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Report No: PAD3462

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

PROJECT APPRAISAL DOCUMENT
ON A
PROPOSED LOAN

IN THE AMOUNT OF US$82 MILLION
TO

INDIA

FOR A

HIMACHAL PRADESH STATE ROADS TRANSFORMATION PROJECT

February 25, 2020

Transport Global Practice
South Asia Region

CURRENCY EQUIVALENTS

January 31, 2020

Currency Unit =	Indian Rupees (INR)
INR 71.40 =	US$1
INR 1 =	US$0.014

FISCAL YEAR
April 1 - March 31

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Country Director:	Junaid Kamal Ahmad
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ABBREVIATIONS AND ACRONYMS

AAI	Airports Authority of India
ARAP	Abbreviated Resettlement Action Plan
BRO	Border Roads Organization
BSI	British Standards Institution
CA	Chartered Accountants
CAG	Comptroller and Auditor General
CCTV	Closed-circuit television
CEO	Chief Executive Officer
CESMP	Contractor Environment and Social Management Plan
CGFA	Corporate Governance and Financial Accountability Assessment
CHS	Construction Health Safety
CONCOR	Container Corporation of India
CPF	Country Partnership Framework
CPR	Conflict Prevention and Reconstruction
CRF	Central Road Fund
CSC	Construction Supervision Consultant
DLI	Disbursement Linked Indicator
DLR	Disbursement Linked Results
DPR	Detailed Project Report
E&S	Environmental and Social
EEP	Eligible Expenditure Program
EIRR	Economic Internal Rate of Return
ePMS	Electronic Project Management System
ERP	Enterprise Resource Planning
ESCP	Environment and Social Commitment Plan
ESF	Environmental and Social Framework
ESIA	Environmental and Social Impact Assessment
ESMP	Environment and Social Management Plan
ESRS	Environmental and Social Review Summary
ESS	Environmental and Social Standards
FM	Financial Management
GBV	Gender Based Violence
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GoHP	Government of Himachal Pradesh
GoI	Government of India
GRM	Grievance Redress Mechanism
GRS	Grievance Redress Service
HARI	Highways, Air transport, Railways and Internet
HP	Himachal Pradesh
HPDOT	Himachal Pradesh Department of Transportation
HPHDP	Himachal Pradesh Horticulture Development Project
HPMVA	HP Motor Vehicle Administration
HPPWD	Himachal Pradesh Public Works Department
HPRIDC	Himachal Pradesh Road & Other Infrastructure Development Corporation
HPSRP I	HP State Road Project

ICB	International Competitive Bidding
ICT	Information and Communication Technologies
IFR	Interim Financial Report
IMIS	Integrated Management Information System
INR	Indian Rupee
IPF-DLI	Investment Project Financing with Disbursement Linked Indicators
IUFRs	Interim Unaudited Financial Reports
IVA	Independent Verification Agent
MDRs	Major District Roads
MoR	Ministry of Railways
MORTH	Ministry of Road Transport and Highways
MSIPs	Management Strategies and Implementation Plans
NABARD	National Bank for Agriculture and Rural Development
NHAI	National Highways Authority of India
NPV	Net Present Value
OHS	Occupational Health Safety
OP	Operational Policy
OPBMC	Output and Performance-based Maintenance Contracting
PAS 55	Publicly Available Specification 55
PDO	Proposed Development Objective(s)
PIM	Project Implementation Manual
PIU	Project Implementation Unit
PMC	Project Management Consultant
PMGSY	Pradhan Mantri Gram Sadak Yojana
PPA	Project Preparation Advance
PPP	Public Private Partnership
PPSD	Project Procurement Strategy for Development
PSI	Project Safety Impact
PSU	Public Sector Undertaking
PWD	Public Works Department
QAC	Quality Assurance Consultant
QPR	Quarterly Progress Report
RADMS	Road Accident Data Management System
RAMS	Road Asset Management System
RAP	Resettlement Action Plan
RIMES	Regional Integrated Multi-Hazard Early Warning System
ROW	Right of Ways
RPF	Resettlement Policy Framework
SCD	Systematic Country Diagnostics
SCRN	State Core Road Network
SEP	Stakeholder Engagement Plan
SHG	Self-Help Group
SMEs	Small and Medium Scale Enterprises
SoER	State of Environment Report
SPV	Special Purpose Vehicle
STEP	Systematic Tracking of Changes in Procurement
TA	Technical Assistance
TAC	Technical Audit Consultant

TOD	Transit Oriented Development
TDF	Tribal Development Framework
TDP	Tribal Development Plan
VMS	Variable Messaging System
VPD	Vehicle Per Day

TABLE OF CONTENTS

DATASHEET

BASIC INFORMATION

Country(ies)	Project Name	
India	Himachal Pradesh State Roads Transformation Project	
Project ID	**Financing Instrument**	**Environmental and Social Risk Classification**
P163328	Investment Project Financing	Substantial

Financing & Implementation Modalities

[ ] Multiphase Programmatic Approach (MPA)	[ ] Contingent Emergency Response Component (CERC)
[ ] Series of Projects (SOP)	[ ] Fragile State(s)
[✓] Disbursement-linked Indicators (DLIs)	[ ] Small State(s)
[ ] Financial Intermediaries (FI)	[ ] Fragile within a non-fragile Country
[ ] Project-Based Guarantee	[ ] Conflict
[ ] Deferred Drawdown	[ ] Responding to Natural or Man-made Disaster
[ ] Alternate Procurement Arrangements (APA)	

Expected Approval Date	Expected Closing Date
20-Mar-2020	30-Jun-2026

Bank/IFC Collaboration

No

Proposed Development Objective(s)

The proposed PDO is to enhance the efficiency of the transportation and road safety institutions and improve selected roads in Himachal Pradesh.

Components

Component Name	Cost (US$, millions)

Building HP's Transport Institutions and Resilience	42.00
Improving select roads stimulating HP's horticultural and overall economic growth	50.00
Enhancing Road Safety	20.00

Organizations

Borrower:	India
Implementing Agency:	Himachal Pradesh Road & Other Infrastructure Development Corporation

PROJECT FINANCING DATA (US$, Millions)

SUMMARY

Total Project Cost	112.00
Total Financing	112.00
of which IBRD/IDA	82.00
Financing Gap	0.00

DETAILS

World Bank Group Financing

International Bank for Reconstruction and Development (IBRD)	82.00

Non-World Bank Group Financing

Counterpart Funding	30.00
Borrower/Recipient	30.00

Expected Disbursements (in US$, Millions)

WB Fiscal Year	2020	2021	2022	2023	2024	2025	2026
Annual	3.00	12.00	15.00	20.00	20.00	10.00	2.00
Cumulative	3.00	15.00	30.00	50.00	70.00	80.00	82.00

INSTITUTIONAL DATA

Practice Area (Lead)

Transport

Contributing Practice Areas

Agriculture and Food, Governance, Macroeconomics, Trade and Investment, Urban, Resilience and Land

Climate Change and Disaster Screening

This operation has been screened for short and long-term climate change and disaster risks

SYSTEMATIC OPERATIONS RISK-RATING TOOL (SORT)

Risk Category	Rating
1. Political and Governance	Moderate
2. Macroeconomic	Moderate
3. Sector Strategies and Policies	Moderate
4. Technical Design of Project or Program	Substantial
5. Institutional Capacity for Implementation and Sustainability	Substantial
6. Fiduciary	Substantial
7. Environment and Social	Substantial
8. Stakeholders	Low
9. Other	
10. Overall	Substantial

COMPLIANCE

Policy

Does the project depart from the CPF in content or in other significant respects?

[ ] Yes [✓] No

Does the project require any waivers of Bank policies?

[ ] Yes [✓] No

Environmental and Social Standards Relevance Given its Context at the Time of Appraisal

E & S Standards	Relevance
Assessment and Management of Environmental and Social Risks and Impacts	Relevant
Stakeholder Engagement and Information Disclosure	Relevant
Labor and Working Conditions	Relevant
Resource Efficiency and Pollution Prevention and Management	Relevant
Community Health and Safety	Relevant
Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	Relevant
Biodiversity Conservation and Sustainable Management of Living Natural Resources	Relevant
Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities	Relevant
Cultural Heritage	Relevant
Financial Intermediaries	Not Currently Relevant

NOTE: For further information regarding the World Bank's due diligence assessment of the Project's potential environmental and social risks and impacts, please refer to the Project's Appraisal Environmental and Social Review Summary (ESRS).

Legal Covenants

Sections and Description

Schedule 2. Section I. B. 1. The Borrower shall, and shall cause the Project Implementing Entity to, ensure that the Project is carried out in accordance with the Environmental and Social Standards, in a manner acceptable to the Bank.

Schedule 2. Section 1. B. 2. Without limitation upon paragraph 1 above, the Borrower shall, and shall cause the Project Implementing Entity to, ensure that the Project is implemented in accordance with the Environmental and Social Commitment Plan ("ESCP"), in a manner acceptable to the Bank.To this end, the Borrower shall, and shall cause the Project Implementing Entity to, ensure that:

(a) the measures and actions specified in the ESCP are implemented with due diligence and efficiency, and as further specified in the ESCP;

(b) sufficient funds are available to cover the costs of implementing the ESCP;

(c) policies, procedures and qualified staff are maintained to enable it to implement the ESCP, as further specified in the ESCP; and

(d) the ESCP or any provision thereof, is not amended, revised or waived, except as the Bank shall otherwise agree in writing and the Borrower has, thereafter, disclosed the revised ESCP.

In case of any inconsistencies between the ESCP and the provisions of this Agreement, the provisions of this Agreement shall prevail.

Schedule 2. Section I. B. 3. The Borrower shall, and shall cause the Project Implementing Entity to:
(a) take all measures necessary on its part to collect, compile, and furnish to the Bank through regular reports, with the frequency specified in the ESCP, and promptly in a separate report or reports, if so requested by the Bank, information on the status of compliance with the ESCP [and the management tools and instruments referred to therein], all such reports in form and substance acceptable to the Bank, setting out, inter alia: (i) the status of implementation of the ESCP; (ii) conditions, if any, which interfere or threaten to interfere with the implementation of the ESCP; and (iii) corrective and preventive measures taken or required to be taken to address such conditions; and
(b) promptly notify the Bank of any incident or accident related to or having an impact on the Project which has, or is likely to have, a significant adverse effect on the environment, the affected communities, the public or workers, in accordance with the ESCP, the instruments referenced therein and the Environmental and Social Standards.

Schedule 2. Section I. B. 4. The Borrower shall, and shall cause the Project Implementing Entity to, maintain and publicize the availability of a grievance mechanism, in form and substance satisfactory to the Bank, to hear and determine fairly and in good faith all complaints raised in relation to the Project, and take all measures necessary to implement the determinations made by such mechanism in a manner satisfactory to the Bank.

Sections and Description

Schedule 2 Section II. 1. The Borrower shall cause the PIE to furnish to the Bank each Project Report, in a format agreed with the Bank, not later than forty-five days after the end of each calendar semester, covering the calendar semester.

Schedule 2 Section II. 2. The Borrower shall cause the PIE to prepare, under terms of reference satisfactory to the Bank, and furnish to the Bank no later than thirty-six (36) months from the Effective Date, a consolidated mid-term review report for the Project, in accordance with the provision of paragraph 2 of Section II of the Schedule to the Project Agreement.

Sections and Description

Schedule 2. Section III. B. Notwithstanding the provisions of Part A above, no withdrawal shall be made:

(a) for payments made prior to the Signature Date, except that withdrawals up to an aggregate amount not to exceed US$3,000,000 may be made from Category (2) for payments made prior to this date but on or after April 30, 2019; and

(b) under Category (1), until and unless the Borrower has:

(i) complied with theinstructions under the Disbursement and Financial Information Letter and any additional instructions specified in accordance with Section 2.01(b) of the General Conditions, including the submission to the Bank of the applicable interim unaudited financial reports evidencing the incurrence of EEP expenditures for which payment is requested; and

(ii) furnished evidence satisfactory to the Bank that the DLR under the DLIs for which payment is requested has been achieved as set forth in Schedule 3 to this Agreement in form and substance satisfactory to the Bank and in accordance with the verification protocols agreed with the Bank and as verified by the IVA-TAC.

Sections and Description

Schedule 2 Section III. C. The following shall not be Eligible Expenditures and the Borrower shall ensure, and cause the Project Implementing Entity to ensure, that the following expenditures are financed exclusively out of the Project Implementing Entity's own resources, as the case may be, and not out of the proceeds of the Loan, namely:

(a) all land acquisition required for the Project;

(b) any compensation, resettlement and rehabilitation payment to affected persons in accordance with the provisions of the ESCP;

(c) any compensatory afforestation payments;

(d) any interest during construction;

(e) retention money/security deposit retained (till the time it is not released);

(f) expenditures incurred after the Project Closing Date;

(g) expenditures not in line with the Project description in this Agreement;

(h) procurement not in line with agreed procurement procedures; and

(i) expenses disallowed by auditors and not resolved adequately, and expenses found ineligible during Bank review.

Sections and Description

Schedule 2 Section IV. The Borrower shall provide or cause the PIE to provide, as needed, the funds, facilities and services and other resources required for the Project.

Sections and Description

Schedule. Section I. A. 3. No later than July 1, 2020, or the first disbursement against Disbursement Linked Indicators (DLIs), whichever comes first, the PIE through HPRIDC shall engage an Independent Verification Agent (IVA) – Technical Audit Consultant (TAC) - with qualifications, experience and terms of reference acceptable to the

Bank, to confirm the fulfilment of the verification protocols for the DLIs and authorize disbursement.

Sections and Description
Schedule. Section I. B. 1.The PIE through HPRIDC, HPDOT, and HP State Police, shall implement the Project in accordance with the PIM.

Sections and Description
Schedule. Section I. C. 1.The Project Implementing Entity shall ensure that the Project is carried out in accordance with the Environmental and Social Standards, in a manner acceptable to the Bank.

Schedule. Section I. C. 2.Without limitation upon paragraph 1 above, the Project Implementing Entity shall ensure that the Project is implemented in accordance with the Environmental and Social Commitment Plan ("ESCP"), in a manner acceptable to the Bank. To this end, the Project Implementing Entity shall ensure that:

(a) the measures and actions specified in the ESCP are implemented with due diligence and efficiency, and as further specified in the ESCP;

(b) sufficient funds are available to cover the costs of implementing the ESCP;

(c) policies, procedures and qualified staff are maintained to enable it to implement the ESCP, as further specified in the ESCP; and

(d) the ESCP or any provision thereof, is not amended, revised or waived, except as the Bank shall otherwise agree in writing and the Project Implementing Entity has, thereafter, disclosed the revised ESCP.

In case of any inconsistencies between the ESCP and the provisions of this Agreement, the provisions of this Agreement shall prevail.

Schedule. Section I. C. 3.The Project Implementing Entity shall:
(a) take all measures necessary on its part to collect, compile, and furnish to the Bank through regular reports, with the frequency specified in the ESCP, and promptly in a separate report or reports, if so requested by the Bank, information on the status of compliance with the ESCP [and the management tools and instruments referred to therein], all such reports in form and substance acceptable to the Bank, setting out, inter alia: (i) the status of implementation of the ESCP; (ii) conditions, if any, which interfere or threaten to interfere with the implementation of the ESCP; and (iii) corrective and preventive measures taken or required to be taken to address such conditions; and
(b) promptly notify the Bank of any incident or accident related to or having an impact on the Project which has, or is likely to have, a significant adverse effect on the environment, the affected communities, the public or workers, in accordance with the ESCP, the instruments referenced therein and the Environmental and Social Standards.

Schedule. Section I. C. 4. The Project Implementing Entity shall maintain and publicize the availability of a grievance mechanism, in form and substance satisfactory to the Bank, to hear and determine fairly and in good faith all complaints raised in relation to the Project, and take all measures necessary to implement the determinations made by such mechanism in a manner satisfactory to the Bank.

Sections and Description

Schedule. Section I. D. The Project Implementing Entity through the HP State Police shall:

(a) ensure that the personnel of the State Traffic Police selected/enlisted to be part of the implementation of Component 3 of the Project be: (i) duly screened to confirm that they have not engaged in past unlawful or abusive behavior, including but not limited to gender-based violence or excessive use of force; and (ii) adequately instructed and trained, namely on the use of force and appropriate behavior/conduct, all in a manner acceptable to the Bank, as further detailed in the HP State Police Standard Operating Procedure/Code of Conduct for HP State Traffic Police personnel adopted by the HP State Police in form and substance satisfactory to the Bank; and

(b) promptly review and diligently investigate any allegations of unlawful or abusive behavior by HP State Traffic Police personnel, and thereafter, if/when warranted: (i) take appropriate disciplinary action reporting such behavior to the relevant authorities and sanctioning the responsible party; and (ii) adopt any necessary measures to preempt their recurrence.

In order to ensure that the road safety initiatives under the Project are implemented in a manner designed to achieve the objectives of the Project, the Project Implementing Entity shall ensure that, unless the Bank shall otherwise agree in writing:

(a) all goods and technical assistance provided for these activities are used by the HP State Police and HP State Traffic Police exclusively for the sole purpose of enforcing the Project Implementing Entity's road traffic laws and regulations;

(b) the proceeds of the Loan shall not be used to: (i) enforce any laws or regulations unrelated to traffic management and/or road safety; and (ii) support the investigation, prosecution, and/or enforcement of judgments that, ex ante, target specific individuals; and

(c) the Loan shall not be used to purchase arms or ammunition or to train any personnel in the use of arms or ammunition.

Sections and Description

Schedule. Section II. 1. The PIE shall monitor and evaluate the progress of the Project and prepare Project Reports in accordance with the provisions of Section 5.08 (b) of the General Conditions and on the basis of indicators acceptable to the Bank. Each such Project Report shall cover the period of one calendar semester, and shall be furnished to the Bank not later than forty-five days after the end of the period covered by such report.

Schedule. Section II. 2. The PIE shall prepare, under terms of reference satisfactory to the Bank, and furnish to the Bank no later than thirty-six (36) months from the Effective Date, a consolidated mid-term review report for the Project, summarizing the results of the monitoring and evaluation activities carried out from the inception of the Project, and setting out the measures recommended to ensure the efficient completion of the Project and to further its objective.

Conditions

Type	Description
Disbursement	No later than July 1, 2020, or the first disbursement against Disbursement Linked Indicators (DLIs), whichever comes first, the PIE through HPRIDC shall engage an Independent Verification Agent (IVA) – Technical Audit Consultant (TAC) - with qualifications, experience and terms of reference acceptable to the Bank, to confirm the fulfilment of the verification protocols for the DLIs and authorize disbursement.

I. STRATEGIC CONTEXT

A. Country Context

1. **India continues to remain one of the fastest growing major economies in the world despite a slight moderation in its GDP growth in the past three years.** The current slowdown is primarily due to unresolved balance sheet issues in the banking and corporate sectors, compounded by stress in the non-banking segment of the financial sector. These issues have prevented a sustainable revival in private investment and private consumption growth has also slowed in FY19/20. As a result, growth is expected to reach 5% in FY19/20. To address the slowdown, the government has introduced various economy-wide and sectoral reforms (including a cut in corporate taxes, as well as steps to support the automobile and real estate sectors, non-banking financial companies and medium and small enterprises). As a result, growth is expected to pick-up gradually from FY20/21 onwards and revert toward potential. On the fiscal side, the general government deficit is estimated to have widened to above 6 percent of GDP in FY18/19 and it is expected to rise further in FY19/20, owing to recently adopted tax cuts and the impact of slower economic growth on tax proceeds. The current account balance is expected to improve in FY19/20, reflecting mostly a sizeable contraction in imports. Given this and robust capital inflows, India's foreign exchange reserves rose to USD 457.5 billion at end-December 2019 (equivalent to more than 11 months of imports).

2. **Since the 2000s, India has made remarkable progress in reducing absolute poverty.** Between FY11/12 and 2015, poverty declined from 21.6 percent to an estimated 13.4 percent at the international poverty line (2011 PPP US$1.90 per person per day), continuing the earlier trend of fast poverty reduction. Thanks to robust economic growth, more than 90 million people escaped extreme poverty and improved their living standards during this period. Despite this success, poverty remains widespread. In 2015, 176 million Indians were living in extreme poverty, while 659 million – half the population – were below the higher poverty line commonly used for lower middle-income countries (2011 PPP US$3.20 per person per day). Implementation challenges of indirect tax reforms, stress in the rural economy and a high youth unemployment rate in urban areas, may have moderated the pace of poverty reduction since 2015.

3. **Himachal Pradesh (HP) is a special category[1] state located in the Himalayan mountains, which is aspiring to be a leader in green growth and become one of the best performing states**. In 2017-18[2], the State Gross Domestic Product at current factor cost was estimated at INR1,67,730 crore (equivalent of US$23.96 billion). In 2017-18, the share of agriculture as a percentage contribution to the State GDP was 8.8[3] percent while manufacturing and services accounted for 29.2 percent and 43.3 percent, respectively.

B. Sectoral and Institutional Context

4. **HP has a high potential to produce horticultural and eco-tourism value chains, which could support the State's green growth vision, if its transport infrastructure and logistics system are well developed.** HP has a land

[1] HP is categorized as special status state due to, inter alia: (i) mountainous terrain; (ii) low population density; (iii) sizable tribal population; (iv) strategic location bordering neighboring countries; (v) economic and infrastructure backwardness; and (vi) non-viable nature of the state finance.
[2] Economic Survey of Himachal Pradesh, 2016-17, Economics and Statistics Department
[3] The SGDP share of agriculture in 1990-91 was 26.5 percent), before it was overtaken by industries and services

area of 55,673 km2 and a population of about 7 million of which about 90 percent lives in rural areas. About 80 percent of the State is mountainous of which 30 percent is covered with forest. The Himalayan mountains and valleys are covered with the state record (SoER, HP) of 3,295 species of plants and 5,721 species of fauna, and magnificent natural scenery, including the Rohtang Pass. Agriculture/horticulture is the main stay of HP's economy as it provides employment to about 62 percent of the total workers in the state, mainly small holding farmers. Given the high potential for horticultural development, GoHP with the support of the World Bank has launched the Horticultural Development Project (HPHDP). HPHDP is inter alia expected to quadruple the production of apple, which is currently a US$1 billion economy. The 'Himachal Pradesh Industrial Investment Policy 2019' is attempting to create an enabling environment to make HP one of the preferred destinations for investment and attract horticultural downstream value chains producing Small and Medium Scale Enterprises (SMEs). However, post-harvest losses are high due to lack of appropriate storage facilities, packaging, handling and transportation. The handling and transport costs share[4] for apple ranges from about Indian Rupee (INR) 123 (52.7 percent) to INR 143 (61.3 percent) of production costs (INR233 per 20 kg box). Wastage during handling and transportation is in the range of 8 to 16 percent. Moreover, due to the long logistics chain, which involves up to five intermediaries, apple farmers get around 21[5] percent of the retail price at the terminal markets.

5. **The substandard, narrow and winding mountainous roads in HP hinder connectivity to the fruit belts, tourist destinations and wholesale markets.** As of March 30, 2019, HP has 35,823 km of roads comprises of 1,792 km of national highways, 4,481 km of Major District Roads (MDRs) and 29,550 km of rural roads, which also includes 9,872 Kms unpaved roads. In addition, the Border Roads Organization (BRO) provides road access (about 800km) in difficult terrain or in sensitive locations. ***HP does not have "state highways",*** as all such roads have been reclassified and transferred to the National Highways Authority of India (NHAI). In the absence of state highways, the Himachal Pradesh Public Works Department (HPPWD), has reclassified about 2,007km of MDRs, connecting agriculture production clusters to SME/wholesale market clusters, as the State Core Road Network (SCRN). However, the roads in HP, including many of the national highways are single lane roads winding on the Himalayan mountains, hampering the use of high capacity trucks and buses.

6. **The Himalayan mountains also pose high geo-hazard (landslide) risk to the transport infrastructure and services.** Being a Himalayan state, HP is very prone to landslides and flash floods that affects road connectivity. Cloud bursts, more extreme river flows and flooding cause landslides and erosion of embankments and loss of roads or bridges. These events are projected to increase over the next few decades as a result of climate change. The existing transport infrastructure is often blocked by landslides and washed out debris, causing interruptions for a significant time and isolating the rural population from basic services, including access to health facilities for women in labor. Road construction and maintenance practices used in the state currently do not systematically consider climate risks as part of design and implementation. These should be improved, and contractors or labor trained accordingly, while considering new techniques and bioengineering solutions addressing these important climate risks while supporting a more cost-efficient use of funds for long-term maintenance and future upgradation works. Furthermore, as there is no early warning system, landslide causes fatal accident. During the snow and rainy season, transportation of agricultural products and tourists is either terminated or delivered at high cost and risk. Lastly traffic congestion - due to tourism inflows, infrastructure deficiencies, limited traffic capacity - not only increases the fuel consumption and greenhouse gas (GHG) emissions, but consequently leads to air pollution. Although Himalayan northern states have lower levels of pollution compared to the rest of India

[4] ICAR-CIPHAT report published in 2015.
[5] Assessment of Quantitative Harvest and Post-Harvest Losses of Major Crops and Commodities in India, ICAR-CIPHAT, 2015

(India being one of the 10 most polluted countries globally), efforts are still required to decrease air pollution to acceptable levels in urban areas specifically where air quality is poor.

7. **The competitiveness of HP products is constrained due to the lack of a multimodal logistics system and inefficient transportation services.** Roads are the main mode of transportation, since rail and air transportation services are not well-developed. However, trucking services along the narrow and winding fruit belts are dominated by informal cartels charging high transportation cost. The state has 200 km of railway network of which only 20 km is broad gauge and the remaining is single/ narrow gauge built in the early 1990s.Chandigarh is the closest rail terminal for transloading/transshipment. However, neither the Container Corporation of India (CONCOR), a Public Sector Undertaking (PSU) under the Ministry of Railways (MoR), nor the 15-small private operators provide dedicated wagons for long-distance hauling. Currently, there are three airports, managed by the Airports Authority of India (AAI). However, due to the terrain, the airstrips are short and serve small aircrafts. Hence the Chandigarh airport is used as a hub for transporting HP tourists and high value products to HP. In respect of existing physical and digital logistics platforms, a digital market platform connecting Shimla horticulture wholesale market to the primary markets where farmers and intermediaries deliver horticultural produce is operational. However, the digital platform needs to be upgraded to integrate a freight management module. In addition, a digital platform connecting the SME/wholesale market clusters and the terminal markets needs to be developed.

8. **Women in Himachal Pradesh are primarily employed in agriculture and agro-based activities and have fluctuating incomes resulting from climate variations.** The female labor force participation for Himachal Pradesh is about 25 percent of which the percentage of women agriculture workers is as high as 82.7 percent (Agriculture Census 2011). Women contribute to the majority of the activities in farm-based livelihoods and barring ploughing, women contribute substantially in all other farm related activities, including sowing, irrigation, using fertilizers, reaping and post-harvest management of the produce[6]. However, there is clear occupational segregation as women are relatively less engaged in off-farm, market-related activities, logistics and technical STEM-related job roles[7]. Changing climatic conditions, an expected decrease in horticulture production and associated impact on agriculture-based livelihoods are likely to affect women cultivators and their farm-based sources of income more prominently as compared to men[8]. The proposed gender actions under the project will, therefore, focus on building the skills sets of women producers' groups/self-help groups and women employed in institutions to enable income diversification and career advancement.

9. **The incidence of road crashes along HP roads is among the highest in India.** In 2016, as reported by the Road Accident Data Management System (RADMS) 7,036 persons were injured in road accidents of which 1,272 suffered fatal injuries. The fatality rate in the State is 18.17 people per 100,000 population, which is comparatively higher to the national level fatality rate of 11.53 people per 100,000 population. 85 percent of the fatalities involved motorized transport, mainly caused by over-speeding and the poor safety standard of the road network.

10. **The institutional base of the transport sector in HP is weak.** The Himachal Pradesh Department of Transportation (HPDOT) is responsible for regulating and coordinating the provision of efficient transportation services in HP. HPDOT has prepared the transport policy and is providing basic services, including vehicle registration, drivers licensing and tax collection. HPDOT has a digital vehicle registration system, although

[6] The Approach Paper to the Eleventh Five Year Plan of Himachal Pradesh
[7] Based on extensive stakeholder consultations
[8] The State Action Plan on Climate Change

customers still use paper forms. Through the Himachal Pradesh Public Transportation Corporation of HPDOT new electric buses have been deployed in Shimla as part of the urban public transportation system. The Road Safety Coordination Cell of HPDOT is serving as the lead agency and secretariat to the State Road Safety Council.

11. The mission of HPDOT is to 'provide mobility with choice, comfort, convenience, frequency, safety and minimal environmental effects. However, HPDOT faces multiple challenges to achieve its mission, inter alia: (a) knowledge gap in vehicle safety inspection and emission control technology and dependence on arbitrary inspection system; (b) limitation to reach customers spread across the State; (c) congestion caused by seasonal tourist traffic; (d) absence of a route rationalization system; (e) lack of a strategy to liberalize the transportation market; (f) lack of strategy to promote clean transportation services; (g) absence of an integrated multimodal transportation system; and (h) absence of freight logistics system and strategy.

12. **The first World Bank funded HP State Road Project (HPSRP I) supported the establishment of the Himachal Pradesh Road and other Infrastructure Development Corporation (HPRIDC) and process reengineering, but the reforms were not transformational.** The development and operationalization of HPRIDC as a corporate entity was not well pursued. The road infrastructure administration capability assessment of HPRIDC (details given in Annex 2), using the most widely recognized standard for the optimized management of physical assets - the British Standards Institution's (BSI) Publicly Available Specification 55 (PAS 55) indicates that HPRIDC is currently going through awareness stage. Governance, financial and procurement management autonomy, asset management and performance assessment gaps are major concerns identified by the PAS 55 assessment. The Corporate Governance and Financial Accountability Assessment (CGFA) review also confirms the results of the PAS 55 assessment. The CGFA findings indicate that, currently, HPRIDC is functioning like a Project Implementation Unit (PIU). The existing legal structure of HPRIDC as a 'Private' Limited Company would not be appropriate to meet the objectives of a public road asset management entity. HPRIDC's board is not operational. The Company does not have permanent employees on its roll, which means there is no institutional knowledge base/ capacity and makes its sustainability questionable. The IT systems of HPRIDC are standalone with a need for upgrading and integration with enterprise systems. HPRIDC's contract administration capability is weak and is not yet able to resolve litigations from HPSRP I. Its environmental and social safeguards capacity is either weak or non-existent. Right of Way (ROW) preservation is carried on an ad hoc basis and land acquisition for road improvement projects is not timely. Asset management functions are carried out by direct labor operation and staff at the zonal offices are responsible for both asset management and maintenance execution.

13. HPSRP I[9], financed the upgrading of 435 km roads to high standard double/intermediate lane and maintenance of 1484.79 Km of roads. The average speed on the upgraded roads increased by 38.4 percent while vehicle operating cost, a proxy to transport costs, reduced by about 32 percent. The death rate has also reduced. In addition, several state-of the art institutional strengthening and capacity building measures have been implemented, including: (i) the establishment of HPRIDC[10], (ii) development of a web-based RADMS; (iii) development of an Electronic Project Management System (e-PMS); (iv) introduction of Output and Performance-based Maintenance Contracting (OPBMC- 347.00 Km); and (v) first time use of International Competitive Bidding (ICB) contracts in the state. Alongside the piloting of OPBMC, HPSRP I also supported initiatives to improve the management of maintenance works by increasing productivity and reducing cost, mainly: (i) by equipping the crew

[9] Launched in 2007 and implemented through 2017. The loan amount was US$400.63 million.
[10] HPRIDC is mandated to build the commercialized states roads network through Public, Private Partnership (PPP) and managing major road development projects.

with adequate and appropriate tools to l increase productivity; (ii) training; and (iii) rebalancing of workload and manpower.

14. **Cognizant of the inefficiency of the direct labor/own force account maintenance operations GoHP has frozen hiring of new labor for the direct labor operation.** A preliminary cost comparison of the maintenance works executed by the direct labor on the national highways administered by HPPWD and the performance-based maintenance contracts under HPSRPI shows that expenditure by direct labor was higher by about 268[11] percent. The direct labor has developed specialized skills in constructing and maintaining roads in the Himalayan mountains and is on standby to remove road blockage. However, there is neither a means of monitoring performance and quality nor knowing the true costs of maintenance works. HPPWD has about 27,000 labor, currently carrying out emergency, routine and periodic maintenance, as well as minor road improvement works. The freezing of the hiring of new labor is expected to resolve the labor issue.

15. **The absence of a stable maintenance financing is a major challenge for the sustainability of the state roads network.** Currently, maintenance of state roads is financed through budgetary allocation from central and state governments. Annual maintenance allocations over the last five years (2013-14 to 2017-18) was on average about US$60 million per year. However, the allocations only covered about 64 percent of the demand. Budgetary provisions for construction and improvement of roads and bridges are made through State budgetary support, Central Road Fund (CRF), Pradhan Mantri Gram Sadak Yojana (PMGSY) and the National Bank for Agriculture and Rural Development (NABARD). Capital expenditure during 2016-17 was about US$ 226 million.

C. Relevance to Higher Level Objectives

16. The operation is aligned with the Government of India's (GOI) objective of eliminating poverty and ensuring access to minimum standard of basic needs for all citizens that targets specifically investing in growth enablers transport & connectivity Infrastructure, which is one of the priorities under the Three-year Action Agenda (2017-18 to 2019-20). The project is consistent with GOI's grand vision to interconnect the country with the state-of-the-art Highways, Air transport, Railways and Internet (HARI), specifically with the Bharatmala program. The Bharatmala program was launched to upgrade the interstate highways and establish logistics parks for freight consolidation at strategic location, as it supports the improvement of the first mile connectivity between small holding farmers production cluster. The Road Safety interventions of the Project will also facilitate the implementation of the new Motor Vehicle Amendment Act, effective September 1, 2019, which provides incentive for states to align with the new Act.

17. The operation supports GoHP's vision for transforming transport, 'to see Himachal Pradesh interconnected with safe, resilient and high standard transport infrastructure and services facilitating green growth'. It also supports the realization of GoHP's transport policy. This is envisaged to be achieved by, inter alia: strengthening state level transport and logistics institutions, improving connectivity and enhancing mobility.

18. The operation will support the achievement of the core focus areas and objectives of the World Bank's Country Partnership Framework for India (CPF, 2018-2022), primarily by:

[11] As reported by HPPWD, in 2016-17 budget year, expenditure by direct labor was about US$22,000 per lane km/year while the payment for the maintenance contracts was about US$8,200 per lane km/year.

(a) *enhancing competitiveness and enabling job creation by improving connectivity and logistics*, as it will finance initiatives to reduce transport cost and accidents; improve safety along tourism corridors in HP; enhance logistics along fruit belts; and strengthen rural and urban linkages.
(b) *enhancing resilience* to climate change (coping with geo-hazard risks by adopting bio-engineering solutions) and supporting the effort to ensure food security in the region by building climate and disaster resilient roads.
(c) *promoting resource efficient, inclusive and diversified growth in the rural sector* by facilitating green growth (providing efficient agro-logistics along fruit belts and improve safety along tourism corridors).
(d) *strengthening public sector institutions* by instilling efficiency in the functional units of HPPWD and HPDOT and promoting innovative development solutions in the implementation of programs.

II. PROJECT DESCRIPTION

A. Project Development Objective

PDO Statement

19. The proposed PDO is to enhance the efficiency of the transportation and Road Safety institutions and improve selected roads in Himachal Pradesh.

PDO Level Indicators

12. The implementation of the core initiatives of the project is expected to result in:
(a) Improved efficiency of transport institutions (measured based on the implementation of the core consultancy services and works contract at the planned cost, time and quality, and reduction in motor vehicle administration services delivery time);
(b) Reduction in maintenance unit cost;
(c) Reduction in transport cost for transporting products from production clusters to SME/wholesale markets along the project roads;
(d) Reduction in road accident fatalities per 100,000 population in the pilot areas

B. Project Components

20. GoHP's program[12] for improving the efficiency of transportation services and provision of safe and resilient road infrastructure to stimulate horticulture and overall economic growth in HP, sets the goal for the institutional transformation envisaged to be implemented under the proposed project. As such, this project will support the launching of GoHP's program, focusing on strengthening the transportation and Road Safety institutions, whilst improving priority MDRs. The scope of the proposed project includes:

21. **Component 1. Building HP's Transport Institutions and Resilience**

22. **Sub component 1.1: Reestablishing and operationalizing HPRIDC and building resilience.** Support Himachal Pradesh's initiative to: (a) create a corporate entity responsible for the administration of the strategic

[12] Details of GoHP's program are provided in annex 2.

core roads network, Major District Roads, and other district roads, as well as maintenance of the National Highways mandated to the State of Himachal Pradesh, and deliver safe, resilient and well performing roads; (b) operationalize the corporate entity (HPRIDC); and (c) make the Himalayan mountain roads in Himachal Pradesh climate risk resilient, through:

23. **Sub component 1.1 (a)** reorganizing and inaugurating the new corporate entity by legally reestablishing HPRIDC as a public limited company for greater transparency, compliance and accountability. The reorganization study will provide the institutional mandate, governance structure, organigram, and administrative manual showing the executive board composition, oversight responsibility, fiduciary authority and code of conduct, as well as chief executive officer's and management team's recruitment, performance assessment and code of conduct;

24. **Sub component 1.1 (b)** operationalizing HPRIDC, including: (i) based on the organigram to be prepared by the institutional reform study, assigning the managerial, technical, finance and procurement staff and increasing the engagement of women; (ii)) rolling out systems and integrating the standalone IT software; and (iii) engaging consultants to address the implementation capacity gaps, including contract management and corporate governance norms;

25. **Sub component 1.1 (c)** establishing the funds flow mechanism and asset transfer, by: (i) earmarking the annual operating budget for HPRIDC in the budget book (budget published by the Finance Department of HP) as a separate budget head or a budget line in HPPWD's budget; (ii) upgrading the Road Asset Management System ("RAMS"); (ii) preparing Road Asset Management Plan, with three years rolling budgetary requirement; (iii) support to the creation of dedicated road financing mechanism and broadening the financing base; and (v) transferring all roads under the jurisdiction of HPPWD to HPRIDC balance sheet; and

26. **Sub component 1.1 (d)** mainstreaming resilience in the Himalayan mountain roads and protecting the natural and social environment by developing and adopting: (i) disaster risk management policy; (ii) emergency warning and response system; (iii) bioengineering solutions manual; and (iv) Borrower's environmental and social framework.

27. Sub component 1.2: **Commercializing road maintenance and the direct labor operations of HPPWD.** Support Himachal Pradesh's initiative to improve the efficiency of maintenance execution and reduce maintenance cost, by: (a) executing maintenance operation based on commercial principles and achieve value for money by undertaking the maintenance of about 50 percent of the state core roads network under performance based maintenance contracting by private contractors; (b) maintaining part of the state core roads network under service level agreement by the separately organized direct labor wing of HPPWD; and (c) undertaking the preservation of bioengineering solution and post construction non-mechanized maintenance by women self-help group, whereby at least 30 percent of the maintenance contracts will be awarded to women-led producer groups/SHG groups, HPRIDC to engage with women-led SHGs along the core network roads to build capacity of these groups in operations and maintenance ("O&M") of roads under the regular maintenance program, and provision of skills training to adopt a holistic approach to include intensive technical as well as life skills training in digital, financial and legal literacy, such trainings to be offered to women-led groups through collaboration with government industrial training institutes; through:

28. **Sub-component 1.2 (a)** executing bench mark performance-based maintenance contracts on about 158 km of the state core roads network by private contractors, whilst HPRIDC outsources the maintenance of about 842 km in parallel under the regular maintenance program;

29. **Sub-component 1.2 (b)** reorganizing and inaugurating the direct labor wing of HPPWD;

30. **Sub-component 1.2 (c)** operationalizing the direct labor operation, including: (i) reassigning the technical staff; (ii) piloting internal service level agreement; (iii) developing manuals and systems; (iv) establishing cost centers; and (v) enhancing the efficiency of the direct labor, including: deploying the systems and training; and

31. **Sub-component 1.2 (d)** preserving bio-engineering solutions within the ROW under women-self-help group contracting.

32. **Sub component** 1.3: **Establishing Himachal Pradesh Motor Vehicle Administration ("HPMVA"), Strengthening the Directorate of Transportation of HPDOT and developing logistics system and strategy.** Support for delivery of efficient customer services, as well as competitive, safe and clean transportation in Himachal Pradesh by: (a) enhancing governance and improving the vehicle administration system; (b) enhancing the regulatory/coordination framework for transportation services, including creating a platform for coordination, policy formulation and planning of road infrastructure development and transport services regulation; (c) adopting a strategic plan for multimodal transport; (d) integration of climate change scenarios and climate risk assessments into planning process; and (e) developing logistics system and strategy to stimulate horticultural and economic growth in Himachal Pradesh, through:

33. **Sub-component 1.3 (a)** reorganizing and inaugurating the HPMVA and the Directorate of Transportation of HPDOT;

34. **Sub-component 1.3 (b)** operationalizing/strengthening HPMVA and the Directorate of Transportation, including: (i) assigning the operational staff and hiring at least 50 percent (50%) women while recruiting new staff in the vehicle registration services and about 30 percent (30%) in the other services; (ii) upgrading/developing and adopting the vehicle registration, vehicle inspection, emission control and drivers licensing systems and procedure manuals; and developing vehicle emission reduction strategy (promoting electric and solar vehicles and tricycles, fleet renewal); (iii) strengthening the main MVA center in Shimla area and the Directorate of Transportation, whilst HPDOT takes up the establishment of branch offices and mobile service provision; (iv) preparing and adopting a strategic plan for the development of multimodal transportation system, and integrating climate change scenarios and climate risk assessments; (v) creating a platform for coordination of policy and planning functions of road infrastructure development and transport services regulation; and (vi) preparing and adopting mobility improvement strategy and action plan for Shimla to relief the seasonal congestion and route rationalization on main corridors; and

35. **Sub-component 1.3 (c)** developing and adopting logistics system and strategy for horticultural and overall economic growth of Himachal Pradesh.

36. **Sub-component 1.4: Preparatory Activities:** Conducting feasibility study and ESIA for 2,000km of roads, and preparing Detail Project Report ("DPR") for upgrading 650 km and maintenance of 1,350 of state core roads.

37. **Component 2. Improving Select Roads stimulating Himachal Pradesh's horticultural and overall economic growth.** Support to enhance the efficiency of HPRIDC to execute road improvement projects at a planned cost, time and quality, whilst improving connectivity by financing the upgrading of approximately 89.2 km of roads (MDRs) connecting small holding farmers production and primary processing clusters to wholesale markets/SME clusters, 30 percent of the maintenance contracts on the Project roads to be awarded to women-led SHG groups from close habitations, through:

38. **Sub-component 2.1.** upgrading of priority roads, including: Baddi Sai Ramshahar road (34km) and Dadhol Ladrour road (13.5km), as well as financing the supervision of all four roads under this Components; and

39. **Sub-component 2.2.** upgrading of part of the Mandi Rewalsar Kalkhar road and Raghunathpura-Mandi-Harpura-Bharari (2.7km).

40. **Component 3: Enhancing Road Safety**

41. **Sub component 3.1: Promoting the 'Safe System':** Support in three pilot districts to reduce road accident fatalities by enhancing enforcement through: (a) strengthening the Road Safety Cell under the Directorate of Transportation of HPDOT, mainstreaming the national MVA Act 2019, and enhancing the data management system to establish a system connecting the hospitals providing post-accident care and the State Traffic Police;(b) strengthening the State Traffic Police patrol by providing surveillance equipment (CCTV cameras for speed control, accident recording, etc.), variable messaging system ("VMS"), communication equipment and fiber connection, training the State Traffic Police, and establishing emergency response system supported by ambulances, first aid kits, tools, communication system, cranes, tow trucks, etc.; (c) promote community Road Safety programs in the pilot districts by organizing, training and equipping volunteers in high accident-prone areas to support enforcement and emergency response; and (d) Road Safety Advisory Services for preparing an action plan, advising the State Traffic Police and the Road Safety Cell of HPDOT, and providing training to the State Traffic Police and the volunteers from local communities supporting the enforcement.

42. **Sub component 3.2: Promoting the 'Safe Corridor initiative':** Support (to be piloted along one corridor with the highest road accident and fatality rate) the state highway patrol by providing surveillance equipment, VMS, training the police, and establishing emergency response system, establishing communication system connecting accident sites and dedicated hospitals for post-crash care and data collection on survival of victims under trauma management.

Proposed Project Financing and Lending Instrument

43. The total project cost is equivalent of US$112 million of which the IBRD loan amount is US$82 million while GoHP's share is US$30 million. Institutional reform and Road Safety activities will be implemented under Investment Project Financing with Disbursement Linked Indicators (IPF -DLI). Implementing institutional reform as DLIs will enable to monitor the effectiveness of the formation and operationalization processes. Road upgrading works and maintenance will be implemented under regular IPF to enable flexibility in case of unforeseen geohazard risks and if any additional financing is received towards infrastructure upgradation and maintenance.

44. **Disbursement Linked Indicators:** The institutional reform and road safety will be implemented under IPF-DLI. The agreed results have been formulated as a series of Disbursement Linked Indicators (DLIs), which will be the basis for disbursement of funds. Performance against these indicators will determine the extent to which disbursements will be made at the end of each period. As such, the disbursements are performance linked. The road upgradation i.e. civil works including maintenance will be implemented under regular IPF.

45. **The disbursement linked indicators (DLIs), include:**

- **DLI-1.** Outputs under sub-component 1.1 (a), 1.2 (b) and 1.3 (a): reorganizing and inaugurating HPRIDC, the direct labor wing of HPPWD, HPMVA and the Directorate of Transportation of HPDOT.
- **DLI-2.** Outputs under sub-component 1.1 (b): operationalizing HPRIDC
- **DLI-3.** Outputs under sub-component 1.1 (c): establishing the funds flow mechanism to HPRIDC and asset transfer
- **DLI-4.** Outputs under sub-component 1.1 (d): mainstreaming resilience in the Himalayan mountain roads and protecting the natural and social environment, by developing and adopting: (i) disaster risk management policy, (ii) emergency warning and response system, (iii) bioengineering solutions manual, and (iv) Borrower's environmental and social framework.
- **DLI-5.** Outputs under sub-component 1.2 (c): operationalizing the direct labor wing of HPPWD.
- **DLI-6.** Outputs under sub-component 1.3 (b): operationalizing/strengthening HPMVA and the Directorate of Transportation of HPDOT.
- **DLI-7.** Outputs under sub-component 1.3 (c): developing and adopting logistics system and strategy for horticultural and overall economic growth of HP.
- **DLI-8:** Outputs under component 3: Developing and adopting a Road Safety enforcement action plan, enabling patrol and emergency response to enhance Road Safety enforcement.

46. Section VII provides DLI details with their verification protocols. Disbursements for scalable DLIs are released against submission of six-monthly disbursement requests. This means that disbursements against these DLIs can be made progressively for part of the target values achieved. The project will reimburse eligible expenditures associated with this program once a set of agreed DLRs have been met.

47. The DLIs will be verified using predefined verification protocols. The Implementing Entity will submit dossiers (progress reports supported by photos for physical components, as well as study reports, draft policy papers and updated standards and manuals for the process DLIs) that will elaborate the achievement of results. These dossiers will be used as the basis for results verification by an Independent Verification Agent (IVA), the Implementing Entity and the World Bank.

48. **Retroactive financing:** Expenditures incurred for the preparatory activities, which are part of the program development cost will be financed under the institutional reform component. This includes the ongoing

consultancy contracts for the Detailed Project Report (DPR) preparation and feasibility study, as well as the Independent Environmental and Social Impact Assessment.

C. Project Beneficiaries

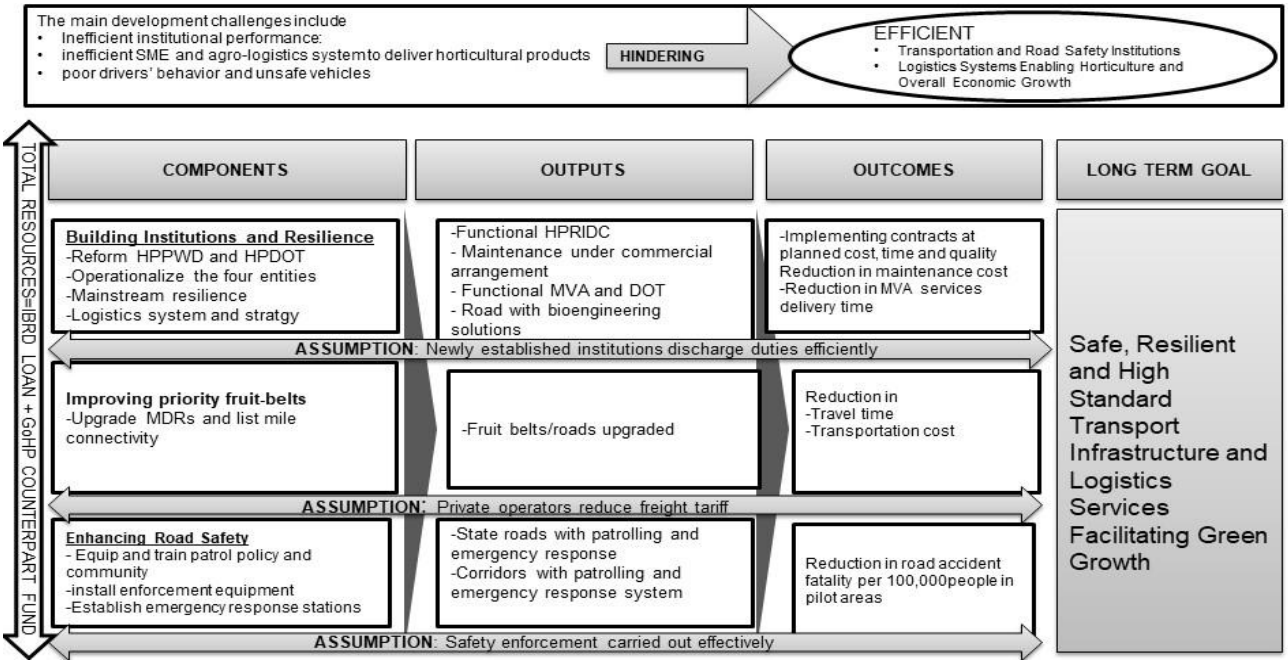
49. The principal beneficiaries of the priority interventions are the rural population living in the project influence area that relies almost exclusively on agriculture/horticulture for their subsistence, estimated at about 962,276 people. Emerging industries, agro-processing plants, the services industry, traders at the local markets, and businesses at the production and SME clusters, as well as businesses along the tourist corridors will benefit from the investments and market influx. The transport, logistics and supply industries that support them will also indirectly benefit from the project. The institutional reforms and road safety enforcement interventions will strengthen the HPPWD, HPDOT and HP State Traffic Police, and enable them deliver efficient services to the entire population of the state and tourists destined to HP eco and cultural tourism sites. In terms of gender the specific anticipated outcomes for women in the project areas include: (a) access to women's self-help groups (SHGs) to preserve bio-engineering solutions and undertake post construction road maintenance; and (b) employment within the corporate entities.

D. Results Chain

Theory of Change:

50. Theory of Change. Figure 1 presents the Theory of Change for the project, including the challenges, activities, outputs, outcomes and long-term goals.

Figure 1. Theory of Change



E. Rationale for Bank Involvement and Role of Partners

51. The Bank is supporting a series of strategic interventions under the project, based on state level circumstances and anchored in international good practices. These include, inter alia: creating public corporate entities and enabling the state transport and road safety institutions to be effective in delivering transport and logistics services; achieving best value for public resources; leveraging private financing; and reducing fatalities from road accidents. The project is helping the GoHP to adopt efficient logistics system and strategy that will help small holder horticultural farmers, services, SMEs and manufacturing industries deliver products just-in-time to wholesale and terminal markets at a lower transportation cost and reduced losses.

52. The project is supporting institutional reforms, based on international good practices, to commercialize maintenance works and enable the direct labor to operate based on commercial principles, and to ensure the delivery of road maintenance at a reduced cost. The project will support the adoption of electronic project management systems, as well as international standards and practices for procurement, road financing, and environment and social safeguards. The project is supporting to enhance good governance in the efficient delivery of motor vehicle administration services to the satisfaction of customers and increase revenue collection. The project is introducing 'the Safe System', which is a scientific approach aimed at reducing road injuries and fatalities. The project is mainstreaming resilience in the geo-hazardous/landslide prone Himalayan roads by adopting bio-engineering solutions as well as mainstreaming gender by increasing the participation of women in the workforce and by contracting out the preservation of bio-engineering solutions to women self-help groups. The Project is supporting initiatives that will ensure sustainability by commercializing maintenance execution and facilitating the creation of a Road Fund that provides stable flow of financing for maintenance. Overall, the project is helping GoHP to strengthen the institutional base for delivering efficient and safe transport and logistics services, based on the Bank's global experience. The reforms to establish efficient institutions, and the innovative approaches to build resilience and ensure sustainability will help build confidence to invest and attract other development partners and the private sector.

F. Lessons Learned and Reflected in the Project Design

53. *Undertaking a profound transformation to enhance the performance of institutions*. HPSRP I was limited to creating HPRIDC, as the development wing of HPPWD, but ended up being a PIU. The process re-engineering also focused on developing a few discreet systems. The separation of road asset management functions from the execution of maintenance by direct labor, as well as undertaking maintenance of roads under commercial principles were overlooked. There was no purpose driven vision to provide efficient transportation services, hence the reform of HPDOT was not considered. This operation is intended to create public corporate entities that operate based on commercial principles and are accountable for the efficient use of public resources. The project will focus on operationalizing the four entities by rolling out systems and creating the critical mass. This operation will support HPPWD and HPDOT to move from piecemeal interventions to a programmatic approach that will focus on institution building and developing both the transport infrastructure and services.

54. *Undertaking maintenance through performance-based maintenance contracting arrangement*. The Implementation Completion Report (ICR) of HPSRP I suggested that the output and performance-based maintenance contracts (OPBMC) were successful in reducing maintenance unit costs and improving service levels.

Building on this success, this project will consider maintaining about 50 percent of the state core roads network under OPBMC methodology.

III. IMPLEMENTATION ARRANGEMENTS

A. Institutional and Implementation Arrangements

55. The project implementation involves multiple institutions, namely: HPRIDC of HPPWD, HPDOT and HP State Traffic Police. HPRIDC will be responsible for the overall coordination of project implementation. The reform of HPPWD and road infrastructure improvement will be implemented by HPRIDC. HPDOT will be responsible for the establishment of HPMVA, strengthening the Directorate of Transportation, and development of the logistics system and strategic multimodal transportation plan. HP State Traffic Police will implement the Road Safety component.

56. **Implementation by HP State Traffic Police:** The legal documents will include covenants to address implementation of the Road Safety enforcement component by HP traffic police. In particular, covenants will be included in the legal agreements in relation to screening and training of personnel, investigation of allegations of unlawful or abusive behavior, and assurances that the proceeds of the financing would be used only for the purposes of the project and not for enforcement of unrelated laws or to support legal action against specific individuals or to purchase arms.

57. As it was the case for the HPSRP I, the country systems will be used for the project implementation. To ensure that the reform process and the investments are implemented at the planned quality, cost and time, the project will provide targeted support. The project will strengthen safeguards, bioengineering solutions, planning, engineering design, procurement and contract management units of HPRIDC by engaging consultants and training. HPPWD, HPDOT and HP State Traffic Police will engage consultancy firms that will advise on the reform process, undertake studies and provision of training.

58. HPRIDC will engage a Project Management Consultant (PMC), which will be responsible for quality assurance and monitoring the DLIs**.** HPRIDC will engage a Construction Supervision Consultant (CSC) for the road upgrading contracts. As required independent Quality Assurance Consultants (QAC) would be engaged to oversee the quality of the construction and maintenance contracts. The Project will engage an Independent Verification Agent (IVA) – Technical Audit Consultant (TAC) - to confirm the fulfilment of the verification protocols for the DLIs and authorize disbursement. Implementation arrangement details are provided in annex 2.

59. **Project implementation period:** The project will be implemented over six years. A mid-term review will be conducted about two years after the effectiveness date of the IBRD Loan.

Implementation Support Strategy

60. The World Bank will regularly review project implementation to ensure satisfactory progress, including compliance with fiduciary and safeguard requirements. The Bank team will regularly review progress and quality assurance reports to be prepared by the PMC, CSC, independent QACs and TAC.

B. Results Monitoring and Evaluation Arrangements

61. The project has established indicators and baseline data to monitor the outputs and outcomes of the proposed project, as presented in the Results Framework. Data will also be disaggregated by gender. Performance monitoring and evaluation will be carried out annually based on the monitoring indicators established for the sector, including governance and transparency in procurement and contract management, quality of executed works and adoption of innovative solutions. Most importantly, the impacts of the project on poverty reduction, shared prosperity and gender will be monitored regularly.

C. Sustainability

62. Ensuring the sustainability of the institutions and Road Safety enhancement measures, as well as the investments and resilience enhancing solutions is one of the most critical challenges, which needs to be viewed from governance, economic, social, and environmental dimensions. Acknowledging the complexity of the sustainability of the institutions and Road Safety enforcement, the ownership of the reform and actions by policy makers is of paramount importance. The establishment of the institutions should be followed by a regular (at least yearly) high level evaluation of the institution formation and operationalization processes, and the delivery of the anticipated results, as well as the satisfaction of users. Likewise, the piloting of the Road Safety actions should be replicated in all districts and corridors. The Project will promote participatory (community and stakeholders) monitoring of the reduction of road injuries and fatality. Community participation is central to enforcement, until surveillance technology is deployed on all accident-prone roads. The project will promote the adoption of a performance-based, multiyear maintenance contracting approach, and undertake the preservation of roadside bioengineering solutions by local women groups. GoHP is also committed to establish a sustainable financing mechanism for maintenance.

IV. PROJECT APPRAISAL SUMMARY

A. Technical, Economic and Financial Analysis (if applicable)

63. The return in investment for institutional reforms is analyzed based on effectiveness and efficiency factors. With respect to HPRIDC, effectiveness is assessed based on the institution's ability to: (a) increase budget absorption capacity; (b) improve the condition of the state roads network; (c) improve the safety, resilience and engineering standard of the Himalayan roads. Efficiency is assessed by conducting value engineering analysis of the planned road asset management works in achieving value for money and user satisfaction with the performance of the roads administered by HPRIDC. GoHP's state core roads network (MDRs) improvement program envisages to invest about US$1 billion over five to ten years. HPRIDC will need to achieve the effectiveness factor by spending US$100 to 200 million per year (increase absorption from the current zero budget). The efficiency of HPRIDC will be monitored in due course of implementation, based on its ability to complete the project roads at the planned cost, time and quality. The road upgrading works will be carried out using DPRs prepared by comparing alternative cost-effective designs and will be procured competitively. The improvement of the roads through the upgradation and spot improvement of accident and landslide prone

locations under the performance-based maintenance contracts will enhance the safety and performance of the roads, which are key factors for user satisfaction. The technical audit will evaluate the maturity level of HPRIDC using the BSI- PAS 55.

64. With respect to the commercialization of the direct labor operations the project will assess efficiency gains by monitoring maintenance expenditures through the service level agreements and will evaluate the reduction in unit costs. The downfall of the current inefficiency of about 264 percent, as compared to the private contractor executed maintenance contacts will be evaluated every year. The target is to execute maintenance works at the prevailing market rate. The quality of maintenance works by the direct labor contract will be assessed through a technical audit to confirm the achievement of the agreed service standards. This will also be compared with the performance of the benchmark contracts carried out by private contractors.

65. With respect to the Directorate of Transportation of HPDOT and HPMVA, the efficiency gains will be assessed based on services delivery time reduction, the ability to conduct vehicle safety inspection and emission control as specified in the inspection manuals, customer satisfaction, and increase in revenue. The procedure manuals to be prepared for each unit (vehicle registration, vehicle inspection, emission control, etc.) will identify the work flow and associated processes and determine nominal service delivery time values. The manuals will also identify the parameters for assessing the quality of services. The technical audit will assess the efficiency gains, quality (including the verification of inspection test results on the street) of the services and customer satisfaction based on the parameters set out in the procedure manuals.

66. **Economic analysis:** The economic analysis was carried out using the HDM-4 tool to estimate the economic viability of road investment for the project, by calculating the project benefits in terms of Vehicle Operating Cost Savings, Value of Travel Time Savings, Value of savings in Accident costs, Saving in Maintenance cost and reduced CO2 emissions, comparing to the Road Construction Cost, Maintenance Cost, Accident Costs and Congestion Cost, etc. The overall Economic Internal Rate of Return (EIRR) of the project is 16.4% and the Net Present Value (NPV), at 12% discount rate, is 1,440 million rupees corresponding to an NPV/Investment Cost ratio of 2.0, thus the project is economically justified. Sensitivity analysis shows that the project is economically justified even if investment cost is 10% higher and the project benefits are 10% lower with 1-year implementation delay. In this case, the overall EIRR would drop to 13.9%. The total gross Carbon Dioxide (CO2) emissions over the 20-year evaluation period under the without-project scenario are estimated at 657,272 tons and under the with-project scenario at 342,736 tons resulting in a net decrease of CO2 emissions of about -314,536 tons, or -15,727tons per year. The results for the individual roads are presented in Table 1.

Table 1: Summary of Economic Analysis

Package No.	Road Segment	Length (km)	Total Project Economic Cost (Rs Cr.)	EIRR (%)	NPV (million Rupees)
1	Baddi - Sai Ramshahar road	34	167.9	14.7	365
2	Dadhol - Ladrour road	13.5	61.3	21.5	621
3	Raghunathpura -Mandi-Harpura-Bharari road	2.7	7.71	12.6	3.47
4	Mandi - Rewalsar - Kalkhar road	28	140.0	15.6	441

Program Analysis	16.4	1,440

*Designs for these roads are under finalization and the capital costs may change accordingly

67. **Benefits of Road Safety**: Road crashes claim many lives in India, and it is recognized that much remains to be done to reduce the national level fatality of 150,000 people per year (11.53 people per 100,000 population), in 2016. Building on GoHPs earlier road safety enhancement actions, the support to road safety enhancement, by strengthening enforcement and providing emergency response will reduce road crash fatalities and injuries.

68. **Development Impact.** The strengthening of the state transport institutions and the complementary interventions will improve roads and logistics services that will provide greater opportunity to the business community and rural population to have better access to domestic, regional and international agricultural markets, beyond encouraging surplus production and manufacturing. The transport and logistics infrastructure and services improvement will attract private investment that will generate jobs, increase in farm gate prices and enhance value chains. The induced development would help secondary cities emerge at nodal points (SME/wholesale market clusters) along the fruit belts and this would generate jobs and services. The digital logistics platform will help to consolidate freight and allow just in-time delivery at a reduce transportation cost. The digital platform operation, the preservation of bio-engineering solutions and post construction non-mechanized maintenance by women-self-help groups will attribute to gender inclusiveness. The project will, therefore, play a catalytic role in increasing production, creating economic opportunities, enhancing gender inclusiveness, generating employment and increasing income. Overall, the project will contribute to reduce extreme poverty, improve livelihood and enhance shared prosperity.

69. **Gender:** As part of the institutional reform, the project attempts to increase the participation of women in technical roles. The gender actions identified under the project aim towards 1) improving the skills sets of women producers' groups/SHGs and 2) building capacity of women producer groups in communities near project roads to diversify their sources of income. The following constitute as gender actions: a) HPRIDC will engage women-led producer groups to build capacity on operations and maintenance and incentivize private contractors to train and hire women-led groups (CBOs/SHGs) for maintenance tasks supported across the horticulture belt; b) the logistics system and strategy planned to stimulate horticulture growth will take into consideration the specific needs of women cultivators and involve them in digital demonstrations; c) ensure that at least a 50 percent of women are recruited/deputed by the motor vehicle authority (MVA) in the vehicle registration and transaction services and about 30 percent in the other services; d) 20% of the maintenance contracts for the 80km MDRs supported under the project will be awarded to women-led producer groups/SHG groups; and e) provision of intensive technical (slope-cutting and bio-engineering solutions) as well as life skills training (digital, legal and financial) will be offered to these groups through collaboration with Industrial Training Institutes.

70. **Citizen engagement**: Recognizing the importance of stakeholder engagement, the project has mainstreamed community engagement through i) analysis of alternatives as part of the mitigation hierarchy during the preparation of ESIA for each of the upgradation corridors; ii) preparation of a grievance redress and feedback mechanism; iii) development of a Stakeholder Engagement Plan in accordance with ESS 10 that shall guide HPRIDC's engagement with all relevant project stakeholders (See Environment and Social section for more details); iv) user satisfaction surveys will be carried out to establish project baseline and will form the basis for monitoring during mid-term and end term surveys; v) impact evaluation studies to ascertain if objectives of mitigation plans such as RAP, LMP and SEP have been achieved.

Climate Risk Mitigation and Adaptation Benefits

71. **Mitigation:** At the policy level, the Directorate of Transportation and HPMVA will introduce vehicle emission control and encourage the use of vehicles running on clean energy. The Directorate of Transportation will promote the use of electric and solar energy run tricycles pick-ups, taxis and buses, whilst supporting the deployment of trucks with emission reduction technology. In line with this, HPDOT has started to deploy electric buses for the Shimla urban mass transportation system.

72. **Carbon emission reduction calculation:** Based on current and future traffic forecasts the amount of emission reduction and shadow price of carbon emission by the project are estimated at: (a) widening to intermediate lane configuration comparing to maintaining existing single lane road reduces 314,618.96 tons CO_2 emission; and (b) according to Bank's high/ low price, the project interventions result in saving US$17.28 million (LOW ESTIMATE), and US$34.55 million (HIGH ESTIMATE) in 20 years operation. GHG emission reduction and shadow price savings calculations are presented in Annex 3.

73. **Resilience** is a key feature of the design solutions that will be adopted to address climate vulnerability and resilience associated with severe geo-hazard risk (landslide) and flooding. The measures to be integrated in the designs of bridges, roads and river crossings include bioengineering solutions for landslide and erosion protection, drainage systems, and so on. The resilience mainstreaming applies to the entire road under the upgradation works contract, as the road alignment falls in the midst of the Himalayan mountains. The bioengineering solutions and drainage improvement in slide risk locations apply to the roads under maintenance as well. The project has a sub-component to strengthen the mainstreaming process. Therefore, the purpose of investments on road upgradation works and performance-based maintenance (US$67.5 million, around 60 percent of the total investment) is to make the roads more climate resilient.

74. **Building climate resilience capacity**. This project has a dedicated sub-component (mainstreaming resilience) to build the capacity of the infrastructure management entities in HP. By the end of the project, it is envisaged that HPRIDC will have developed policy for resilience and manual for bioengineering solutions. HPRIDC will also develop the Borrower's Environmental and Social (ES) Framework, based on the 'New World Bank ES framework', with an emphasis on natural environment safeguards. Core staff will be trained on designing more resilient roads and logistics infrastructure. Vulnerability assessment and detailed mitigation and adaptation measures considered by this operation are presented in Annex 3.

B. Fiduciary

Financial Management

75. *The Project Financial Management arrangements will be the same as HPSRP I with improvements based on lessons learnt from implementing the said project. Financial Management (FM*) functions for the project will be provided by HPRIDC, funds are not expected to flow to any other agency such as HPPWD, HPDOT or MVA. HPRIDC is a fully GoHP owned Private Limited Company as per provision of the Companies Act, 2013. As per requirements of the Companies Act, accounting standards issued by the Institute of Chartered Accountants of India will be applicable to HPRIDC. To ensure consistency and quality in the financial management function across the organization, HPRIDC has prepared an Operations Manual, which will also be used for the project. At the State level, the project's financial requirements would be budgeted in the GOHP's annual budget under the PWD;

project funds will then be provided to HPRIDC for implementation. HPRIDC would report on project activities through quarterly Interim Unaudited Financial Reports (IUFRs). The finance function at HPRIDC is headed by a qualified Chief General Manager supported by a team of accountants. This team will be strengthened with additional accountants to undertake the additional work. The Internal Audit under the project shall be carried by a firm of Chartered Accountants (CA). Qualifications of the CA firm and terms of reference will be agreed with the Bank. The external audit of HPRIDC is carried out by a firm of Chartered Accountants (CA) appointed by the Comptroller and Auditor General (CAG); this arrangement will be made acceptable to the Bank with the terms of reference of the external auditor being extended to meet certain additional assurance/ disclosure requirements of the Bank. The above audit reports will be due within six months after the end of the financial year.

76. **Eligible Expenditure Program (EEP)**. EEP is defined as the cost of goods, works, non-consulting services, consulting services, Incremental Operating Costs, and Training under Components 1.1, 1. 2 (b), 1.2 (c) and 1.3, and Component 3 of the Project procured and implemented in line with agreed procedures acceptable to the World Bank. HPRIDC shall prepare Interim Financial Report (IFR) associated with the six-monthly disbursement requests. The project will reimburse eligible expenditures incurred under the project. Disbursement for contracts, Incremental Operating Costs, and training, under Components 1.2 (a), 1.2 (d) and 1.4, and Component 2 of the Project, which will be implemented under regular IPF will be made against Interim Financial Reports (IFRs). Disbursement request over the contract amount plus contingencies shall be borne by the Borrower, or justification will be provided that the cost overrun is due to unforeseen subsurface conditions.

Procurement

77. The project would be subject to the World Bank's Anticorruption Guidelines, dated October 15, 2006, and revised in January 2011 and July 2016. A Project Procurement Strategy for Development (PPSD) has been prepared and summary is provided below:

a) The Procurement of Goods, Works, Non-consulting Services and Consulting Services for the project will be carried out in accordance with the World Bank's Procurement Regulations for IPF Borrowers, July 2016, Revised November 2017 and August 2018 and Bank's relevant Standard Procurement Documents (SPD)/ model bidding documents agreed by the Bank.
b) Procurement of goods and works will be carried out through NIC e-procurement portal hppwd.gov.in/tender.htm
c) Extensive market analysis has been carried to ensure adequate participation of bidders during the bidding process. Based on the findings of market trends in the sector/ State and issues/ challenges faced by contractors under EPC mode, traditional Item Rate mode of contracting will be adopted in the project. Furthermore, due to geographical challenges, frequent landslides, unpredictable weather conditions and unforeseen circumstances, experience of implementing EPC contracts in the area were not encouraging. Moreover, PIU also do not have capacity and experience of implementing EPC contracts in the past.
d) Packaging and Slicing approach of contracting will not be suitable due to following reasons: (i) availability of encumbrances free site for construction for multiple contracts (ii) continuity of stretches, and (iii) capacity of bidders to execute number of contracts. Therefore, bidding for individual contracts will be carried out in the project.
e) Project Management Consultants will be hired to provide support to PIU in day to day management of project activities such as drafting bidding documents, evaluation of bids, contract award, timely release of payments, etc.

f) Construction supervision consultant will be hired to monitor and supervise contract implementation for timely execution and delivery of contractual milestones to achieve the objective of the project PDOs.

78. **Procurement Capacity Assessment**: The procurement under this project shall be done by Himachal Pradesh Road and other Infrastructure Development Corporation Ltd. (HPRIDC), is a wholly owned Company of Government of Himachal Pradesh, was incorporated on June 10, 1999 under the Companies Act 1956. The HPRIDC have prior experience of implementing the World Bank HPSRP-1 project. The proposed project will be implemented by HPRIDC through a dedicated Project Implementation Unit (PIU) to be headed by Chief Engineer cum Project Director (CE cum PD). The PIU will be responsible for carrying out procurement and contract management of the project. The procurement contracts will be signed by PD (who will be the Employer). The PIU have dedicated staff for procurement and contract management in place, however, they lack expertise in Bank's Procurement Regulations. To bridge capacity issues, the PIU is in the process of hiring Project Management Consultants (PMC) for the project who will be responsible to provide complete support in day to day project management activities. The PMC will have procurement and contract management professionals with adequate experience of implementing externally funded projects like World Bank, ADB, or other multilateral organisation, etc. as key staff members in their team. The Executive Engineer (Contract Management) placed at PIU will be fully responsible for supervision and monitoring of the procurement contracts. The e-PMS system developed under HPRSP-1 will be used to facilitate effective monitoring and supervision of contracts undertaken in the project. In addition to above, Construction Management Units (CMUs) will be established in different zones where project roads are proposed to be constructed. Each CMU will be headed by an Executive Engineer and will be supported by 2-3 Assistant Engineer and Junior Engineer as per requirement during contract implementation phase. The procurement under this project include procurement of works, consultancy services and goods.

79. **Procurement Risk Assessment**: The Procurement Risk Assessment has been done, using Bank's PRAMS (Procurement Risk Assessment and Management System) tool, for the implementing agency and based on the assessment, the procurement risk rating is "Substantial", although the implementing agency has implemented the earlier Bank funded Road Project, but due to the following reasons the procurement risk rating is substantial: (a) inherent sectoral and State specific procurement risks, (b) time and cost overruns in contract execution observed in the previous project; (c) applicability of Procurement Regulations for this project which is new to the PIU; and (d) inclusion of ESHS, GBV and SEA provisions in the civil works and supervision consultant's contracts. In order to mitigate the capacity gaps and risks identified in previous project, following risk mitigation measures were advised to be undertaken: (a) provide procurement training on Procurement Regulations; (b) ensure that the estimates for the works packages are realistic; (c) ensure that the completion period is mentioned in the bidding documents is realistic; (d) ensure that encumbrance free land is available before signing of contract agreement; (e) ensure statutory clearances with regard to forest, wildlife and mining will be obtained prior to bidding and contract award to avoid implementation delays in the procurement contracts; and (f) e-PMS will be effectively used for monitoring and supervision of contracts to keep track of timely completion of contractual deliverables and timely release of payments.

80. **Procurement Plan**: HPRIDC has prepared a Procurement Plan for procurements planned for the first 18 months of the Project. The procurement plan has been updated in STEP (Systematic Tracking of Exchanges in Procurement). The project staff have been trained by Bank in use of STEP and in Procurement Regulations.

81. **E-procurement System**: The e-procurement system of GoHP developed by NIC will be used for all civil works procurements under the project. Detailed procurement arrangements are provided in Annex 1.

C. Legal Operational Policies

	Triggered?
Projects on International Waterways OP 7.50	No
Projects in Disputed Areas OP 7.60	No

D. Environmental and Social

82. **ESS 1: Assessment and Management of Environmental and Social Risks and Impact:** Under Component 2, the project is financing about 89.2 km of upgradation roads and 158 km of maintenance of roads. The four upgradation corridors are located in Solan, Bilaspur and Mandi districts, while the six corridors totaling to 158 km of maintenance roads are spread across five districts (Sirmour, Shimla, Mandi, Una and Bilaspur). The proposed project improvements are expected to bring positive environmental and social impact by improving the connectivity and reducing road crash accidents. The potential environmental impacts are mostly due to large scale construction works of the project roads, which include: water and soil contamination from waste water generated from construction/workers camps and municipal solid waste; spillage and handling of chemical and hazardous materials; damage to vegetation; clogging of waterways; potential inducement of landslides, landslips, erosion from cut surfaces of hill slopes; disposal of spoils from hill side cutting; air pollution due to fugitive dust from earthwork and emission from the vehicle operation, equipment and plants; cutting of trees for widening of roads; reduction of natural resources base and land degradation due to extraction/quarrying; land degradation from project induced development; change in aesthetic of landscape; impacts on culturally and socially important common properties, religious properties/sites, sacred groves on or near the project roads; and distress of public/community due to disruption of utility services. In addition, diversion of 1.5ha of forest land is involved but is unlikely to have significant impact on ecological function of forest and natural habitat. The project will not have an impact on sensitive area/sites such as National Parks, Wildlife Sanctuaries, reserve forests, conservation reserves, wetlands; and archaeological monuments or historic important sites are not present in the project area. Furthermore, the nature and scale of works and expected risks and impacts from maintenance works do not commensurate to high risk activities.

83. Social Impacts identified include: partial impacts on private structures i.e. residential, commercial and residential-cum- commercial – all of them belonging to encroachers and squatters; and partial impacts on common property resources (boundary walls, religious structures/shrines, bus shelter/bus stand, borewell and hand pumps) and there is also no requirement for private land in these two corridors. There are also a few vulnerable families who will be impacted by the project. As the proposed upgradation and maintenance works in the remaining corridors will be of a similar nature, the nature and extent of impacts too are likely to be similar. These impacts can be addressed effectively through commensurate measures and entitlements as proposed in the Resettlement Policy Framework (RPF). Identified social risks include: Inadequate coordination between concerned agencies on land acquisition and resettlement, lack of dedicated personnel dealing with social aspects within HPRIDC and PIUs; mismatch between road design drawings and revenue maps, changes in alignments; and potential delays in negotiations for direct purchase due to the poor state of land revenue records. In order to address capacity and coordination issues, in the management of E&S issues that could result in inordinate delays,

capacity augmentation measures in the form of staffing in the implementing agency, appointing project management consultants and training have been included.

84. The overall project environmental and social risk is categorized as 'substantial'. The E&S risk rating of Substantial is based on the risks associated with the proposed works and the findings of the ESIAs of the two priority roads. The ESIAs indicated that: (i) the nature and extent of likely risks and impacts were construction related and minor or partial impacts on structures of non-titleholders; do not include any private land acquisition; (ii) the forest land requirement was reduced to less than one hectare by restricting the upgrading work to the existing Right of Way (ROW); (iii) mitigation measure to address the sensitivity of project area to geo-hazard, construction activity induced impacts such as proneness to slides, erosion, slope stability, muck disposal and likely impact on surrounding natural habitat. The risk levels for the other two upgradation corridors is at present not known, as the engineering design and ESIAs are not completed. The Client's capacity for managing E&S issues is weak and the implementing entity will recruit additional in-house staff. The project also provides E&S consultants.

85. As the nature of upgradation and maintenance works is likely to be similar in other corridors, though not yet fully known, the environmental and social risks and impacts are also anticipated to be similar in nature and magnitude, with minor variations, if any, depending on the available right of way and the final design. Therefore, acquisition of private land, if any, is likely to be very small. The maintenance roads are located in the five districts (Sirmour, Shimla, Mandi, Una and Bilaspur), which are not in predominant tribal areas. The nature of the maintenance activities does not envisage any taking of additional land or loss of livelihood. On the contrary, the project is expected to have positive impacts. Benefits in the form of improved road conditions, safety, and work opportunities in form of local labor for maintenance works shall accrue to the local population. Hence, in light of these factors, the project risk categorization will be revisited and revised upon conducting of final ESIAs for these corridors. The Bank will review the risk levels for both these roads based on review of the ESIAs and site visits. If one or both the corridors are classified as High risk, it will be decided at that time whether or not they will be financed under the project. If yes, the risk classification for the Project as a whole would be raised to High.

86. The ESIAs were carried out in all four corridors. The ESIAs for two roads – Baddi to Sai to Ramshahr (34 km) and Dadhol – Ladraur (13.5 km) have been finalized and disclosed both in-country and on the World Bank's website. In addition, corridor specific Environmental and Social Management Plan (ESMP) and a consolidated Resettlement Action Plan (RAP) for the first two priority corridors have been prepared and disclosed. Similar approach will be adopted and HPRIDC is at an advance stage of preparation of the E&S management tools for remaining two priority roads and a generic ESMP cognizant of works proposed for the 158 km of road maintenance. It will be the responsibility of the contractor to prepare Contractor's ESMP (C-ESMP) which will include the related plans such as OHS Plan, Waste Management Plan, Workers' Camp Management Plan, CHS Plan, Site Restoration Plan, etc. Based on the findings of these assessments carried out in accordance with ESS 1, extent of relevance and the requirements against ESS was ascertained and is presented below.

87. As part of its due diligence on risks and impacts on disadvantaged or vulnerable individuals or groups, Bank ensured that: i) terms of reference for undertaking ESIA adequately covered such categories of potentially impacted persons; ii) questionnaires and consultation checklists used for conducting census & socio-economic surveys and focus group discussions. It then reviewed the ESIAs and Stakeholder Engagement Plan to assess: i) coverage of such groups in the consultation meetings including the issues and concerns raised by these groups; ii) their enumeration segregated by group amongst project affected families; iii) identified additional measures that could be provided in the R&R entitlements that would help to mitigate the differentiated impacts on these groups

including possible job opportunities that could be provided to some able-bodied member of the family; iv) mechanisms and modes by which such groups project would disseminate information, consult with them to elicit their participation in the project interventions. Additionally, design intervention for physically challenged particularly provision of access ramps to bus stops and Possible job opportunities. This includes Scheduled Caste, Scheduled Tribes, family/household headed by women/female, physically challenged, Below Poverty Line (BPL) families; widows; and persons above the age of 65 years irrespective of their status of title (ownership). Vulnerable groups would also include those farmers who (after acquisition of land) become small/marginal farmers Assessments of the two upgradation corridors for which the ESIA have been completed indicated amongst the vulnerable - ST (2) and SC (13) households would be impacted.

88. It is anticipated that construction work will involve migrant workers from other states. With varied cultural and economic backgrounds, the likely interactions between communities and workers may lead to potential women safety issues, making it pertinent to create awareness on gender issues, gender-based violence (GBV) and risk mitigation measures available. The GBV risk rating for the project is Moderate.

89. To assess potential GBV At-Risk groups and Hotspots, stakeholder consultations were carried out. Identified At- Risk groups, Hotspots, and Strategies for GBV prevention, reporting and response are outlined as follows: Vulnerable At-Risk groups identified include single women (one-fourth of the households in HP are headed by women who are single, divorced, widowed or deserted) scheduled caste women and adolescent girls (travelling to school and/or vocational training centers, primarily from communities close to the construction work and labor camps). Migrant women laborers are also vulnerable if adequate safety and security measures are not undertaken at work sites and within labor camps. Identified Hot Spots for GBV within the project include construction work sites and labor camps alongside local communities, schools, vocational training centers, liquor shops and, migrant laborers residing in rented accommodations within the villages. Hence a GBV plan has been developed for the overall project, that comprises: i) a Code of Conduct for GBV to be developed and shared with the contractors to be signed by all laborers; ii) mapping of Service Providers for GBV prevention and Response for all the sub-project roads and, institutional linkages with these service providers should be strengthened for GBV risk mitigation and response; iii) integrating GBV into existing IEC strategy/materials, GRM, safety talks, tool box meeting and regular trainings including orientation and sensitization training need to be provided for all project staff and contractors, in particular, safety supervisors and engineers; iv) providing strategies for increasing community consultation and identification of GBV focal points within the community; and v) monitoring and reporting of these actions with a special focus on identified hot spots.

90. **ESS 2: Labor and Working Conditions:** The National legal provisions on labor cover almost all requirements in ESS2 except relating to community workers and a functional GRM for different types of workers. HPRIDC will contract agencies to undertake civil works, agencies/firms to support core-functions; primary suppliers of material/equipment and other implementation support partners. All categories of project workers: Direct workers, Contracted workers including migrant labor, primary supply workers (quarry owners, labor contractors) and community workers would be involved. Risks include: non-payment of wages by Employer; non-payment of benefits (compensation, bonus, maternity benefits etc.) by Employer; discrimination in Employment (e.g. abrupt termination of the employment, working conditions, wages or benefits etc.); possibility of Gender based violence arising from large influx of migrant workers, particularly in sensitive locations such as hospitals, schools, etc. that are near to habitations; and health risks of labor relating to HIV/AIDS and other sexually transmitted diseases. Based on the ESIAs undertaken thus far for the two upgradation contracts, it is anticipated that the construction activities will directly involve about 1000 workers.

91. A Labor Management Procedure (LMP) will be developed prior to mobilization of the civil works contractor, that would clearly spell out the requirements relating to provision of terms and conditions of employment; promoting of non-discrimination and equal opportunity; worker's organization etc. besides a grievances redress mechanism for the direct and contracted workers. In order to address labor influx, the contractors will prepare a Labor Influx Management Plan that will comprise provisions: for sourcing all unskilled labor from within the project area and its vicinity to minimize labor influx into the project area. Skilled labor, if unavailable locally, would be brought in from outside the project area either from within or outside the state. A Workers' Camp Management Plan will be developed to address specific aspects of the establishment and operation of workers' camps e.g. cordoning of separate areas for labor camps and material storage; conduct training programs on HIV/AIDS and other communicable diseases; and develop a complaint handling mechanism at the project level.

92. Bid documents for construction has listed out the requirements of applicable national/state labor laws and provisions and the metrics for periodic reporting by contractors. The ESMP outline the various measures that need to be considered to prepare the contractor's OHS plan which will be part of Contractor's ESMP (C-ESMP). The World Bank will review the contractor's OHS Plan to ensure it is acceptable. In addition, the contractor obligations to manage these adverse impacts is clearly reflected in the contractual obligations of the civil works contractor with appropriate mechanisms for addressing non-compliance.

93. **ESS 3: E&S risks and impacts relating to Resource efficiency and Pollution Prevention:** The assessment of impacts and risks due to road constructions has considered sensitive receptor such as settlement, drainage pattern of the area, water bodies, springs/streams/river crossing, forest, protected areas, animal crossing within and outside protected area, roadside trees/plantation, erosion prone locations, receptors vulnerable to air, water, noise and soil quality etc. In addition, natural calamity like landslide, earthquake and flooding were also considered during assessment due to location of road in such sensitive geography. The potential project impacts on sensitive environmental receptors is anticipated to be substantial due to the direct impacts of construction activities and associated facilities that include deteriorating air quality due to emission from vehicles, plants, machinery and fugitive dust during hill side cutting, excavation earthwork; contamination of water and soil from waste water (18000L/day), municipal solid wastes (122kg/day) generated during construction period; spillage and handling of chemical and hazardous waste materials (used oil – 8592L, grease – 859L, cotton wastes-250kg); disruption to drainage pattern due to drying of springs and clogging of streams (30 Nos.); proneness to landslides (27 locations), landslips and erosion due to disturbing of already stable slope during excavation and disposal of spoils from hill side cutting (939499 c.m); cutting of trees and diversion of forest land (1.5ha) for widening of road; reduction of natural resources base and degradation due to extraction/quarrying (borrow area- 227212 cu.m), aggregate- 535204 MT, sand- 65648 MT); land degradation from project induced development; change in aesthetic of landscape; impacts on culturally and socially important common properties, religious properties/sites, sacred groves on or near the project roads; exposure of settlements (29 Nos.) along road to construction related traffic, accident, and occupational health & safety issues; distress of public/community due disruption of utility services (transformer – 12 Nos., water supply line – 18km, electric and telephone poles – 278 Nos.); and likely indirect and induced impacts on ecological functions of forests and natural habitats excluding protected areas. The project's impacts and risk would be of significance on sensitive receptors, which can be addressed through management and mitigation measures in the ESMP. The site specific ESMP will includes plans for hazardous and non-hazardous wastes management, OHS, traffic and road safety management, muck disposal management and restoration, borrow area management and restoration etc. In addition, avoidance and minimization of impacts has also considered design interventions analysis, including widening on valley side to optimize use of muck and

rock from excavation/hill side cutting; widening schemes (concentric or eccentric); road configurations to minimize hill side cutting; mitigation measures like nature based engineering to prevent soil erosion, slope stability; and treatment of upstream of seasonal streams by providing check dams. The GHG emission were projected by International Vehicle Emission (IVE) and Road Emissions Optimization (ROADEO) with estimated reduction equivalent to 9,61,747 tons of CO_2 during the life cycle of road up to year 2038 due to improvement of two priority road.

94. The ESMP will be part of contract and environmental mitigation cost budgeted in scope of contractor by including ESMP items in Bill of Quantity. The implementation of mitigation measures shall be monitored as per the environmental monitoring plan in the ESMP. In addition, the contractors will prepare and submit the Contractor Environmental and Social Management Plan (C-ESMP) to HPRIDC for acceptance which will include the detail implementation plan and approach of mitigation measures. Periodic training will be provided to staffs of both contractors and PIU. The integration of ESMP in civil work bidding document is one of HPRIDC's commitment in the Environmental and Social Commitment Plan.

95. **ESS 4: E&S risks and impacts relating to Community Health and Safety**: The project expects to have a positive impact on the community during the operation phase by increasing accessibility and road safety. ESIA has identified environmental and social risks and impacts on sensitive receptors identified under ESS4 consider vulnerability to risk due to natural calamities like earthquake, landslides and even at times may be landslide triggered due to road construction work. The construction activities related impacts such as fugitive dust from earthworks, hill side cutting; proneness to landslide/slides (27 locations) due to disturbing already stable hill slope during excavation and disposal of excavated material (9,39,499 cu.m); exposure of settlements (29 Nos.) along road to construction and operation stage related traffic, accident. Majority of these impacts are location specific that could be addressed through management and mitigation measures in the Environmental and Social Management Plan (ESMP). The ESMP outlines contractor responsibilities during project planning, implementation and monitoring and evaluation of plans (for muck disposal, wastes management plan, traffic management plan, OHS, emergency response etc.) for which contractor is mandated to prepare a Contractor Environmental Management Plan. The integration of ESMP in the civil work bidding document is one of HPRIDC's commitment in the Environmental and Social Commitment Plan. HPRIDC has prepared a Sexual Exploitation and Abuse /Sexual Harassment risk mitigation plan to address the potential risks and impacts that might arise from the influx of migrant labor The contractor as part of C-ESMP shall also develop a Labor Influx Management Plan and also provide necessary sensitization and awareness training on HIV/AIDS and other sexually transmitted diseases to construction workers and community besides ensuring availability of necessary STD preventive materials.

96. **ESS 5 relating to land and assets:** Identified categories of impact include: i) Structure (Private, Encroachments) - Residential, commercial and Squatters (residential, commercial and Residential –cum-commercial); and ii) Common Property resources (School, College, religious spots, bus shelter/bus stand, borewell and Hand pump. There is no acquisition of private land. 158 households (22 in Baddi-Ramshahr road and 136 in Dadhol-Ladraur) are affected - all of these are non-titleholders. 21 CPR – schools, religious shrines, handpumps and bus-shelter are within the corridor of impact. The social risks identified include, inadequate coordination between concerned agencies on land acquisition and resettlement, lack of dedicated personnel dealing with social aspects within HPRIDC and PIUs; mismatches between road design drawings and revenue maps, changes of alignments, delays in negotiations for direct purchase and disbursements. In accordance with the ESS requirements, a RPF has been prepared with provisions for compensation for impacts on titleholders and non-title holders' families for their losses of land, and structures – houses, shops, cattle shed, etc. at replacement cost.

It also provides the process to be followed for taking of land on private negotiations basis and by using the LA Act, in case land taking is required. Besides, it provides for reconstruction of or restoration of impacted CPRs in consultations with relevant communities and with support of relevant authorities. Based on the RPF a single consolidated RAP has been prepared. The RPF shall also guide the conducting of Social Impact Assessment (SIA) and subsequent RAP preparation for the other two upgradation corridors as well as for preparation of RAP, as necessary, for the maintenance corridors.

97. **ESS 6 relating to Bio-diversity & Living Natural Resources (ESS 6):** The ESIA of two corridors have indicated that none of the sub-projects are neither located or traversing into legally protected areas such as National Parks, Wildlife Sanctuary, and conservation reserves, wetland etc. Specifically, the Baddi Sai Ram Shaher road runs adjacent to forest land and improvement of road geometry is likely to require acquisition of 1.512ha of forest land and a total of 269 trees is likely to be impacted of which 5,380 trees are enumerated within existing right of way of the two priority roads. The extent of trees that would be affected will be determined after verification of land ownership of road stretches through forest. Further, no rare, endangered and threatened flora species exist along the road. The majority of species identified are local species with good distribution along the road. The GoHP is already implementing management measures to control four invasive species identified. In case of fauna species, Monitor Lizard (Varanus Bengalensis), Common Peafowl (Pavo Cristatus), Cheer Pheasant (Catreus wallichii) and Kalij Pheasant (Lophura leocomelanos) are recorded in the project area which are protected under the Wildlife Protection Act-1972. Although these faunal species are present along the project corridor but were not identified during the biodiversity investigation survey.

98. The project is not expected to significantly affect forest habitats and ecosystems during construction and O&M since the road is already existing and any improvement works will be carried out within the existing ROW, which has already largely been acquired for and owned by the project. During construction, workers will be prohibited from using and collecting forest products and resources, which will be specified in the workers code of conduct. During operation of the improved roads, direct and indirect impacts to forest habitats and ecosystems are not expected as the volume of traffic is not expected to significantly increase. During the preparation of the ESIAs, the ESIA team has reviewed the existing state plan of the Himachal State which shows no evidence of big industrialization or tourism plan in near future. The improved roads will facilitate the existing apple belts by introducing better safety measures, proper signage of habitat movement etc. Besides the surrounding forests along the road corridor are already fragmented and disturbed. Based on Forest Department's determined 'Net Present Value' for diverted forestland and trees cut due to the project, and to meet requirements, the project will support compensatory afforestation and compensatory tree plantation and to meet with national requirements. It is not offset or compensation for lost biodiversity to meet ESS6 since the project is not adversely affecting forest and natural habitats and biodiversity. In addition, a biodiversity and habitat assessment is planned to prepare a biodiversity management plan to address wildlife animal movement outside protected areas. This is also one of actions (bullet 6.1 and 6.2) in ESCP.

99. **ESS 7 relating to Indigenous Peoples**: The state of Himachal Pradesh has designated Schedule V areas i.e. areas that have a preponderance of tribal population – Kinnaur, Lahaul-Spiti and two blocks of Chamba district namely Pangi and Bharmour. The four upgradation corridors are located in Solan, Bilaspur and Mandi districts, while the 158 km of maintenance roads are spread across five districts (Sirmour, Shimla, Mandi, Una and Bilaspur). The ESIAs conducted for the first two upgradation roads and the social screening carried out for the other two upgradation roads, confirmed that though these had a few tribal households en-route, but did not meet the characteristics outlined in ESS 7. Also, the identified maintenance corridors are not located in the aforementioned

Schedule V areas. As the ESIA is yet to be carried out for the maintenance corridors, a Tribal Development Framework (TDF) will be prepared, if required, based on its findings, prior to issuance of bids and is stated as a requirement in the ESCP. The TDF will guide the preparation of a consolidated Tribal Development Plan (TDP) in accordance with the requirements of the ESS.

100. **ESS 8 relating to Cultural Heritage**: The alignment of the project road does not have any ancient monuments and/or archaeological site(s). Thus, no impacts are foreseen on ancient monuments and archaeological sites due to the construction of road project. However, four religious' structures/shrines are expected to be partially impacted by the proposed road improvement activities. The extent of impact including on access on these structures, could vary depending on the final designs during preparation and potential modifications during construction stage. In order to mitigate these, actions will be proposed in the RAP and also a "chance find" procedure will be incorporated to help identify and address any such issues during construction stage into Cultural Heritage Management Plan as part of ESMP.

101. **ESS 9 relating to Financial Intermediaries:** This standard is not relevant as no financial intermediaries are involved.

102. **ESS 10 relating to Stakeholder Engagement Plan:** As part of project preparation, consultations were held with affected parties, other interested parties including disadvantaged and vulnerable groups and, institutional stakeholders. Outcomes of public consultations held as part of the activities proposed in the Stakeholder Engagement Plan (SEP) were helpful in: i) providing key inputs to the DPR on adoption of the mitigation hierarchy and provide inputs for approach to management of E&S issues arising in the project road which resulted in reduced impacts on private assets and avoided displacement of families and common property resources such as schools and no impacts on RHS structures; and ii) helping inform the communities of the project and also helping to identify modes of consultations that would be most effective for continued engagement with the communities. A SEP has been prepared that provides for continued engagement of all relevant stakeholders of the project – affected persons and institutions such as schools, temples; other interested parties; communities; institutional stakeholders including relevant government departments such as revenue board; pollution control board; the police department for road safety; shopkeeper associations; civil works contractors; project management and construction supervision consultants; and service providers such as agencies (NGO) who would be involved in RAP implementation and GBV risk mitigation. The SEP details the nature, modes and frequency of engagement with these stakeholders commensurate to the interests and relevance in the project activities, besides specifying the monitoring and reporting requirements on SEP implementation. It shall guide HPRIDC's engagement with all stakeholders in the project. The SEP also details the GRM including principles, processes and timelines that shall be followed in receiving and redressing grievances. The draft Stakeholder Engagement Plan has been disclosed by the HPRIDC on its website on December 10, 2019.

103. **Capacity and Reporting**: HPRIDC will establish and maintain an E&S organizational structure with qualified staffs to support management of E&S risks including at least one Environmental Expert and one Social Expert for ensuring compliance with the Bank's ESF and ESS's at the State level and as appropriate at the District/Division officer level. The state level specialist will provide periodic training to the contractors and will be responsible for reviewing all safeguard related documents. HPRIDC will share a half yearly training plan and will provide an update on the training status in the quarterly progress report. The contractors will need to have dedicated Environmental and Social Specialists for any physical works. HPRIDC will share Quarterly Progress report (QPR) capturing details on E&S performance of the project no later than 15 days after the end of each quarter, with the World Bank.

HPRIDC will need to notify the Bank of any accident event within 24 hours after learning of the incident or accident and provide an investigation report within one week. HPRIDC will engage a third-party firm to complement and verify the monitoring of environmental and social risks and impacts of the Project.

104. All key safeguard documents (ESIAs & ESMPs, RAP, RPF, SEP and ESCP) have been disclosed on the website of HPRIDC. Also, the Executive Summaries of the ESIAs including ESMPs, RPF, consolidated RAPs and SEP were translated to the local language (Hindi) and disclosed on the website of HPRIDC. Copies of these documents will be kept in the project division/circle/district offices. The draft Environmental and Social Impact Assessment (ESIA) and the Environmental and Social Management Plan for the Baddi-Sai-Ramshahar road and the Mandi-Dadhol-Ladrour road were disclosed on November 18, 2019. The ESF package (ESRS, ESCP, SEP) was concurred by the ESSA on January 1, 2020 and disclosed on the Environmental and Social Management System (ESMS) and wbdocs on January 9, 20201. The ESF package was disclosed in country on January 10, 2020.

V. GRIEVANCE REDRESS SERVICES

105. Communities and individuals who believe that they are adversely affected by a World Bank (WB) supported project may submit complaints to existing project-level grievance redress mechanisms or the WB's Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed in order to address project-related concerns. Project affected communities and individuals may submit their complaint to the WB's independent Inspection Panel which determines whether harm occurred, or could occur, as a result of WB non-compliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the World Bank's attention, and Bank Management has been given an opportunity to respond. For information on how to submit complaints to the World Bank's corporate Grievance Redress Service (GRS), please visit http://www.worldbank.org/en/projects-operations/products-and-services/grievance-redress-service. For information on how to submit complaints to the World Bank Inspection Panel, please visit www.inspectionpanel.org.

VI. KEY RISKS

106. **Overall risk is rated 'Substantial',** due to the complexity of the reform and infrastructure improvement interventions; the difficulties experienced by other on-going and past Bank supported projects in the road sector in HP; and the environmental and social risks associated with upgrading roads in geo-hazard/landslide prone areas.

107. **Technical Design of Project or Program risk is rated 'Substantial'** due to the complexity of the institutional reform, which changes the way the state roads and motor vehicle administration services are managed and the need for a continuous monitoring through the operationalization of the corporate entities to ensure that the expected performance and efficiency gain goals are achieved. The logistics system development process is attempting to address complex SME and agro-logistics challenges currently carried out by several intermediaries and informal cartels.

108. **Institutional capacity for implementation and sustainability risk is rated 'Substantial',** due to implementation capacity constraints for timely procurement of consultancy and works contracts; implementing

contracts at the planned quality, time and budget; implementation of safeguard instruments, land acquisition and labor influx; as well as the sustainability of upgraded infrastructure and bio-engineering solutions. The Project includes adequate provision for capacity building support and to address sustainability issues. Priority roads are designed in advance and land acquisition processes will be completed giving good lead-time.

109. **Fiduciary risk is rated 'Substantial',** due to the procurement and contract administration challenges that affected the performance of the recently closed HPSRP I. Further, this project shall be using the Procurement Regulations which is new to the implementing agency. Financial management administration is centralized and as the operation of HPRIDC is scaled up this may pose risk of delaying payment processing.

110. **Environment and Social risks are rated 'Substantial'.** The two completed ESIAs found that Environmental risks and impacts are typical for road construction and there are no adverse impacts that are irreversible on sensitive receptors. There are no adverse impacts and risks as well on critical and natural habitats and on protected areas, wildlife corridor, etc. The widening of the road formation to improve safety and increase capacity of the roads may involve acquisition of farm land and properties. The commercialization of the direct labor operation involves a reform that will support the operational wing of HPPWD, which provides employment to 27,000 workers. The decision of GoHP to implement the direct labor operation commercialization over a long period and to focus the reform on pilot service level agreement during the project period will make the social risk moderate. The remaining high ES risk is associated with the upgrading of roads in mountainous areas, mainly due to the unpredictable landslide risk. With the proposed risk mitigation measures the risk rating has been downgraded to "Substantial". Further, according to the new ESF, the risk rating will be revisited considering the combined impacts of the geo-hazards risk and borrower's current capacity/systems to address them, during implementation. As nature of upgradation and maintenance works shall be similar in other corridors, though not yet fully known, the environmental and social risks and impacts are anticipated to be similar in nature and magnitude as well, with minor variations, if any, depending on the available right of way and the final design. In light of these factors, the project risk categorization will be revisited and revised upon conducting of final ESIAs for these corridors. Bank team will review the risk levels for both these roads based on review of the ESIAs and site visits. If one or both the corridors are classified as High risk, it will be decided at that time whether or not they will be financed under the project. If yes, the risk classification for the Project as a whole would be raised to High.

111. Political and Governance, Macroeconomic and Sector Strategies and Policies risks are rated 'Moderate'. Such risks are not expected to pose significant challenges to the achievement of the PDO.

VII. RESULTS FRAMEWORK AND MONITORING

Results Framework

COUNTRY: India

Himachal Pradesh State Roads Transformation Project

Project Development Objectives(s)

The proposed PDO is to enhance the efficiency of the transportation and road safety institutions and improve selected roads in Himachal Pradesh.

Project Development Objective Indicators

Indicator Name	DLI	Baseline	End Target
Building HP's Transport Institutions & Resilience			
Improved efficiency of transport institutions (Percentage)	DLI 1, 2, 4, 5, 6	50.00	15.00
Reduction in maintenance unit cost (Text)	DLI 3	US$22,000/km/year	US$10,000/km/year
Improve Selected Roads to stimulate horticultural and overall economic growth of HP			
Reduction in transport cost (Percentage)	DLI 7	100.00	75.00
Enhancing Road Safety			
Reduction in road accident fatality (Text)	DLI 8	18.17 people per 100,000 population	11.53 people per 100,000 population

Intermediate Results Indicators by Components

Indicator Name	DLI	Baseline	End Target
Building HP's Transport Institutions & Resilience			
HPRIDC, Direct Labor Wing of HPPWD, HPMVA and Directorate of Transportation of HPDOT reorganized and operational (Yes/No)		No	Yes
Pilot service level/performance agreement for direct labor operation implemented (Yes/No)		No	Yes
Percentage of maintenance contracts awarded to women (Percentage)		0.00	30.00
Maintenance of State Core Road Network carried out under private contractor performance based maintenance contracting (Kilometers)		0.00	1,000.00
Increase the number of women assigned as operational staff by HP Motor Vehicle Administration (Percentage)		0.00	50.00
Road users satisfied with improved road conditions on a scale of "1 - 5" (Number)		0.00	5.00
Improving Selected Roads stimulating HP's horticulture and overall economic growth			
Roads constructed (CRI, Kilometers)		0.00	80.00
Roads constructed - rural (CRI, Kilometers)		0.00	0.00
Roads constructed - non-rural (CRI, Kilometers)		0.00	80.00
Enhancing Road Safety			
Patrol and emergency response equipment commissioned in the pilot districts and the pilot safe corridor (Yes/No)		No	Yes
Police and community volunteers trained (Yes/No)		No	Yes

Monitoring & Evaluation Plan: PDO Indicators					
Indicator Name	**Definition/Description**	**Frequency**	**Datasource**	**Methodology for Data Collection**	**Responsibility for Data Collection**
Improved efficiency of transport institutions	Improved efficiency of HPRIDC (measured based on the implementation of the core consultancy services and works contract at the planned cost, time and quality, and reduction in motor vehicle administration services delivery time). Currently contract completion cost overrun is about 50 percent. This will be reduced to a maximum of 15 percent cost overrun. Motor vehicle administration services delivery time will be reduced by 20 percent.	Annual	Progress Reports	Review of progress reports, technical audit, user satisfaction survey	Project Mangement Consultant/ Technical Audit Consultant/ Implementing entities
Reduction in maintenance unit cost	The maintenance expenditure for direct labor maintenance is higher by about 264 percent compared to performance based maintenance contracts carried out by	Yearly	Progress Reports	Review of progress reports, technical audit, user satisfaction survey	Project Mangement Consultant/ Technical Audit Consultant/ Implementing entities

	private contractors. This expected to reduce to the market price (100 percent, i.e. equivalent to the market price) for maintenance contracts carried out by private contractors for works carried out by pilot service level agreement/internal performance-agreement by the direct level.				
Reduction in transport cost	Reduction in transport cost for transporting products from production clusters to SME/wholesale markets along the project roads. Transportation cost along the project roads is expected to reduce by 25 percent (from 100 percent to 75 percent)	Annually	Progress reports/Technical Audit Reports	Review of progress reports, technical audit, user satisfaction survey	Project Mangement Consultant/ Technical Audit Consultant/ Implementing entities
Reduction in road accident fatality	Fatality rate reduction to the national average level in pilot districts.	Annualy	RADMS	Self-generated reports from RADMS	Project Mangement Consultant/ Technical Audit Consultant/ Implementing entity/Police Department

Monitoring & Evaluation Plan: Intermediate Results Indicators					
Indicator Name	**Definition/Description**	**Frequency**	**Datasource**	**Methodology for Data Collection**	**Responsibility for Data Collection**
HPRIDC, Direct Labor Wing of HPPWD, HPMVA and Directorate of Transportation of HPDOT reorganized and operational	Conduct a study to reorganize HPPWD's asset management (HPMVA and direct labor operation, as well as HP Department of Transport (HPDOT's) motor vehicle administration services and Directorate of Transportation. Issue reestablishment act and cabinet order. Operationalize by allocating adequate budget, engage technical/operational staff and process reengineering.	Bi-annul/ Half-Yearly	Government notification/ Order of appointment, Technical Audit Reports and user satisfaction survey	Review of progress reports, technical audit, user satisfaction survey	Project Mangement Consultant/ Technical Audit Consultant/ Implementing entities
Pilot service level/performance agreement for direct labor operation implemented	Preparation of pilot direct labor internal performance-based maintenance; benchmark performance-based maintenance; and women self-help group bio-engineering solutions preservation bidding and contracts documentation.	Annualy	Project progress reports/Technical Audit Reports	Project progress reports and data prepared by the AE using the ePMS and reports by the PMC and TAC	Project Mangement Consultant/ Technical Audit Consultant/ Implementing entities

Percentage of maintenance contracts awarded to women	Engage women's SHG to carry out bio-engineering solutions preservation and post construction non-mechanized maintenance at least on the project roads. .	Annualy	Progress reports/ Technical Audit Reports	Review of progress reports, technical audit, user satisfaction survey	Project Mangement Consultant/ Technical Audit Consultant/ Implementing entities
Maintenance of State Core Road Network carried out under private contractor performance based maintenance contracting	Maintenance contracted out to private contractors	Annually	Project progress reports/Technical Audit Reports	Review of progress reports, technical audit, user satisfaction survey	Project Mangement Consultant/ Technical Audit Consultant/ Implementing entities
Increase the number of women assigned as operational staff by HP Motor Vehicle Administration	Increase the number of women operational/technical staff in HPMVA and HPRIDC by about 50 percent and	Annually	Progress reports/ Technical Audit Reports	Review of progress reports, technical audit, user satisfaction survey	Review of progress reports, technical audit, user satisfaction survey
Road users satisfied with improved road conditions on a scale of "1 - 5"	Road users satisfied with improved road conditions	Once	User satisfaction surveys reports	Satisfaction surveys undertaken on sample road users	HPRIDC and Study Consultants
Roads constructed		Annually	Progress reports, ePMS and Technical Audit Reports	Project progress reports and data prepared by the AE using the ePMS and reports by the PMC and TAC	Project Mangement Consultant/ Technical Audit Consultant/ Implementing entities

Roads constructed - rural		NA	NA	NA	NA
Roads constructed - non-rural		Annually	Project progress reports/Technical Audit Reports	Project progress reports and data prepared by the AE using the ePMS and reports by the PMC and TAC	Project Mangement Consultant/ Technical Audit Consultant/ Implementing entities
Patrol and emergency response equipment commissioned in the pilot districts and the pilot safe corridor	Patrol and emergency response equipment commissioned in the pilot districts and the pilot safe corridor	Annually	Project progress reports/Technical Audit Reports	Police, community volunteers and hospitals reporting accident using the app for data collection	Project Mangement Consultant/ Technical Audit Consultant/ Implementing entities
Police and community volunteers trained	Police assigned for patrol and emergency response in the pilot districts and corridor, as well as community volunteers trained	Annually	Project progress reports/Technical Audit Reports	Review of progress reports, technical audit, community consultation	Project Mangement Consultant/ Technical Audit Consultant/ Implementing entities

Disbursement Linked Indicators Matrix				
DLI 1	Reorganizing and inaugurating HPRIDC, the direct labor wing of HPPWD, HPMVA and the Directorate of Transportation of HPDOT			
Type of DLI	**Scalability**	**Unit of Measure**	**Total Allocated Amount (USD)**	**As % of Total Financing Amount**
Output	No	Text	5,000,000.00	18.52
Period	**Value**		**Allocated Amount (USD)**	**Formula**
Baseline	Asset management and maintenance works execution is inefficient and not carried out on commercial principles. Transport and MV services not modernized and inefficient.			
2020			5,000,000.00	
2021			0.00	
2022			0.00	
2023			0.00	
2024			0.00	
2025			0.00	
2026			0.00	

DLI 2	Operationalizing HPRIDC			
Type of DLI	**Scalability**	**Unit of Measure**	**Total Allocated Amount (USD)**	**As % of Total Financing Amount**
Output	Yes	Text	2,000,000.00	7.40
Period	**Value**		**Allocated Amount (USD)**	**Formula**
Baseline	Current entity with inefficient asset management & business procedure practices.			
2020			700,000.00	
2021			1,000,000.00	
2022			0.00	
2023			0.00	
2024			300,000.00	
2025			0.00	
2026			0.00	

DLI 3	Establishing the funds flow mechanism and asset transfer for HPRIDC			
Type of DLI	**Scalability**	**Unit of Measure**	**Total Allocated Amount (USD)**	**As % of Total Financing Amount**
Output	Yes	Text	1,500,000.00	5.55
Period	**Value**		**Allocated Amount (USD)**	**Formula**

Baseline	Not in place.			
2020			1,000,000.00	
2021			0.00	
2022			0.00	
2023			500,000.00	
2024			0.00	
2025			0.00	
2026			0.00	

DLI 4	Mainstreaming resilience in the Himalayan mountain roads and protecting the natural and social environment			
Type of DLI	**Scalability**	**Unit of Measure**	**Total Allocated Amount (USD)**	**As % of Total Financing Amount**
Output	No	Text	1,500,000.00	5.55
Period	**Value**		**Allocated Amount (USD)**	**Formula**
Baseline	Not in place.			
2020			0.00	
2021			0.00	
2022			0.00	
2023			1,500,000.00	

2024			0.00	
2025			0.00	
2026			0.00	

DLI 5	Operationalizing the direct labor wing of HPPWD			
Type of DLI	**Scalability**	**Unit of Measure**	**Total Allocated Amount (USD)**	**As % of Total Financing Amount**
Outcome	No	Text	1,000,000.00	3.70
Period	**Value**		**Allocated Amount (USD)**	**Formula**
Baseline	Current maintenance practices are inefficient and not carried out on commercial principles.			
2020			0.00	
2021			0.00	
2022			1,000,000.00	
2023			0.00	
2024			0.00	
2025			0.00	
2026			0.00	

DLI 6	Operationalizing/strengthening HPMVA and the Directorate of Transportation of HPDOT			
Type of DLI	**Scalability**	**Unit of Measure**	**Total Allocated Amount (USD)**	**As % of Total Financing Amount**
Outcome	Yes	Text	5,000,000.00	18.52
Period	**Value**		**Allocated Amount (USD)**	**Formula**
Baseline	Transport and MV services not modernized and inefficient.			
2020			0.00	
2021			1,000,000.00	
2022			0.00	
2023			2,000,000.00	
2024			2,000,000.00	
2025			0.00	
2026			0.00	

DLI 7	Developing and adopting logistics system and strategy for horticultural and overall economic growth of HP			
Type of DLI	**Scalability**	**Unit of Measure**	**Total Allocated Amount (USD)**	**As % of Total Financing Amount**
Output	No	Text	1,000,000.00	3.70
Period	**Value**		**Allocated Amount (USD)**	**Formula**

Baseline	Not in place.		
2020		0.00	
2021		0.00	
2022		0.00	
2023		1,000,000.00	
2024		0.00	
2025		0.00	
2026		0.00	

DLI 8	Enabling patrol and emergency response to enhance Road Safety enforcement & strengthening road safety			
Type of DLI	**Scalability**	**Unit of Measure**	**Total Allocated Amount (USD)**	**As % of Total Financing Amount**
Output	No	Text	10,000,000.00	37.00
Period	**Value**		**Allocated Amount (USD)**	**Formula**
Baseline	Not in place.			
2020			0.00	
2021			1,000,000.00	
2022			0.00	
2023			9,000,000.00	

2024		0.00	
2025		0.00	
2026		0.00	

Verification Protocol Table: Disbursement Linked Indicators	
DLI 1	Reorganizing and inaugurating HPRIDC, the direct labor wing of HPPWD, HPMVA and the Directorate of Transportation of HPDOT
Description	One-time disbursement of US$5 million upon achieving Disbursement linked Results 1 (DLR 1): (i) Cabinet order issued; and DLR 2 (ii) The HPRIDC board members, heads of the four entities and Department/Division/zonal heads appointed.
Data source/ Agency	Government issued order/ communication
Verification Entity	Technical Audit Consultant
Procedure	The TAC reviews the Cabinet order and Chief Minister's and heads of the four entities notification/office order issued to the appointed board members and heads of the Department/Division/zonal offices.
DLI 2	Operationalizing HPRIDC
Description	(a) US$0.5 million upon achieving DLR 2 (i) The assignment of at least 60% of the technical staff; (b) US$0.5 million upon achieving DLR 2 (ii) Rolling out the Electronic Project Management System (ePMS) and HP State government contract management system; and DLR 2 (iii) Integrated Management Information System (IMIS) commissioned; (c) US$0.7 upon achieving DLR 2 (iv) An independent Verification Agent (IVA-TAC) engaged, (v) Project Management Consultant (PMC) engaged, and DLR (vi) hiring individual consultant, including for social and environmental safeguards, bio-engineering, financial management and contract management; (d) US$0.3 upon achieving DLR 2 (vii) Monitoring and evaluation of performance of the four entities and outcomes, and conducting surveys and auditing and DLR 2 (viii) Design review manual

	prepared.
Data source/ Agency	Government Orders/notification/appointment/assignment letters; and project progress reports
Verification Entity	Technical Audit Consultant
Procedure	The TAC reviews: (a) the government document demonstrating that the staff is hired/appointed/assigned according to the staffing plan prepared by the institutional reform study; as well as progress reports prepared by the PMC/ implementing entities.
DLI 3	Establishing the funds flow mechanism and asset transfer for HPRIDC
Description	(a) US$1 million upon achieving DLR 3 (i) annual budget for HPRIDC earmarked in the budget book for FY 2020-2021, and DLR 3 (ii) all roads under the jurisdiction of HPPWD transferred to HPRIDC balance sheet, completing the asset transfer; (b) US$0.5 million upon achieving DLR 3 (iii) Road Asset Management System (RAMS) upgraded, and DLR (iv) A three years rolling Road Asset Management Plan adopted, and (v) recommendations of the road financing study adopted.
Data source/ Agency	progress reports prepared by the PMC/implementing entity and TAC
Verification Entity	Technical Audit Consultant
Procedure	The TAC reviews: (a) the government document demonstrating that the staff is hired/appointed/assigned according to the staffing plan prepared by the institutional reform study; as well as progress reports prepared by the PMC/implementing entities.
DLI 4	Mainstreaming resilience in the Himalayan mountain roads and protecting the natural and social environment
Description	One-time disbursement of US$1.5 million upon achieving DLR 4 (i) disaster risk management policy; and DLR 4(ii) emergency warning and response system; DLR 4(iii) bio-engineering solutions manual; and DLR 4(iv) Borrower's environmental and social framework.
Data source/ Agency	Project progress reports by the PMC and TAC
Verification Entity	Technical Audit Consultant

Procedure	The TAC reviews progress reports prepared by the PMC/implementing entities and proceedings of the panel of experts and workshop deliberating on the final products of the consultancy services.
DLI 5	Operationalizing the direct labor wing of HPPWD
Description	One-time disbursement of US$1 million upon achieving DLR 5 (i) assigning the technical staff, DLR 5 (ii) TA provided for piloting internal service level agreement and developing manuals and systems; and DLR 5 (iii) deploying the systems and training.
Data source/ Agency	Government Orders/notification/appointment/assignment letters; and project progress reports by the PMC and TAC
Verification Entity	Technical Audit Consultant
Procedure	The TAC reviews: (a) the government document demonstrating that the staff is hired/appointed/assigned according to the staffing plan prepared by the institutional reform study; as well as progress reports prepared by the PMC/implementing entities.
DLI 6	Operationalizing/strengthening HPMVA and the Directorate of Transportation of HPDOT
Description	(a) US$0.5 million upon the assignment of at least 60% of the operational staff (positions, qualification and specific number, as recommended by the reorganization study) plus US$0.5 million upon the appointment of 100% of the technical staff; (b) US$1 million upon achieving DLR 6 (ii) Vehicle registration, vehicle inspection, emission control, drivers licensing systems and procedure manuals, and emission reduction strategy upgraded/ developed and adopted; and bidding documents for the procurement of equipment for Shimla MVA center prepared; (c) US$2 million upon achieving DLR 6 (iii) The main MVA center in Shimla area and the Directorate of Transportation strengthened; (d) US$1 million upon achieving DLR 6 (iv) preparing and adopting a strategic plan for the development of multi-modal transportation system; and (v) preparing and adopting mobility improvement action plan for Shimla to relief the seasonal congestion and route rationalization on main corridors.
Data source/ Agency	Government Orders/notification/appointment/assignment letters; and project progress reports by the PMC and TAC
Verification Entity	Technical Audit Consultant

Procedure	The TAC reviews: (a) the government document demonstrating that the staff is hired/appointed/assigned according to the staffing plan prepared by the institutional reform study; as well as progress reports prepared by the PMC/implementing entities.
DLI 7	Developing and adopting logistics system and strategy for horticultural and overall economic growth of HP
Description	One-time disbursement of US$1 million upon achieving DLR 7 (i) Developing logistics system & strategy.
Data source/ Agency	Government Orders/notification/appointment/assignment letters; and project progress reports by the PMC and TAC
Verification Entity	Technical Audit Consultant
Procedure	The TAC reviews progress reports prepared by the PMC/implementing entity and proceedings of the panel of experts and workshop deliberating on the final products of the consultancy services.
DLI 8	Enabling patrol and emergency response to enhance Road Safety enforcement & strengthening road safety
Description	(a) US$1 million upon achieving DLR 8 (i) Adopting a Road Safety improvement action plan and training police and communities; (b) US$9 million upon achieving DLR 8 (ii) Delivery and commissioning of patrol and emergency response equipment to the police and community programs.
Data source/ Agency	Project progress reports and data prepared by the PMC and TAC
Verification Entity	Technical Audit Consultant
Procedure	The TAC reviews progress reports prepared by the PMC/implementing entities.

ANNEX 1: Implementation Arrangements and Support Plan

COUNTRY: India Himachal Pradesh State Roads Transformation Program

A. General

1. Project implementation involves multiple institutions, namely: Himachal Pradesh Road and other Infrastructure Development Corporation (HPRIDC) of Himachal Pradesh Public Works Department (HPPWD), Himachal Pradesh Department of Transport (HPDOT) and HP State Traffic Police. HPRIDC will be responsible for the overall coordination of the implementing entities and the implementation of Sub-components 1.1, 1.2 and 1.4, as well as Component 2. HPDOT will implement sub component 1.3. HP State Police will implement component 3.

2. GoHP's program for transforming state level transport institutions, enhancing mobility and logistics for horticulture and overall economic growth in HP, connecting HP to the Bharatmala network, and enhancing road safety is estimated to cost about US$1 billion. The transport and logistics institutions and the road safety enforcement police will be responsible for the implementation of the program and the institutional reform is designed to ensure the successful implementation of the program. As such, the program sets the goal for the institutional transformation envisaged to be implemented under the proposed project. The program is envisaged to be implemented in three phases. The program framework is summarized in Table 1.1.

Table 2.1. Summary of GoHP's Program

Implementing Entities	**Phase 1**	**Phase 2**	**Phase 3**
HPRIDC	- Reestablishing HPRIDC and building resilience -Supporting the commercialization process of the direct labor operations and promoting competitive performance-based maintenance - Mainstreaming resilience in the Himalayan mountain roads and protecting the natural and social environment - Improving fruit belts to stimulate HP's horticulture and overall economic growth	-Strengthening HPRIDC -Enhancing the efficiency of the direct labor -Scaling up benchmark performance-based maintenance contracting and preservation of bioengineering solutions -Scale up the upgrading of horticultural corridors	-Improve efficiency of HPRIDC -Complete commercialization and/or establishing emergency maintenance and rescue crews -Scaling-up benchmark spot upgrading and maintenance contracts on district/rural roads; and (preservation of bioengineering solutions district/rural roads

HPDOT	-Establishing HPMVA, strengthening the Directorate of Transportation of HPDOT and developing logistics systems and strategy[13]	-Efficiency enhancement of HPMVA and Directorate of Transportation -Establish model physical and digital platforms	-Establish efficient end to end logistics system -Scaling up road safety enforcement
HP Police	-Promoting the 'Safe System' -Promoting the 'Safe Corridor initiative'	-Scale up of the Road Safety interventions in the remaining districts	-Scaling up road safety enforcement
Cost Estimate	US$ 112 million	US$ 488 million	US$ 400 million

B. The implementation arrangement

3. HPRIDC will be reorganized as the asset manager, responsible for development and maintenance of the strategic core roads network, Major District Roads and District Roads, as well as maintenance of the National Highways mandated to the State.

4. The direct labor will be organized as the operational wing of HPPWD and will be managed by an engineer in Chief during the initial stage of commercialization. The direct labor will have four zonal offices and maintenance depots at central locations of the maintenance areas. The commercialization process of the direct labor will be worked out as part of the reorganizational study of HPPWD and will be initiated through the implementation of pilot performance-based contracts. The reform process will also create or reassign relevant cost centers. In recent

[13] Developing logistics system and strategy for horticultural and overall economic growth of HP. This could transform the marketing and production of downstream value chains for strategic horticultural produce, including apple and contribute to the overall economic growth of HP. The logistics system and strategy include, inter alia: (a) mapping of services provided by logistic service providers in HP like but not limited to assembly and processing, warehousing, quality control, supply chain management, financial services, customer services, terminal operations, freight forwarding, reverse logistics, transportation, infrastructures and others; (b) analyzing various policies, schemes, programs and initiatives taken by central government and state government in all sectors (including agriculture, health, urban, industrial, etc.) and in all modes including air, waterways (port and inland), road and rail transport; (c) analyzing the specific logistics infrastructure and services demands of the production clusters, including the option of establishing physical and digital platforms for aggregation of products and bus depots; (d) assessing the logistics and infrastructure demands of the wholesale markets/SME clusters, including the option of establishing production cluster freight consolidation and passenger transport terminals; (e) assessing the option for developing the logistics infrastructure by attracting private investment; (f) analyzing the connectivity and logistics services demand between production clusters and wholesale markets/SME clusters, as well as the wholesale markets/SME clusters and the rail terminals in Chandigarh, including last-mile connectivity; (g) attracting end to end multimodal logistics services provision companies; (h) liberalizing the informal cartel; (i) creating quality jobs for women, including the operation of the digital freight management platform connecting the smallholding farmers- wholesale markets/ SME clusters – truckers – logistics companies; (j) preparing logistics plan and policy for HP and identifying a nodal implementing authority and prepare Business Plan for the nodal Authority with its legal and institutional framework; and (j) develop logistics policy and strategy for HP, based on the experience of Gujarat.

years there has been no new recruitment of un-skilled labor and the replacement of staff with guaranteed employment will take place through an iteration process; at the retirement of a staff under the civil service regime with guaranteed employment, if the position is required it will be refilled by a contract staff. No permanent staff of the direct labor operation will lose its employment due to the reform. However, there is an established need to retain some contract skilled workers, including: (i) workers operating and maintaining machinery and equipment; (ii) laboratory technicians; (iii) foremen and superintendents; (iv) emergency maintenance crew; and (v) administrative, warehousing and finance staff. HPRIDC will engage a consultancy firm to advise on the direct labor commercialization, developing systems and manuals, and providing training.

5. HPMVA will be accountable to HPDOT. HPMVA's mandate includes: (a) vehicle registration and transaction; (b) vehicle inspection, including general vehicle standard, vehicle safety and emission control; and (c) driver's licensing; whilst the Directorate of Transportation of HPDOT will be responsible for: (a) developing sector level regulations and strategies; (b) developing and issuing systems and procedure manuals for vehicle administration; (c) road safety coordination; (d) route rationalization; (e) liberalizing the transportation market along collector and rural roads; (f)promoting climate friendly – clean- transportation services; (g) enhancing logistics and public transportation; and (h) promoting multimodal transportation.

6. HP State Traffic Police is accountable to the Department of Home Affairs. The RADMS, established under HPSRP I is managed by the State Police, the first responder. HP Traffic Police has acquired some experience from the implementation of the Road Safety Action Plan (RSAP), which was prepared for the pilot district (Kinnaur) based on the cause and nature of the accidents recorded by the RADMS. HP Traffic Police will prepare an action plan for the pilot interventions and list the equipment to be installed for patrolling and at the emergency response stations for the piloting. Patrolling and emergency response station buildings would be built by HPRIDC, as part of road side facilities.

7. As it was the case for HPSRP I, country systems will be used for the project implementation. The Project Management Consultant (PMC), inter alia, will be responsible for quality assurance and monitoring the DLIS**.** The project will engage an Independent Verification Agent (IVA) to confirm the fulfilment of the verification protocols for the DLIs and authorize disbursement. As required independent Quality Assurance Consultants (QAC) would be engaged to oversee the quality of the construction and maintenance contracts. Supervision consultants to be engaged by HPRIDC will provide regular supervision services of the road upgrading contract. The performance-based road maintenance and bioengineering solution preservation contracts will be monitored by HPRIDC zonal offices. The project will deploy the ePMS developed under HPSRP I and monitor physical and financial progress, backed by real time photos showing the construction stage of the pavement and drainage structures of the road, as well as the progress of maintenance and bioengineering preservation contracts.

C. Implementation Support Strategy

8. The World Bank will regularly review project implementation to ensure satisfactory progress, including compliance with fiduciary and safeguard requirements. The project will engage a PMC and independent QACs to review contracts for compliance with all aspects of project implementation. The technical audit firms will also ensure satisfactory implementation of the reform and systems development processes.

9. The World Bank will undertake regular semi-annual implementation support missions jointly with DEA, HPPWD and HPDOT, and specialist consultants (as needed). The ePMS, quality control system, and the PMC,

independent QAC and technical audit reports will form the basis for the agenda of World Bank implementation support missions to enable the mission focus on areas of concern beyond confirmation of project implementation status.

D. Financial Management

10. The Project Financial Management arrangements will be the same as HPSRP I with improvements based on lessons learnt; which included challenges in staffing and contract management. Financial Management (FM) functions for the project will be provided by HPRIDC, with no funds expected to flow to HPPWD, HPDOT or MVA. HPRIDC is a fully Government of HP owned, Private Limited Company as per provision of the Companies Act, 2013. As per requirements of the Companies Act, Accounting Standards issued by the Institute of Chartered Accountants of India will be applicable to HPRIDC. To ensure consistency and quality in the financial management function across the organization, HPRIDC has prepared an Operations Manual, which will also be used for the purposes of the project.

11. **Staffing:** The Finance function in HPRIDC is headed by Chief General Manager. Currently except for 3/4 accountants, the FM function is being handled by HPIDB staff on an additional charge. Adequate own HPRIDC FM staff needs to be in place as part of the institutional restructuring. Understandably, a proposal for reorganization of staffing in HPRIDC has be taken for cabinet approval.

12. **Budgeting:** At the State level, the project's financial requirement would be budgeted in GOHP's annual budget. This will be based on estimates provided by the HPRIDC and approved by the PWD. At HPRIDC a detailed annual work plan and budget will be maintained to monitor progress. For the upcoming project a budget of INR 1000 Million is being allocated. The heads with the description are as follows:

Head Number	Head Name	Amount (INR' Millions)
5054-04-337-21	World Bank State Roads	750
5054-04-789-11	Rural World Bank	250
Total		1000

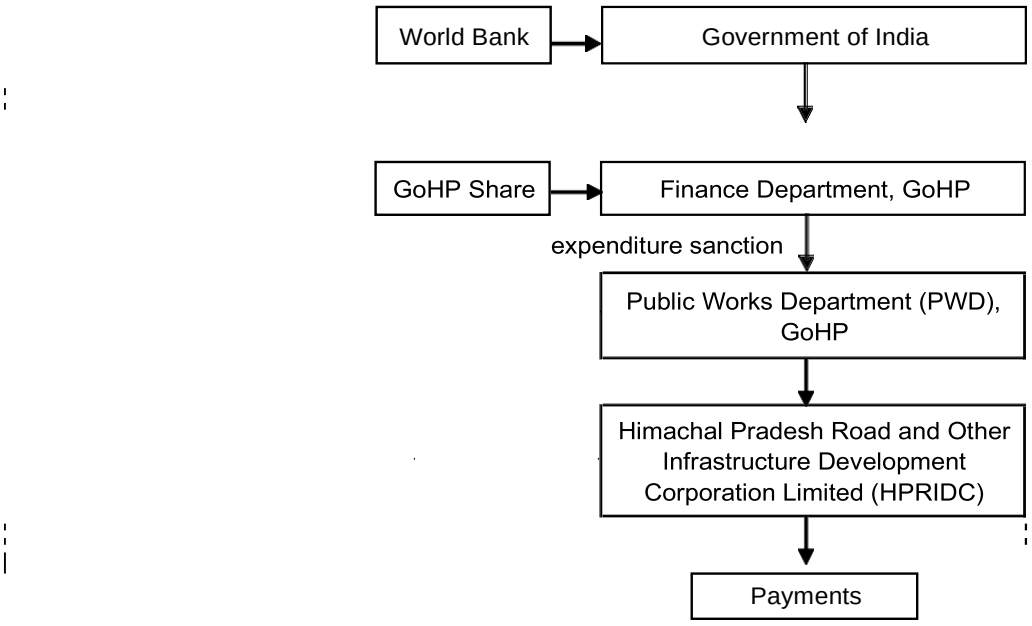
13. **Accounting:** Accounting for the project would be carried out on the exiting Tally system on an accrual basis in compliance with Companies Act 2013 provisions. To ensure consistency and quality in the financial management function across the organization, HPRIDC has prepared an Operations Manual, which details accounting policies/ procedures, funds flow arrangements, chart of accounts and procedures for internal control etc.

14. **Internal Control and Internal Auditing:** Project FM arrangements will include arrangements regarding internal controls including safeguarding of cash, control over inventories, segregation of duties and joint signature of two officers on all significant payments under the project. The Internal Audit function under the project will be entrusted to a firm of Chartered Accountants (CA) with qualifications subject to review by the Bank. Terms of Reference of the auditors will be prepared by HPRIDC and approved by the Bank. The audit will would cover all project locations and will review transactions on a reasonable sample basis. The results of the internal audit would form the basis for management action. Action taken by the management may be reviewed by the Bank during regular project supervision missions.

15. **Contract Management:** One of the weakness in the previous project was the contract management capacity within HPRIDC. This also contributed to large number of ongoing litigation cases. To address this, HPRIDC should implement the exiting contract management system.

16. **Funds Flow:** Funds will flow from the Bank to the GOI and on to the GOHP. GOHP will budget project funds under PWD; however, to ensure timely availability of funds, the Finance Department will transfer funds directly to the implementing agency i.e. HPRIDC. GOHP will ensure that funds are transferred to the project within 2 weeks of receiving the funds from GoI. Depending on the nature of the activity, HPRIDC will use the funds to make payments. Payments for all activities will be centralized at HPRIDC, Head Office in Shimla. Funds for land compensation (non-Bank funded) will be transferred by the PWD directly to the designated officer (Land Acquisition Collector). The funds flow arrangements are summarized in form of the following flow chart.

HPS, Funds Flow Arrangements



17. HPRIDC would report on project activities following the system of quarterly Interim Unaudited Financial Reports (IUFRs). The IUFRs would provide information on expenditure made in the previous quarter and contract related information.

18. **Financial Reporting:** Information on project related to advances, expenditure and balances will be compiled by the HPRIDC; this will be utilized to prepare quarterly IUFRs for the project as well as Annual Financial Statements (AFS) for the entity. The formats of the IUFRs will be provided with the Disbursement and Financial Information Letter and the Annual Financial Statements and will include: annual IUFR for the fourth quarter, management assertion, sources and application of project funds and such information as agreed with the World Bank.

19. **External Audit:** The external audit of HPRIDC is carried out by a firm of Chartered Accountants (CA) appointed by the Comptroller and Auditor General (CAG); this arrangement will be made acceptable to the Bank with the terms of reference of the external auditor being extended to meet certain additional assurance/

disclosure requirements of the Bank. For the land acquisition component (non-Bank financed/ fully financed by GoHP). GoHP will be required to submit a copy of the 'Annual Finance Accounts' certified by the C&AG for correctness and accuracy. The Annual Finance Accounts will identify expenditure under a relevant head[2] of account for expenditure incurred on land compensation. The above audit reports will be due within six months of closure of the financial year. The following audit reports will be monitored in the Bank's Audit Reports Compliance System.

Implementing Agency	Audit	Auditors
HPRIDC	Entity Audit Report	CA firm appointed by CAG

20. Additionally, the AG in the State carries out a Balance Sheet Audit of HPRIDC and provides comments under section 139 of the Companies Act, 2013. It further has the right to review transactions/ files of HPRIDC (in the nature of a Propriety Audit) and prepare an Audit and Inspection Note. Copies of these documents will be shared by HPRIDC with the World Bank.

21. **Ineligible expenditures**: The following expenditures are treated as ineligible expenditures for financing from the Bank under this project:

a. All land acquisition/ purchases required for the purpose of the project
b. Any compensation, resettlement and rehabilitation payment to affected person in accordance with the provision of the RAPs, CPTDs and TPDP
c. Any compensatory afforestation payments
d. Any interest during construction (IDC)
e. Retention money/security deposit retained (till the time it is not released)
f. Expenditures incurred after the project closing date
g. Expenditures not in line with the project description in the Legal Agreement
h. Procurement not in line with agreed procurement procedures
i. Expenses disallowed by auditors and not resolved adequately, and expenses found ineligible during Bank review

22. **Disbursement arrangements:** The applicable disbursement methods will be 'reimbursement'. Disbursement made against DLIs based on satisfactory achievement of DLIs and verified as per the agreed verification protocol supported by EEPs incurred under the project. The basic principles governing the DLI-based component are as follows:

a. The project will submit reports (at least annually) showing the status of achievement of DLIs. This will be verified, where appropriate, by an Independent Verification Agency (IVA) to be appointed by the project as per TOR agreed with the World Bank.
b. On validation of DLIs achieved, the project will seek reimbursement from the World Bank of an amount equivalent to the DLI value achieved. The World Bank, subject to EEPs being adequate to cover the value of DLI(s) achieved, will disburse the full amount. Where the reported EEP is less than the aggregate DLI value achieved by the project, disbursement by the World Bank will be limited to the value of the reported EEP. The balance DLI value will be reimbursed when adequate EEP is reported subsequently. Reported EEP will be considered cumulatively.

c. If the project does not achieve the DLI target(s) for a particular year, the same will be rolled over till the DLI is achieved. In the case of non-scalable DLIs (as provided for in the DLI Verification Protocol), the Bank will only disburse against the full achievement of the DLI target for that particular year.
d. In case the audited EEP is less than the reported EEP, the difference would be adjusted against the disbursement of subsequent DLIs.
e. In the case of partial achievement of any specific scalable DLI, the Bank may, at its discretion, reallocate an amount not exceeding [thirty percent] [30%] of the proceeds of the Loan to any other DLI. In no case shall the amount allocated against any DLI be increased by more than [thirty percent] [30%] through any reallocation, including the reallocation mentioned herein.

23. Disbursement for goods, works, non-consulting services, consulting services, Incremental Operating Costs, and training, under Components 1.2 (a) and 1.2 (d), and Component 2 of the Project, which will be implemented under regular Investment Project Financing (IPF) will be made against Interim Financial Reports (IFRs).

24. **Disbursement schedule.** Loan funds will be disbursed against the DLIs achieved, under the following category/s subject to the allocated amount, reported EEP, and the disbursement percentage as indicated in table 1 below.

Table 2.2. Disbursement Schedule

Category	Amount of the Loan Allocated (expressed in USD)	Percentage of Expenditures to be financed (inclusive of Taxes)
(1) Goods, works, non-consulting services, consulting services, Incremental Operating Costs, and Training, under the Eligible Expenditure Program (EEP) under Components 1.1, 1. 2(b), 1.2(c), 1.3, and 3 of the Project	27,000,000	100% in accordance with Schedule 3 to this Agreement
(2) Goods, works, non-consulting services, consulting services, Incremental Operating Costs, and Training, under Components 1.4, 1.2(a), 1.2(d), and 2 of the Project	54,795,000	73%
(3) Front-end Fee	205,000	Amount payable pursuant to Section 2.03 of this Agreement in accordance with Section 2.07 (b) of the General Conditions
(4) Interest Rate Cap or Interest Rate Collar premium	0	Amount due pursuant to Section 4.05 (c) of the General Conditions
TOTAL AMOUNT	**82,000,000**	

25. **Retroactive financing.** The GoHP will seek retroactive financing, not exceeding US$3 million, for project-related work undertaken by the borrower under category 2 and in advance of the signing date. This will be eligible for financing subject to compliance with the World Bank's procurement procedures. Expenditures incurred between April 30, 2019 and the date of signing of the loan Agreement, subject to US$3 million, can be claimed. For retroactive financing, the PMU will submit a separate stand-alone unaudited IFR certifying the actual expenditure incurred and disbursed.

26. **Implementation support.** As implementation progresses, the World Bank will review the financial and audit reports. In the initial years, project staff may require support/training on project FM and disbursement processes/procedures. The World Bank will undertake at least semiannual ISMs to ensure that agreed FM arrangements are appropriately followed.

27. **Eligible Expenditure Program (EEP)**. EEP is defined as the cost of goods, works, non-consulting services, consulting services, Incremental Operating Costs, and Training under Components 1.1, 1. 2 (b), 1.2 (c) and 1.3, and Component 3 of the Project procured and implemented in line with agreed procedures acceptable to the World Bank, as set out in the project implementation manual.

28. The Bank team will ensure that the eligible expenditure amount as ascertained in the Interim Financial Report (IFR) submitted for disbursement, does not exceed the Disbursement linked Result (DLR) allocated amount. The Implementing Entity shall prepare Interim Financial Report (IFR) associated with the six-monthly disbursement requests. The project will reimburse eligible expenditures incurred under the project.

E. Procurement

29. Procurement for the project will be carried out in accordance with the World Bank's "Procurement Regulations for IPF Borrowers for Procurement in Investment Project Financing - Goods, Works, Non-Consulting Services and Consulting Services", dated July 2016 revised November 2017 and August 2018 ("Procurement Regulations") and the additional provisions stipulated in the Legal Agreement. A Project Procurement Strategy for Development (PPSD) has been prepared which includes market analysis for different high value packages of procurement and decisions on packages and lots are made to ensure adequate participation of bidders. The project would be subject to the World Bank's Anticorruption Guidelines, dated October 15, 2006, and revised in January 2011 and July 2016.

30. **Procurement Capacity Assessment**: The procurement under this project will be carried out by HPRIDC. HPRIDC has prior experience in implementing WB-funded HPSRP. The proposed project will be implemented by HPRIDC through a dedicated Project Implementation Unit (PIU) headed by Chief Engineer cum Project Director (CE cum PD). The PIU will be responsible for carrying out procurement and contract management of the project. The procurement contracts will be signed by PD (who will be the Employer). The PIU have dedicated staff for procurement and contract management in place, however, they lack expertise in Bank's Procurement Regulations. To bridge capacity issues, the PIU is in the process of hiring Project Management Consultants (PMC) who will be provide complete support to PIU in day to day project management activities. The PMC will be mandated to have procurement and contract management professional as key staff members in their team, with adequate experience of implementing projects funded by World Bank, ADB, or other multilateral organisation, etc. The Executive Engineer (Contract Management) placed at PIU will be fully responsible for supervision and monitoring of the procurement contracts. The e-PMS system developed under HPRSP-1 will be used to facilitate effective

monitoring and supervision of contracts undertaken in the project. In addition to above, the Construction Management Units (CMUs) will be established in different zones where project roads are proposed to be constructed. Each CMU will be headed by an Executive Engineer and will be supported by two to three Assistant Engineer and Junior Engineer as per the requirements during the contract implementation phase. The procurement under this project include procurement of works, consultancy services and goods.

31. **Procurement Risk Assessment:** The Procurement Risk Assessment has been done for the implementing agency, using Bank's PRAMS (Procurement Risk Assessment and Management System) tool, and based on the assessment, the procurement risk rating is "Substantial" due to the following reasons: (a) inherent sectoral and State specific procurement risks; (b) time and cost overruns in contract execution observed in the previous project; (c) applicability of Procurement Regulations for this project which is new to the PIU; and (d) inclusion of ESHS, GBV and SEA provisions in the civil works and supervision consultant's contracts. In order to mitigate the capacity gaps and risks identified in the assessment, following risk mitigation measures have been advised: (a) provide procurement training on Procurement Regulations, (b) ensure that the estimates for the works packages are realistic, (c) ensure that the realistic completion period is mentioned in the bidding documents, (d) ensure that encumbrance free land is available before signing of contract agreement, (e) Statutory clearances with regard to forest, wildlife and mining should be obtained prior to bidding and contract award to avoid implementation delays in the procurement contracts, (f) e-PMS should be effectively used for monitoring and supervision of contracts to keep track of timely completion of contractual deliverables and timely release of payments under the procurement contracts.

32. **Capacity Building Measures:** The HPRIDC PIU staff have been associated with HPSRPI and hence are conversant with the World Bank's procurement procedures, however, due to staff turnover, and applicability of the Procurement Regulations for the current project, they would need some basic hand-holding from the World Bank and support from the PMC. The PMC will provide support in carrying out procurements and responsible for all procurement related activities, i.e. preparation of procurement plan, preparation of bidding documents and evaluation of bids, contract agreements, procurement disclosures etc. under this project. The World Bank organized a procurement training on Procurement Regulations covering the procurement of goods, IT equipment and Consultancy Services for all the implementing agencies including training on the STEP system. The World Bank also recommended that the procurement staff of the may undergo the Certificate Program in Public Procurement (CPPP) available online at www.procurementlearning.org .

33. **Complaint Handling Mechanism:** To address procurement complaints received for the proposed project, a complaint handling mechanism will be implemented by HPRIDC. On receipt of complaints, immediate action would be initiated to acknowledge the complaint and to redress within a reasonable timeframe. All complaints will be addressed at levels higher than the level at which the procurement process was undertaken, or the decision was taken. Any complaint received will also be forwarded to the Bank for information, along with all correspondence pertaining to that complaint.

34. **Disclosure of Procurement Information:** The proposed Project will comply with the disclosure requirements stipulated in the Banks' Procurement Regulations (July 2016 revised November 2017 and August 2018). Accordingly, the following documents will be disclosed on the PIU's/Project websites: (i) procurement plan and updates, (ii) invitation to bid for goods and works for all Request for Bids (RFB) following Open – National & Open - International methods, (iii) request for expression of interest for selection/hiring of consulting services, (iv) contract awards of goods and works procured following Request for Bids – Open National & Open International

methods , (v) list of contracts/purchase orders placed following Request for Quotation method on quarterly basis, (vi) short list of consultants, (vii) contract award for all consultancy services, (viii) list of contracts following DC or CQS or SSS on a quarterly basis, and (ix) action taken report on the complaints received on a quarterly basis.

35. The following details shall be published on the UNDB through STEP : (a) invitation for bids for procurement of goods and works using Request for Bids – Open International method; (b) request for expression of interest for consulting services with an estimated cost more than US$ 800,000; (c) contract award details of all procurement of goods and works using the Open-International method; (d) contract award details of all consultancy services with estimated cost more than US$ 800,000; and (e) all contracts/purchase orders placed following SSS or CQS or DC procedures.

36. Further, the PIUs will also publish on their websites, any information required under the provisions of "suo moto" disclosure as specified by the Right to Information Act.

37. **Record Keeping:** All records pertaining to award of contracts, including bid notification, bid opening minutes, and Bid Evaluation Reports (BERs) and all correspondence pertaining to bid evaluation, communication exchanged with the Bank and the bidders/consultants in the process, bid securities, and approval of invitation/evaluation of bids by the PMC would be retained by HPRIDC.

38. **Procurement Plan:** The implementing agency has prepared a Procurement Plan (PP) for procurements planned for the first 18 months of the Project which has been updated on STEP (Systematic Tracking of Exchanges in Procurement). The PP will be updated at least annually or as required to reflect the actual project implementation needs and improvements in institutional capacity. For contracts to be financed under the project, the different procurement methods or consultant selection methods, the need for prequalification, estimated costs, prior review requirements, and time-frame are agreed between the Borrower and the World Bank in the PP.

39. **Post Review:** All contracts not covered under prior review by the World Bank will be subject to post review during Implementation Support Missions and/or special post review missions including missions by the Bank.

40. **Frequency of Procurement Supervision:** Two missions a year at an interval of six months are envisaged for procurement supervision of the project.

41. **Procurement Method and Prior-Review Thresholds:** The table below provides the various procurement methods to be used for activities financed under the loan. The thresholds given in Table 11 apply to the initial 18-months of implementation period and are based on the procurement performance of the project; and may be subsequently modified.

Table 1: Procurement Thresholds

Procurement Approaches and Methods	Thresholds (US$ equivalent) *
Open international (goods, IT system, and non-consulting services)	> 10 million
Open national (goods, IT system, and non-consulting services)	> 100,000 and up to 10 million

Procurement Approaches and Methods	Thresholds (US$ equivalent) *
Open international (Works including turnkey, supply and installation of plant and equipment)	> 40 million
Open National (Works including turnkey, supply and installation of plant and equipment)	> 100,000 and up to 40 million
National request for quotation (goods, works, non-consulting services including IT system procurement)	Up to 100,000
Direct selection	No threshold; For goods/non-consulting services: According to paragraphs 6.8–6.10 of the Regulations; For consultants: According to paragraphs 7.13–7.15 of the Regulations
Shortlist of national consultants	Up to 800,000

42. **Procurement prior-review thresholds***: Based on the 'substantial' risk rating of procurement, given below are the prior review thresholds for the project:

(a) Works including Supply & Installation of Plant and Equipment: All contracts more than US$ 10 million equivalent.

(b) Goods and IT system: All contracts more than US$2 million equivalent

(c) Non-consulting services: All contracts more than US$2 million equivalent

(d) Consultants: All contracts >US$1 million equivalent for firms and >US$300,000 equivalent for individuals

43. The above thresholds also provided in the PP are for the initial 18-month implementation period; based on the procurement performance of the project and may be subsequently modified. Irrespective of the thresholds, all TORs shall be prior reviewed by Bank. The Procurement Plan will be subsequently updated annually (or at any other time if required) and will reflect any change in the prior review thresholds.
* If bids are called concurrently for several contracts in a package and the PIU invites cross discounts, the aggregate value of the total package will form the basis to determine the procurement method as well as the prior review threshold requirements.

44. **Prior review contract**: In the case of contracts subject to prior review, the Implementing Agencies will seek the World Bank's no objection before granting/agreeing to: (a) an extension of the stipulated time for performance of a contract that either increases the contract price or has an impact on the planned completion of the project; (b) any substantial modification of the scope of works, goods, non-consulting services, or consulting services and other significant changes to the terms and conditions of the contract; (C) an extension of the stipulated time for performance of a contract; (d) any substantial modification of the scope of services, substitutions of key experts, or other significant changes to the terms and conditions of the contract (d) any variation order or amendment (except in cases of extreme urgency) that, singly or combined with all variation orders or amendments previously issued, increases the original contract amount by more than 15 percent; and

(d) the proposed termination of the contract. Complaints received in all prior review cases will be sent to the World Bank for review and the response to the such complaints, shall be cleared with the World Bank. Complaints with allegations of fraud and corruption, are to be shared with the World Bank, irrespective of the thresholds.

(a) A copy of all amendments to the contract shall be updated in STEP.

(b) Pre-qualification: Not Applicable

(c) Proposed Procedures for CDD Components (as per paragraph. 3.17 of the Guidelines): Not Applicable

45. **Any Other Special Procurement Arrangements:**

A. Contracts procured in advance will be financed under retroactive financing within the specified limits, if agreed to in the Loan Agreement.

B. **The following details shall be sent to the World Bank for publishing on the United Nations Development Business and the World Bank external website:** (a) an invitation for bids for procurement of Works, goods , IT system procurement and non-consulting services using open international procedures; (b) Requests for Expression of Interests above USD 800,000; (c) contract award details of all procurement of works, goods, IT system procurement and non-consulting services using open international procedure; and(d) a list of contracts/purchase orders placed following DC procedures on a quarterly basis. Further, the implementing agency will also publish on their websites any information required under the provisions of 'suo moto' disclosure as specified by the Right to Information Act.

C. **Domestic preference.** The provision of domestic preference will be applied in the evaluation of bids in accordance with Annex VI of the Regulations.

D. **National Procurement Procedures:** National competition for the procurement of goods, IT system procurement and non-consulting services according to the established thresholds will be conducted in accordance with paragraphs 5.3–5.5 of Section V of the Regulations and the following provisions:

1. Only the model bidding documents for National Competitive Procurement (NCP) agreed with the GOI Task Force (and as amended for time to time), shall be used for bidding.
2. Invitations to bid shall be advertised on a widely used website or electronic portal with free open access at least 30 days prior to the deadline for the submission of bids, unless otherwise agreed in the approved procurement plan.
3. No special preference will be accorded to any bidder either for price or for other terms and conditions when competing with foreign bidders, state-owned enterprises, small-scale enterprises or enterprises from any given State.
4. Except with the prior concurrence of the Bank, there shall be no negotiation of price with the bidders, even with the lowest evaluated bidder.
5. Government e-Marketplace (GeM) set-up by Ministry of Commerce, Government of India will be acceptable for procurement under Request for Quotations (RFQ) method.
6. At the Borrower's request, the Bank may agree to the Borrower's use, in whole or in part, of its electronic procurement system, provided that the Bank is satisfied with the adequacy of such system.
7. Procurement will be open to eligible firms from any country. This eligibility shall be as defined under Section III of the Procurement Regulations. Accordingly, no bidder or potential bidder shall be declared ineligible

for contracts financed by the Bank for reasons other than those provided in Section III of the Procurement Regulations.

8. The request for bids/request for proposals document shall require that Bidders/Proposers submitting Bids/Proposals include a signed acceptance in the bid, to be incorporated in any resulting contracts, confirming application of, and compliance with, the Bank's Anti-Corruption Guidelines, including without limitation the Bank's right to sanction and the Bank's inspection and audit rights.

9. The Borrower shall use an effective complaints mechanism for handling procurement related complaints in a timely manner.

10. Procurement Documents will include provisions, as agreed with the Bank, intended to adequately mitigate against environmental, social (including sexual exploitation and abuse and gender-based violence), health and safety ("ESHS") risks and impacts.

E. **E-procurement System:** The e-procurement system of GoHP which is NIC developed e-procurement portal (http://etender.up.nic.in) shall be used for all Civil works procurements under the project. For procurement of Goods and consultancy services, the use of e-procurement shall be subject to Bank's approval based on capacity building on e-procurement.

F. **Use of GeM (Government eMarketplace):** Use of GeM will be allowed in lieu of RFQ/Shopping as per following details:

- up to INR 50,000 in catalog mode (viz. any available item could be selected by IA without further competition), provided selected Item/Supplier meeting the requisite quality, specification and delivery period.
- up to INR 3 Million from the Supplier having lowest price amongst at least three Suppliers meeting the requisite quality, specification and delivery period. The tools for online bidding and online reverse auction available on GeM may be used by the Purchaser.
- up to INR equivalent of US$ 100,000 from the Supplier having lowest price and meeting the requisite quality, specification and delivery period after mandatorily obtaining bids from at least three Suppliers, using online bidding or reverse auction tool provided on GeM.

ANNEX 2: Institutional Reform of HPPWD and HPDOT

COUNTRY: India
Himachal Pradesh State Roads Transformation Project

Background and Gaps Assessment

1. As of March 30, 2019, HP has 35,823 km of roads consisting of 1,792 km of national highways, 4,481 km of Major District Roads (MDRs) and 29,550 km of rural roads, which also includes 9872 Kms unmetalled roads. In addition, the Border Roads Organization (BRO) provides road access (about 800km) in difficult terrain or in sensitive locations. However, the quality and size of the network is inadequate and needs significant improvement and upgrading. The Himachal Pradesh P Public Works Department (HPPWD), currently being the overall road asset manager of the state, is engaged in planning, construction and maintenance of roads, bridges, ropeways and buildings (both residential and non-residential for various government departments). The department further executes engineering work on behalf of Local Bodies, Public Undertakings, Boards & other Institutions under Himachal Pradesh Government (GoHP) as "Deposit Works".

2. The Himachal Pradesh Road and other Infrastructure Development Corporation (HPRIDC) Ltd., a wholly owned Company of Government of Himachal Pradesh, was incorporated on February 10,1999 under the Companies Act 1956 with the following objectives:

(a) Development of road infrastructure or any other structural or architectural work on Public Private Partnership (PPP) mode or on any other scheme in any manner.
(b) To facilitate and/or undertake other infrastructure projects.
(c) To act as special purpose vehicle (SPV) for resource mobilisation on behalf of the State Government for all infrastructure projects.

3. The gaps identified by the road infrastructure administration capability assessment of HPRIDC, using the most widely recognized standard for the optimized management of physical assets - the British Standards Institution's (BSI) Publicly Available Specification (PAS 55) and the Corporate Governance and Financial Accountability Assessment (CGFA) review, inter alia include:

(a) Governance, fiduciary management autonomy, asset management and performance assessment gaps are major concerns.
(b) Currently, HPRIDC is functioning like a Project Implementation Unit (PIU).
(c) The existing legal structure of HPRIDC as a ‘Private’ Limited Company would not be appropriate to meet the objectives of a public road asset management entity.
(d) HPRIDC’s board is not operational.
(e) The Company (HPRIDC) does not have permanent employees on its roll, which means there is no institutional knowledge base/ capacity and makes sustainability questionable.
(f) The IT systems of HPRIDC are standalone with a need for upgrading and integration with enterprise systems.
(g) HPRIDC’s contract administration capability is weak and not yet able to resolve litigations from the First Himachal Pradesh State Roads Project (HPSRP I).
(h) HPPWD/HPRIDC’s environmental and social safeguards management capacity is weak or non-existent.

(i) Right of Ways (ROW) preservation is carried on ad hoc basis and land acquisition for road improvement projects is not acquired timely.
(j) Asset management functions are carried out mixed with direct labor operation and the staff at the zonal offices are responsible for both asset management and maintenance execution.
(k) HPRIDC could not attract private investment for road concessions, as the traffic volume on the roads (Major District Roads and Rural Roads) under the jurisdiction is low and road upgradation cost is excessively high due to the terrain (Himalayan mountain roads).

4. The Himachal Pradesh Department of Transport (HPDOT) is playing a key role in regional development and harnessing the growth potential of each and every sector of the state economy by improving mobility of people, goods and services, as well as accessing employment opportunities created around the state, by the youth and women. HPDOT gives emphasis on connecting remote and interim parts of the state. The Transport Policy of the GoHP, prepared by the HPDOT (the policy paper is publicly available at HPDOT's website). The mission statement of HPDOT, includes "providing mobility with choice, comfort, convenience, frequency, safety and minimal environmental effects". HPDOT is committed to provide alternate modes of transport like water transport, ropeways, etc., where possible, and promote efficient logistics services. The basic services provided by HPDOT, include:

(a) Learner's Permit.
(b) Driving License.
(c) Registration of Vehicles.
(d) Collection of Taxes.

5. HPDOT has a set of identified challenges, which include:

(a) Lack of vehicle inspection (general vehicle standard, vehicle safety, and emission testing) system and testing facilities (equipment and stations) ;
(b) Arbitrary vehicle testing system;
(c) Lack of knowledge of available technology;
(d) enhancing drivers' licensing;
(e) congestion issues caused by seasonal tourist traffic in urban areas & highways;
(f) Absence of route rationalization system to test viability of routes;
(g) liberalizing the transportation market along collector and rural roads;
(h) promoting climate friendly transportation services;
(i) enhancing logistics for horticultural and overall economic growth of HP; and
(j) absence of a platform for coordinating policy and planning for road infrastructure development and transport and logistics services regulatory functions, as well as promoting integrated multimodal transportation system.

The consultant will assess all such challenges and make recommendations to mitigate, manage and monitor the same as per the best global practices.

6. Road Safety enhancement responsibilities are coordinated by the Road Safety Unit of HPDOT. The coordination is led by the State Road Safety Council, chaired by the Chief Minister. As such, the Road Safety Unit of HPDOT is considered as the lead agency. Beyond the coordination HPDOT is responsible for vehicle safety and driver's licensing responsibilities. The daunting enforcement task is discharged by the State Police. The State Police

is also administering the Road Accident Data Management System (RADMS). HPPWD is responsible for engineering aspects. However, the capacity of all the stakeholders is weak and requires strengthening. The patrolling and emergency response task could be strengthened through Community Road Safety Programs.

Principles of Reform:

7. **Corporate Model:** The assessment of the three common corporate models suggests the applicability of the "Public" Limited Company as the roads under HPPWD are basic access roads (MDRs and Rural Roads) serving low volume of traffic and the cost of road upgradation is extremely high due to the challenges of constructing high standard road in the Himalayan mountains. As developing toll roads is not financially viable, the option considered to reduce dependence on the budgetary process is to establish a broad-based Road Fund that relies on: mobilizing private sector resources through PPP (SPV), annuity programs, land value capture tax/levy, vehicle licensing fees, promoting Transit Oriented Development (TOD) around nodal points by attracting private investment for developing tax revenue generating facilities (freight consolidation, bus terminals, real-estate and businesses), etc.

8. The toll/commercial road corporation model adopted by the Korea Expressway Corporation, Ethiopian Toll Roads Administration Enterprise, as well as national and/or state level expressway/express lane administration units of Department of Transportation (DOTs) in the US, Europe, China and other parts of the world could be adopted for administering highways that serve over 15, 000 vehicle per day (VPD). Such corporate entities rely revenues generated from toll and expand the network through asset recycling. The public policy constraint in this domain is the need to develop such toll roads, as alternate to freeways, which serve tax payers not willing to pay toll. In the Indian context, such network could be developed by the National Highways Authority of India (NHAI), provided a choice expressways/express lane developed, as alternate freeway. The national/state highway agency model is common for administering highways that serve a traffic volume of 5,000 to 15,000 VPD as a blend toll and shadow toll road plus trunk and major secondary roads classified as national/state highways. Such networks are financed by blend of toll revenue, Road Funds and public budget.

9. **Legal and Governance Structure**: The reorganization study may consider legally reestablish HPRIDC as a "Public" Limited company for greater transparency, compliance and accountability by an act of the State Assembly. The asset/capital base, mandate of the corporate entities, source of financing, and rolls and responsibilities of the governance structure will be stipulated by the establishment Act. HPRIDC would be reestablish with autonomy to manage fiduciary responsibilities and apply funds for approved prioritized investment and maintenance intervention, in accordance with the Road Asset Mangement Plan. An administrative manual to be prepared as part of the reorganization study will provide the details on operational procedures of the HPRIDC board and core management team. The administrative manual will provide details on the board composition, oversight responsibilities, fiduciary authority and code of conduct, as well as Chief Executive Officer's (CEO's) and core management team's recruitment procedures, performance assessment, accountability and code of conduct. The reorganization study will propose a governance structure, organogram, detailed institutional mandate categorized by core functional units, and job specification for all managerial and technical positions. The CEO will sign a performance agreement with the executive board for the implementation of the approved investment and maintenance plan, and application of all funds for the intended purpose. Hence, the core management team will be accountable.

10. Himachal Pradesh Motor Vehicle Administration (HPMVA) could be established as a public agency providing customer services and collecting taxes and fees. The reform here is to enhance good governance by

deploying a transparent system where tariffs are publicly available on HPMVA website and all tax and fee collections are made through centrally controlled electronic revenue collection systems. Quality of services is monitored through technical audits and user satisfaction surveys. The Directorate of Transportation of HPDOT and the Direct Labor Wing of HPPWD could be established as a Department of a public agency/ ministry.

Funds Flow

11. The institutional reform study will propose the funds flow mechanism and determine the asset to be transferred to HPRIDC. The process may include:

(a) earmarking the annual budget for HPRIDC in the budget book, starting with the financial year 2020-2021. The amount shall be the equivalent of the investment and maintenance contracting budget that would be allocated for HPPWD. The operation budget for the direct labor will be retained by HPPWD while HPRIDC, as the asset manager will administer the maintenance and spot improvement works to be executed by the direct labor wing;

(b) upgrading the Road Asset Management System (RAMS), by simplifying the data collection system and integrating the road maintenance and rehabilitation module (existing); green and resilient roads module for preserving the Right of Way (ROW) and acquired land (quarry sites, dumping areas, plant sites, camps, and access to acquired land) and protecting road embankments and drainage structures from flooding and erosion (new); rural accessibility improvement program module to meet the Rural Accessibility Index- population living within 2km radius of all season access (new); and road upgrading and modernization program module to meet the development and traffic growth demand (new);

(c) preparing and adopting three years rolling road asset management investment and maintenance plan by rolling out the updated Road Asset Management System (RAMS). HPRIDC shall prepare the three years rolling road asset management plan and submit for consideration by the budgetary process for the financial year 2021 -2022;

(d) creation of a dedicated road financing mechanism and broadening the financing base, and apply proceeds of the Road Fund to partly finance HPRIDC's maintenance and investment plan for the financial year 2022 -2023 and onward;

(e) transferring all roads under the jurisdiction of HPPWD to HPRIDC balance sheet by April 1, 2020.

Expected Proposals from the Institutional Reform Study

12. Based on a thorough diagnostics, stakeholder consultation and reviewing the above-mentioned reform principles, the institutional reform study will deliver the following:

Tasks/Proposals	**HPRIDC**	**Direct Labor**	**Directorate of Transportation**	**HPMVA**
Developing mission statement	✓	✓	✓	✓
Defining mandates and core functions; task grouping and organizational structure	✓	✓	✓	✓
Governance structure and administrative manual	✓			
Reestablishment Act/Cabinet Order	✓	✓	✓	✓
Process reengineering (System, procedures, standards) requirements and	✓	✓	✓	✓

Administrative procedures and manuals; staff regulation handbook	✓	✓	✓	✓
Performance agreement/service level agreement	✓	✓	✓	✓
Tasks tracking and monitoring system	✓	✓	✓	✓
Improvements in the physical working environment	✓	✓	✓	✓
Integrated document/records handling system	✓	✓	✓	✓
Human resources development plan	✓	✓	✓	✓
Financing options	✓			
Policy and planning coordination platform			✓	
Clean -transportation			✓	
Transport logistics coordination			✓	

Detailed Assessment of HPRIDC. Assessment of HPRIDC's asset management capabilities.

46. Many road authorities have adopted the principles of asset management and various guidelines are available to help with this process. The most widely recognized standard for the optimized management of physical assets is the British Standards Institution's (BSI) Publicly Available Specification PAS 55. The PAS 55 is the basis for the recently published ISO 55000 Standards for asset management, designed to apply to any asset type.

47. The requirements of PAS 55 are regarded as a benchmark when assessing the asset management practices of a specific road authority. The asset management requirements are defined under the following headings:

- General requirements
- Asset management policy
- Asset management strategy, objectives and plans
- Asset management enablers and controls
- Implementation of asset management plan(s)
- Performance assessment and improvement
- Management review

48. The assessment of current asset management practices was made against the desired standards as listed in Table 3.1 according the methodological approach proposed by the Institute of Asset Management (IAM). The Assessment Methodology allows the assessor to record the scores for each attribute based on a scale from zero representing the lowest maturity (no compliance with requirement), to maturity level 4, where the road authority/agency surpasses the requirements). The road asset management practice maturity stage is categorized as: (i) awareness, (ii) development, (iii) competence, and (iv) excellence.

49. Technically speaking, HPRIDC is currently going through the awareness stage and embarking onto the development stage. Therefore, the results as shown in the following table show maturity level 0 for most of the requirements and maturity level 1 for few items attributable to the adoption of the Road Asset Management System (RAMS) from PMGSY, developing information management system and ePMS that will help to put in place that will help to meet the requirement for record, the introduction of performance based maintenance contracting, and the keen interest of GoHP for change management, expressed by the action taken to reestablish HPRIDC.

Table 3.1: Qualitative Judgement based on PAS 55 Methodology Assessment

PAS 55 Clause	2008 Clause Title	Qualitative Score
4.1	General requirements	0.5
4.2	Asset management policy	0.5
4.3.1	Asset management strategy	0.5
4.3.2	Asset management objectives	0
4.3.3	Asset management plans	0.5
4.3.4	Contingency planning	0
4.4.1	Structure, authority and responsibilities	0.5
4.4.2	Outsourcing of asset management activities	0.5
4.4.3	Training, awareness and competence	0
4.4.4	Communication, participation and consultation	0
4.4.5	Asset management system documentation	0
4.4.6	Information management	0
4.4.7.1	Risk management process(es)	0
4.4.7.2	Risk management methodology	0
4.4.7.3	Risk identification and assessment	0
4.4.7.4	Use and maintenance of asset risk information	0
4.4.8	Legal and other requirements	0.5
4.4.9	Management of change	1
4.5.1	Life cycle activities	0
4.5.2	Tools, facilities and equipment	0.5
4.6.1	Performance and condition monitoring	0.5
4.6.2	Investigation of asset-related failures, incidents and nonconformities	0
4.6.3	Evaluation of compliance	0
4.6.4	Audit	0
4.6.5.1	Corrective and preventive action	0
4.6.5.2	Continual improvement	0
4.6.6	Records	1
4.7	Management review	1

50. The target level of maturity will depend on the authority and its portfolio of assets. It is assumed that, for the present gap analysis purposes, HPRIDC's target would be Level 0.5. Level 3 of PAS 55 is an ultimate target for organizations like HPRIDC, which need to demonstrate (to politicians, funders, regulators etc.) that they have governance in place and are managing their assets in a way that meets best practice.

ANNEX 3: Climate Adaptation and Mitigation Measures

COUNTRY: India
Himachal Pradesh State Roads Transformation Project

1. **Climate and Disaster Risk Screening:** The project has run the climate and disaster risk screening tool and found that extreme precipitation and flooding, earthquake and landslides are high risks in the project area, while extreme temperature and strong winds are moderate risks for the infrastructure component. The proposed technical solutions as well as non-infrastructure components of the project related to policy development, implementation, and emergency protocol are expected to significantly help reducing potential negative impacts, while capacity building training and outreach would also contribute positively.

2. **Vulnerability assessment and climate/disaster risks:** As stated in the state strategy and action plan on climate change for Himachal Pradesh[14], HP is vulnerable to climate and disaster risks. Himachal Pradesh is a northern Indian state in the Himalayas that faces large scale climate variability and is exposed to enhanced risks from climate change. Himachal Pradesh is vulnerable to the effects of climate change since its population is highly dependent on the growth of its agrarian economy. Himachal Pradesh in India in terms of earthquake, landslide, and extreme precipitation and flooding susceptibility are classified as high, as it has rainfall patterns, terrain slope, geology, soil, land cover and potentially-damaging earthquakes that make localized landslides a frequent hazard phenomenon. Potentially damaging and life-threatening urban floods are expected to occur at least once in the next ten years. The extreme heat hazard and strong winds are classified as moderate that leads to high risk of wildfire hazard, that means that prolonged exposure to extreme heat resulting in heat stress is expected to occur at least once in the next five years, and there is greater than a 50 percent chance of encountering weather that could support a significant wildfire that is likely to result in both life and property loss in any given year.

3. The existing transport infrastructure is thus often blocked by slides and is washed out causing interruption for significant time and isolating the rural population from basic services, including access to health facilities for women in labor. Road construction and maintenance practices used in the state do not currently systematically consider climate risks as part of design and implementation. They should be improved, and contractors or labor trained accordingly, considering new techniques and bioengineering solutions addressing these important climate risks while supporting a more cost-efficient use of funds for long-term maintenance and future upgradation works. As there is no early warning system, the landslides caused by stormwater from the mountains result in fatal accident on vehicles. Evacuation of agricultural products and transportation of tourists should either be terminated or delivered at high cost and risk, during the snow and rainy season. HPPWD has identified five districts, where landslide related road closure disrupts the movement of people and goods for weeks, during the winter season. HPPWD has standby crews in the slide prone districts to carry out slide and debris removal, rescuing vehicles and people, and repairing collapsed bridges and road sections.

4. **GHG emissions:** The traffic capacity of HP cannot catch up with the increase in traffic as a result of economic development. Serious traffic congestion not only increases fuel consumption and greenhouse gas (GHG) emissions, but consequently leads to air pollution, and is therefore a large contributor to global climate change. Traffic congestion due to infrastructure deficiencies has been identified as one of the major issues and the agreed

[14] State strategy and action plan on climate change for Himachal Pradesh, Department of Environment, Science and Technology, Government of Himachal Pradesh, 2012

solution is to invest on the priority infrastructure in HP. According to the traffic condition, this project is expected to mitigate the GHG emissions.

5. This project intends to address these above-mentioned risks and potential negative impacts induced by climate change through project design and the implementation of appropriate adaptation and mitigation measures.

Climate adaptation related measures

6. **Given the high geo-hazard risk the project design has mainstreamed resilience in the institutional reform, infrastructure improvement and safe transport interventions of the project.** The core tasks to be implemented under the proposed project to help GoHP adapt geo-hazard risks and vulnerabilities are summarized in Table 4.1.

Table 4.1. Project Climate Vulnerability Matrix

Components	Contribution to the reduction of climate vulnerability
Component 1. Building HP's Transport and Logistics Institutions, and Resilience (US$42 million of which US$32 million from IBRD against DLIs)	
Sub-components 1.1 (a), (b) and (c): Reorganizing and operationalizing HPRIDC	HPRDC is the host institution for making the Himalayan mountains climate resilient. The reorganization of HPRIDC includes the establishment of a bioengineering and environmental and social monitoring unit, which will ensure the mainstreaming of green technologies (making roads climate resilient, effective use of natural resources, reducing emission) in design, construction and maintenance of roads in HP. The Road Asset Management System (RAMS) that will be updated under this component will include the creation of a resilience module focused on copping up with geo-hazard risks through bioengineering solutions and improved drainage for the relief of the water pressure and flooding.
Sub-component 1.1 (d): Mainstreaming resilience in the Himalayan mountain roads and protecting the natural and social environment	This subcomponent is dedicated to developing the policy framework, strategies and technical manuals for mainstreaming resilience by preparing and adopting: (i) disaster risk management policy; (ii) emergency warning and response system; (iii) bioengineering solutions manual; and (iv) environmental and social management framework (supporting the Borrower to adopt the new ESS for natural resources management)
Sub-component 1.2 (a): Executing bench mark performance-based maintenance contracts.	The unique feature of the performance maintenance contracts promoted under this project include the improvement of geo-hazard and flood prone locations by adopting bioengineering solutions and the provision of adequate flood and erosion control drainage structures. HPRIDC is currently preparing a bid document for spot improvement and performance-based maintenance contracts for 1,350km of roads, applying part of the proceed of the IBRD Loan.

Sub-component 1.2 (b) and (c): Reorganizing and operationalizing the direct labor operation	This supports the establishment of emergency response crews to clear landslide blockage, rescue victims, repair damaged spots and make HP roads resilient by improving drainage structures and slide areas stabilization. Beyond the above the direct labor will adopt bioengineering solutions on all roads under service level agreements.
Sub-component 1.2 (d): Preserving bio-engineering solutions within the ROW and post construction non-mechanized maintenance under women-self-help group contracting.	This supports the sustainability of the bioengineering solutions and provide income generating jobs for local women.
Sub-component 1.3 (a) and (b)*:* Reorganizing and operationalizing/strengthening the motor vehicle administration services (HPMVA) and the Directorate of Transportation of HPDOT	This project contributes to climate risk mitigation by promoting electric and solar vehicles and three-wheelers and emission control of all vehicles registered in HP.
Sub-component 1.3 (c): Developing and adopting logistics system and a strategy for horticultural and overall economic growth of HP.	The system will help the provision of green logistics services that will reduce emission from transport operation (resource efficiency) through freight consolidation. The system will also promote the use of multimodal transport system by transferring horticultural and agricultural products to the rail system and haul to the long-distance terminal markets, like Mumbai, Chennai, etc.
Component 2. Improving priority MDRs stimulating HP's horticulture and overall economic growth (US$50 million of which US$40 million from IBRD)	
Upgrading of approximately 80km of roads (MDRs) connecting small holding farmers production and primary processing clusters to wholesale markets/SME clusters.	Green technology (stated above) has been mainstreamed in the design of the project roads and will strictly be applied during construction and maintenance. As the entire road to be improved under the project is in a geo-hazard area making the roads climate resilient is the fundamental purpose of the road improvement works. All road sides and water crossing locations will be provided adequate drainage facilities and bioengineering solution to the highest resilience standard. To the extent possible, concrete structures are replaced with bioengineering solutions.
Component 3. Enhancing Road Safety (US$20 million of which US$10 from IBRD)	
Sub component 3.1: *Promoting the 'Safe System'*	Landslide is one of the main causes for road accidents in HP. The emergency response system, unlike in other roads in plains will be engaged in rescuing victims of accidents cause by landslide and flooding from the Himalayan mountains and valleys. Warning signage of slide and flood risks will be key resilience enhancing measures to be implemented by the project
Sub component 3.2: *Promoting the 'Safe Corridor initiative'*	The safe corridors will be piloted on a tourist corridor, which crosses sensitive landslide and flooding areas. The emergency response system and warning signs play a critical role in enhancing resilience.

7. **Resilience** is a key feature of design solutions that will be adopted to address climate associated with severe geo-hazard risks (landslide) and flooding. The measures to be integrated include bioengineering solutions for landslide and erosion protection, drainage systems, and so on, in the designs of bridges, roads and river crossings. Resilience mainstreaming applies to the entire road under the upgradation works contract, as the alignment is in the Himalayan mountains. The project is supporting the adoption of bioengineering solutions on

the entire length of the road under the civil work contract. To the extent possible, the DPR consultant is applying bioengineering solutions in lieu of concrete retaining walls and will provide adequate drainage structure to relief the water pressure, which is the main cause of geo-hazard risk. Bioengineering solutions and improving drainage in slide risk locations apply to the roads under maintenance, as well. The project has a sub-component to strengthen the mainstreaming process, which involves developing a resilience and risk management policy, preparing bioengineering manual, as well as geohazard risk mapping and developing emergency warning and response system. The purpose of the investments on road upgradation works and performance-based maintenance (US$67.5 million, around 60 percent of the total investment) is to make the roads more climate resilient. Early warning system for floods and landslide risk will be developed to avoid disruption of roads/ road closure and incidences on road users.

8. **Building climate resilience capacity**. The project has a dedicated sub-component (mainstreaming resilience) to build the capacity of infrastructure management entities in HP. By the end of the project, it is envisaged that HPRIDC will have developed a policy for resilience and manual for bioengineering solutions. HPRIDC will also develop the Borrower's Environmental and Social (ES) Framework, based on the 'New World Bank ES framework', which gives emphasis on natural environment safeguards. Core staff will be trained on designing more resilient infrastructure.

Climate mitigation related measures

9. **Mitigation:** Although, shifting to rail transport in a short term is not plausible due to the mountainous terrain, HPDOT is promoting the use of clean energy run transportation services and is improving resource efficiency by consolidating freight and introducing digital platforms optimizing truck loading and reducing empty backhaul.

10. At the policy level, the Directorate of Transportation and HPMVA will introduce vehicle emission control and encourage the use of vehicles running on clean energy. The Directorate of Transportation will promote the use of electric and solar energy run tricycles pick-ups, taxis and buses, while supporting the deployment of trucks with emission reduction technology. This initiative will help reduce emissions from tricycles, a widely used transportation means in India. Based on the policy level dialogue on climate risk mitigation during project preparation HPDOT has deployed electric buses in the Shimla urban mass transportation system.

11. **Carbon emission reduction calculation:** Reduced travel time and reduced congestion lower carbon emissions, which benefits climate change mitigation. Road improvement works will help reduce congestion, increase vehicle speed and enhance fuel efficiency, in this case reducing carbon emissions.

12. The road planning tool HDM-4 was used to carry out the economic analysis. Overall, based on current and future traffic forecasts, emission reduction and shadow price of carbon emission by the project are estimated at: (a) reduction in 314,618.96 tons CO_2 emission as a result of widening to intermediate lane configuration comparing to maintaining existing single lane road; and (b) a saving US$17.28 million (LOW ESTIMATE), and US$34.55 million (HIGH ESTIMATE) for the 20 years operation according to Bank's high/ low price.