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R2019-0051/1

March 12, 2019

**Closing Date: Friday, March 29, 2019
at 6:00 p.m.**

FROM: Vice President and Corporate Secretary

India – Uttar Pradesh Core Road Network Development Project

Project Appraisal Document

Attached is the Project Appraisal Document regarding a proposed loan to India for an Uttar Pradesh Core Road Network Development Project (R2019-0051), which is being processed on an absence-of-objection basis.

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Report No: PAD1120

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED LOAN

IN THE AMOUNT OF US\$400 MILLION

TO THE

REPUBLIC OF INDIA

FOR AN

UTTAR PRADESH CORE ROAD NETWORK DEVELOPMENT PROJECT

March 7, 2019

Transport Global Practice
South Asia Region

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CURRENCY EQUIVALENTS

Exchange Rate Effective January 31 , 2019

Currency Unit =	Indian Rupees (INR)
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71.13 INR =	US\$1
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FISCAL YEAR

April 1 - March 31

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ABBREVIATIONS AND ACRONYMS

AADT	Average Annual Daily Traffic
ADB	Asian Development Bank
ADGP	Additional Director General Police
AMS	Asset Management System
CAAA	Controller of Aid, Accounts and Audit
CAG	Comptroller and Auditor General
CCL	Cash Credit Limit
CE	Chief Engineer
CERC	Contingent Emergency Response Component
CPF	Country Partnership Framework
CPR	Common Property Resources
CRN	Core Road Network
DDO	Drawing and Disbursement Officer
DGS&D	Director General of Supplies and Disposal
DPR	Detailed Project Report
DSP	Deputy Superintendent Police
DTI	Driver Training Institute
EA	Environmental Assessment
EAP	Externally Aided Projects
EDFC	Eastern Dedicated Freight Corridor
EE	Executive Engineer
EIA	Environmental Impact Assessment
EIRR	Economic Internal Rate of Return
EMP	Environmental Management Plan
EoP	End of Project
EPC	Engineering Procurement Construction
ESDRC	Environment, Social Development and Resettlement Cell
ESIA	Environment and Social Impact Assessment
ESMF	Environment and Social Management Framework
ESMP	Environment and Social Management Policy
ESO	Social Development Officer
FM	Financial Management
GADF	Gender Assessment and Development Framework
GBV	Gender Based Violence
GDP	Gross Domestic Product
GeM	Government e-Marketplace
GIS	Geographic Information System
GoI	Government of India
GoUP	Government of Uttar Pradesh
GPS	Global Positioning System
GRC	Grievance Redress Cell
GRM	Grievance Redress Mechanism
GRS	Grievance Redress Service
GSDP	Gross Domestic Product
GST	General Services Tax
HC	Head Constable
HDM	Highway Development and Management Model
HLRSC	High-Level Road Safety Committee
HQ	Headquarter
HR	Human Resource
IBRD	International Bank for Reconstruction and Development
ICB	International Competitive Bidding
ICC	Internal Complaints Committee

ICR	Implementation Completion and Results report
IDS	Institutional Development and Strengthening
IE	Independent Engineer
IEC	Information, Education and Communications
IEG	Independent Evaluation Group
IFR	Interim Financial Report
IGRM	Integrated Grievance Redress Mechanism
INR	Indian Rupee
IPF	Investment Project Financing
IPO	Independent Procurement Observer
TPPF	Tribal People Policy Framework
iRAP	International Road Assessment Program
ISDP	Institutional Development and Strengthening Plan
ISP	Implementation Support Plan
IWT	Inland Water Transport
LA	Land Acquisition
M&E	Monitoring & Evaluation
MDR	Major District Roads
MIS	Management Information System
MoRTH	Ministry of Road Transport & Highways
MSME	Micro Small & Medium Enterprise
MTR	Mid-Term Review
NCW	National Commission for Women
NGO	Non-Governmental Organization
NH	National Highways
NIC	National Informatics Centre
NICSI	National Informatics Centre Services Inc.
NHAI	National Highways Authority of India
NLTA	Non-Lending Technical Assistance
NPV	Net Present Value
ODR	Other District Roads
OP	Operational Policy
OPRC	Output and Performance Based Road Contracts
ORAF	Operational Risk Assessment Framework
PAD	Project Appraisal Document
PAP	Project Affected Person
PCI	Per Capita Income
PDO	Project Development Objective
PGB	Project Governing Board
PIP	Project Implementation Plan
PIU	Project Implementation Unit
PMC	Project Management Consultants
PMGSY	Pradhan Mantri Sadak Yojna
PMIS	Project Management Information System
PPP	Public-Private Partnership
PPSD	Project Procurement Strategy for Development
PRAMS	Procurement Risk Assessment and Management System
PWD	Public Works Department
QM	Quality Management
RADMS	Road Accident Data Management System
RAMS	Road Asset Management System
RAP	Resettlement Action Plan
R&R	Resettlement and Rehabilitation
RFQ	Request for Quotations
RPF	Resettlement Policy Framework
RSC	Road Safety Cell (at Transport Department)
RSSAT	Road Safety Screening and Appraisal Tool
RTFCLARR	Right to Transparency and Fair Compensation in Land Acquisition and Resettlement and

	Rehabilitation Act
SAMI	Stress Absorbing Membrane Interface
SE	Superintending Engineer
SH	State Highways
SI	Sub-Inspector
SIA	Social Impact Assessment
SOP	Status of Project
SP	Superintendent of Police
SRSF	State Road Safety Fund
STEP	Systematic Tracking of Exchanges in Procurement
TPAC	Third Party Audit Consulting firm
TPDP	Tribal People Development Plan
TOR	Terms of Reference
UNDB	United Nations Development Business
UP	Uttar Pradesh
UPCRNDP	Uttar Pradesh Core Road Network Development Program
UPHP	Uttar Pradesh Highway Police
UPSRP	Uttar Pradesh State Roads Project
UPSRTC	Uttar Pradesh State Transport Corporation
UPRSC	Uttar Pradesh Road Safety Council
UPCDAS	Uttar Pradesh Crash Data Analysis System
VR	Village Roads
WB	World Bank
WHO	World Health Organization
WMM	Wet Mix Macadam



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DATASHEET

BASIC INFORMATION

Country(ies)	Project Name	
India	Uttar Pradesh Core Road Network Development Project	
Project ID	Financing Instrument	Environmental Assessment Category
P147864	Investment Project Financing	A-Full Assessment

Financing & Implementation Modalities

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

Expected Approval Date	Expected Closing Date
29-Mar-2019	30-Jun-2025

Bank/IFC Collaboration

No

Proposed Development Objective(s)

The Project Development Objective is to build capacity for results-focused road safety management in Uttar Pradesh and to improve traffic flows and safety for all road users on selected corridors of the state core road network

Components

Component Name	Cost (US\$, millions)
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Network Improvement	476.00
Institutional Strengthening of PWD	3.00
Road Safety	90.00
Contingent Emergency Response Component	0.00
Front end fees	1.00

Organizations

Borrower:	REPUBLIC OF INDIA
Implementing Agency:	UP-PWD UP Police Traffic Directorate Transport Department

PROJECT FINANCING DATA (US\$, Millions)**SUMMARY**

Total Project Cost	570.00
Total Financing	570.00
of which IBRD/IDA	400.00
Financing Gap	0.00

DETAILS**World Bank Group Financing**

International Bank for Reconstruction and Development (IBRD)	400.00
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Non-World Bank Group Financing

Counterpart Funding	170.00
Borrower/Recipient	170.00

Expected Disbursements (in US\$, Millions)

WB Fiscal Year	2019	2020	2021	2022	2023	2024	2025
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Annual	0.00	35.52	110.53	107.87	103.66	21.46	20.96
Cumulative	0.00	35.52	146.05	253.92	357.58	379.04	400.00

INSTITUTIONAL DATA

Practice Area (Lead)

Transport

Contributing Practice Areas

Climate Change and Disaster Screening

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

Gender Tag

Does the project plan to undertake any of the following?

a. Analysis to identify Project-relevant gaps between males and females, especially in light of country gaps identified through SCD and CPF	Yes
b. Specific action(s) to address the gender gaps identified in (a) and/or to improve women or men's empowerment	Yes
c. Include Indicators in results framework to monitor outcomes from actions identified in (b)	Yes

SYSTEMATIC OPERATIONS RISK-RATING TOOL (SORT)

Risk Category

Rating

1. Political and Governance	● Substantial
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	● Substantial



9. Other	● High
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

Safeguard Policies Triggered by the Project	Yes	No
Environmental Assessment OP/BP 4.01	✓	
Performance Standards for Private Sector Activities OP/BP 4.03		✓
Natural Habitats OP/BP 4.04	✓	
Forests OP/BP 4.36	✓	
Pest Management OP 4.09		✓
Physical Cultural Resources OP/BP 4.11	✓	
Indigenous Peoples OP/BP 4.10	✓	
Involuntary Resettlement OP/BP 4.12	✓	
Safety of Dams OP/BP 4.37		✓
Projects on International Waterways OP/BP 7.50		✓
Projects in Disputed Areas OP/BP 7.60		✓

Legal Covenants

Sections and Description

GoUP to maintain throughout implementation: (a) a High Level Safety Committee; (b) a Project Governing Board; (c) a dedicated Project PIU at PWD comprising field level division (PWD-circles) and an environment, social development and resettlement cell (ESDRC); (d) a PIU at the Traffic Directorate of the Home Department; (e) a Road Safety Cell at the Transport Department; (f) a Project Management Consultant, all of them in with qualified staff and/or terms of reference satisfactory to the Bank.



Sections and Description

GoUP to select and engage within 3 months of effectiveness and maintain throughout implementation: (a) a third-party audit consulting firm to monitor Project implementation; and (b) an accounting firm to assist the PWD PIU in carrying out FM responsibilities, all with qualifications and terms of reference acceptable to the Bank.

Sections and Description

GoUP to engage, prior to commencing any civil works under Component 1 and 3, and then maintain throughout implementation a RAP implementation support agent to assist the PWD PIU and the RSC with the implementation of RAPs and GAPs.

Sections and Description

GoUP to carry out the Project in accordance with the Operations Manual.

Sections and Description

GoUP to prepare by August 31, 2019 a time-bound Road Safety Implementation Plan for the carrying out sub-components 3(a) and (b), listing the procurement packages, expenditures, and target days therefor, and thereafter ensure that these sub-components are implemented in accordance with such schedule and provided adequately budgetary allocations.

Sections and Description

GoUP to launch by March 31, 2020 the phase one of the UPHP on selected corridors covering approximately 80 km of the core road network.

Sections and Description

GoUP to ensure that the personnel selected/enlisted to be part of the UPHP be: (a) duly screened to confirm no record of unlawful or abusive behavior (including gender violence or excessive use of force); and (b) adequately instructed and trained on use of force and appropriate behavior/conduct as further detail in the code of conduct for UPHP to be adopted by GoUP.

Sections and Description

GoUP to promptly review and diligently investigate any allegation of unlawful or abusive behavior by UPHP personnel and, if warranted: (a) take appropriate disciplinary actions; and (b) adopt any necessary measure to preempt recurrences.

Sections and Description

GoUP to ensure that: (a) all goods and technical assistance provide under sub-component 3(a) of the Project are used by the UPHP for the sole purpose of enforcing traffic laws and regulations; (b) the proceeds of the loan are not used to enforce any laws or regulation unrelated to traffic management and safety or support any investigation, prosecution and/or enforcement of judgments that are targeting specific individuals; and (c) the proceeds of the loan are not used to purchase any arms or ammunition or train any personnel in the use of arms and/or ammunitions.

Sections and Description

In order to trigger the CER component, GoUP to: (i) prepare and furnish to the Bank for approval a CER Operations



Manual detailing activities, expenditures and implementation arrangements; (ii) identify and maintain a Coordinating Authority with adequate staff and resources; (iii) declare an eligible crisis or emergency; and (iv) prepare and disclose any required safeguard documents.

Sections and Description

GoUP to carry out the the Project in accordance with the EMPs, RAPs, GAPs and TPDPs prepare ro to be prepared pursuant to the ESMF.

Sections and Description

GoUP to ensure that, prior to awarding any contract to a contractor, or undertake any activities, under Components 1 and 3 of the Project: (i) all relevant government permits/clearances have been obtained, and/or any conditions imposed have been fulfilled/met; (ii) all preconstruction conditions imposed by government authorities have been complied with/fulfilled; and (iii) all resettlement measures for the respective roads, or section thereof, have been properly implemented (including full payment of any resettlement compensation as per the applicable ESMF and/or RAP).

Sections and Description

GoUP to ensure that, prior to commencing any civil works under Component 1 or sub-components 3(b) and 3(c) of the Project: (a) all necessary governmental permits and clearances have been obtained; (b) all pre-construction conditions imposed under such permits/clearances have been complied with/fulfilled; and (c) all resettlement measures set forth in the respective RAP have been executed -including full payment of compensation prior to displacement and/or provision of relocation assistance to all affected persons as per ESMF's and RAP's entitlements.

Sections and Description

GoUP to ensure compliance with the Safeguard Documents as part of the contractors' obligations pursuant to the bidding documents.

Sections and Description

GoUP to ensure that all land acquisition, all compensation resettlement and rehabilitation payment to displace persons, and any agency charges, utility shifting charges, and/or centage charges collected by GoUP agencies, divisions and/or departments, are paid out of GoUP's own resources, and ineligible under the Loan.

Sections and Description

GoUP to: (i) maintain throughout implementation monitoring and evaluation protocols and record keeping procedures to supervise and assess compliance with Safeguard Documents; (ii) select and engage within 3 months of effectiveness and maintain throughout implementation of Component 1 and 3 the services of environmental and social consultants acceptable to the Bank, and (ii) furnish to the Bank semi-annual reports to reports on compliance with Safeguard Documents and/or any remedial actions required.

Sections and Description

GoUP to establish within a month of effectiveness and then maintain and operate throughout implementation, a multi-tier grievance redressal mechanism including district level grievance redress cells.



Conditions

Type Disbursement	Description GoUP to fully staff the HD-PIU prior to withdrawing any funds under disbursement Category 2 (i.e. sub-component 3(a) - Road Safety Initiative by the HD)
Type Disbursement	Description Prior to withdrawing any funds under Category 4 (i.e. CER Component), GoUP to activate the CER Component and: (i) determine an eligible crisis or emergency, determine the activities to be carried out and obtain the Bank's concurrence thereto; (ii) prepared and disclosed all safeguard documents required for said activities; (iii) provide evidence of an adequately staffed coordinating authority; and (iv) adopt a CER operations manual acceptable to the Bank.



I. STRATEGIC CONTEXT

A. Country and State Context

1. India continues to be the world's fastest growing major economy. After growing at 7.2 percent in FY17/18, the economy expanded by 7.7 percent in the first half of the current fiscal year. This robust performance was underpinned by a revival in industrial activity, strong private consumption complemented by rising investment, and a rise in exports of goods and services. Meanwhile, the external headwinds that characterized the first half of the year have subsided. The dramatic decline in oil prices, since October 2018, has allowed the current account deficit to return to relatively benign levels. Likewise, the large portfolio capital outflows that materialized from April 2018 onwards (against the background of current account imbalances and heightened perceptions of emerging markets risk) have eased and capital inflows have resumed (resulting in a stabilization of the exchange rate and bond yields). With the normalization of external circumstances, foreign reserves have remained at around US\$396 billion, which represents a comfortable level (equivalent to about 9 months of imports). Going forward, growth is projected to reach 7.3 percent for the full current fiscal year and to firm-up thereafter, at around 7.5 percent, primarily on account of robust private consumption, a rise in exports of goods and services, and a gradual increase in investments. However, the current account deficit is projected to remain elevated in FY18/19.

2. Since the 2000s, India has made remarkable progress in reducing absolute poverty. Between FY2011/12 and 2015, poverty declined from 21.6 percent to an estimated 13.4 percent of the population at the international poverty line (2011 PPP US\$1.90 per person per day), continuing the trend of a robust reduction in poverty. Aided by strong economic growth, more than 90 million people moved out of extreme poverty and improved their living standards during this period. Despite this success, poverty remains widespread in India. In 2015, an estimated 176 million Indians were still living in extreme poverty, while 659 million, or 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). Recent trends in the construction sector and rural wages, a major source of employment for the poorer households, suggest that the pace of poverty reduction, generally, may have moderated.

3. Uttar Pradesh (UP) is one of the largest, and the most populous state in India, with a population of nearly 220 million of which nearly 60 million live in extreme poverty. During the last decade UP's GDP grew at an average of 6.5 percent per annum but lagged behind the national average. Its per capita income (PCI) of US\$727 (2017-18) places UP amongst the lowest of all states, and the gap with the national average (US\$1,800) has widened over the years. Whilst UP has made significant progress in reducing poverty during the last decades (the poverty headcount has fallen from 41 percent to 29 percent between 2004 and 2012), the pace of reduction, again, compares poorly with the national trend and economic growth has been less effective at reducing poverty in UP than in other states. Though in absolute numbers UP remains home to the largest number of poor in India – accounting for nearly one-sixth of the total poor in the country.

4. Sources of growth in UP have shifted away from agriculture towards services – particularly trade, tourism and real estate – during the last decade. While the composition of production is more sophisticated in UP than in comparator states – it is concentrated in regional pockets, especially in the Gautam Buddha Nagar district (which includes Noida). However, in the recent years, the manufacturing sector has lost ground within the state compared to rest of India. The primary and secondary sectors contribute 23 percent each, with the tertiary sector accounting for the remaining 54 percent. Simultaneously, while there has been some movement of labor out of agriculture (primarily to construction), agriculture continues to be the primary source of employment in the state. A key constraint to improving the productivity of both the agricultural sector and the manufacturing sector in UP is infrastructure, underlining the need to improve the



transport infrastructure.

B. Sectoral and Institutional Context

5. A high-quality, sustainable road network is an essential element to facilitate economic growth in UP and ensure access to health and educational services, and employment, including for women. The road network carries over 90 percent of all freight and passenger traffic, a distribution between the modes that is unlikely to change. Demand for road transport has been continuously increasing, and generally exceeds GDP growth by a factor of 1.2, so 8-10 percent per annum, again a rate of demand growth that is expected to be maintained. The number of registered vehicles in the state has been increasing at an average annual rate of about 11 percent since 2005. As of 2018, there were about 29 million vehicles registered in the state, with 3 million registered in the last year only. As a result, the volume of traffic has increased markedly on all roads, but particularly the National Highways (NH), State Highways (SH) and Major District Roads (MDR), as they carry the vast majority of the traffic, approximately 35-40 percent each on the NH and SH/MDR respectively.

6. **UP Road Network.** The UP Road Network amounts to approximately 280,000 km of road network, the largest in the country after Maharashtra. The Public Works Department (PWD) manages about 235,000 km (84 percent) of the total network, much of which is in fair or good condition, but with geometric characteristics that are incompatible with current use and traffic levels. The remaining roads are managed by other state departments. National Highways (NH) with a total length of 7,600 km are managed by National Highways Authority of India (NHAI) and Ministry of Road Transport & Highways (MoRTH). The PWD network comprises 7,140 km State Highways (SH) (3 percent), 7,400 km Major District Roads (MDR) (3 percent), 49,600 km Other District Roads (ODR) (21 percent) and about 170,000 km Village Roads (VR) (72 percent). Recently, approximately 2400 km roads have been declared as NH, reducing SH and MDR lengths by about 2,100 and 300 Km respectively and the transfer process is ongoing.

7. The SH/MDR system is a vital part of the road network - acting as the connector between the rural roads and the arterial (national) roads. A poorly managed and maintained SH network will diminish the benefits from expanding/upgrading the other levels of the network. While the rural connectivity has been improving in the state over the years under the Government of India (GoI's) PMGSY initiative and the national highways are being developed by the GoI under the National Highway Development Program, the road condition of SH and MDRs, which are managed by the PWD has not been improving at the same pace. As these categories of roads provide the feeder link between the rural road network and the NH, their importance cannot be overemphasized in the context of connectivity in the state and its impact on the local economy.

8. About 40 percent of the SH/MDR network is deficient in terms of the geometric characteristics given current traffic levels and use. The current SH/MDR network generally comprises roads with a one lane paved carriageway that is 3.5 meters in width, which is totally inadequate for the current use and traffic levels. The SH/MDR roads have poor geometric characteristics, inadequate pavement thickness resulting in poor ride quality and higher operating costs, deficiencies in the design of junctions, inadequate right-of-way, suffer from encroachment on government land in the right-of-way and ribbon development exacerbating safety risks, insufficient drainage and limitations in protection on slopes, banks and bridge abutments. The network not surprisingly also displays high crash death and injury rates, and high levels of congestion.

9. **The UP Strategic Core Road Network Master Plan.** The Government of Uttar Pradesh (GoUP) recognizes that to achieve its objectives in terms of economic growth, an effective and efficient road network is vital. Such a network is crucial in accelerating industrial growth, enhancing agriculture productivity and integrating the less developed regions.



Accordingly, in 2013, following a recommendation in the UPSRP, the GoUP prepared a comprehensive 20-year transport masterplan and defined a Strategic Core Road Network (CRN) of 24,095 km, to be developed and maintained to enable upward social mobility and economic development of the state. The defined CRN included 7,550 km NHs, 7,530 km SHs, 5,761 km MDRs and 3,254 km ODR. The Masterplan was adopted subsequently by the GoUP. For the CRN, the GoUP envisaged an investment program of about US\$14 billion to upgrade 16000 km of roads from 1 lane to 2 lane or 4 lane depending on traffic levels (excluding the NHs, which are funded by the Central Government) in four phases till 2031. It was estimated that about 60 percent of the required investment could be met with budgetary and central government support, 25 percent from multilateral financial institutions, and the remaining 15 percent from the private sector via a public-private partnership.

10. **Road Sector Management.** The PWD contracts out all upgrading, periodic and routine maintenance work to the private sector, with supervision provided by PWD staff in district offices. The majority of the contracts are the traditional input-based contracts (BOQ), with the known inefficiencies and associated risks. In the FY2017-18, the PWD spent approximately US\$2.3 billion in capital expenditure, and US\$1.2 billion in recurrent expenditure, so even a modest improvement in efficiency would realize substantial savings. Supervision of externally financed projects is undertaken by independent consultants.

11. The recent Audit report¹ by the Comptroller and the Auditor General of India stated that “...in the State of Uttar Pradesh, Audit did not find even Annual Plans for any of the years during 2011-16. Audit observed that the proposals for road construction and upgradation were sanctioned by the Government in an ad-hoc manner on a case to case basis. Neither any prioritization of roads was carried out nor traffic surveys conducted periodically in majority of cases to support project proposals. The PWD also did not have any complete database of roads to facilitate systematic and objective planning. Hence, in the absence of a proper planning process the entire system of submission of proposals by divisional officers and sanction of road works by the government lacked transparency.” “Audit, however, observed that in 38 per cent of the test-checked cases in 17 selected districts, the proposals for widening and strengthening of roads were not supported by traffic census reports... Hence, widening and strengthening of large number of roads was conducted without proper need assessment.”

12. Irrespective of the development plans, there remains a pressing need to further strengthen the management of the road network, clarify organization responsibilities, ensure the sustainability of the finances, and improve management practices. The foundation stone is an up-to-date road inventory database that covers all the classes of SH and MDR roads, and ideally other levels of the road network. An Asset Management System (AMS) was initiated in the earlier Bank financed project², and road inventory data for SHs, MDRs and ODRs has been collected and included in the database in the past few years. It is a substantial task and the process of data collection and the inventory of village roads is ongoing, with condition data and traffic data by road section to be added. Once the database is complete, the AMS can be used for annual and multi-annual maintenance planning, based on a clear prioritization of need. However, to get to this stage, additional modules need to be developed, and the protocols, procedures, and equipment to collect traffic data and road condition data introduced and sustained.

13. **Road Safety.** Road safety performance of the road network in the state has been deteriorating at an alarming

¹ Report of the Comptroller and Auditor General of India for the year ended March 31, 2016 on Performance Audit of “Contract Management in Road Works”, Government of Uttar Pradesh, Report No 04 of the year 2017, <http://www.agup.nic.in/pag/en/docs/PACM-en.pdf>

² Uttar Pradesh State Roads Project (UPSRP), Loan number IBRD-46840.



pace. UP recorded 20,124 traffic deaths and 27,494³ serious injuries in 2017,⁴ with fatalities growing at a rate almost four times the rate for the country (23.5 percent increase from 2014 to 2017, compared to 6 percent across India for the same period of time). About 70 percent of these deaths occurred on NH and SH. For example, on just two of the key national highways 1342 people were killed in 2017 (344 fatalities on 88km of NH25 from Lucknow to Kanpur and 998 fatalities on 773 km of NH2 from Haryana border to Bihar border). Vulnerable road users (pedestrians, bicycles, two-wheelers, auto-rickshaws, other rickshaws, animal drawn carts and handcarts) constitute about 60 percent of traffic fatalities. During project preparation, the World Bank advocated at the highest levels of government the need to strengthen road safety management capacity across the state through the adoption of a concerted multi-sectoral approach with the active engagement of key departments working together under a single umbrella. At the national level, a Supreme Court Committee on Road Safety has been calling the states for action on establishing lead agency and implementing specific programs. Accordingly, GoUP undertook a number of important steps:

- Adopted a State Road Safety Policy in July 2014 to systematically address the eleven key themes: (i) awareness about road safety; (ii) strengthening institutional arrangements; (iii) establishing road safety information database; (iv) ensuring safe road infrastructure; (v) safer vehicles; (vi) safer drivers; (vii) safety for vulnerable road users; (viii) road safety education and training; (ix) enforcement of traffic laws; (x) emergency medical assistance to road accident victims; and (xi) research for road safety.
- Established a Road Safety Fund, earmarking revenues for road safety by collecting a portion of penalties collected by the nascent traffic police and transport department.
- Strengthened the UP Road Safety Council (UPRSC) and reconstituted it under the chairmanship of the UP Chief Minister, with Ministers of participating departments as members, and the Principal Secretary Transport as Member Secretary.
- Established a High-Level Road Safety Committee (HLRSC), chaired by the Chief Secretary, comprising Ministers of the participating departments, and the Principal Secretary Transport as its Member Secretary, to implement UPRSC decisions, manage the State Road Safety Fund, and monitor relevant decisions.
- Established a Road Safety Cell (RSC) within the Transport Commissioner's office, to act as the Secretariat of the UPRSC and the coordinating agency for all multi-sectoral road safety activities.

14. Climate Change Mitigation. Resilience to climatic events is an increasing concern for the road sector in UP. Historically, a number of locations on the road network have been exposed to climate hazards and the resulting geo-hazard, such as high temperatures, precipitation and flooding, drought, and strong wind. However, the frequency and magnitude of the climatic events and the severity of the geo-hazards are expected to rise markedly, including among others an increase in average temperatures by 2°C by 2050 and an increase in average annual rainfall by 15 to 20 percent by 2050. Currently there are 30 districts that are highly prone to flooding during the monsoon season, the incidence and duration of pluvial flooding of this type is expected to increase. These flood events have severe impacts on both the road infrastructure itself, but also the population living in the affected districts whose vulnerability is increased. By contrast, drought is a regular phenomenon in Vidhyachal and Bundelkhand regions and again the incidence and duration are likely to increase. Better planning, design and sound measures are required to anticipate, when possible, prevent, or reduce the negative impacts of such events. Improved road maintenance is critical to enhanced resilience and realize the operational life of the assets.

³ Ministry of Road Transport and Highways, *Road Accidents in India, 2017*

⁴ While these data are alarming, there are indications that road fatalities and injuries are seriously underreported. Global experience suggests that serious injuries can be expected to be at least ten times the number of fatalities.



C. Relevance to Higher Level Objectives

15. The project will contribute to the Bank's twin objectives of poverty reduction and shared prosperity. Despite experiencing economic growth, economic activity in UP has not evenly distributed across the different areas of the state. Poverty rates are two to three times higher than those of the more advanced states. The construction of roads, or the improvement of existing ones, are essential to the attainment of the twin objectives of sharing prosperity, boosting economic activity and reducing income inequality.

16. The project is consistent with the World Bank Group's Country Partnership Framework (CPF) for India (FY18-22) discussed by the Board on September 20, 2018 (Report No. 126667-IN), set to focus on select objectives in three broad areas that flow from the Systematic Country Diagnostic and government priorities: (i) resource efficient growth; (ii) creating jobs and investing in human capital; and (iii) strengthening public-sector institutions. The project will contribute towards each of the above objectives underscored in the CPF.

17. The proposed Road Development Policy under preparation by PWD calls for Incorporation of computer based Geographical Information System and Road Maintenance Management system for taking important decisions, incorporation of Asset Management System, classification of Roads into Core Road Network, incorporation of IRC standards in the geometrical and technical design of roads of different categories, use of e-tendering for transparency, special emphasis on Road safety and reduction in road accidents, and quality control.

18. The project's support for road asset management, road network planning and quality management will contribute towards improving the sustainability of the SH/MDR network, will improve resource utilization, and strengthen the capacities of the public institutions responsible for managing the road network. The upgrading of about 500 km of SH will reduce travel time, and lower transportation costs for producers and consumers, and ensure access to essential services for the population at large, especially those living in rural areas and smaller centers along the corridors. The use of new contract modalities such as Engineering Procurement & Construction (EPC), which includes 5 years maintenance after the construction phase, along with the piloting of cement treated materials will enhance the sustainability of the road improvements and provide a benchmark for the other roads.

19. The UPHP is likely to deploy nearly 1,000 personnel; and the EPC road contracts, with 5 years maintenance inclusive, have a mandatory provision to hire 30 percent women for routine maintenance works. These opportunities offer direct job creation through the project. Further, reduction in number of crashes and fatalities will indirectly help prevent unnecessary loss of human capital, especially given the fact that majority of those killed on the roads are young adults and people in the most productive age group. Strengthening human capital will also be achieved through several training opportunities under the project, more specifically for PWD on asset management and climate resilient road designs; and for Police, Transport and PWD on road safety.

20. The project's support to enhance road safety management capacity and implementation of the state road safety policy—including proactive enforcement and social marketing, together with large targeted programs of road safety improvements on the state highway network—will contribute to safer and improved traffic flows and bring substantial economic and intangible benefits from fewer deaths and serious injuries. The project will build capacity of the three main government agencies (Traffic Police, Transport Department and PWD) responsible for road safety by way of developing accident data management system, establishing highway police for the first time, strengthening road safety cell, improving commercial driver training institute, vehicle Inspection and testing centers and social marketing/ media campaign. With the establishment of UP Traffic Police and other initiatives related to road safety undertaken under road



safety component, the project would further the 'Lighthouse India' initiative proposed under the CPF that would enable Uttar Pradesh to demonstrate the practical know-how that it would achieve under the project for the benefit of the other Indian states and the wider world. Reduction of road crash deaths and injuries which disproportionately impact on the poor and thrust families back into poverty, will also support the goal of poverty reduction.

II. PROJECT DESCRIPTION

A. Project Development Objective

PDO Statement

21. The Project Development Objective is to build capacity for results-focused road safety management in Uttar Pradesh and to improve traffic flows and safety for all road users on selected corridors of the state core road network.

PDO Level Indicators

22. The PDO indicators are as follows: (details are presented in the Results Framework, Section VI).

(i) Build capacity for better management of road safety:

- UP Highway Police in place doing general deterrence-based enforcement on pilot corridors
- Data from UP Crash Data Analysis System (UPCDAS) is publicly available and used for analysis and planning interventions

(ii) Improve traffic flows and safety of road uses on selected corridors:

- Reduction of average travel time for cars on civil works corridors
- Improved Road Users Perception (RUSS) Index on civil works corridors
- Reduced number of fatalities on Highway Police pilot corridors

B. Project Components

23. The project comprises four components: Network Improvement component and Institutional Strengthening component, which will be implemented by PWD, and comprehensive Road Safety component, which, in addition to PWD, will be implemented by the Police and Transport Department. In addition, there will be a provision for emergency response under the fourth component.

Component 1: Network Improvement (Total Cost: US\$476 million, including IBRD US\$350.2 million)

24. The Network Improvement component will include pavement strengthening, upgrading (widening and strengthening), and maintenance of about 500 kms high priority SH corridors, part of the defined Core Road Network (CRN). The component shall include civil works, rehabilitation and resettlement (R&R); and associated consulting services and goods.

25. Phase 1 roads, for which procurement has been done during project preparation, comprise:

- i. Hamirpur-Rath Road (SH-42) – 75km
- ii. Garautha-Chirgaon Road (SH-42) – 50km



- iii. Gola-Shahjahanpur Road (SH-93) – 59km
- iv. Badaun-Bilsa-Bijnaur Road (Sh-51) – 79km

26. Phase 2 investments will be selected based on objective, agreed criteria, including the economic rate of return, complementarity with other World Bank investments (like Tourism project and/or Eastern Dedicated Freight Corridor), connectivity with growth centers and Buddhist circuit, that have been identified as a priority by the GoUP. A long list of roads has been identified and discussed, final agreement on specific sections is pending.

27. During the preparation of the Detailed Project Report (DPR) greater emphasis was assigned on incorporating road safety features in the road designs, particularly focusing on improving the safety of vulnerable road users. Consideration will be given to the adjustment of road design, construction, operation and maintenance procedures to reduce vulnerability and the potential impact of climate change effects. The project will mainstream, wherever feasible along the project highways, the green highways approach, which includes resource efficiency and sustainability measures from a menu of options such as pavement recycling, use of local materials, recycled aggregates, use of innovative materials, plantations along the corridor, soil and water conservation, new/alternative technologies, and energy-efficient lighting.

28. All civil works contracts for road improvement will include 5-year post-construction maintenance to be paid on performance basis. It has been agreed that in the case the maintenance period is not completed by the end of the project, the GoUP will bear the remaining costs of the contracts.

29. The component will also include an Independent quality audit to ensure that implementation is being carried out as per the contractual provisions and specifications, trial of Cement Treated Base Materials in the construction of road pavements, which can offer potential cost savings compared with traditional crushed stone base, especially in regions which are short of sources of good quality aggregates, and implementation of an IT-Based Project Management Information System (PMIS) developed under the project for providing relevant, timely and updated project information to all stakeholders to enable monitoring of project activities, inputs, outputs and results.

30. The project will strive to increase employment opportunities for women. It has been agreed to add a provision to the Engineer, Procure, Construct (EPC) civil works contracts, requiring contractors to hire females for at least 30 percent of the routine maintenance works (each EPC contract includes a 5-year maintenance period). Through this employment opportunities, women will acquire technical and soft skills (like team work, financial management and contract management), which will add to the human capital of the employed women and will benefit them even after this project is completed. All employees associated with project contracts will be sensitized on gender issues and behaviours associated with sexual misconduct and harassment. The project will work with PWD to support effective implementation of the Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal Act, 2013 (SHWW Act 2013). The Grievance Redress Mechanism (GRM) will provide for gender segregated data. The project will also support the strengthening of the Internal Complaints Committee (ICC), dissemination of information regarding the ICC and standard operating procedures to register complaints and address them within the given time.

Component 2: Institutional Strengthening of PWD (Total cost US\$3.00 million, including IBRD financing of US\$2.1 million).

31. **Asset Management.** The main focus of the project in developing the institutional capacity of PWD will be on strengthening asset management practices, which will lead to better planning and prioritization of investments on an objective basis, and on improving the quality management system of PWD. The proposed activities under this component



include the operationalization of the Road Asset Management System (RAMS), integrated with Geographic Information System database. The Project will support the RAM Division effort in expanding the scope of the data, improving information on traffic volumes and axle loading and extending the analytical capability of the RAMS. This will include pavement strength survey of SHs, weigh-in-motion surveys at selected locations on SHs, MDRs and ODRs to acquire unbiased samples of axle loading on different road classes, establishing permanent automatic traffic count stations at around 20 locations on the network to provide hourly, daily and seasonal variations in traffic volume and allow short duration coverage counts elsewhere to be expanded to Average Annual Daily Traffic (AADT), and engagement of a part time technical advisor to support the RAMS Cell in developing the scope of the RAMS database and analytical tools to create a state-of-the-art public information system as well as a tool to assist PWD in planning and programming road works including capacity improvements, rehabilitation and renewals. The scope will also be expanded to include a bridge management system. Through the asset management technical assistance and advisory support, the project will strengthen the processes in PWD related to prioritization of investments, multi-year planning and use of RAMs in preparation of annual maintenance plans for the department.

32. **Vulnerability Assessment.** Along with the importance, traffic volume, condition of the road section (and possible other criteria), its climate vulnerability will be one of the key criteria to be used when prioritizing investments via the proposed road asset management system and bridge management system. The project will finance an assessment of the vulnerability of the Core Road Network in UP to climate change. This assessment mainly consists of the identification and mapping of the most vulnerable road sections, allowing for the implementation of priority climate resilient measures accordingly.

33. **Quality Management (QM).** The project will support strengthening quality management and control in PWD. It will help development of a comprehensive QM policy and system and operationalization within PWD, propose recommendations for improved institutional arrangements for QM, amending PWD procedures and responsibilities for testing.

34. **Gender Assessment.** The project will support recommendations of the gender assessment (ongoing), which will identify additional gender gaps. The project will also collect gender disaggregated data through the road user satisfaction survey (RUSS) and the GRM and utilize the same for assessment of gender gaps, safety and security.

35. **Capacity building of PWD staff.** The project will support a program of training and capacity building for PWD staff on, *inter alia*, asset management, contract management, social and environmental safeguards, including gender awareness and gender-based violence (GBV), climate resilient road designs, road safety, including attending international and/ or domestic training course, workshops, international exposure visits, and knowledge exchanges.

Component 3: Road Safety (Total cost US\$90.00 million, including IBRD financing of US\$46.7 million).

36. This project will support the GoUP in strengthening road safety leadership, policy and coordination arrangements across the state, and the application of the Safe System approach, which places the emphasis on results-focused road safety management, with agreed targets in reduction of road deaths towards Zero Vision and with public accountability of lead agency/agencies in charge of road safety management. Central focus of interventions will be on best practice safety engineering and changing road users' behavior through improved police enforcement and social marketing measures on high-risk national and state highways, to achieve quick, visible and measurable reductions in traffic fatalities. Simultaneously the project will strengthen institutional management capacity across participating agencies, which will enable them to scale up and sustain successful safety programs across the remainder of the core road network. The



component in the project includes a systematic package of sub-components to be implemented by the departments of Home/Police, Transport and Public Works, and will support the following initiatives and activities:

Subcomponent 3A: Road Safety Initiative by Home/Police (Total cost US\$41.00 million).

37. This subcomponent will support the following initiatives:

38. ***Establishment of UP Highway Police (UPHP)*** to improve enforcement focusing on preventing crashes, and ultimately, achieving reductions in road crash deaths and injuries. The project will implement proactive, mobile, highly visible, general deterrence enforcement operations on two pilot corridors totalling 830 km (NH2, entire stretch passing through UP, and NH25, Lucknow-Kanpur). It will also pilot IT-based enforcement on expressway and enforcement in urban environment.

39. The UPHP will be established under the Additional Director General (ADG) Traffic Directorate. Its operations will include patrolling highways 24 hours a day, seven days a week to ensure high visibility, general deterrence road policing presence and enforcement. Once the pilot demonstrates good results and the model proves to be working well, the Traffic Directorate intends to scale it up and extend UPHP enforcement operations to additional high-risk corridors across UP. This model can then be replicated across India as well.

40. ***Social marketing and media campaigns*** to support UPHP enforcement operations in the pilot corridors. The objectives of these intensive social marketing and media campaigns will be to (i) help branding the new force and create a positive image; (ii) raise road safety awareness; and (iii) promote safe behaviours, targeting at-risk groups. Social marketing to support the UPHP will be aligned with the state-wide road safety awareness campaigns implemented by the Transport Department's Road Safety Cell, to ensure consistency in the overall communications strategy and related provision of research, production and media services.

41. ***Monitoring and evaluation*** of UPHP road safety performance in the pilot corridors. This activity will implement systematic monitoring and evaluation procedures to track and assess safety performance on NH2 and NH25.

42. ***Capacity building of UPHP staff.*** The project will support a program of training and capacity building for UPHP staff on road safety policing, crash investigations, data collection and analysis, community engagement, use of safety equipment, including attending international and/ or domestic training course, workshops, international exposure visits, and knowledge exchanges.

43. ***Crash data management system.*** The project will support development and state-wide implementation of a web-enabled crash database and analysis system (UPCDAS⁵) that will meet the specific requirements of all road safety partners and stakeholders in Uttar Pradesh, including Police, Transport, Health and the PWD. UPCDAS will provide linkages to the existing system used by the police and national driver license and vehicle registration systems. Potential linkages will also be explored with health sector data systems (particularly the GVK-EMRI emergency calling system and Trauma Registries at the hospitals) to provide a more comprehensive picture of crash injuries and emergency service effectiveness. The project will fund palm-top crash recording devices providing GPS locations for crash events and ease of entry for all crash data requirements, and extensive training of police force in data collection.

⁵ Uttar Pradesh Crash Data Analysis System (UPCDAS)



44. A unit for the investigation of serious crashes will be established under the Traffic Directorate, and trained, to enable the investigation of significant crashes with multiple fatalities and/or involving heavy commercial vehicles. These teams will also be available to provide advisory support for other crash investigations done by local police.

45. It has been agreed that the costs for establishment of the UPHP and implementation of the pilot on selected corridors, as well as media campaigns and social marketing will be fully funded by the Government of UP, including procurement of vehicles, fuel and maintenance, establishment of the command center and communications system, enforcement equipment, production of media and advertising materials and cost of broadcasting. Bank funding will be used for capacity building, advisory support and training of the UPHP, monitoring and evaluation, IT-based enforcement pilots and crash database development. The Project Implementation Plan (PIP) will be prepared by the Police and agreed with the Bank (a covenant in the loan agreement), which will stipulate the timeline of procurement, review requirements and implementation of various activities under the subcomponent, both GoUP and Bank financed. The Bank team will work closely with the Traffic Police, review and monitor implementation of all the above activities, and ensure that the activities are implemented in line with the schedule and timelines mentioned in the PIP.

Subcomponent 3B: Road Safety Initiative by Transport Department (Total cost US\$14.00 million).

46. This subcomponent will strengthen capacity of the Transport Department as the nodal agency for road safety in the state, and support building capacity in road safety management, planning, monitoring and evaluation of road safety programs and specific activities to improve vehicle safety and safe driving, especially commercial transport. It will fund the following activities:

47. **Road Safety Cell Strengthening.** The project will finance strategic management support and capacity building of the Road Safety Cell, including advisory and expert support, support for development of road safety strategy and action plans, monitoring and evaluation, data analysis and reporting.

48. **Media Campaigns.** State-wide media campaigns will be implemented in support of the State Road Safety Policy.

49. **Commercial Driver training.** The project will focus on strengthening commercial driver training and certification, including support for strengthening of the Driver Training Institute (DTI), training of UP State Road Transport Corporation (UPSRTC) drivers in road safety and emergency responses, development of a training program and providing training for commercial drivers, and development of a health check-up system for commercial drivers.

50. **Vehicle Inspections.** Vehicle safety is a critical element of the safe system approach. The project will support development of optimal designs for vehicle testing stations and finance establishment of up to five vehicle testing stations. The sub-component will also include a study to explore potential for private sector engagement in vehicle inspections and testing.

51. **Capacity building of Transport Department staff.** The project will support a program of training and capacity building for department staff on road safety management, data analysis, preparing and monitoring implementation of road safety strategy and action plans, including attending international and/ or domestic training courses, workshops, international exposure visits, and knowledge exchanges.

52. It has been agreed that the costs related to support of the driver training institutes and training of commercial drivers, as well as state-wide media campaigns will be fully funded by the Government of UP, including procurement of



experts to support these activities, production of media and advertising materials and cost of broadcasting. Bank funding will be used for capacity building, advisory support and training of Road Safety Cell and Transport Department and for designing and establishing vehicle testing centers and related technical assistance. The Project Implementation Plan (PIP) will be prepared by the Transport Department and agreed with the Bank (a covenant in the loan agreement), which will stipulate the timeline of procurement, review requirements and implementation of various activities under the subcomponent, both GoUP and Bank financed. The Bank team will work closely with the Transport Department, review and monitor implementation of all the above activities, and ensure that the activities are implemented in line with the schedule and timelines mentioned in the PIP.

Subcomponent 3C: Road Safety Initiative by PWD (Total cost US\$35.00 million).

53. This subcomponent will improve safety of state highway network through implementation of targeted safety engineering improvement programs on the Core Road Network and build capacity in PWD in road safety, and will support following activities:

54. **Road infrastructure safety improvement programs** - design, implementation and evaluation of state-wide program of systematic and consistent application of low-cost safety engineering measures on Core Road Network (focusing on speed management, sharp curves, village and school zones treatments); design, implementation and evaluation of targeted program of cost-effective safety engineering improvements for selected junctions, high-risk highway corridors, and selected urban arterial roads. This will include Research and evaluation of effectiveness of safety engineering improvements.

55. **Capacity building and expert support to the Road Safety Division of PWD**, including attending international and/or domestic training courses, workshops, international exposure visits, and knowledge exchanges. Safety engineering training programs for PWD staff, and support for mainstreaming road safety into design, operation and maintenance practices of PWD.

Component 4: Contingent Emergency Response Component (CERC) (Total cost US\$0.00 million).

Uttar Pradesh has been plagued by various natural disasters such as floods, drought, fire, epidemics, earthquake, causing severe damage to life and property and thus adversely affecting normal life. Out of 71 districts, 30 are highly prone to floods while drought is a regular phenomenon in Vidhyachal and Bundelkhand region. Similar is the case with epidemics. This component would ensure that once a disaster is triggered, funds can be quickly allocated to this component as per exceptions set out in the World Banks policies.

C. Project Financing

56. The total cost of the project is estimated at US\$570 million. The World Bank share is estimated at US\$400 million and Government of Uttar Pradesh share will be US\$170 million. The Bank financing will cover of 70 percent of the costs under Components 1 and 2, and 100 percent of the costs of agreed activities under the Component 3, with the government agreeing to finance fully large portion of the Police and Transport sub-components in Component 3. Cost associated with LA, R&R, utility shifting, agency charges and tree cutting charges under the project will be fully financed from GoUP share of financing. The table below presents the project costs for each component, along with respective portions to be met through financing from the Bank and GoUP.

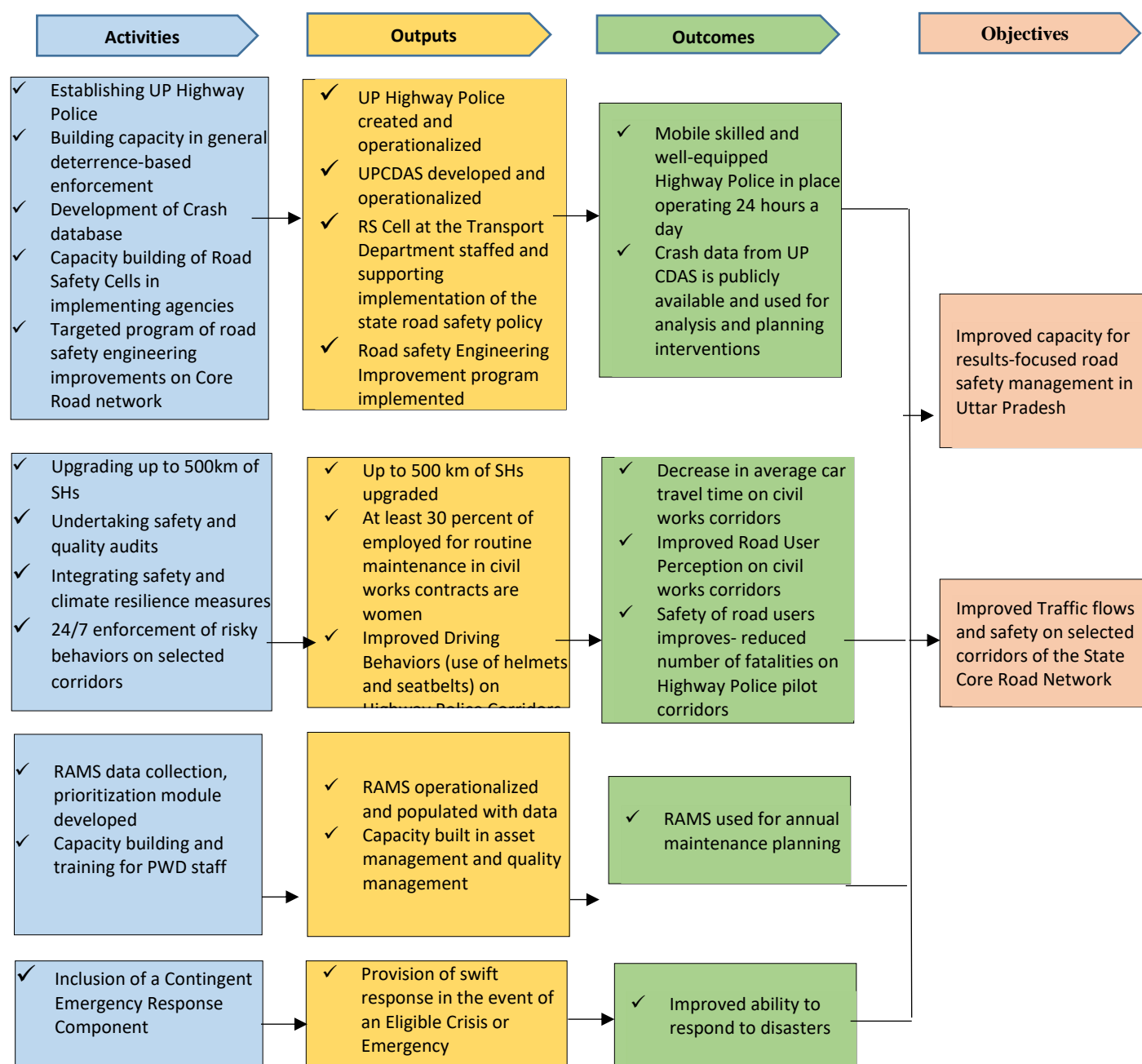


Project Components	In US\$million			IBRD Share (percentage)
	Project cost	IBRD Financing	GoUP Financing	
Component 1 : Network Improvement	476.00	350.20	125.80	74
Component 2 : Institutional Strengthening of PWD	3.00	2.10	0.90	70
Component 3 : Road Safety				
3A : Home/Police	41.00	4.60	36.40	11
3B : Transport Department	14.00	7.10	6.90	51
3C : PWD	35.00	35.00	0.00	100
Component 4 : Contingent Emergency Response (CERC)	0.00	0.00	0.00	-
Front end fees	1.00	1.00	0.00	100
Total	570.00	400.0	170.00	70

D. Project Beneficiaries

57. Primary beneficiaries include the communities, industries, and businesses within the project influence area, particularly road users along – (i) the 500 km of CRN being improved under the project; and (ii) NH2 and NH25, where the project will support comprehensive road safety pilot, including establishing of UP Highway Police, media campaigns and social marketing.

E. Results Chain



F. Rationale for Bank Involvement and Role of Partners

58. Previous Transport Sector Engagement in the State - a loan of US\$488m for Uttar Pradesh State Roads Project (UPSRP), approved in 2002 and closed at the end of 2010, included comprehensive studies covering Policy and Funding Arrangements; Reorganization; Procurement and Contract Management; HR Development; Financial Management; Planning, Programming and Budgeting; Road Maintenance Management; Quality Management; and Road Safety. The implementation of the major recommendations for institutional reform remain part of the policy dialogue, a number of



recommendations were taken forward after the project was completed. The RAMS system developed under the previous project has been populated with data, and during project preparation, the Bank team was providing expert technical assistance to build capacity in the RAMS Division created in the PWD. This work will continue under the current project, with the outputs used to guide the preparation of annual and multi-year maintenance planning. The Road Safety Division in the PWD was also established, based on the earlier recommendations, and further support to build capacity and develop and implement road safety programs by PWD, which are needed and mandated by the national and state government, will be provided in the current project.

59. The development of the masterplan for its state roads, which resulted in the definition of the Core Road Network and its priorities, was also a recommendation from the earlier project. In order to support the GoUP in meeting the funding needs to develop the CRN, the Project will include a Network Improvement component, which will provide financing of about US\$400 million to rehabilitate, strengthen and widen about 500 km of state highways from the CRN. The EPC contracts successfully implemented in several states in India under Bank-financed projects but yet to be piloted in Uttar Pradesh will be adopted under this project and will include 5-year routine maintenance. The benefits from these types of contracts have been significant in other states in markedly reducing overrun in cost and time. Potentially if the pilot is successful, the modality could be extended to all upgrading expenditure on the SH/MDR network, irrespective of funding source.

60. There is a very strong rationale and opportunities for the World Bank to support improving UP road safety performance, which is integral to achieving the development goals of the state. Lessons can be learned from the success of high-income countries over the last four decades demonstrate that road deaths and injuries are predictable and entirely preventable. Critical success factors for improving road safety in UP include, institutional reform and strengthening; targeting of high concentrations of crash deaths and injuries across the road network where the biggest gains can be made, with a mix of intensive safety engineering, police enforcement and social marketing programs; and the establishment of systematic performance monitoring and evaluation tools.

61. The ADB is currently supporting a Major District Roads Improvement Project in Uttar Pradesh to the tune of US\$300 million, that seeks to improve about 430kms of MDRs in the state, in line with the Strategic Core Road Network Master Plan. It will involve upgrading of MDRs and 5-year maintenance after construction. The project will also conduct a road safety audit of the MDRs on the core road network (CRN) and initiate remedial measures at identified critical locations.

G. Lessons Learned and Reflected in the Project Design

62. The Independent Evaluation Group (IEG) of the Bank rated the outcomes of the previous Bank funded project as Moderately Unsatisfactory (MU) and Borrower performance as Unsatisfactory (U). The project was implemented by the PWD and the development objective was to improve the performance of the core road system in Uttar Pradesh. The project's original scope was curtailed due to implementation delays and funding shortfall, leading to upgrading of 685 km of SHs and rehabilitation of 1910 km of SHs and MDRs. The studies under the Institutional Strengthening Component resulted in 50 reports with recommendations, many of which have not been implemented and incorporated into the standard business and technical processes of PWD. The IEG report includes the following lessons: "In situations where the Borrower lacks a track record for handling large and complex projects, project design should either keep the project to a manageable size or make realistic provision to improve or augment capacity. This project was too large for PWD and GoUP to handle effectively in the given time-frame, and their absorptive capacity for institutional improvements was low, with clear implications for project design."



63. Since the previous engagement of the Bank, the capacity of PWD to manage large and complex projects has improved significantly. They are currently managing much larger projects, equivalent to the scale of contracts being envisaged under the project. Following are some of the measures taken in project design to address the lessons learned:

- There is a considerable progress on achieving readiness of the contracts. About 30 percent of total works contracts have already been bid out and are ready for award before negotiations. This shall ensure that the period between the project preparation and beginning of the implementation is minimal to avoid facing major changes in physical conditions.
- It was agreed to focus the institutional strengthening activities focus on a few key areas, where the project can contribute in a meaningful way - quality management, operationalizing road asset management and road safety, which are core weaknesses of the institution.
- Piloting new form of contracting approach (EPC) to reduce risks of time and cost over-runs.
- Introduction of IT based project management systems in contract supervision and monitoring to ensure efficient project and contract management of civil contracts.

64. Improving road safety performance is integral to achieving the development goals of the state and lessons can be learned from the success of high-income countries over the last four decades which demonstrate that road deaths and injuries are predictable and entirely preventable. Critical success factors include, institutional reform and strengthening; targeting of high concentrations of crash deaths and injuries across the road network where the biggest gains can be made, with a mix of intensive safety engineering, police enforcement and social marketing programs; and the establishment of systematic performance monitoring and evaluation tools.

65. The road safety component reflects the lessons learned in previous road safety initiatives throughout India and other World Bank regions. Its distinctive features include an extensive top-down consultation process with departmental heads and senior executive officers, including an international study tour, to reach official consensus on project objectives and priorities, plus a formal sign-off on these by the Chief Minister. It also includes a best practice development of road policing initiatives and related social marketing support initiatives, with sufficient funding levels set to assure measurable success. The decision to involve Transport Department and Police as implementing agencies for the project also reflects the need of building ownership and commitment of these agencies for road safety by empowering them with responsibility for implementation of related sub-components. Attention has been paid to strengthening institutional safety structures and functions in all participating agencies and their alignment with newly established coordination arrangements and state-wide results focus.

66. The experience and lessons learned with development of Crash Data Management Systems in Tamil Nadu (2008-2010) and Himachal Pradesh (2014-15) under World Bank financed projects underscored importance of having police leading the initiative with active engagement of other stakeholders and fed into the development of the terms of reference for the UP system.

III. IMPLEMENTATION ARRANGEMENTS

A. Institutional and Implementation Arrangements

67. The Network Improvement and Institutional Strengthening Components will be implemented by the PWD,



through a dedicated Project Implementation Unit (PIU), headed by Chief Engineer (CE), Externally Aided Projects (EAP), established at the PWD headquarters (Lucknow). The PIU will be responsible for procurement and overall project management, monitoring and evaluation. In addition, 3 circles, headed by Superintending Engineers (SE) have been established for implementation of Phase 1 works– Lucknow, Kanpur and Moradabad Circles. Additional circles shall be established for implementation of Phase 2 works. The PIU will be supported by PM consultants for project management, design, supervision of works and monitoring & evaluation.

68. While the PWD has the experience of implementing the previous Bank financed UPSRP project, it will be a first experience for Police and Transport. Furthermore, the multiplicity of implementing agencies; institutional capacity enhancements of these agencies; and mainstreaming innovative practices across these agencies may face general resistance to change and is a Substantial risk for the project. These risks shall be mitigated through the high-level project governing structure established under the project, like the Project Governing Board (PGB) to be headed by the Chief Secretary, for monitoring the progress of the project activities and push for the reforms and practices across these organizations. The Bank task team shall also endeavour to enhance supervision and advocacy with various stakeholders.

69. The Road Safety component will be implemented by Home/Police, Transport and PWD. The Traffic Directorate, UP Police will be responsible for the establishment of a dedicated Highway Police service and development of state-wide crash database and analysis system. A dedicated Project Implementation Unit headed by the ADG (Traffic) has been created under the traffic directorate for project implementation. The Transport Commissioner, UP shall be responsible for implementation of activities under the Transport Department through the Road Safety Cell created at the department. PWD Road Safety Division will be responsible for implementation of the related sub-component.

70. Enforcement by police would involve transactions for levying fines on offenders. Also, misuse of vehicles being purchased for enforcement including fuel cost is also a risk. Comprehensive governance requirements addressing issues of staff productivity, vehicle use, public perceptions and confidence will be implemented to ensure high levels of operational transparency and accountability. Appropriate mitigation measures (Annex 3) have been built into the project to address these risks. The UPHP will be unarmed and not be involved with criminal investigations. To mitigate this risk, specific provisions have been introduced in the project Legal Agreement.

71. Project implementation arrangements and Implementation Support Plan are described in Annex 1.

B. Results Monitoring and Evaluation Arrangements

72. The Results Framework in Section VI will be used to monitor and evaluate the achievement of the PDO and the indicators. The implementing agencies will be responsible for collection of data as per the frequency given in the results framework. The data will be collected from both primary and secondary sources

C. Sustainability

73. All civil works contracts under the network improvement component will include a 5-year maintenance period. In addition, the project will support the operationalization of the Road Asset Management System and capacity building of PWD in road asset management, which will result in more efficient use of resources through better maintenance planning and quality management.

74. Ensuring the sustainability of road safety initiative component has taken a high priority in the component design



and preparation. Emphasis has been placed on a step-wise implementation process that builds the necessary organizational capacity to replicate and scale up effective and efficient delivery of these initiatives beyond the completion of the project. Particular attention has been paid to addressing institutional management functions vital to sustained success, and technical assistance support provided where required, ensuring that departmental management and technical staff are appropriately mentored and developed throughout the process.

IV. PROJECT APPRAISAL SUMMARY

A. Technical and Economic Analysis

75. The proposed works involve pavement strengthening and widening of single/intermediate/double lane carriageway (3.5m to 7m) to double/four lane carriageway including paved shoulders on both sides, junction improvements, drainage facilities, and provision of bus lay-byes and truck lay-byes, widening / reconstruction of structures, bypasses, road safety engineering measures and improvement of the geometry of the alignment. Proposed work contracts would also include 5-year post construction maintenance. The Phase I road corridors were selected from CRN as part of the Road Sector Master Plan. In addition, the selection criteria also included minimal land acquisition requirements. The Phase 2 roads will be selected based on the agreed criteria adopted for Phase 1 roads, including economic rate of return, complementarity with other World Bank investments (like Tourism project and/or Eastern Dedicated Freight Corridor), connectivity with growth centers and Buddhist circuit, resilience, that have been identified as a priority by the GoUP. The PWD has engaged experienced and qualified consulting firm for preparation of designs, which were integrated with environment and social development aspects to minimize adverse impacts and improve climate resilience.

76. Greater emphasis was placed on road safety in the designs. Design stage Road Safety Audit was carried out by a team independent of the design team, and their observations were addressed by the design team. Emphasis was given to incorporate protective features to improve the safety of road users, especially vulnerable road users. In addition to providing paved shoulders along the entire stretch of the road, these include provisions for speed calming in identified villages and urban areas, village gateway treatments, proper signs and marking, footpaths and properly designed junctions. iRAP (International Road Assessment Program) recommendations were also incorporated in the road designs.

77. The Road Safety Screening and Appraisal Tool (RSSAT) was used to analyse the road safety impact of designs from eight homogenous sections of project roads⁶. The selected homogenous sections (20 km to 30 km length) currently have fatality rates around 0.3 deaths per km per km which is categorized as low-medium based on the international standards. The analysis from RSSAT⁷ shows that vehicle occupants, which account for 50 percent of current fatalities, will have a marginal drop in relative risk of deaths (-1.5 percent) when project design is compared to the existing conditions. The undivided nature of the highway and marginal increase in operating speed from 43 km/h to 50 km/h is primarily responsible for the increased safety risk while installation of road side barriers, paved shoulder length and road side markings have contributed positively to increasing the safety. Pedestrians, on the other hand, will have a significantly lower risk of fatality (-81 percent) mostly attributed to traffic calming measures along built-up areas, sidewalk provisions and frequent crossing facilities. On an aggregate for all road users the section analysed is expected to have 20 percent fewer deaths compared to the existing conditions.

⁶ RSSAT is an internal tool developed by the World Bank Transport Global Practice to estimate the road safety outcome as the result of the project design as measured by crash deaths and serious injuries. The UPCRNDP is one of the pilot projects evaluated using RSSAT.

⁷ As analyzed on a 25 km section on the Gola-Shahjahanpur Road (SH-51)



Economic Analysis

78. **Rationale for Public Sector Financing.** There is a strong rationale for public sector financing since all required investments cannot be commercially viable and fully contributed by the private sector.

79. **Economic Rationale – Component 1: Network Improvement.** Project roads will be upgraded to 2-lane or 4-lane, depending on traffic, with paved shoulder depending upon the minimum land acquisition. The economic analysis has been carried out for the rehabilitation and upgrading of 261 km of roads under Phase I in the project.

80. The economic analysis has been done using the Highway Development and Management Model (HDM-4), a globally accepted key analytical tool for economic analysis of highways investment alternatives, which simulates life cycle conditions and costs and provides economic decision criteria for multiple road design and maintenance alternatives. The economic costs and benefits attributed to the project are calculated by comparing “without” and “with” project scenarios. Both scenarios have been defined for the 20-year benefit period from 2019 to 2038. The economic benefits accounted for include savings in vehicle operating costs, travel time costs, and crash fatality and injury costs.

81. The cost-benefit analysis indicates that Phase 1 under component 1 is economically viable. Table 1 presents the results of the economic evaluation. In the base case, the overall Economic Internal Rate of Return (EIRR) for phase 1 roads is 20.09 percent, with the EIRR for each road being at least 18.45 percent and NPV is US\$108.391 million. When GHG emissions are accounted for the NPV increases to US\$108.398 million. Switching value analysis (which determines the percentage change in costs or benefits for the NPV to become zero) indicates that the benefits have to decrease by 44 percent or the costs have to increase by 78 percent for the NPV to be zero at a 12 percent discount rate. For Phase 2 the same methodology for economic analysis will be used and only investments that are viable at 12 percent discount rate will made part of the next phase.

Table 1: Economic Analysis

Road	NPV (US\$million)	EIRR
Garautha-Chirgaon Road (SH-42)	\$ 19.84	18.65%
Hamirpur-Rath Road (SH-42)	\$ 38.10	23.59%
Badaun-Bilsi-Bijnaur Road (SH-51)	\$ 28.71	19.66%
Gola-Shahjahanpur Road (SH-93)	\$ 21.74	18.45%
Total	\$ 108.39	20.09%

82. **Economic Rationale – Component 3: Road Safety.** The road safety component has been designed to support the decisions taken by the Government of Uttar Pradesh (GoUP) to strengthen road safety leadership, policy and coordination arrangements across the state. Establishment of UP Highway Police (UPHP) to implement proactive, highly visible, general deterrence enforcement operations targeting reductions in road crash fatalities and injuries, and social marketing to support UPHP enforcement operations in the pilot corridors, comprise significant sub-components of the project’s road safety component. Two high-risk highway corridors totalling about 830 km have been selected to pilot the UPHP (NH2, entire stretch passing through UP and NH25, Lucknow-Kanpur). Establishment of UPHP and social marketing to support UPHP yield an EIRR of 226 percent. For these two sub-components to be economically unviable, crash fatality and injury



reductions would have to be at least 62 percent lower.

83. Economic analysis of UPHP enforcement and social marketing in NH 2 and NH25. UPHP enforcement of unsafe road user behaviours on NH2 and NH25 and related social marketing support comprise significant sub-components of the project's road safety component. These initiatives have been designed to be scalable and able to be replicated across the core state road network, and it is anticipated that their benefits will be substantial and sustainable. Under conservative assumptions, estimated benefits of crash fatality and injury prevention initiatives in the NH2 and NH25 corridors in the short-term comfortably exceed their costs. It is anticipated that the project will perform better than the analysis suggests and its longer-term benefit-cost ratio (currently estimated as 2.76) will be higher.

B. Fiduciary

(i) Financial Management (FM)

84. The FM system of GoUP is considered adequate and acceptable to account for and report on project expenditures, that is, for (a) use of funds in an efficient and economical manner for the purposes intended, (b) preparation of accurate and reliable periodic financial reports, and (c) acceptable audit/assurance arrangements.

85. FM risk of the project is assessed as "Substantial" due to involvement of multiple line departments in carrying out FM functions. It is first ever engagement of transport and traffic police departments with the Bank and assessments indicate that departments require extensive support on Bank's FM procedures. The PWD has implemented previous Bank-financed project and is familiar with Bank procedures. However, it needs guidance on the new contracting techniques envisaged under the Project. The state government is putting in place essential implementation capacities i.e. contracting necessary firms, individuals, to support project activities by using Bank's retroactive financing facility. The oversight arrangements i.e. internal and external audit will provide reasonable assurance on use of Bank funds. The external audit of the implementing departments will be conducted by Comptroller and Auditor General (CAG) of India through the State office in GoUP and audit reports will be submitted to the World Bank within nine months from the end of each financial year. During the first year of project implementation, the Bank will undertake semi-annual implementation support missions, including field visits to ensure that agreed FM arrangements, laid down accounting processes and procedures are appropriately followed. As implementation progresses; it will involve review of Interim financial reports and audit reports. Detailed FM arrangements are provided in Annex 1.

(iii) Procurement

86. 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.

Procurement Capacity Assessment:

87. The procurements under this Project shall be done by three implementing agencies, i.e. PWD (Public Works



Department), Police and Transport department. A procurement manual including appropriate contract management and complaint handling mechanism has been prepared by the PIUs. The procurement by PWD shall include works, consultancy services and goods. The PWD has prior experience of implementing Bank funded Project in the earlier UP State Road Project, however, the PIU shall be using Bank's Procurement Regulations for the first time. Additionally, the PIU has hired the services of a PMC (Project Management Consultant) for support on procurement and contract management monitoring. The procurement by the Traffic Directorate (Police) shall include procurement of equipment, IT systems and Consultancy services. Currently the procurements for the Traffic Department are done by ADG Police Head Quarter, Allahabad. The Traffic Directorate at Lucknow normally procures items for computerization, wireless sets and day to day office requirements. District SP participate in procurement committee up to INR 10 lakh (equivalent to US\$14,285). The traffic directorate do not have experience of procurement under Bank funded Project. The PIU established under traffic directorate has been provided a training on World Bank procurement procedures. Services of a procurement specialist shall be engaged by the PIU for managing procurement. The procurement by the Transport Department shall include procurement of equipment and consultancy services. The department does not do any procurement and there is no procurement staff. They do not have experience of procurement under Bank funded Project. The Transport Department staff have has been provided training on World Bank procurement procedures. Services of a procurement specialist shall be engaged by the Transport Department for managing procurement.

88. **Procurement Risk Assessment:** The Procurement Risk Assessment has been done, using Bank's PRAMS (Procurement Risk Assessment and Management System) tool, for the three implementing agencies and based on the assessment, the procurement risk rating is "Substantial", although the PIU under GoUP PWD has implemented the earlier Bank funded Road Project, but due to inherent sectoral and State specific procurement risks and inordinate delays in contract execution observed in the previous project, applicability of Procurement Regulations for this project which is new to the PIU, the procurement risk rating is substantial. Further, the Transport and Police departments have no prior experience of procurement under Bank funded Project. During the first round of bidding for Phase-I roads, certain risks were observed, i.e. less competition, participation of few local tenders though there is no dearth of bidders for the package size, non-submission of bid security after online bid submission, prices quoted by the lowest bidder was higher than the estimated cost, change in key project staff etc. In order to mitigate these risks, following risk mitigation measures were advised by Bank: having an Independent Procurement Observer (IPO) on board to be involved at all stages of the procurement process; having a system for submission of bid security along with the bid; holding a contractor's workshop to inform the prospective bidders about the changes in the Bid document and to build trust of the private sector; to go for slice and package method by combining all three packages; relaxing the post qualification criteria to increase competition; to advertise in one more national daily in addition to what was done in first round of bidding including UNDB publication; and updating the estimated cost. These risk mitigation measures were implemented during the course of the project preparation and before publishing the notice for rebidding of the three phase-I roads.

89. **Procurement Plan:** All three PIUs have developed a Procurement Plan for procurements planned for the first 18 months of the Project. The procurement plans have been updated on STEP (Systematic Tracking of Exchanges in Procurement). All three PIU staff have been trained by Bank in use of STEP.

90. **E-procurement System:** The e-procurement system of Government of Uttar Pradesh, 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. Detailed procurement arrangements are provided in annex 1.



C. Safeguards

(i) Environmental Safeguards

91. The environmental assessment (EA) for the project has been undertaken in line with Bank policies (OP4.01, OP4.04, OP4.11, OP4.36) and applicable environmental laws. OP4.01 has been triggered to ensure that project investment decisions consider the environmental assessment findings and manage implementation in a manner in consonance with their significance. The Natural Habitats policy (OP4.04) has been triggered as there could be some havens for natural wildlife that may occur in the project – though none have been found along project roads identified thus far. Since several stretches of roads have designated Protected Forests, some of which may be affected by the road improvements and may require diversion of small areas of Reserve Forests, the policy on Forests (OP4.36) has been triggered. There are several cultural properties located along the road, some of which may be adversely impacted, while others may be enhanced for their use/local importance values. In this context, OP4.11 has been triggered. The EA has also included the preparation of the Environment and Social Management Framework (ESMF) to guide the Environment and Social Impact Assessment (ESIA)/ Environmental and Social Management Plan (ESMP) preparation for the roads to be taken up subsequently. The ESMF was reviewed and disclosed in 2015 both in-country and in Bank Infoshop and again revised and re-disclosed as detailed in paragraph 115. Since the assessment has been carried out by the consultants involved in the design of the road improvements, an independent review of the process and outputs has also been undertaken. Preparation of ESIA and ESMP for the 4 roads to be implemented in Phase I have been completed following the ESMF and findings of the Independent Review. The ESIA and ESMP for the 4 roads and the ESMF have been disclosed in country and in the Infoshop during December 2014 and January 2015. The UPPWD had confirmed in April 2018 that the Environment Management Plan (EMP) prepared were still sufficient for the management of the potential impacts. The project design and implementation planning have been informed by the EA process and outputs, which are integrated with the other project documents like works bidding/contract documents.

92. The EA indicates that most of the significant impacts due to the proposed road improvement activities are likely to be confined to roadside features along existing alignments in Phase I. For Phase I, these include removal of 32,435 trees, which are designated as Protected Forest in Uttar Pradesh, diversion of approximately 0.1 Ha of Reserved forest land, impact on 21 cultural properties, and adverse impacts especially close to sensitive receptors like educational and health facilities, due to increase in the noise and air pollution levels during construction and operation. The EIAs also estimate the magnitude of the climate related impacts – of the proposed improvement to roads and on the roads in light of currently known trends for the future. Other potential impacts could arise from improper disposal of waste – both from road construction and labor camps. Temporary impacts relating to safety of workers and other road users, increased air pollution from construction plants – hot mix plants, crushers, etc. have also been identified.

93. Mitigation measures identified for the project include provision of compensatory plantation in line with the local laws. In addition, relevant portions of the ESMP have been integrated with the Works contract documents to ensure implementation of the necessary measures by the Contractor during the construction period. Enhancement of several community properties has also been included as part of the project. The estimated budget for environmental management in Phase I is approximately US\$7.04 million (INR 422.5 million).

94. The PWD is putting in place an adequate structure to ensure that the environmental management aspects are handled properly during the subsequent stages of the project. The implementation of the environmental aspects is a responsibility of several stakeholders – with PWD being the primary entity. Its ESDRC will be staffed with 2 full-time engineers from the department who will be the interface with the PWD and GoUP. In addition, one full-time



environmental expert will be hired on contractual basis for the duration of the project. A grievance redressal mechanism covering environmental aspects also is being created. ESDRC has the mandate to ensure that any grievance received through the mechanism are properly handled, passed on to the relevant officials/stakeholders, and resolved in a timely manner.

95. The Project Management Consultant's environmental specialist will oversee preparation of environmental assessments and management plans; implementation of plans integrated with the works contract by the contractors and be responsible for regular reporting on progress in their implementation. In addition, forest department would primarily be responsible for the compensatory plantation, while involvement of local communities is expected in the implementation of plans for the locally important cultural resources identified for enhancement. The contractors' teams will also include environmental specialist who will ensure that the environmental and safety related work contract stipulations are implemented during execution of works.

96. Since the environmental impacts of the activities to be undertaken by the Transport Department – upgradation of Driver Training Institutes – within already identified and own available land parcels and/or buildings, it has been agreed that the relevant provisions of the ESMF developed for the project will be applied, including for appropriate assessment of site specific impacts and their incorporation in the contract documents – for works and equipment.

(ii) Social Safeguards

97. A Social Impact Assessment (SIA) for all project corridors of phase I was completed in December 2014. It included consultations with stakeholders, information on socio-economic and cultural features of the population, and baseline data on impacts due to involuntary land taking. These data were subsequently verified through independent review and have informed the development of measures to ensure that negative impacts are mitigated, and that people receive benefits from the project. Based on SIA results, Resettlement Action Plans (RAPs) for all phase I project corridors were prepared and disclosed in January 2015. The RAPs were subsequently updated in May and June 2018. The English version of revised RAPs and ESMF were re-disclosed in country on September 7, 2018 and Hindi version on November 15, 2018. The revised documents were disclosed in Bank's InfoShop on November 15 and 16, 2018.

98. Bank's Operational Policy (OP) 4.12 on Involuntary Resettlement has been triggered as project will acquire private land for widening of existing bridge approaches in two out of four project corridors of phase I and will have adverse impact on livelihood of the community along the corridor. Project will be adversely impacting 1395 families of which 478 will be displaced. The displaced families are non-titleholders and largely small commercial structure and kiosk owners. Out of total 1395 affected families, 894 are losing commercial structures of which more than 50 percent are kiosk owners. These kiosks will move out of corridor of impact but will remain within the right of way. Little over 15 percent are losing part of their residential structure. Although, project activities are largely restricted within the right of way, project will be directly purchasing 7.7 ha of private land for widening of bridge approaches. The families losing part of their agriculture land are 16 percent of the total project affected families and no titleholder is getting displaced. Project will also impact 218 common property resources (CPRs) and majority of them are hand pumps. The other CPRs include religious structures, stand posts, water tanks, bus stops and boundary walls. Services of non-governmental organization (NGO) has been hired. The RAP of Hamirpur – Rath corridor is already under implementation. The micro plan of this corridor was disclosed locally in September 2018.

99. OP 4.10 on Indigenous Peoples has been triggered though a small number of scheduled tribe found in the project area has migrated from other part of the state. They do not speak a separate language from that of the majority population



(Hindi), nor do they have political institutions that separate them from the majority population. They do not have a historically based collective attachment to the land in the project area or any customary rights to forest and grazing land. Therefore, a Tribal Peoples Development Plan has not been prepared. The survey for phase II corridors is yet to begin as roads for phase II has not been identified yet.

100. **Mitigation Measures:** In order to mitigate these adverse impacts, UP PWD has developed a project-specific Resettlement and Rehabilitation (R&R) Policy which goes beyond the requirements of the Right to Fair Compensation, Transparency in Land Acquisition, Rehabilitation and Resettlement Act of 2013 and which together with the Resettlement Action Plan (RAP) establishes compliance with OP 4.12. The R&R policy has been approved by State Government vide Government Order number / 23-12-2014 (SA) /2012 dated August 19, 2014. The policy has the provisions for mitigating losses for (i) both title holders as well as non-titleholders and (ii) direct and indirect losses. Based on project specific R&R policy, RAPs for all the four Phase I corridors have been prepared. Project apart from compensating loss of immovable property, will assist each affected family for physical relocation and economic rehabilitation. The total budget for RAP implementation for all the phase I corridors is US\$2.68 million (INR 160.6 million).

101. The cut-off date for entitlements for losses caused by land acquisition varies from corridor to corridor and ranges from May 2018 to June 2018 when RAP data was updated for all four project corridors. Project will relocate all adversely impacted CPRs in consultation with the community. Project has also developed Gender Action Plan for phase I roads as part of RAP to be implemented along with RAP. The gender action plan provides for additional livelihood scope apart from creating awareness for gender-based violence; safety of women and child; and equal participation of men and women in decisions related to project. Consultants are in the process of identifying phase II roads. The RAP and Tribal People Development Plan (TPDP) as required will be prepared as per the guidelines given in ESMF.

102. **Labor Influx and its management:** At the peak of construction, it is expected that large numbers of laborers will be working on the different civil works sites. The influx of an itinerant workforce will put additional pressure on existing resources. The workforce normally consists of solitary migrant males and this could be a potential risk for the host population. Labor management plan has been prepared as part of ESMF. Within 30 days from the appointed date, the contractor shall prepare and submit 4 hard copies and 1 soft copy of Labor Influx and Worker's Camp Management Plan to UP PWD and the Bank that addresses specific activities that will be undertaken to minimize the impact on the local community, including elements such as worker codes of conduct, training programs on HIV/AIDS, etc. A Workers' Camp Management Plan addresses specific aspects of the establishment and operation of workers' camps.

103. **Institutional Arrangements:** In order to have smooth implementation of RAP, project has established Environment, Social Development and Resettlement Cell (ESDRC) managed by Executive Engineer, supported by an Environmental Specialist and a Social Development Specialist. At district level, project has established project implementation units (PIUs) headed by an Executive Engineer and supported by an Assistant Engineer designated as Environmental and Social Development Officer (ESO). A Social Development Officer will be hired by the project. Advertisement for the same has been given. A non-governmental organization (NGO) has been hired for implementation of RAP. The RAP will be implemented over a period of two years for the phase I roads. The project will also establish an integrated grievance redress mechanism (IGRM). As part of IGRM, project has already taken a toll-free number.

104. Since phase II roads are yet to be identified, project based on findings of phase I roads, has prepared an Environmental and Social Management Framework (ESMF) that acknowledges adverse environmental and social issues and integrates the measures for addressing them in the project preparation and implementation for phase II roads. The draft ESMF was presented to a wide range of stakeholders in a state level workshop. The comments and feedback received



has been included in the final version of the ESMF. The ESMF includes a Resettlement Policy Framework (RPF), which specifies the procedures, eligibility, grievance redress and other measures to be followed in the event that resettlement or land acquisition is required for any sub-project. Although there is negligible presence of tribal community in the state, an Tribal People Policy Framework (TPPF) has been prepared for a chance find, with the objective of including tribal communities in the project in order to achieve the highest possible positive impact of the interventions to improve their quality of life. Most of the women's status indicators (including those pertaining to health, literacy, work force participation, spousal abuse) show that gender equity and empowerment remain important issues in the state. ESMF also includes Gender Assessment and Development Framework (GADF). The project designs should be gender responsive based on the gender analysis and should be included in the Detailed Project Report (DPR). The findings and recommendations from the gender analysis during project planning and feedback from beneficiaries during implementation must be discussed thoroughly to determine the need for further action. Gender analysis will be carried out for the sub-projects at the screening stage, in order to analyse gender issues and to design interventions to address women's needs. In order to ensure that the potential for disruption to the normal life is minimized, the potentially affected populations were consulted and adequately informed during the preparation stages. ESMF makes it mandatory to consult potential PAPs and local community during the design and preparation stages of the sub-project; adoption of better planning and construction practices to reduce the potential disruptions; and strong local level communications and grievance redress system to inform and respond to the affected people. Since exact location of five Inspection and Certification Centres under Department of Transport is not known yet, an Environmental and Social Management Framework (ESMF) has been prepared. The ESMF will provide guidance on preparation of RAPs if required.

105. **Consultation and Disclosure:** During the preparation of Resettlement Action Plans, 25 consultations were carried out with participation of nearly 300 potential project affected persons and additional 7 consultations were carried out in May and June 2018 while updating the RAPs. The issues raised included shifting of religious structures, compensation, employment in project, training for self-employment, safety during construction, etc. The issues have been addressed in corridor specific RAPs. The state level ESMF workshop was also held to receive feedback on ESMF from 50 stakeholders who attended the workshop representing academics, civil society, administration and project affected persons. The executive summary of ESMF and R&R policy was circulated prior to the workshop. The feedback received has been incorporated in the final ESMF. A state level workshop was also conducted to receive feedback on the ESMF for inspection and certification centres. The comments received in the consultation has been incorporated to finalize the ESMF.

106. **Capacity Building:** The Indian law, Right to Transparency and Fair Compensation in Land Acquisition and Resettlement and Rehabilitation Act (RTFCLARR, 2013) has sought to progressively address popular concerns regarding equity, fair compensation, consultation, transparency, thus winning greater approval in the larger civil society. The legislation, however, has posed significant implementation challenges in the absence of an understanding of its legal requirements, administrative procedures, right institutional mechanisms and capacities in the country. The lack of clarity on RTFCLARR application procedures may adversely affect the project. The people's rising expectation of better compensation and R&R assistance for loss of land is hardly matched by the existing response capacity of the government. In recognition of significant challenges, project will hold division level training program for staff of UP Public Works Department to educate managers of LARR associated with Bank funded projects as well as for those who are not part of Bank funded project. The training will not only help acquiring land for the Bank funded project but will also develop capacity of PWD to acquire land for other projects under the new Act. The capacity building component will cover tools and methodologies for efficient application of RTFCLARR to be imparted by external experts to be identified Project will carry out training on the new law for all engineers above the rank of Assistant Engineer in all the divisions of PWD. Apart from new LA law training will also cover gender issues and citizen's engagement for monitoring purpose.



107. Since the environmental impacts of the activities to be undertaken by the Transport Department – upgradation of Driver Training Institutes – within already identified and own available land parcels and/or buildings, it has been agreed that the relevant provisions of the ESMF developed for the project will be applied.

(iii) Gender

108. The project will strive to increase employment opportunities for women. At the all-India level, female labor force participation is only 27 percent as recorded 2017. Several factors contribute to low labor force participation rate among women including lack of education and training opportunities; cultural factors that influence decision making regarding work and additional burden of care on women. Per the 2011 census, employment opportunities seem to be much lower for women in Uttar Pradesh. The labor force participation rate for females is only 16.5 percent as compared to 46.8 percent for males. The labor force participation rate for women in the project corridor is little less than 14 percent. At the same time women's participation in the transport sector in India is significantly lower than male participation. Nationally, of the total number of people employed in the transport, storage and communications sector in India, is only 2 percent are women.[1] It has been agreed to add a provision to the EPC civil works contracts, requiring contractors to hire females for at least 30 percent of routine maintenance works such as filling of potholes; maintaining shoulders; etc.(each EPC contract includes a 5-year maintenance period). Project will ensure that contractor hires local persons including women for these tasks. All these workers will be subject to Equal Wages Act. Through this employment opportunities, women will acquire technical and soft skills (like team work, financial management and contract management), which will add to the human capital of the employed women and will benefit them even after this project is completed. As part of mid-term review, an assessment of these gender actions will be conducted.

109. During RAP preparation, separate consultations were carried out with both men and women to identify their concerns about the impacts of the project and the same was documented in RAP. Data on GBV was collected during census and socio-economic survey. Some households reported incidents of GBV. A gender action plan has been prepared as part of the RAP. Though RAPs prepared under the project for phase I roads has gender action plan focussing additional livelihood scope for women apart from creating awareness for gender-based violence; safety of women and child; and equal participation of men and women in decisions related to the project, the project will undertake detailed gender assessment of selected roads and three urban centres. The gender assessment will not only identify issues related to road construction but also issues related to urban and rural transport. The urban centres will be decided in consultation with PWD and Department of Transport by the consultants. UP PWD has already hired the services of a consulting firm to conduct corridor specific gender assessment covering urban areas. The assessment will help identify actions that will be implemented as part of project implementation. Separate budget has been earmarked for capacity building and gender assessment. The state has also extensively advertised the Women's helpline 1091. The social development officer of ESDRC and NGO hired for implementation of RAP along with the supervision consultant will be responsible for monitoring the cases of GBV in project area. During consultation, limited employment opportunity for women was identified as one of the gaps. Thus, project is focusing on increasing employment opportunities for women and requiring contractors to employ at least 30 percent women for routine maintenance works. This will be monitored during the project implementation period. In addition, project will track women's feedback through grievance redress mechanism (GRM) and road user's satisfaction survey (RUSS). As part of component 3, the project will carry out gender nuanced messaging for social marketing targeting at women and facilitating women's participation in driver training. The project will ensure that equal opportunity for participation in driver training will be provided for men and women. Concurrently, level of sexual harassment in the work place is high in Uttar Pradesh. For example, of all the complaints received by National Commission for Women (NCW), the highest share (26 percent) are from Uttar Pradesh. The fear of harassment in the

[1] Based on ILO data, using a three-year average.



workplace is a major deterrent for women from working. The project will take actions to both mitigate this risk as well as put in a robust response mechanism in case such an act occurs. The project will work with PWD to support effective implementation of the Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal Act, 2013 (SHWW Act 2013). GRM will provide for gender segregated data. The project will support strengthening the Internal Complaints Committee (ICC), dissemination of information regarding the ICC and standard operating procedures to register complaints and address them within the given time.

(iv) Grievance Redress Mechanisms

110. 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.

V. KEY RISKS

111. **Overall Risk Rating Explanation:** While risks related to Macroeconomic, and Sector Strategies and policies have been considered Moderate, all other risks related to the project have been identified as Substantial or High, including risks related to Technical Design of Project or Program, Institutional Capacity for Implementation and Sustainability, Fiduciary, Environmental and Social, and Stakeholders. Police related risks comprising frequent changes to senior key project staff, Integrity and governance and accountability of UP Highway Police have been grouped under "other" and rated as High. The Risks and Mitigation measures proposed for the project are described in Annex 3.

Risk Category	Rating
1. Political and Governance	Substantial
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	Substantial
9. Other (Frequent changes to senior key project staff, Integrity, and Governance and Accountability of UP Highway Police)	High
10. Overall	Substantial



VI. RESULTS FRAMEWORK AND MONITORING

Results Framework

COUNTRY: India

Uttar Pradesh Core Road Network Development Project

Project Development Objectives(s)

The Project Development Objective is to build capacity for results-focused road safety management in Uttar Pradesh and to improve traffic flows and safety for all road users on selected corridors of the state core road network

Project Development Objective Indicators

Indicator Name	DLI	Baseline	End Target
Improved capacity for results-focused road safety management in Uttar Pradesh			
UP Highway Police in place doing general deterrence-based enforcement on pilot corridors (Yes/No)		No	Yes
Crash data from UPCDAS is publicly available and used for analysis and planning interventions (Yes/No)		No	Yes
Improve travel time and safety of all road users on selected corridors			
Reduction of average travel time for cars on civil works corridors (Text)		SH42 Hamirpur -Rath -133 SH42 Garautha Chirgaon - 68 SH51-116 SH93 - 94	SH42 Hamirpur-Rath - 59 SH42 Garautha-Chirgaon - 39 SH51-66 SH93-47



Indicator Name	DLI	Baseline	End Target
Improved Road Users Perception (RUSS) Index on civil works corridors (Text)		survey to be done in 2019	TBD
Reduced number of fatalities on Highway Police pilot corridors (NH25 and NH2) (Percentage)		0.00	20.00

Intermediate Results Indicators by Components

Indicator Name	DLI	Baseline	End Target
Network Improvement			
Roads rehabilitated, Non-rural (CRI, Kilometers)		0.00	500.00
Satisfactory post-construction road safety audit (Yes/No)		No	Yes
Women employed for routine maintenance under EPC contracts (Percentage)		0.00	30.00
Assessment of gender actions conducted (Yes/No)		No	Yes
Institutional Strengthening			
RAMS operationalized and used for annual maintenance planning (Text)		RAMS is not used for annual planning	At least 50 percent of annual budget allocated based on RAMS
Road Safety			
UP Highway Police established, equipped and trained (Text)		UP Highway Police does not exist	Mobile, skilled and well-equipped force in place operating 24 hours a day
Improved Driving Behaviors (Use of helmets and seatbelts) on Highway Police Pilot Corridors (Text)		To be collected in 2019	TBD in YR1
RS Cell at Transport Department staffed and supporting implementation of the state RS policy (Text)		RS Cell established but not staffed	Fully functional RS Cell at the Transport department



Indicator Name	DLI	Baseline	End Target
Road safety engineering improvement program implemented on CRN (Text)		Program not yet started	targeted programs completed satisfactorily

Monitoring & Evaluation Plan: PDO Indicators

Indicator Name	Definition/Description	Frequency	Datasource	Methodology for Data Collection	Responsibility for Data Collection
UP Highway Police in place doing general deterrence-based enforcement on pilot corridors	dedicated personnel of Highway police trained and equipped, and providing deterrence-based enforcement 24 hours a day on pilot corridors	semi-annually	Project Progress reports		Police/Home department
Crash data from UPCDAS is publicly available and used for analysis and planning interventions	System developed for crash data collection and analysis	at MTR and EOP	Progress reports		Police/Home Department
Reduction of average travel time for cars on civil works corridors	Average Car travel time, minutes per km	at mid-term and end of project	Project progress reports Speed surveys		PWD
Improved Road Users Perception (RUSS) Index on civil works corridors	Road User Perception measured through primary survey in terms of an Index on civil works corridors	at Baseline, Mid-term and End of Project	Survey	RUSS methodology	PWD



Reduced number of fatalities on Highway Police pilot corridors (NH25 and NH2)	Reduction in Traffic fatalities on Police pilot corridors by 20 percent In 2017 there were 998 road deaths on NH-2, and 344 deaths on NH-25	At baseline and end of Police Pilot	In the absence of a good crash database, the information will be collected from all police stations located along the project highways		Police

Monitoring & Evaluation Plan: Intermediate Results Indicators

Indicator Name	Definition/Description	Frequency	Datasource	Methodology for Data Collection	Responsibility for Data Collection
Roads rehabilitated, Non-rural	Kilometers of all non-rural roads reopened to motorized traffic, rehabilitated, or upgraded under the project. Non-rural roads are roads functionally classified in various countries as Trunk or Primary, Secondary or Link roads, or sometimes	PWD	Annual reports/Quarterly Progress Reports		Annually



	Tertiary roads. Typically, non-rural roads connect urban centers/towns/settlements of more than 5,000 inhabitants to each other or to higher classes of road, market towns and urban centers. Urban roads are included in non-rural roads.				
Satisfactory post-construction road safety audit	A road safety audit after construction is completed and before opening it for traffic	After completion of each roads contract	Project Progress Reports RSA audit report		PWD
Women employed for routine maintenance under EPC contracts	At least 30 percent of employed for routine maintenance under EPC contracts are women	semi-annually	Project Progress Reports Contractors reports		PWD
Assessment of gender actions conducted		At mid-term	assessment report, progress reports		PWD
RAMS operationalized and used for annual maintenance planning	At least 50 percent of annual plans developed with RAMS	annually	PWD budget reports Project Progress Reports		PWD



UP Highway Police established, equipped and trained		Semi-annually	Project progress reports		Police/Home
Improved Driving Behaviors (Use of helmets and seatbelts) on Highway Police Pilot Corridors	Improved driving behaviors on UPHP corridors (use of seatbelts and correctly worn, safety standard approved helmets)	annually	Primary Surveys		Police/Home
RS Cell at Transport Department staffed and supporting implementation of the state RS policy	RS Cell staffed with technical expertise, resourced and supporting implementation of the state RS policy	annually	Project Progress Reports		Transport Department
Road safety engineering improvement program implemented on CRN	Targeted programs with cost-effecting engineering measures for road safety improvements,	annually	project Progress Reports		PWD



ANNEX 1: Implementation Arrangements and Support Plan

COUNTRY: India

UP Core Road Network Development Project

Project Institutional and Implementation Arrangements

1. ***Implementation arrangements for Network Improvement and Institutional Strengthening Components.*** Implementation of the civil works component will be managed by the office of the Chief Engineer (CE) Externally Aided Projects (EAP). The PWD has established 3 circles headed by Superintending Engineers (SE) for implementation of civil works of Phase 1– Lucknow Circle, Kanpur Circle and Moradabad Circle. The key positions have been staffed and more people will be added as preparation of DPRs and procurement of civil works progresses. Additional circles may be established later for implementation of Phase 2 works. The PIU are being supported by Project Management Consultants, who will be engaged in design, supervision and project management support. For implementation of the Institutional Strengthening Component, the CE EAP will engage the RAMS unit and other relevant departments.
2. ***Implementation Arrangements for Road Safety Initiatives Component.*** Due to multi-sectorial aspect of road safety it has been agreed that there will be three implementation agencies – PWD, Police and Transport department, responsible for the implementation of their respective subcomponents:
3. In PWD, under the Chief Engineer EAP, Road Safety Division will be entrusted with implementation of targeted road safety engineering improvement programs and capacity building of PWD in road safety.
4. In Police, Traffic Directorate headed by the Additional Director General Police (ADGP) will manage implementation of the project activities under this sub-component. PIU has been created under ADGP, which will be supplemented by the domain experts hired from the market. The proposed new force – UP Highway Police will report to ADGP as well.
5. In Transport Department, the office of Transport Commissioner will be responsible for the project implementation. As part of the State Road Safety Policy, a dedicated Road Safety Cell has been created at the Transport Department, which once fully staffed, will assume project management functions for sub-component 3b.
6. While PWD has the experience of implementing the previous Bank financed UPSRP project, it will be a first experience for Police and Transport. Furthermore, the multiplicity of implementing agencies; institutional capacity enhancements of these agencies; and mainstreaming innovative practices across these agencies may face general resistance to change and is a Substantial risk for the project. These risks shall be mitigated through the high-level project governing structure established under the project, like the Project Governing Board (PGB) to be headed by the Chief Secretary, for monitoring the progress of the project activities and push for the reforms and practices across these organizations. The Bank task team shall also endeavour to enhance supervision and advocacy with various stakeholders.
7. Enforcement by police would involve transactions for levying fines on offenders. Also, misuse of vehicles being purchased for enforcement including fuel cost is also a risk. Comprehensive governance requirements addressing issues of staff productivity, vehicle use, public perceptions and confidence will be implemented to ensure high levels of operational transparency and accountability. Appropriate mitigation measures (Annex 3) have been built into the project



to address these risks. The UPHP will be unarmed and not be involved with criminal investigations. To mitigate this risk, specific provisions have been introduced in the project Legal Agreement.

8. **Coordination and Oversight Mechanism for Road Safety Initiatives Component.** The High-Level Road Safety Committee (HLRSC) chaired by the Chief Secretary will assume oversight and coordination role, will review progress and facilitate resolution of various issues related to implementation of sub-components on a quarterly basis.

9. **Project Governing Board.** Each agency has established Project Governing Board for oversight of implementation progress of their respective parts, and for procurement approvals.

10. **Reporting Arrangements.** Each respective agency will prepare Project Progress Reports and furnish them to the Bank and to the HLRSC on a quarterly basis, not later than forty-five (45) days after the end of each calendar semester, covering the calendar semester.

Financial Management, Disbursements and Procurement

Financial Management (FM)

11. The finance wings of the departments are headed by financial controllers from state finance services of GoUP. The accounting firm in PWD and individual consultants in Department of Transport and Traffic Directorate will be additionally contracted by respective PIUs to provide support on FM functions. The PIUs will have the overall responsibility of maintaining FM systems and ensuring that these functions are carried out in accordance with project's legal agreements. These activities will include: (a) adequate annual budgetary provision and effective utilization; (b) sufficient and timely flow of funds for project activities; (c) maintenance of adequate and competent FM staff; (d) appropriate accounting of project expenditures; (e) preparation and timely submission of Interim Financial Reports; and (f) timely submission of audit reports and project financial statements to the Bank. The FM arrangements are largely reliant on 'country systems'. The PIUs will use extant FM systems of GoUP with additional requirements for financial reporting and Internal Audit.

12. **Budget and Fund Flow:** The World Bank funds (70 percent of total project cost) will be provided to GoI under IBRD loan terms and it will be released by GoI to GoUP on back to back basis. The funds (100 percent) for the project will be provided by GoUP within overall budget of the State and will flow to the respective implementing departments through treasury system. The GoUP will use its budgetary resources to pre-finance project expenditures and will seek disbursement from the Bank on submission of Interim Financial Reports (IFR). The PIU's of PWD, Transport and Traffic Directorate have created identifiable budget line for Externally Aided Project within its Department budget. The annual budget provision will be made by PIUs of respective departments on the basis of approved procurement/work plans. The yearly budget (BE) / supplementary budgets (RE) of the project will be approved by State Legislature as part of the overall budget of the state, after which funds will be made available to the respective implementing departments. In PWD, procurement function for all project activities will be centralized at PIU. The payment function for civil works and R&R activities will be de-centralized through sub-treasuries of respective field divisions. The PWD will provide 'Cash Credit Limit' (CCL) to drawing and disbursement officer (DDO)/Executive Engineer of the participating field/circle divisions. The DDO (Executive Engineer) will follow administrative authority levels provided within PWD to approve civil work bills and make payment. A Project Management Consulting (PMC) firm has been engaged by PWD as an independent engineer to monitor the quality, progress of work and certify civil work bills. For EPC contracts, the payments will be linked to achievement of construction milestones and these milestones will be specified in contract document and verified by an independent engineer i.e.



Project Management Consultant (PMC). The payment for goods and consulting services, for PWD will be centralized at PIU (Head Office) to be made by Treasury office of Lucknow. For Transport and Traffic Directorate, the procurement and payment function for all project activities will be centralized at the respective PIUs. The bills will be presented by DDO of the respective departments to the treasury offices for effecting payments.

13. **Accounting:** The payments will be made electronically by the Treasury on submission of bills by DDOs of PIUs. The amounts will be recorded by Treasury at the time of final payment against approved budget in the Treasury system of GoUP (Koshvani). The rules of accounting will be guided by PWD Manual, State Financial Handbook (in VIII volumes) and Budget Manual as applicable to all transactions in GoUP. The field divisions of PWD will maintain subsidiary records (measurement books and running account bills for civil work transactions and PAF File for R&R payments) at the respective locations. The payments will be monthly reconciled by DDO with the Treasury.

14. **Disbursement and Financial Reporting (IFR):** The PIU's (Transport and Traffic Directorate) will generate expenditure statements from Koshvani and submit these statements to PIU (PWD) within 30 days from the end of each quarter. The divisional accountants of field divisions in PWD will submit reconciled expenditure statements generated from Koshvani to PIU (PWD). The accounting firm hired by PIU (PWD) will consolidate the expenditure reports of three implementing departments in the Interim Financial Report formats (annexed to Disbursement and Financial Information Letter) and it will be submitted to the Bank (through CAAA, GoI) within 45 days from end of each calendar quarter. The IFR will form the basis of disbursement by the Bank to GoUP.

15. **Finance Staffing and Training:** The finance wing of PWD is headed by financial controller, an official from State finance services having rich experience in government accounting and audit matters. The financial controller will provide oversight and ensure that agreed FM tasks are carried out seamlessly. The divisional accountants are in place at participating field circles/divisions. The PWD will hire services of an accounting firm within three months of project effectiveness to get support on FM matters. The finance wing of Transport department and Traffic Directorate are headed by financial controllers. Both these departments will hire full time FM consultants within three months of project effectiveness to support financial controller in FM functions. The accounting firm and individual consultants will be provided sufficient training on Bank FM procedures.

16. **Internal audit:** The internal audit will be conducted by firm of chartered accountants as per the terms of reference agreed with the Bank. The firm will be selected by PWD following World Bank procurement procedures and it will conduct the internal audit of PWD, Transport and Traffic Directorate. Audits will be conducted annually and will provide feedback to management on control weaknesses and issues that require management attention. The internal audit reports along with the corrective actions taken by the project to address control weaknesses (if any) will be shared with the World Bank.

17. **External Audit:** The Comptroller and Auditor General of India (CAG) will be the external auditor for the project. The CAG through the State office in GoUP will conduct an annual audit of the project financial statements covering sources and uses of funds. The audit will be conducted as per the terms of reference agreed with the Bank dated March 20, 2009 and the audit report will be submitted within nine months from the close of each financial year. The audit report for the expenditures incurred under Retroactive financing will be combined with the first-year audit report. The annual audit report would consist of (i) audit opinion; (ii) project financial statements; and (iii) management letter highlighting weaknesses, if any. The following audit reports will be monitored:

Implementing Agency	Audit Report	Auditor	Due Date
PIU, PWD, GoUP	Audit report and project financial	C&AG of India	December 31 of each year



	statements		
PIU, Transport, GoUP	Audit report and project financial statements	C&AG of India	December 31 of each year
PIU, Traffic Directorate, Home department GoUP	Audit report and project financial statements	C&AG of India	December 31 of each year

18. **Retroactive Financing:** Financing of US\$80 million has been requested. The payments made by the PIUs prior to the signing date but on or after April 1, 2018 for the contracts awarded following World Bank procurement procedures shall be eligible for retroactive financing. A separate IFR will be submitted to claim such expenditures from the Bank.

19. **Public Disclosure:** The annual audit reports and project financial statements will be disclosed on the website of implementing departments.

Procurement

20. 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.

21. The procurements under this Project shall be done by three implementing agencies, i.e. PWD (Public Works Department), Police and Transport department. A procurement manual including appropriate contract management and complaint handling mechanism has been prepared by the PIUs.

Procurement Risk Assessment:

22. The works component under the project shall be implemented by a dedicated Project Implementation Unit, headed by Chief Engineer (World Bank Projects), established at the PWD Head Quarter (Lucknow). This PIU would be responsible for procurement and overall project management, monitoring and evaluation. The Traffic Directorate, UP Police shall be responsible for implementation of Dedicated Highway Police Service and Development of State-wide Crash database and analysis system. The Transport Commissioner, UP shall be responsible for implementation of activities under the Transport Department through the proposed Road Safety Cell, being created as part of the Road Safety Policy of the state. A procurement manual including appropriate contract management and complaint handling mechanism has been prepared by the PIUs. The assessment of the existing procurement arrangements in the three implementing agencies was carried out during project preparation. The assessment reviewed the organizational structure for implementing the project, the process of procurement and applicable codes as being followed in the procurement process, the staffing of the PIUs, and the tiers as well as authority levels in the procurement decision process.

23. **The Public Works Department:** The procurement by PWD shall include works, consultancy services and goods. The PIU headed by Chief Engineer (World Bank Projects), at the PWD HQ (Lucknow) has prior experience of implementing Bank funded Project in the first UPSRP, however, the PIU shall be using Procurement Regulations for the first time.



Additionally, the PIU has hired the services of a PMC (Project Management Consultant) for support on procurement, contract management and monitoring. During the first round of bidding for Phase-I roads, certain risks were observed, i.e. less competition, participation of few local tenders though there is no dearth of bidders for the package size, non-submission of bid security after online bid submission, prices quoted by the lowest bidder was higher than the estimated cost, change in key project staff etc. In order to mitigate these risks, following risk mitigation measures were advised by the Bank: having an Independent Procurement Observer (IPO) on board to be involved at all stages of the procurement process; having a system for submission of bid security along with the bid; holding a contractor's workshop to inform the prospective bidders about the changes in the Bid document and to build trust of the private sector; to go for slice and package method by combining all three packages; relaxing the post qualification criteria to increase competition; to advertise in one more national daily in addition to what was done in first round of bidding including UNDB publication; and updating the estimated cost. These risk mitigation measures were implemented during the course of the project preparation and before publishing the notice for rebidding of the three phase-I roads.

24. **The Traffic Directorate under UP (Police):** Procurements by this department for the Road Safety component, shall include procurement of equipment and procurement of consultancy services for dedicated highway patrol units, implementation of safety enforcement program, implementation of good practices from international policing organizations, crash database and analysis system. The program would address speeding, drink driving, non-wearing of safety belts and helmets, distracted driving, vulnerable road user safety, heavy vehicle safety etc. Currently the procurements for the Traffic Department are done by ADG PHQ, Allahabad. The DGP office at Lucknow normally procures items for computerization, wireless sets and day to day office requirements using DGS&D⁸ rate contracts or through GoUP PSUs by paying their service charges e.g. ITI for electronic items and District SP participates in procurement committee up to Rs. 10 lakh (equivalent to US\$14,285). They do not have experience of procurement under Bank funded Project. The PIU established under traffic directorate has been provided a training on World Bank procurement process. Services of a procurement specialist shall be engaged by the PIU for managing procurement.

25. **The Transport Department:** Procurements under this project shall be normally computers and related items, handheld terminals, stationery, pre-printed stationery, tax receipts, fee receipts, condemnation forms, vehicle enforcement equipment, speed radar etc. The department does not do any procurement and there is not procurement staff. Normal method of procurement is (a) Stationery from UP Upbhokta Sahkari Sangh Ltd or through Government e-Marketplace (GeM); (b) vehicles against State Rate contracts or GeMS; (c) Uniforms – department pays only money to individuals who get them made/ stitched; (d) For computer and related equipment, National Informatics Centre Services Inc. (NICSI) is requested to give the specifications, after which certain GoUP PSUs are advised to give their rates, and order is then placed on the PSU offering the lowest price. Transport Department does not currently undertake any procurement, not even under GoUP funding. This is the first bank funded project to be handled by the proposed PIU. There is no procurement staff, and other staff are not familiar with the GoUP procurement procedures nor with the Bank Procurement procedures and Guidelines. Procurement staff will need to be identified and suitably trained. The department staff have been given procurement training by the Bank.

26. Based on the assessment it was observed that that existing procurement arrangements and systems in PWD are adequate to implement the civil works component of the project with some hand holding from Bank. In the procurement manual, adequate guidelines have been incorporated on timelines and levels for internal clearances and adherence to

⁸ DGS&D is the central purchase organization of the Indian government, functioning under the Ministry of Commerce & Industry. Its role is to finalize the rate contracts to be used by Government departments to procure items of general use. DGS&D contract rates allow the state, central and government-owned entities to buy required goods at the DGS&D specified prices. The contract rates for such purchases by government departments and public sector undertakings (PSUs) are fixed once every year.



procurement process timelines as per procurement plan. However, the existing procurement arrangements and systems require considerable strengthening in Transport Department and Traffic Police as the fiduciary environment suffers from weak capacity and there is risk that the existing systems will not provide reasonable assurance of executing procurement activities under the project. Some critical areas noted in all three implementing agencies are: delays in bid evaluation and award of contracts, delays in releasing of advances and other payments during execution, weak contract management leading to contract variations, lack of satisfactory complaint handling system, weak procurement capacity in terms of staffing in Transport department and Traffic Police. Based on the assessment the procurement risk rating was noted to be “Substantial”.

Risks and Mitigation Measures:

27. The main areas of procurement risks observed are: delays in bid evaluation and award of contracts, delays in releasing of advances and other payments during execution, weak contract management leading to contract variations, lack of satisfactory complaint handling system, weak procurement capacity in terms of staffing in Transport and Traffic (Police) department. During procurement of phase-I roads by UPPWD certain risks were observed, i.e. less competition, participation of few local tenders though there is no dearth of bidders for the package size, non-submission of bid security after online bid submission, prices quoted by the lowest bidder was higher than the estimated cost, change in key project staff etc. Based on discussions held with the implementing agencies, the risk mitigation measures are : (a) Hiring the services of a PMC by PWD for procurement and contract management, (b) Hiring of procurement staff at Traffic Police and Transport department, (c) Implementation of a complaint monitoring system; (d) establish a system of public disclosure of information on procurement actions as indicated below; (e) having an Independent Procurement Observer on board to be involved at all stages of procurement by UPPWD. The key areas of procurement risks and corresponding mitigation measures have been identified and highlighted in the following paragraphs.

28. **Capacity Building Measures:** The PWD staff have been associated with Bank’s earlier road sector project UPSRP and hence are conversant with Bank’s procurement procedures, however, due to staff turnover, and applicability of the Procurement Regulations for this project, they would need some basic hand-holding from Bank. The other two implementing agencies for the Road Safety component, i.e. Transport and Traffic (Police) department do not have any prior experience of procurement under Bank funded Project and do not have procurement staff. The Transport and Traffic (Police) department will appoint/depute a dedicated staff responsible for carrying out procurements and responsible for all procurement related activities, i.e. preparation of procurement plan, procurement disclosures etc. under this project. Bank has already organized a procurement training covering procurement of goods, IT equipment and Consultancy Services for all three implementing agencies. It is also recommended that the procurement staff in the three PIUs may undergo the Certificate Program in Public Procurement (CPPP) available online at www.procurementlearning.org.

29. **Complaint Handling Mechanism:** To address procurement complaints received by the proposed Project, a complaint handling mechanism will be implemented by the PIUs. 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. The PIUs will establish a procurement complaint handling system during the implementation of the Project.

30. **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 shall be disclosed on the PIU’s/Project websites: (i) procurement plan and updates, (ii) invitation for



bids 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 of 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.

31. 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 estimated cost more than US\$800,000, (c) contract award details of all procurement of goods and works using 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.

32. 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.

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

34. **Procurement Plan:** All three PIUs have developed a Procurement Plan for procurements planned for the first 18 months of the Project. The procurement plans have been updated on STEP (Systematic Tracking of Exchanges in Procurement). The procurement plan will be updated at least annually or as required to reflect the actual project implementation needs and improvements in institutional capacity. All three PIU staff have been trained by Bank in use of STEP. For contracts to be financed by the Bank, 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 Bank in the procurement plan.

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

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

37. **Contract Management:** Civil works and Institutional Strengthening component will be implemented by the Public Works Department (PWD). The works component shall be implemented by a dedicated Project Implementation Unit, headed by Chief Engineer (World Bank Projects), established at the PWD Head Quarter (Lucknow). The PIU would be responsible for procurement and overall project management, monitoring and evaluation. In addition, 3 circles, headed by Superintending Engineers (SE) have been established for implementation of Phase 1 works– Lucknow Circle, Kanpur Circle and Moradabad Circle under the PIU. Additional circles shall be established for implementation of Phase 2 works. The PIU would be supported by Project Management Consultants for design and supervision of works. The PWD staff responsible for contract management may additionally undertake certificate program in contract management available online at www.procurementlearning.org



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

Table 1: Procurement Thresholds

Procurement Approaches and Methods	Thresholds (US\$ equivalent) *
Open international (goods, IT system, and non-consulting services)	> 3 million
Open national (goods, IT system, and non-consulting services)	> 100,000 and up to 3 million
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

39. **Procurement prior-review thresholds⁹.** The World Bank will prior review the following contracts:
- Works including Supply & Installation of Plant and Equipment: All contracts more than US\$10 million equivalent.
 - Goods and IT system: All contracts more than US\$2million equivalent
 - Non-consulting services: All contracts more than US\$2million equivalent
 - Consultants: All contracts >US\$1 million equivalent for firms and >US\$300,000 equivalent for individuals

40. The above thresholds are for the initial 18-month implementation period; based on the procurement performance of the project, these thresholds may be subsequently modified. Irrespective of the thresholds, ToRs shall be prior reviewed by Bank. The prior review thresholds will also be indicated in the Procurement Plan. 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.

41. **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

⁹ 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.



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 shall be sent to Bank for review and the response to the complaint in such cases, shall be cleared with the Bank. Complaints with allegations of fraud and corruption, shall be shared with Bank, irrespective of the thresholds.

42. A copy of all amendments to the contract shall be updated in STEP.
43. Pre-qualification: Not Applicable
44. Proposed Procedures for CDD Components (as per paragraph. 3.17 of the Guidelines): Not Applicable
45. Reference to (if any) Project Operational/Procurement Manual: A Procurement Manual has been prepared by the implementing agencies.
46. ***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 US\$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 Bank’s Procurement Regulations.
47. ***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 Bank’s Procurement Regulations and the following provisions:
- (a) 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.
- (b) 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.
- (c) 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.



- (d) Except with the prior concurrence of the Bank, there shall be no negotiation of price with the bidders, even with the lowest evaluated bidder.
- (e) Government e-Marketplace (GeM) set-up by Ministry of Commerce, Government of India will be acceptable for procurement under Request for Quotations (RFQ) method.
- (f) 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.
- (g) 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.
- (h) 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.
- (i) The Borrower shall use an effective complaints mechanism for handling procurement related complaints in a timely manner.
- (j) 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.

48. **E-procurement System:** The e-procurement system of Government of Uttar Pradesh 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.

49. **Use of GeM (Government eMarketplace)** will be allowed in lieu of RFQ (Request for Quotation) as per following details:

- up to INR 50,000 in catalogue mode (viz. any available item could be selected by the implementing agency 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



Environmental and Social (including safeguards)

Environmental Impacts Management.

50. In order to mitigate environmental impacts, Environmental Management Plans (EMPs) have been prepared with the EIA for each road in Phase I. The key measures include provision of funding for compensatory plantation in the ratio of 2 saplings for each tree felled in line with Indian legislation, design and other measures to protect roadside cultural properties, and provision of barriers for noise reduction/safety close to sensitive receptors like schools. Impacts related to contractors' activities will be mitigated through the provisions in the contract documents – these pertain to safety of road-users and workers, pollution from plants used for construction, and so on. Specific provisions for appropriate environmental management during use of borrowed earth, transport and handling of construction material, and provision of basic amenities required for the laborers and their camps are also included in the bidding/contract documents. Enhancement plans have also been prepared for select road side cultural properties that were found to be of significant value to local populations. Resources for these measures are included in the project budget.

51. For the one road, being implemented using item-rate contract, visiting Bank team found that the contractor has begun to implement the EMP and periodic visits were being undertaken by the Environmental Specialist of the PMC team. There needs to be systematic capacity building in the field, both for this contractor and for the EPC contractors to ensure that the field teams are able to implement the EMP as implementation begins.

52. For roads to be taken up subsequently, an environmental and social management framework (ESMF) has been developed to establish the environmental sensitivity of any candidate road, provide guidance on the assessment to be undertaken and management plan to be developed for use during implementation. It also provides guidance on the consultation strategies, review and clearance of the road specific EIAs, and budgeting for environmental measures. Additional support, including any required in-depth studies, has also been budgeted in the project, to ensure that any roads identified for Phase II are duly evaluated, e.g. ecological, impacts.

53. For the implementation of environmental aspects of the project, the primary responsibility rests with the UPPWD through the Chief Engineer, World Bank. The Chief Engineer is assisted by an ESDRC staffed by engineers from the department. In addition, the Project Management Consultant team hired for the project has environmental specialist as a key member of the team. The PMC's environmental specialist oversees the EIA preparation, and EMP implementation through the contractor. In addition, the environmental specialist would also lead the preparation of progress reports for the project's environmental management activities. An independent review of the EIA and EMPs for all project roads is envisaged since this is a Category A project and this has been completed for Phase I roads.

54. The Contractors' teams will also have environmental specialist who will be overseeing the day-to-day execution of the environmental management and safety aspects of civil works and associated activities, including laborers' facilities and off-site activities. A management information system module for environmental aspects is also being developed for regular reporting from the field. The GRM also has provision for raising and addressing grievance relating to environmental quality, especially for the construction phase.

55. In addition, the Forest Department will be responsible for the compensatory plantation as per local laws. Communities would be involved in the implementation of enhancement plans for which budget estimates have been included in the EMP and integrated with project costs



56. **Implementation of Resettlement Action Plan:** For smooth implementation of Resettlement Action Plan (RAP), an Environment, Social Development and Resettlement Cell (ESDRC) has been established at the headquarter level. The ESDRC is headed by Chief Engineer and supported by Environment specialist and Social Development specialist. Project is in the process of hiring social development specialist. The responsibility of co-ordination lies with Social Development specialist of ESDRC. The ESDRC will establish operational links within PWD and with other agencies of government involved in project-induced resettlement. It will (i) bridge the gap between the project and project affected persons and communities; (ii) provide the means and mechanisms for coordinating the delivery of the compensation and assistance entitled to those who will suffer loss; (iii) link the project with state government agencies, provide liaison with Public Works Department (PWD) field units and impacted communities; (iv) establish district level committees to co-ordinate social development and resettlement operations in the field; (iv) assist NGO partners during implementation; (v) engage required training services; (vi) oversee a grievance redress process; and (vii) actively monitor RAP implementation. On behalf of PWD, the ESDRC will assume the responsibility for representing the social impact and resettlement components of the project for environment clearance. The ESDRC will also be responsible for disseminating this information to the public and providing additional opportunities for public comment. In absence of in house capacity to implement RAP, project has hired the services of an NGO. As part of RAP implementation, NGO will assist PWD in disbursement of compensation and R&R assistances; educate PAPs on the proper utilization of compensation and rehabilitation grant; and help them in getting financial assistance, if required, under various subsidy related development programs. It will also organize training programs to impart required skill for such PAPs who would prefer to go for self-employment schemes. The contracted NGO will also be responsible for implementation of gender action plan (GAP).

57. **Grievance Redress:** The design of the project includes several mitigation measures which also include mandatory consultations with the local community during the design and preparation stages of the sub-projects; adoption of better planning and construction practices to reduce the potential disruptions; and strong local level communications and grievance redress system to inform and respond to the affected people. An Integrated Grievance Redress Mechanism (IGRM) will be established at the head quarter level that will register user complaints using combination of various mediums (e.g. a dedicated toll-free phone line, web-based complaints, written complaints in feedback register and open public days) and address them in a time bound system. A dedicated toll-free number has already been taken by the project. The project through partner NGO, will appoint a grievance redress or Public Relation officer solely responsible for handling phone and web-based complaints. The person will be responsible for directing the aggrieved person to the concerned official through e-mail. On receiving any phone call or web based or email, a unique number will be generated which will be the reference number for the caller and he can trace the progress of his grievance / query through that number. Any complaint lodged will be addressed within 15 days of receiving the complaint. System will have escalation matrix i.e. if grievance / query remains untended or there is no response from the concern officer for specified period of time than system will escalate the grievance / query to next level through email. The toll-free line will be monitored between 10 AM to 5.30 PM on all working days. Any call made before or after the stipulated time, will get recorded and from the voice mail an e- mail will be generated addressed to the grievance officer. The grievance officer will then direct that mail to the concerned official and follow-up. The recorded message will be responded back the next day. The project will also commit itself for proactive disclosure and sharing of information with the key stakeholders, including the communities/beneficiaries. The website of PWD will have the name and number of social development officer; the toll-free number and also the website address. Apart from IGRM, a separate grievance redress cell (GRC) will be established at district level headed by District Magistrate or his / her representative and supported by the head of PIU and ESO. NGO representative will also be part of district level GRM.

58. The project will have a communication strategy focusing on efficient and effective usage of print and electronic media, information boards, posters, and adoption of any other method suited to the local context, logistics, and human



and financial resources available. The project communications plan includes dissemination of corridor-specific information through suitable local media. Communities will be engaged through stakeholder consultations in planning and implementation. The Environment and Social Officer of PIUs will be responsible for implementation of communication plan with assistance from contacted NGO.

59. **Road Safety:** Specific road safety engineering measures will be adequately integrated in the engineering designs to reduce the safety risks in hazardous locations and also to provide a safer road environment for all road users, especially women and children. Provision of paved shoulders along entire stretches of project roads will provide a safer area for bicyclists and motorcyclists. The protection of vulnerable road users will be improved through speed management measures in stretches passing through settlements. Work zone safety standards will be fully integrated in the contract management framework to ensure the safety of women workers. In addition to inclusion of adequate road safety provisions into the program of state highway rehabilitation and widening under the Network Improvement Component, there will be programs of systematic, cost-effective safety engineering improvements focusing on high-risk corridors of the core network, junctions' improvements and speed management programs. An awareness program will be carried out with a partner NGO specifically for women; children and elderly people in the project corridors.

60. **Stakeholder Engagement:** Sustainability of the priority investments will depend substantially on the meaningful participation and support of key stakeholders, especially local communities. During Social Impact Assessment, perception of various stakeholders was also recorded, and it indicates a high-level of demand at the grassroots level for greater transparency and for active involvement in the planning of proposed road corridor. Therefore, local communities and key stakeholders will be engaged to ensure their inclusion and participation in the planning of road design and also in implementation stage. These interventions will include: (i) Information, Education, and Communications (IEC) campaigns; (ii) mobilization of local communities (particularly women and youth) around issues of road safety; livelihood; sanitation, health and hygiene; (iii) transparent consultations; (iv) dissemination of project information; and (v) community oversight. NGO partners deployed for RAP implementation will be responsible for implementation of these investment-level social intermediation programs.

61. **Evaluation of RAP Implementation:** Project will carry out third party evaluation of RAP implementation twice in the project cycle, once at mid-term and again at project closing.

Strategy and Approach for Implementation Support

62. The strategy for the implementation support has been developed based on the nature of activities involved in the project and their commensurate risk profile. The Implementation Support Plan (ISP), as described below, will be a live document, will be reviewed and revised regularly as and when required during the implementation, at least twice a year.

63. **Technical Support.** The Bank will provide required technical support to the implementing agencies through sector specialists and institutional and road safety specialists. The support will be on road engineering, asset management, developing capacity for improved planning and budgeting. In addition to the bank immediate team safety initiatives will be supported by international experts. The implementation support will be provided through at least two implementation support missions in a year and through continuous exchange of correspondence and regular communication.

64. **Procurement.** Implementation support will include: (a) reviewing procurement documents and providing timely no-objection; (b) providing detailed guidance on the Bank's Procurement Regulations; (c) monitoring procurement progress against the detailed Procurement Plan; (d) review of contract management activities; and (e) identifying the



capacity building/training need on procurement processing and providing training if required. The support will be provided through regular interactions, half-yearly implementation support missions, and thematic implementation support missions, if required.

65. **Financial management.** Implementation Support will review the project's financial management system, including but not limited to, accounting, financial reporting, internal controls and audit. The financial management risks and issues identified during the implementation phase will be addressed appropriately. The support will be provided through regular interactions, half-yearly implementation support missions, and thematic implementation support missions, if required.

66. **Environmental and Social Safeguards.** The Bank safeguards specialists in the team will supervise various activities to ensure full compliance with the Bank's operational policies / procedures and the agreed actions related to environment and social safeguards aspects. The implementation support will be provided through regular interactions, half-yearly implementation support missions, and thematic review missions, if required.

Implementation Support Plan:

67. Most of the Bank team members will be based in the India country office, including the Task Team Leader (TTL), technical, procurement, FM and safeguards specialists. This would facilitate timely, efficient, and effective implementation support to the client. Road Safety specialist based in the region and Road Safety Advisor from HQ will participate in regular missions and provide inputs when needed. Detailed inputs from the Bank team are outlined below:

- **Transport Sector Specialists, Procurement Specialist and Lawyer,** will provide inputs to finalize the bidding documents and facilitate smooth implementation of the civil works contracts throughout the project life. The technical specialists will also collaborate with the safety experts in providing implementation support for the road safety component.
- **Institutional Strengthening Inputs.** The transport specialists supported by institutional and technical experts will provide implementation support for Institutional strengthening of PWD component, provide assistance to GoUP in completing the procurement process, and then review along with the PIU the quality of various studies/outputs prepared by the consultants. The IT-team of the World Bank will support implementation of Project Management Information System. The specialists would also provide specific implementation support in ensuring the adoption/rolling out of various institutional study recommendations.
- **Road safety inputs.** The task team in collaboration with road safety experts would provide implementation support to the client in developing and implementing of the road safety program under the project.
- **Fiduciary Compliance and Management.** The Bank's FM and procurement specialists will help GoUP identify capacity building needs to strengthen its procurement and financial management capacity and improve procurement management efficiency including identification of red flags (for fraud and corruption). Special focus would be on supporting police and transport department due to their inexperience with the Bank policies and procedures. Both specialists will provide timely support in procurement processing and compliance with FM requirement including timely submission of audit statements and financial reports.
- **Safeguards Compliance and Management.** The Bank's social and environmental specialists will provide implementation support in review of safeguards documentation and ensuring compliance with the Bank's operational policies and procedures on social and environmental safeguards. The specialists will visit project sites during missions, take detailed notes, and when required follow up with the client to help improve safeguards implementation.



ANNEX 2: Detailed Project Description

COUNTRY: India

UP Core Road Network Development Project

1. The project comprises four components: Network Improvement component and Institutional Strengthening component, which will be implemented by PWD, and comprehensive Road Safety component, which, in addition to PWD, will be implemented by the Police and Transport Department. In addition, there will be a provision for emergency response under the fourth component.

Component 1: Network Improvement (Total Cost: US\$476 million, including IBRD US\$350.2 million)

2. The Network Improvement component will include pavement strengthening, upgrading (widening and strengthening), and maintenance of about 500 kms high priority SH corridors, part of the defined Core Road Network (CRN). The component shall include civil works, rehabilitation and resettlement (R&R); and associated consulting services and goods.

3. **Phase 1 roads**, for which procurement has been done during project preparation, comprise:

- i. Hamirpur-Rath Road (SH-42) – 75km
- ii. Garautha-Chirgaon Road (SH-42) – 50km
- iii. Gola-Shahjahanpur Road (SH-93) – 59km
- iv. Badaun-Bilsi-Bijnaur Road (Sh-51) – 79km

4. **Phase 2 investments** will be selected based on agreed criteria, including economic rate of return, complementarity with other World Bank investments (like Tourism project and/or Eastern Dedicated Freight Corridor), connectivity with growth centers and Buddhist circuit, that have been identified as a priority by the GoUP. A long list of roads has been identified and discussed, final agreement on specific sections is pending.

5. **Road Safety Enhancements.** During the preparation of the Detailed Project Report (DPR) greater emphasis was assigned on incorporating road safety features in the road designs, particularly focusing on improving the safety of vulnerable road users. The majority of Phase I roads have been surveyed by iRAP, with recommendations reflected in the DPRs. It has been agreed that: (a) all project roads would have paved shoulders throughout the entire length of the road, (b) when passing through settlements speed calming measures and other treatments would be implemented including speed tables and raised pedestrian crossings, footpaths, and central hatching, (c) gateway treatments for notifying drivers about upcoming settlements would be introduced. These measures would be evaluated through the research program envisioned under the road safety component for PWD. The review by the iRAP of the designs confirmed decreased risks for all road users resulting in improved star rating of the project roads in most sections from 1-2 to 3 stars. It is also envisioned that Road Safety Audit would be undertaken not only at design stage, but also during construction, at pre-opening and during maintenance phases.

6. **Climate resilience.** Consideration will be given to the adjustment of road design, construction, operation and maintenance procedures to reduce vulnerability and the potential impact of climate change effects. The detailed designs and technical documents, with precise information to be monitored on the mitigation measures necessary to address climate change related impacts, will be completed during project implementation. However, the range of interventions is



anticipated to be as follows:

- Throughout the state – use of asphalt grade VG 30 to withstand high temperature will be promoted.
- Mountainous areas – the focus will be on slope stabilization using both engineering and bio-engineering interventions. Attention will be given to “slope top” drainage systems to prevent water entering potential shear zones.
- Flat areas – the focus will be on identifying areas of potential flooding to provide sufficient cross drainage and road height. In identified flood prone areas, including particularly the south west region of the state, bank protection will be strengthened, and equalizer cross drainage structures will be installed.

7. The project design has already considered cross drainage measures and provided additional culverts (52 Nos.) for three roads proposed under the project. Finally, as construction uses a significant amount of the same shared scarce resource, the project design will to the extent possible, consider specifications that require the minimum amount of water. More importantly the design will look at the adjacent catchment and design outflows from the road drainage system to convey it to the lowest point, to harvest storm water for use by the community around, animals and wild life.

8. **Mitigation - Green Highways Approach.** The project will mainstream wherever feasible along the project highways, the green highways approach, which includes resource efficiency and sustainability measures from a menu of options such as pavement recycling, use of local materials, recycled aggregates, use of innovative materials, plantations along the corridor, soil and water conservation, new/alternative technologies, and energy-efficient lighting.

9. **Contracting modality.** The project will introduce Engineering, Procurement, and Contracting (EPC) contracting approach for road works, which has been successfully used in several states in India but have not been used in UP yet. In the EPC mode the design and implementation risks are transferred to the contractors, thereby minimizing the risks of cost and time overruns. It was agreed that all contracts for civil works will be done on EPC basis, except for one item-rate contract procured during project preparation and will include 5 years maintenance after the construction phase. E-procurement system will be used in bidding for works.

10. **Post-Construction Maintenance.** All civil works contracts for road improvement will include 5-year post-construction maintenance to be paid on performance basis. It has been agreed that in the case the maintenance period is not completed by the end of the project, the GoUP will bear the remaining costs of the contracts.

11. **Third-Party Quality Audit:** Independent quality audit will review quality assurance system and works to ensure that implementation is being carried out as per the contractual provisions and specifications. The audit will also include reviewing the quality of supervision services being provided by consultants/PWD.

12. **Trial of Cement Treated Base Materials.** In 2012, the Indian Roads Congress (IRC) produced a new version of Guidelines for the Design of Flexible Pavements (IRC: 37-2012) which, for the first time in India, introduced the concept of using cement treated materials in the construction of road pavements. This method of construction is not new; it has been widely used in Southern Africa since the 1960s but in India it is still regarded as experimental. The use of cement treated base offers potential cost savings compared with traditional crushed stone base, especially in regions which are short of sources of good quality aggregates. The UP has many parts where haulage distance for aggregates is in the range of 200 – 400km. As part of civil works under project a pilot will be undertaken using cement treated base. Within the cement treated base section, different types of Stress Absorbing Membrane Interfaces (SAMI) would be used; Wet Mix Macadam (WMM), bitumen and no SAMI. The pavement performance of the entire contract should then be closely monitored for the next 5 years or more and the performance of the cement treated section compared with that of the



traditional sections.

13. **Implementation of an IT-Based Project Management Information System (PMIS)** – A web based and integrated Project Management Information System (PMIS) has been developed under the project for providing relevant, timely and updated project information to all stakeholders to enable monitoring of project activities, inputs, outputs and results. The PMIS will have amongst others key modules for works management, e-procurement, grievance redressal management (with segregated data to include women), and document and workflow management. The PMIS will act as a central repository to capture, update and manage quality and progress of all project works and components and serve as a management tool to bring transparency, accountability and capacity building at PWD. A dashboard will also be developed for real time decision making and planning purpose. If this tool proves to be successful, the project will explore possibility of scaling up its use across PWD.

14. **Gender.** The project will strive to increase employment opportunities for women. At the all-India level, female labor force participation is only 27 percent in 2017. Per the 2011 census, employment opportunities seem to be much lower for women in Uttar Pradesh. The labor force participation rate for females is only 16.5 percent as compared to 46.8 percent for males. The labor force participation rate for women along the project corridor is little less than 14 percent. At the same time women's participation in the transport sector in India is significantly lower than male participation in the sector. Nationally, of the total number of people employed in the transport, storage and communications sector in India, is only 2 percent are women [1]. Concurrently, level of sexual harassment in the work place is high in Uttar Pradesh. For example, of all the complaints received by National Commission for Women (NCW), the highest share (26 percent) are from Uttar Pradesh. The fear of harassment in the workplace is a major deterrent for women from working.

15. It has been agreed to add a provision to the EPC civil works contracts, requiring contractors to hire females for at least 30 percent of routine maintenance works (each EPC contract includes a 5-year maintenance period). Through this employment opportunities, women will acquire technical and soft skills (like team work, financial management and contract management), which will add to the human capital of the employed women and will benefit them even after this project is completed. All employees associated with project contracts will receive sexual harassment training. The project will work with PWD to support effective implementation of the Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal Act, 2013 (SHWW Act 2013). GRM will provide for gender segregated data. The project will support strengthening the Internal Complaints Committee (ICC), dissemination of information regarding the ICC and standard operating procedures to register complaints and address them within the given time.

Component 2: Institutional Strengthening of PWD (Total cost US\$3.00 million, including IBRD financing of US\$2.1 million).

16. **Asset Management.** The main focus of the project in developing institutional capacity of PWD will be on strengthening asset management practices, which would lead to better planning and prioritization of investments based on scientific approach, and on improving the quality management system of PWD. The proposed activities under this component shall include operationalization of Road Asset Management System (RAMS), integrated with Geographic Information System database. The Project will support the RAM Division effort in expanding the scope of the data, improving information on traffic volumes and axle loading and extending the analytical capability of the RAMS. This will include pavement strength survey of SHs, weigh-in-motion surveys at selected locations on SHs, MDRs and ODRs to acquire unbiased samples of axle loading on different road classes, establishing permanent automatic traffic count stations at around 20 locations on the network to provide hourly, daily and seasonal variations in traffic volume and allow short

^[1] Based on ILO data, using a three-year average.



duration coverage counts elsewhere to be expanded to AADT, and engagement of a part time technical advisor to support the RAMS Cell in developing the scope of the RAMS database and analytical tools to create a state-of-the-art public information system as well as a tool to assist PWD in planning and programming road works including capacity improvements, rehabilitation and renewals. The scope will also be expanded to include a bridge management system. Once all the modules are done that allow for prioritization and planning, the PWD staff will be trained in using the RAMS for maintenance planning. The RAMs unit support the districts in development of annual plans.

17. **Vulnerability assessment.** Along with the importance, traffic volume, condition of the road section (and possible other criteria), its climate vulnerability will be one of the key criteria to be used when prioritizing investments via the proposed road asset management system and bridge management system. The project will finance an assessment of the vulnerability of the Core Road Network in UP to climate change. This assessment mainly consists of the identification and mapping of the most vulnerable road sections, allowing for the implementation of priority climate resilient measures accordingly.

18. **Quality Management (QM).** The project will support strengthening quality management and control in PWD. It will help development of a comprehensive QM policy and system and operationalization within PWD, propose recommendations for improved institutional arrangements for QM, amending PWD procedures and responsibilities for testing.

19. **Gender Assessment.** The project will support recommendations of the gender assessment (ongoing), which will identify additional gender gaps. The project will also collect gender disaggregated data through the road user satisfaction survey (RUSS) and GRM and utilize the same for assessment of gender gaps, safety and security.

20. **Capacity building of PWD staff.** The project will support a program of training and capacity building for PWD staff on, *inter alia*, contract management, social and environmental safeguards, including gender awareness and GBV, climate resilient road designs, road safety, including attending international and/ or domestic training course, workshops, international exposure visits, and knowledge exchanges.

Component 3: Road Safety (Total cost US\$90.00 million, including IBRD financing of US\$46.7 million).

21. This project will support the GoUP to further strengthen road safety leadership, policy and coordination arrangements across the state, and the application of the Safe System approach, which places the emphasis on results-focused road safety management, with agreed targets in reduction of road deaths towards Zero Vision and with public accountability of lead agency/agencies in charge of road safety management. Central focus of interventions is on best practice safety engineering and changing road users' behavior through improved police enforcement and social marketing measures on high-risk national & state highways, to achieve quick, visible and measurable reductions in traffic fatalities. The component in the project includes a systematic package of sub-components to be implemented by the departments of Home/Police, Transport and Public Works.

22. This comprehensive Road Safety component aims to achieve quick, visible and measurable reductions in deaths and injuries on targeted sections of the road network through integrated and multi-sectoral package of interventions focused on prevention of fatal crashes. Simultaneously the project will strengthen institutional management capacity across participating agencies, which will enable them to scale up and sustain successful safety programs across the remainder of the core road network. The project will support the following initiatives and activities:



Subcomponent 3A: Road Safety Initiative by Home/Police (Total cost US\$41.00 million).

23. As shown by experience of best performing countries in road safety, police has a very important role to play in reduction of fatalities and improving road safety performance through prevention based, general deterrence enforcement and education. Speed management is critical because it minimizes the risk of a crash happening in the first place and reduces crash forces when crashes do occur. It is known from studies that every percent increase in average road speed increases the chance of dying to 4 percent. Stopping and reversing it can bring large gains. Likewise, enforcing the use of seatbelts, child restraints and helmets is important, because they reduce risk severity if a crash occurs. High visibility enforcement also reduces the risk of error and crashes by discouraging people from drink-driving, drug-driving, driving when fatigued, failing to give way, etc. Having good quality data is key for development and implementation of road safety programs. This subcomponent will support the following initiatives:

24. ***Establishment of UP Highway Police (UPHP).*** This activity will introduce new for India model of enforcement on highways - high visibility, general deterrence road policing that is proactive and preventative by design. It will aim to change unsafe driver behaviors through intense and consistent enforcement of trauma-promoting offences (e.g. speeding, non-use of safety belts and motorcycle helmets, drunk driving, and driving on the wrong side into oncoming traffic) leading to significant reductions in road crash fatalities and injuries and their economic and social costs. The highly visible presence of mobile force on the pilot highways will likely improve the overall security on the highways, thus leading to better safety, especially for women.

25. Two high-risk corridors have been selected to pilot the UPHP – the entire length of NH2 through UP from the Haryana border to Bihar border, passing through several large cities in the state –Agra, Kanpur, Allahabad, and Varanasi (773km) – and a section of NH 25 between Lucknow and Kanpur (88km). These roads are under the purview of the National Highway Authority of India (NHAI) and are operated through concessions with tolling. These corridors represent just three percent of the CRN, but account for significant share of all road fatalities in the state with 998 and 344 people killed in 2017 on NH2 and NH25 respectively.

26. The project will also select an arterial road in Lucknow and Agra to develop an enforcement model for traffic police in urban environment. IT-based enforcement (speed cameras, point-to-point cameras) will also be piloted on a few selected sections of pilot corridors and expressways, where high intensity enforcement would be impractical, in that it would cause unnecessary disruption to traffic flow, or where the roading environment would be unsafe for UPHP staff to operate.

27. The UPHP will be established under the ADG Traffic Directorate as a new unit with its own command structure, and initial staffing of up to 1000 people for implementation of the pilot. UPHP staff will be sourced from within their existing numbers of the police, with these members then being back filled. This would allow for an expedited recruitment for UPHP, with currently serving members, with existing police experience and knowledge, being developed and up skilled in the general deterrence policing model. Once the DGP has authorized their deployment, all UPHP officers will be selected from existing Traffic Police or from new recruits, and as such will have received the standard traffic police training. The additional UPHP training program will include modules in ethics and values, trauma promoting road user behaviours, legislation and regulations, GoUP road safety strategy and action plan, road policing prevention strategies and operational tactics, equipment use, driver training, crash attendance and data collection, first responder trauma care, outcome and output reporting, media management, and community engagement.

28. Although facilitated and supported by the existing functions of the 100 UP Command Centre, and its media unit,



UPHP will have different reporting lines than regular police and UP 100 because this service will be heavily enforcement based and issuing fines for offending, and will have its own operational protocols, training, specialist equipment, reporting requirements and processes.

29. The UPHP operations will include patrolling highways 24 hours a day, seven days a week to ensure high visibility, general deterrence road policing presence. It is proposed that the UPHP will operate out of highway police stations established at existing toll plazas, who are currently required under their contract to supply Police with space to operate from. This would result in a mutually beneficial relationship, where UPHP staff can support toll operations staff, while having access to a safe site for some enforcement activity. It is apparent that existing police stations along the pilot corridors do not have capacity to accommodate UPHP staff. Capacity could be supplemented at toll plazas with portable office units if required. Each UPHP highway police station will be responsible for patrolling about 40 km of highway, with staff working in three shifts.

30. Once the pilot demonstrates good results and the model proves to be working well, the Traffic Directorate intends to scale it up and extend UPHP enforcement operations to additional high-risk corridors across UP. This model can then be replicated across India as well.

31. The project will finance UPHP vehicle fleet (cars and motorbikes), including maintenance and operating costs for the first four years, and patrolling and enforcement equipment (radars, laser guns, passive Breathalyzer, portable radios, first aid kits, vehicle video systems, GPS tracking systems). The UPHP will benefit from already established processes under the 100 UP for purchasing vehicles, fuel supply – via an allocated card system for each vehicle – and maintenance.

32. UPHP's communications system; event recording, dispatch and information analysis, will be facilitated by the existing 100 UP Command and Control Centre. 100 UP will set up digital boundaries for both NH2 and NH25, and any urban arterial road identified in Lucknow and Agra, and any calls for service coming into those set boundaries will automatically be assigned to the closest UPHP patrols in that area. This arrangement would need to be the subject of a project report and MoU between 100 UP and UPHP and would take approximately six months to develop. Supporting this operationally in a command role, a UPHP Command HQ could be situated in the Traffic Directorate building.

33. To protect the reputational integrity of the newly re-branded UPHP, high levels of transparency and accountability will be vital to its sustainable success. Comprehensive governance arrangements will be implemented to address issues related to staff performance and productivity, staff conduct, their interface with public as well as public perceptions and confidence. UPHP's management of vehicles will reflect the current system implemented by 100 UP; including fleet management software, random vehicle use audits, fuel card use monitoring, and GPS tracking.

34. In addition to the core task of proactively enforcing unsafe road user behaviours, the UPHP will also be the first responders to crashes, administer first aid to victims if needed, control the crash scene and collect and report accurate data. However, as is the case with 100 UP patrols, the local Superintendent of Police will retain responsibility for crash investigation and litigation, and for managing any law and order situations on highways. Any investigative role delegated to UPHP staff would negatively impact on their ability to retain high visibility patrolling, and as such, the general deterrence benefit of reducing offences. The UPHP will be unarmed and not be involved with criminal investigations. To mitigate this risk, specific provisions have been introduced in the project Legal Agreement.

35. ADG Traffic Directorate will benefit from establishing a partnership with local Ambulance Services along both pilot corridors, and communication links, to ensure that any medical related issues at crash scenes are dealt with by



appropriately trained medical staff. UPHP staff will receive basic first aid training, and carry an extensive medical kit, however they will not want to be distracted from their core role in containing crash or crime scenes, gathering best evidence to pass on to investigators from local stations, and securing accurate crash information from the event to feed into the crash analysis database, by being pressured to care and transport for injured parties

36. A unit for investigation of serious crashes will be established under the Traffic Directorate and trained, to enable to provide technical support and expertise for the investigation of significant crashes with multiple fatalities, and involving heavy commercial vehicles. The Unit will also be available to provide advisory support for other crash investigations done by local police. This unit will be separate from UPHP.

37. UPHP operating practices will be intelligence driven and deployed to risk. While they will remain focused on trauma-promoting offences throughout the year, operating practices will be influenced by seasonal factors, such as weather, primary production peaks, holiday periods and significant events. Hence flexibility in the tasking of UPHP teams toward crash and trauma prevention opportunities will be a key factor in the success of the project. Accurate, analysed and value added, crash data will be a major source of intelligence available to UPHP Command HQ to facilitate deployment.

38. The UPHP will be required to form vital partnerships with key stakeholders including (i) local Superintendents of Police for crash investigations and law and order situations; (ii) UP100; (iii) Transport Department for overloading and vehicle fitness issues; (iv) NHAI/concessionaires for infrastructure safety improvements, traffic management and incident support services; (v) emergency service operators (GVK-EMRI) and associated hospitals to provide a coordinated response to crashes; (vi) local media and civil society; and (vii) communities along NH2 and NH25 and related city areas.

39. Although the launch of the UPHP will be staggered, to accommodate resources as they come on line, with NH25 between Lucknow and Kanpur likely being deployed initially, all identified areas of the pilot corridors will be launched simultaneously. This staggered approach will ensure that the concept and related management systems are operationally tested and proven in a manageable way. for the first few months where warnings only will be issued for all but extreme offences, and professional relationships with road users and roadside communities developed.

Key issues	Measures to be taken
Staff performance and productivity	All staff activities will be supervised and assessed in terms of safety outputs delivered on a continual, day-to-day basis at the corridor, police station, staff shift, vehicle team and individual officer levels, using powerful management information system tools specifically developed for this purpose.
	Senior management shall have an oversight of the entire operation as well as of the performance and productivity of each highway police station/ team/individual through the UPHP-Command HQ.
	Comprehensive monitoring and evaluation system will be designed to monitor UPHP performance supported by MIS
Vehicle and fuel use	UPHP will benefit from the established 100 UP fleet management system, which includes an Automatic Vehicle Location System with GIS/GPS tracking, identifying each vehicle and driver. The system will be able to generate real time and historical data to monitor the uses, cross check with other performance data (e.g. issuance of infringement notices) and identify any pilferage.
	Provision of fuel will be as per the current 100 UP internal fleet manager systems; where each vehicle is assigned a dedicated fuel card, is tracked via GPS, and undergoes random audits of



	fuel use and kilometers travelled.
Staff conduct and their interface with public; public perceptions and confidence	UPHP members will be equipped with body mounted cameras to provide high levels of staff scrutiny in their interactions with public.
	Cashless transactions will be implemented for the issuing of road user infringement notices.
	Widely publicized and accessible grievance redressal mechanisms for the lodging and hearing of road user and community grievances with the UPHP will be implemented.
	UPHP website, including social media tools will be developed for the public information and interface.
	UPHP staff will be trained in the ethics and values conducive to building public respect for their authority and mission.
	High levels of community consultation and engagement will be scheduled on a regular and sustained basis.
	In the first few months only warnings will be issued for all but extreme offences, to develop professional relationships with road users and roadside communities
	UPHP vehicles and staff will be separately branded to ensure high visibility and supported by social marketing campaigns designed to seek community ownership of the UPHP focus on preventing crash fatalities and injuries.
	Staff will be wearing uniform only during their shift hours to minimize the risk of abuse of their authority in off-duty hours.

40. ***Social marketing and media campaigns to support UPHP enforcement operations in the pilot corridors.*** The objectives of these intensive social marketing and media campaigns will be to (i) help branding the new force and create a positive image; (ii) raise road safety awareness; and (iii) promote safe behaviors, targeting at-risk groups.

41. The project will fund technical assistance to develop the communications strategy and assist the specification, procurement and management of the media and marketing services, including procurement of a media and marketing company for the design, production, procurement and placement of all related media (TV, radio, newspaper, online, billboards etc), and procurement of a media research company for the comprehensive tracking of communications effectiveness.

42. Social marketing to support the UPHP will be aligned with the state-wide road safety awareness campaigns implemented by the Transport Department's Road Safety Cell, to ensure consistency in the overall communications strategy and related provision of research, production and media services. Both campaigns will aim to be competitive with other mainstream advertising, matching them in quality, intensity, creativity and duration, to ensure high target audience recall of key messages and acknowledgement of their relevance to them.

43. ***Monitoring and evaluation of UPHP road safety performance in the pilot corridors.*** This activity will implement systematic monitoring and evaluation procedures to track and assess safety performance on NH2 and NH25. Monitoring and Evaluation Framework for the pilot will comprise a mix of safety risk exposure, safety outcomes, safety performance indicators, safety outputs, and safety engagement measures, which will be systematically collected and evaluated on a periodic basis.

Category	UPHP performance measures	Frequency
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Exposure to safety risk	Traffic volumes and vehicle mix	6 monthly
Safety outcomes	Fatalities	Continuous
	Injuries	Continuous
Safety performance indicators	Vehicle speeds	6 monthly
	Safety belt wearing	6 monthly
	Motorcycle helmet wearing	6 monthly
	Driver alcohol levels	Annually
	Community perception surveys	Annually
	Target audience responses to media campaigns (recall, message takeout, relevance)	6 monthly
Safety outputs	Hours of road policing operations	Continuous
	Number of crash attendances	Continuous
	Number and types of infringement notices (challans)	Continuous
	Media campaign weights (frequency & reach)	Continuous
Safety engagements	Partnership consultations	Continuous
	Community meetings	Continuous
	School visits	Continuous
	Selected crash victim welfare follow-ups	6 monthly

44. The project will fund consulting services to prepare and track baseline estimates, plus the periodic data collection for monitoring and evaluation framework. Some of the data will be directly produced and appraised by the MIS.

45. **Development and state-wide implementation of crash database and analysis system.** This activity will support the development and state-wide implementation of a web-enabled crash database and analysis system (UPCDAS) that will meet the specific requirements of all road safety partners and stakeholders in Uttar Pradesh, including Police, Transport, Health and the PWD. The server for this system can be housed in the 100 UP building. The project will also fund palm-top crash recording devices providing GPS locations for crash events and ease of entry for all crash data requirements

46. UPCDAS will provide linkages to the national Crime and Criminal Tracking Network & System (CCTNS), national driver license and vehicle registration systems (Vahan and Sarathi), and will be connected with all police stations state-wide, starting with those in the pilot UPHP corridors and city areas. Potential linkages will also be explored with health sector data systems (particularly the GVK-EMRI emergency calling system and Trauma Registries at the hospitals) to provide a more comprehensive picture of crash injuries and emergency service effectiveness. The UPCDAS shall be able to seamlessly provide key information/data for national level accident reports that are being generated manually today.

47. A working group consisting of representatives of key state departments will guide and oversee the development as well as implementation of the UPCDAS. An Accident Data Research and Analysis Unit will be created at the Traffic Directorate, which will be responsible for development and maintenance of the database, quality assurance of the data entries, data analysis and preparation of regular reporting on the state performance in reduction of road related fatalities and serious injuries. Consultations shall be carried out to develop and reach consensus on a common data set, crash record form, and minimum system requirements, that would be used not only by the UPCDAS but also any other state/MoRTH



wishing to implement such a system at state/national level.

48. Development of the system will underpin the design and performance tracking of ongoing GoUP programs and policies designed to achieve longer-term safety goals and performance targets. It will draw on the experience and lessons being learned with other World Bank financed initiatives, including the Road Accident Data Management System in Tamil Nadu (developed in 2008-2010) and the customized, off-the-shelf system currently under implementation in Himachal Pradesh (2014-2015).

49. Training program will be developed for all police staff on collection of crash data and its record. Train of Trainers at Police training centres will build capacity and inclusion of the program in regular curriculum for new recruits will ensure sustainability. In addition, separate training for all SPs and DSPs will be conducted to raise awareness of the importance of crash data collection. Also, various users of the data from police, transport and PWD will be trained in data analysis and reporting.

50. **Capacity building of UPHP staff.** The project will support a program of training and capacity building for UPHP staff on road safety policing, crash investigations, data collection and analysis, community engagement, use of safety equipment, including attending international and/ or domestic training course, workshops, international exposure visits, and knowledge exchanges.

51. It has been agreed that the costs for establishment of the UPHP and implementation of the pilot on selected corridors, as well as media campaigns and social marketing will be fully funded by the Government of UP, including procurement of vehicles, fuel and maintenance, establishment of the command center and communications system, enforcement equipment, production of media and advertising materials and cost of broadcasting. Bank funding will be used for capacity building, advisory support and training of the UPHP, monitoring and evaluation, IT-based enforcement pilots and crash database development. The Project Implementation Plan (PIP) will be prepared by the Police and agreed with the Bank (a covenant in the loan agreement, which will stipulate the timeline of procurement, review requirements and implementation of various activities under the subcomponent, both GoUP and Bank financed. The Bank team will work closely with the Traffic Police, review and monitor implementation of all the above activities, and ensure that the activities are implemented in line with the schedule and timelines mentioned in the PIP.

Subcomponent 3B: Road Safety Initiative by Transport Department (Total cost US\$14.00 million).

52. This subcomponent will strengthen capacity of the Transport Department as the nodal agency for road safety in the state, and support building capacity in road safety management, planning, monitoring and evaluation of road safety programs and specific activities to improve vehicle safety and safe driving, especially commercial transport. It will fund the following activities:

53. **Road Safety Cell Strengthening.** The project will finance strategic management support and capacity building of the Road Safety Cell, including advisory and expert support, support for development of road safety strategy and action plans, monitoring and evaluation, data analysis and reporting.

54. **Media Campaigns.** State-wide media campaigns will be implemented in support of the State Road Safety Policy.

55. **Commercial Driver training.** The project will focus on strengthening commercial driver training and certification, including support for strengthening of the Driver Training Institute (DTI), training of UPSRTC drivers in road safety and



emergency responses, development of a training program and providing training for commercial drivers, and development of a health check-up system for commercial drivers.

56. **Vehicle Inspections.** Vehicle safety is a critical element of the safe system approach. The project will support development of optimal designs for vehicle testing stations and finance establishment of up to five vehicle testing stations. The project will also include study to explore potential for private sector engagement in vehicle inspections and testing.

57. **Capacity building of Transport Department staff.** The project will support a program of training and capacity building for department staff on road safety management, data analysis, preparing and monitoring implementation of road safety strategy and action plans, including attending international and/ or domestic training courses, workshops, international exposure visits, and knowledge exchanges.

58. It has been agreed that the costs related to support of the driver training institutes and training of commercial drivers, as well as state-wide media campaigns will be fully funded by the GoUP, including procurement experts to support these activities, production of media and advertising materials and cost of broadcasting. Bank funding will be used for capacity building, advisory support and training, and for designing and establishing vehicle testing stations and related technical assistance. The Project Implementation Plan (PIP) will be prepared by the Transport Department and agreed with the Bank (a covenant in the loan agreement), which will stipulate the timeline of procurement, review requirements and implementation of various activities under the subcomponent, both GoUP and Bank financed. The Bank team will work closely with the Road Safety Cell/Transport Department, review and monitor implementation of all the above activities, and ensure that the activities are implemented in line with the schedule and timelines mentioned in the PIP.

Subcomponent 3C: Road Safety Initiative by PWD (Total cost US\$35.00 million).

59. This subcomponent will improve safety of state highway network through implementation of targeted safety engineering improvement programs on the Core Road Network and build capacity in PWD in road safety, and will support:

60. **Road infrastructure safety improvement programs** - design, implementation and evaluation of state-wide programs of low-cost safety engineering measures on Core Road Network focusing on speed management, sharp curves, village and school zones treatments, selected junctions, high-risk highway corridors, and selected urban arterial roads. This will include Research and evaluation of effectiveness of safety engineering improvements.

61. **Capacity building and expert support to the Road Safety Division of PWD**, including attending international and/ or domestic training courses, workshops, international exposure visits, and knowledge exchanges. Safety engineering training programs for PWD staff, and support for mainstreaming road safety into design, operation and maintenance practices of PWD

Component 4: Contingent Emergency Response Component (CERC) (Total cost US\$0.00 million).

62. Uttar Pradesh has been plagued by various natural disasters such as floods, drought, fire, epidemics, earthquake, causing severe damage to life and property and thus adversely affecting normal life. Out of 71 districts, 30 are highly prone to floods while drought is a regular phenomenon in Vidhyachal and Bundelkhand region. Similar is the case with epidemics. This component would ensure that once a disaster is triggered, funds can be quickly allocated to this component as per exceptions set out in the World Banks policies.



ANNEX 3: Risks and Risk Mitigation

COUNTRY: India

UP Core Road Network Development Project

1. **Overall Risk Rating Explanation:** The overall risk to achieving the PDO has been rated as “Substantial”. The risks related to technical design of project or program, institutional capacity for implementation and sustainability, fiduciary, environmental and social, and stakeholders are rated as “Substantial”. Other risks comprising frequent changes to senior key project staff, integrity, and governance and accountability of UP Highway Police are rated as “High”. The principal risks and mitigation measures are discussed below.
2. **Technical Design of Project:** During the preparation of the Detailed Project Reports (DPR) greater emphasis was assigned on incorporating road safety features in the road designs, particularly focusing on improving the safety of vulnerable road users. The majority of Phase I roads have been surveyed by iRAP, with recommendations reflected in the DPRs; comprising provision of paved shoulders; speed calming measures and gateway treatments in alignment passing through settlements and near schools, hospitals, religious places. Implementation of these measures would be evaluated through the research program envisioned under the road safety component for PWD. Further, a Road Safety Audit will be undertaken at design, construction, pre-opening and during maintenance phases. The Phase 2 roads are yet to be identified and team will ensure that similar due diligence, as Phase 1 roads, is undertaken to ensure road safety. Also, Phase 2 investments will be selected based on complementarity with other World Bank investments (like Tourism project and/or Eastern Dedicated Freight Corridor), connectivity with growth centers and Buddhist circuit, that have been identified as a priority by the GoUP.
3. **Institutional Capacity for implementation and sustainability:** PWD has the experience of implementing the previous Bank financed Uttar Pradesh State Roads Project (UPSRP), it will be the first experience for Police and Transport. Furthermore, the multiplicity of implementing agencies; institutional capacity enhancements of these agencies and; mainstreaming innovative practices across these agencies may face opposition from vested interests or general resistance to change. This risk shall be mitigated through the high-level project governing structure established under the project, like the Project Governing Board (PGB) to be headed by the Chief Secretary, for monitoring the progress of the project activities and push for the reforms and practices across these organizations. Further, PIU has been established in PWD and revalidation of PIU (established in 2005) in Traffic Directorate is in process (included covenant to complete by loan signing), while the Road Safety Cell under the Transport Commissioner will undertake the implementation of Road Safety component under the Transport Department (appropriate staffing in Road Safety Cell is included as covenant, to completed by loan signing). The Road Safety Cell needs to be substantially strengthened, both with respect to deputation of staffs and technical capacity, and the project has therefore included a component on strengthening the Road Safety Cell. The Bank task team shall also endeavour to enhance supervision and advocacy with various stakeholders. The project will support hiring individual experts to work within the PIUs and enhance the implementation capacity of the executing agencies. The project design also includes adequate provision for training and capacity building of project staff. Some of the project activities under Traffic Police and Transport Department shall be fully financed through the state budgetary sources. Unless all the project activities are conceived and implemented in coordinated manner, the final objective cannot be achieved. Both, Traffic Police and Transport Department would need considerable hand holding for developing and implementing the project activities. To mitigate the risk related to delay in implementation of different subcomponents, the project envisages establishing a Project Implementation Plan (PIP) by Traffic Police and Transport Department that stipulate the timeline of procurement, review requirements and implementation of various activities under the subcomponents, both GoUP and Bank financed. The PIP will be agreed with the Bank (a covenant in the loan agreement)



and could be modified based on project need during implementation. Further, the Bank team will work closely with the Traffic Police and Road Safety Cell/Transport Department, review and monitor implementation of all the above activities, and ensure that the activities are implemented in line with the schedule and timelines mentioned in the PIP.

4. **Environment and Social:** There is a likelihood of potential adverse impacts due to construction and operation, land acquisition, displacement of people, loss of vegetation; impacts on air, noise, general flora and fauna; and displacement of cultural and community resources. These risks are being mitigated through developing and implementing robust Environmental Management Plans (EMP) and Resettlement Action Plans (RAP). At the peak of construction, large number of laborers will be working on the sites and this could be a potential risk for the host population. Labor management plan has been prepared as part of ESMF. Contracts will include provision for the contractor to prepare Labor Influx and Worker's Camp Management Plan that addresses specific activities that will be undertaken to minimize the impact on local communities, including workers code of conduct, training programs on HIV/AIDS, etc.

5. With regards to Gender and GBV, separate consultations were carried out with both men and women to identify their concerns about the impacts of the project and a gender action plan has been prepared as part of RAP. Separate budget has been earmarked for capacity building and gender assessment and UP PWD has hired the services of a consulting firm to conduct corridor specific gender assessment covering urban areas. The state has also extensively advertised the women helpline "1091". The social development officer of ESDRC and NGO hired for implementation of RAP along with the supervision consultant will be responsible for monitoring the cases of GBV in project area.

6. **Fiduciary:** The fiduciary capacity of PWD in managing procurement and financial management is adequate. However, it needs guidance on new contracting techniques envisaged under the Project. The Police and Transport departments have not implemented a Bank project and will require extensive support on Bank's processes and procedures. The risk will be mitigated through provision of extensive training on procurement and financial management and through engagement of consulting firms and individuals for fiduciary support functions. The Bank task team will also work closely with the implementing agencies in providing the required support and guidance.

7. **Stakeholders:** Effective engagement for successful implementation of Road Safety components with all the stakeholders will be essential for the success of the proposed project. Specific components to be delivered under the project are identified for the Traffic Police, Transport and PWD, however the real outcome can be achieved only if the three agencies work in synergy towards achievement of the common goal. The state has already put in place the requisite mechanism towards addressing road safety issues, however, coordination amongst agencies needs strengthening. The state has adopted a Road Safety Policy in July 2014 to systematically address the eleven key themes: (i) awareness about road safety; (ii) strengthening institutional arrangements; (iii) establishing road safety information database; (iv) ensuring safe road infrastructure; (v) safer vehicles; (vi) safer drivers; (vii) safety for vulnerable road users; (viii) road safety education and training; (ix) enforcement of traffic laws; (x) emergency medical assistance to road accident victims; and (xi) research for road safety. Further, the UP Road Safety Council (UPRSC) has been strengthened and reconstituted under the chairmanship of the UP Chief Minister, with Ministers of participating departments as members, and the Principal Secretary Transport as Member Secretary. A High-Level Road Safety Committee (HLRSC), chaired by the Chief Secretary, and comprising Principal Secretaries of the participating departments, and the Principal Secretary Transport as its Member Secretary, has been formed to implement UPRSC decisions, manage the State Road Safety Fund, and monitor relevant decisions. A Road Safety Cell within the Transport Commissioner's office has been established to act as the Secretariat of the UPRSC and the coordinating agency for all multi-sectoral road safety activities. During the project implementation, the bank team will also bring in local and global expertise to work closely with the stakeholders and ensure that the project components are effectively delivered.



8. **Others:** Frequent change in Key Government Staff, Integrity Risk and Governance and Accountability of UP Highway Police have been identified as “High” risks for the project. Frequent changes in senior officials, particularly in Police is a High risk for the project. This risk will be mitigated through by introducing a covenant in the project legal agreement for the Government to ensure minimum tenure of two years for senior project staff.

9. **Others: Integrity risk:** The previous round of procurement exercise for Phase 1 roads had to be cancelled as certain risks were observed, i.e. less competition, participation of few local tenders though there is no dearth of bidders for the package size, non-submission of bid security after online bid submission, prices quoted by the lowest bidder was higher than the estimated cost, change in key project staff etc. which were perceived red flags on bid collusion. The task team had then reported the matter to the Integrity Vice Presidency (INT). Thereafter, the Bank proposed additional risk mitigation measures to be implemented by the PWD, i.e. having an Independent Procurement Observer (IPO) on board to be involved at all stages of the procurement process; having a system for submission of bid security along with the bid; holding a contractor’s workshop to inform the prospective bidders about the changes in the Bid document and to build trust of the private sector; to go for slice and package method by combining all three packages; relaxing the post qualification criteria to increase competition; to advertise in one more national daily in addition to what was done in first round of bidding including UNDB publication; and updating the estimated cost. These risk mitigation measures have been implemented by the PWD before proceeding for rebidding of the remaining three phase-I roads. Further, risk mitigation on project monitoring will be ensured by adopting a web based integrated Project Management Information System (PMIS) that is being developed under the project to enable monitoring of project activities, inputs, outputs and results. The PMIS will act as a central repository to capture, update and manage physical, financial and temporal progress of all project works and components and serve as a management tool to bring transparency, accountability and capacity building at all levels of PWD. In addition, third-Party Performance Monitoring and Auditing will be undertaken by hiring independent multidisciplinary performance auditors to assess project quality and progress. The audit will cover technical aspects, fiduciary and safeguards compliance and quality of outputs.

10. **Others: Governance and Accountability of UP Highway Police:** Enforcement by police would involve transactions for levying fines on offenders, which is vulnerable to fraud and corrupt practices, and is perceived as High risk for the project. The misuse of vehicles being purchased for enforcement including fuel cost is also a risk. Comprehensive governance requirements addressing issues of staff productivity, vehicle use, public perceptions and confidence will be implemented to ensure high levels of operational transparency and accountability. These risks shall be mitigated through various measures including IT based contract management, continual recording and supervision of staff activities using powerful management information system tools, community grievance mechanisms, cashless infringement transactions, staff training in ethics and values etc. The UPHP will be unarmed and not be involved with criminal investigations. To mitigate this risk, specific provisions have been introduced in the project Legal Agreement. The UPHP envisages deploying around 1000 personnel across the two pilot corridors selected under the project and an appropriate institutional structure and system will be evolved and recommended through TA/ studies under the project. A PIU with nearly 60 staffs that was created in 2015 needs to be revalidated (included covenant) and will be functional right from the project take-off. It is envisaged that through the development of a module-based training package; a ‘train the trainer’ course, for longevity; and mentoring for senior UPHP staff and patrol staff shall be undertaken. With regard to effective utilization of vehicles and fuel, the tested controls established under UP100, which is card-based, with each vehicle’s fuel and maintenance records being linked back to an assigned card and subject to regular audits will be adopted. International experts would support the professional staff mentoring.