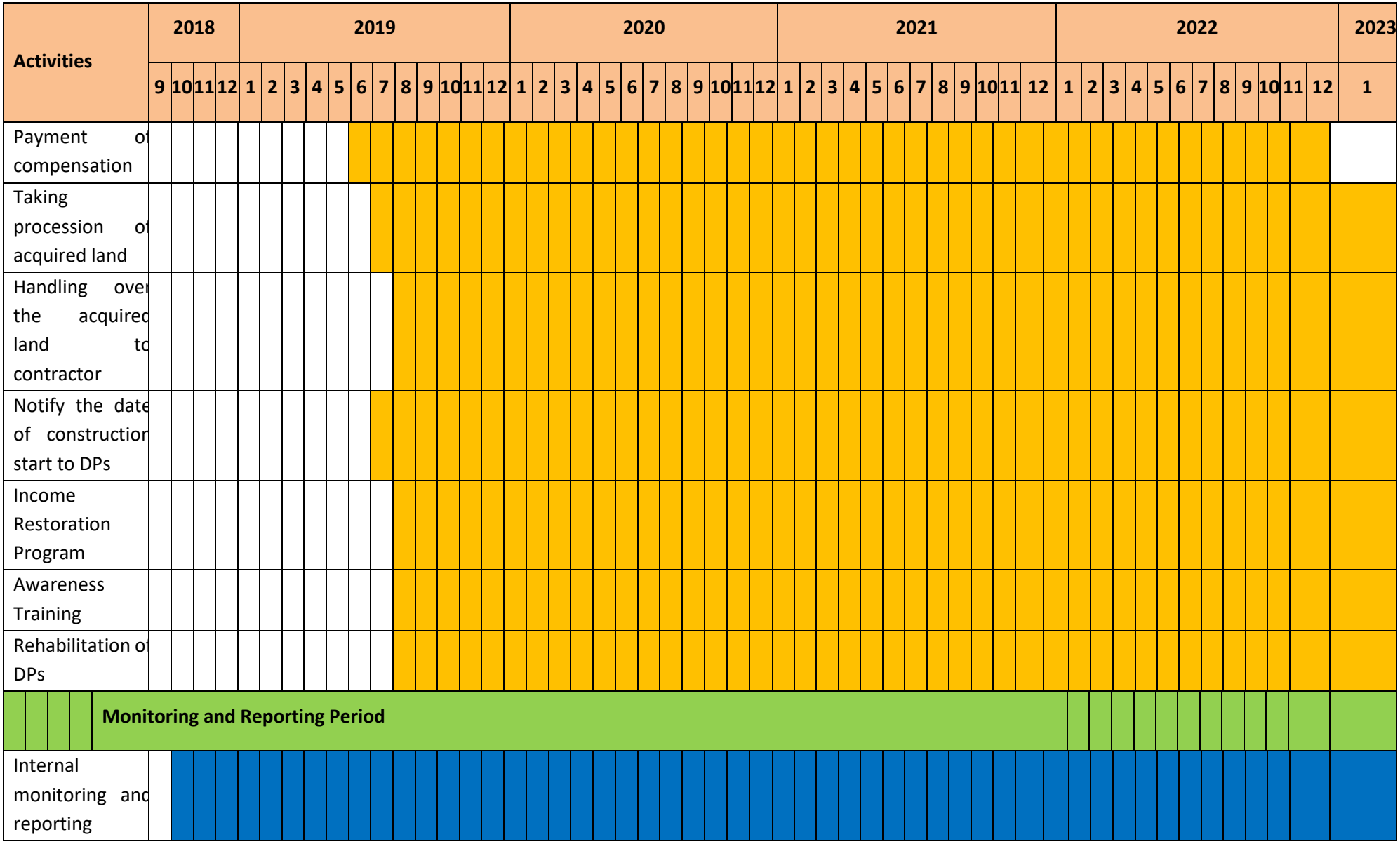
Implementation schedule should be revised, post-finalization of entitlements, compensation packages and the budget. This should depend on the magnitude of work to be undertaken as part of RAP implementation. PAPs should be given sufficient notice period to vacate their property before civil works begins. No civil works should begin until all PAPs receive the approved compensation package. Civil works should therefore be linked with the completion of land acquisition. In this case, all land transfers from Government have to be completed. Depending on the ownership, PIU should coordinate the DC's office and the Revenue Department. A draft Implementation Schedule is given in **Table 12.1**, subject to change after revalidation of RAP.

It is assumed that implementation will take minimum 36 months to hand over land for civil works. Training for income restoration, if proposed, however shall continue for another month, estimating a total period for RAP implementation.

Table 12.1: Implementation Schedule of Resettlement Plan

Activities	2018				2019												2020												2021												2022												2023
	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1
Project Preparation Stage																																																					
Screening project impact																																																					
Public Consultation or alignment																																																				
Updating the affected family information																																																				
Initiation of the implementation of the RP activities																																																				
RP Implementation Stage																																																				

Activities	2018				2019												2020												2021												2022												2023
	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1
Obtain RP approval from MORTH																																																				
Disclosure of RP																																																				
Hiring NGO for RP Implementation																																																				
Formation of GRC (Grievance Mechanism)																																																				
Implementation of GRC																																																				
Public Consultation																																																				
Co-ordination with district authority for LA																																																				
Submission of LA proposals to DC																																																				
Declaration of cut-off date (LA notification)																																																				


Activities
2018
2019
2020
2021
2022
2023
9 10 11 12 1 2 3 4 5 6 7 8 9 10 11 12 1 2 3 4 5 6 7 8 9 10 11 12 1 2 3 4 5 6 7 8 9 10 11 12 1 2 3 4 5 6 7 8 9 10 11 12 1 2 3 4 5 6 7 8 9 10 11 12 1
Payment of compensation
Taking procession of acquired land
Handling over the acquired land to contractor
Notify the date of construction start to DPs
Income Restoration Program
Awareness Training
Rehabilitation of DPs
Monitoring and Reporting Period
Internal monitoring and reporting

Activities	2018				2019												2020												2021												2022												2023
	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1
Hiring Construction Supervision Consultant																																																					
External monitoring and reporting																																																					

CHAPTER 13: MONITORING AND EVALUATION

Monitoring and evaluation are important activities of infrastructure development project particularly, those involving involuntary resettlement. It helps making suitable changes, if required during the course of implementation of RAP and also to resolve problems faced by the PAPs. Monitoring is periodical checking of planned activities and provides midway inputs, facilitates changes, if necessary and provides feedback to project authority for better management of the project activities. Evaluation on the other hand assesses the resettlement effectiveness, impact and sustainability of R&R activities. In other words, evaluation is an activity aimed at assessing whether the activities have actually achieved their intended goals and purposes. Thus, monitoring and evaluation of resettlement action plan implementation are critical in order to measure the project performance and fulfillment of project objectives.

The monitoring and evaluation of RAP implementation will ensure monitoring of key indicators on inputs, outputs, project processes and evaluation of impact indicators. The overall purpose of the monitoring is to keep track of the implementation processes and progress, achievement of performance targets fixed in the annual work plans, learning lessons and taking corrective actions to deal with emerging constraints and issues. Monitoring and evaluation will constitute the following:

- Implementation progress (physical and financial aspects), monitoring of inputs, and outputs;
- Process documentation (case studies and lessons learnt);
- Impact evaluation based on sample survey and consultations; and
- Thematic studies.

13.1 Institutional Arrangement for M & E

The Resettlement Policy Framework (RPF) stipulates hiring services of an external agency (third party) for monitoring and evaluation of RAP implementation. This means the project authority through an external agency will carry out monitoring and evaluation from the subsequent month of the mobilization of RAP IA at project site. Internal monitoring will be carried out by the Social Officer of Project Coordination Unit (PCU) with assistance from R&R officer and RAP IA whereas external monitoring and evaluation will be carried by the third party engaged for the purpose. This will help monitor project activities closely. Regular monitoring by undertaking site visits and consultations with PAPs will help identify potential difficulties and problems faced in the implementation and accordingly help take timely corrective measures including deviations, if needed.

Components of monitoring will include performance monitoring i.e., physical progress of the work and impact monitoring and external evaluation. Indicative indicators to be monitored related to performance are provided in the following sections. In case during the project implementation, if some other indicators are found relevant they will also be considered for monitoring.

13.2 Monitoring and Evaluation (M&E) at Project and Sub-project Level

The Resettlement Action Plan contains indicators and benchmarks for achievement of the objectives under the resettlement programme. These indicators and benchmarks will be of three kinds:

1) Proposed indicators, indicating project inputs, expenditures, staff deployment, etc.

2) Output indicators, indicating results in terms of numbers of affected People compensated and resettled, training held, credit disbursed, etc,

3) Impact indicators, related to the longer-term effect of the project on People's lives.

The benchmarks and indicators will be limited in number, and combine quantitative and qualitative types of data. Some of these indicators may include, percentage of PAPs actually paid compensation before any loss of assets; percentage of PAPs whose incomes after resettlement are better than, or at least same as before resettlement; percentage of assets valued at replacement cost compensation; percentage grievances resolved; and/or percentage of cases to court. The first two types of indicators, related to process and immediate outputs and results, will be monitored to inform project management about progress and results, and to adjust the work programme where necessary if delays or problems arise. The results of this monitoring will be summarized in reports which will be submitted to the World Bank on a regular basis. Provision will be made for participatory monitoring involving the project affected people and beneficiaries of the resettlement programme in assessing results and impacts. The Project Authority will engage services of an external agency (third party), which will undertake independent concurrent evaluations at least twice a year during the project implementation period. At the end of the project an impact evaluation will be carried out as part of the project completion report. Such independent evaluation will focus on assessing whether the overall objectives of the project are being met and will use the defined impact indicators as a basis for evaluation. Specifically, the evaluation will assess: (i) The level of success (including the constraints and barriers) in land acquisition programme, resettlement plan, and income recovery of the PAPs after they have been displaced from the project affected area, and, (ii) the types of complaints/ grievances and the success of the handling of grievance and public complaints towards the construction of project's infra-structures, means of redress for assets and lands and the amount of compensation, resettlement, and other forms of complaints.

Summarizing, M&E would be carried out for regular assessment of both the process followed and progress of the RAP implementation. The internal monitoring will be carried out by the State PCU by the Land Acquisition cum Social Development Officer with assistance from RAP Implementation Support Agency and a quarterly report will be submitted to MoRT&H. Each quarterly report would also be uploaded on the MoRT&H website. The external agency (third party) however, would conduct assessment six monthly for each sub-project by undertaking field visits and all other necessary activities including consultations. The six monthly reports would cover detailed information on process and progress of RAP implementation. The report would highlight issues, if any that need attention of the Project Authority and suggest corrective measures that may be followed for better implementation of RAP.

13.3 Process & Performance Monitoring

Process monitoring would enable the project authority to assess whether the due process are being followed or not, whereas performance monitoring would mainly relate to achievement in measurable terms against the set targets. Monitoring report will also provide necessary guidance and inputs for any changes, if required during the course of the implementation. A list of indicators is given in **Table 14.1.**

Table 14-1: Performance Monitoring for RAP Implementation

Sl. No.	Indicators	Target	Status	Achievement (in %)	Remarks
1	Land acquisition (Private)				
	Notification published u/s 3D				
	Award declared u/s ……. for				
	Land area (ha)				
	Land owners (No.)				
	Compensation disbursed by Competent Authority to land owners (No.)				
	Govt. land transfer (ha)				
2	Verification of identified PAPs completed (No.)				
3	New PAPs added, if any (who could not be enumerated at the time of survey)				
4	Consultations held with regard to RAP (dissemination of information, awareness generation, entitlements, HIV/ AIDS, SCHM, etc) – No.				
5	Leaflets, containing salient features of RAP, hand bills, fliers and other awareness materials distributed (No.)				
6	Measurement of structures likely to be affected completed (No.)				
7	Date of formation of DLC				
8	Meetings held by DLC for fixing the replacement cost (No.)				
9	Valuation of affected properties completed (No.)				
10	Micro plan submitted for THs for approval (No.)				
11	Identity cum entitlement card issued to PAPs (No.)				

Sl. No.	Indicators	Target	Status	Achievement (in %)	Remarks
12	Consultations held with local community regarding relocation or rehabilitation of CPRs (No.)				
13	Estimate submitted for relocation/ rehabilitation of CPRs for approval				
14	Agency to carryout relocation/ rehabilitation of CPRs as agreed by the project authority				
15	R&R assistances disbursed to PAPs (THs – No.				
16	PAPs re-established their shops/ business (No.)				
17	PAPs covered under income generation schemes (No.)				
18	PAPs provided training for alternate livelihood (No.)				
19	CPRs relocated/ rehabilitated (No.)				
20	Grievance/ complaints brought to GRC for redressal (No.)				
21	GRC meeting held and cases resolved (No.)				
22	Various channels of SCHM used by category (No.)				
23	Consultation meetings held by LA cum SDO of Project Coordination Unit (PCU) (No.)				

13.4 Evaluation

The external agency engaged by the Project Authority shall carry out the evaluation at two stages viz., mid-term and after the completion of RAP implementation. The evaluation will be carried out under a set term of reference. The evaluation study would involve both quantitative and qualitative surveys and compare results before and after the implementation of the project. It will focus on assessing whether the overall objectives of the project are being met and will use the defined impact indicators as a basis for evaluation. The evaluation study would undertake the following but not limited to:

- Review monthly progress report submitted by RAP Implementation Agency (RAP IA);
- Undertake consultations with PAPs in order to assess their point of view with regard to overall process;
- Intensity and effectiveness of information dissemination with regard to RAP implementation covering eligibility of different categories of PAPs, frequency of interactions by RAP IA personnel with PAPs, deployment of RAP IA staff, quality of rapport maintained by RAP IA personnel with PAPs, capability of RAP IA personnel, behavior of RAP IA staff, availability of RAP IA staff, level of satisfaction as regards the work of RAP IA, etc;
- Collect information about distribution of awareness generation materials, entitlements, distribution of identity cum entitlement card, adequacy of dissemination of information, consultations meetings with regard to policy and eligibility for entitlement, alternatives and relocation related issues, measurement and valuation of affected properties, understanding and use of grievance procedure, disbursement of assistance, and other R&R related issues, compliance of resettlement policy, etc;
- Conduct sample survey (25% of PAPs) for making comparative analysis substantiated by qualitative surveys and case studies, etc.

It may be noted that one of the key objectives of the project is improvement or at least restoration of economic status of the PAPs to the pre project level. An illustrative list of indicators is given in **Table 13.2**, which would be measured against the baseline data collected for the preparation of RAP. The M&E agency would finally select the indicators for the evaluation of the project depending upon the progress of R&R activities.

Table 13-2: Impact Indicators

Sr. No.	Indicator	Unit	Before Project Implementation	During/after RAP Implementation
1	Monthly income of family/household			
2	Consumer durables/material Assets owned			
3	Ownership of Transport and farm implements owned			
4	Occupation of head of Household and other members			
5	Type of dwelling units			
6	Number of Earning members/households			
7	Family under debt			
8	Size of loan			
9	Households purchased loans			
10	Households with various sizes of land			
11	Ownership/tenancy of dwelling units (owner, encroacher, squatter)			

Sr. No.	Indicator	Unit	Before Project Implementation	During/after RAP Implementation
12	Access to water and sanitation facilities			
13	Access to modern sources of lighting and cooking			
14	Animal and poultry birds owned			
15	Migration for employment			

13.5 Reporting

Monthly Progress Reports on the progress of RAP implementation including mobilization of staff members, opening of site offices, etc. of the project would be prepared by RAP IA and submitted to the R&R Officer at sub-project level.

Quarterly Monitoring Reports shall be compiled by the LA cum SDO of Project Coordination Unit (PCU) and submitted to MoRT&H for review and onward submission to World Bank

Six monthly reports shall be prepared by the M&E agency by undertaking site visits and review of progress report, consultations, etc.

Evaluation Report shall be prepared by the M&E agency at the end of the project implementation as part of the project completion report.