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PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED CREDIT

IN THE AMOUNT OF SDR 105.6 MILLION (US\$160 MILLION EQUIVALENT)

TO

THE REPUBLIC OF INDIA

FOR A

RAJASTHAN ROAD SECTOR MODERNIZATION PROJECT

October 1, 2013

Sustainable Development Department  
India Country Management Unit  
South Asia Region

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**CURRENCY EQUIVALENTS**  
 (Exchange Rate Effective July 31, 2013)

Currency Unit = Indian Rupees

US\$1.0 = INR 60.79

**FISCAL YEAR**  
 April 1 – March 31

**ABBREVIATIONS AND ACRONYMS**

ADB	Asian Development Bank	iRAP	International Road Assessment Program
BoQ	Bill of Quantities	LA	Land Acquisition
BOT	Build-Operate-Transfer	M&E	Monitoring and Evaluation
CAG	Comptroller and Auditor General	MoEF	Ministry of Environment and Forests
CAM	Civil Accounts Manual	MoF	Ministry of Finance
CCA	Chief Controller of Accounts	MORTH	Ministry of Road Transport and Highways
CE	Chief Engineer	NGO	Non-Government Organization
CGA	Controller General of Accounts	NHDP	National Highways Development Project
CMU	Country Management Unit	NHIIP	National Highways Interconnectivity Improvement Project
CPS	Country Partnership Strategy	ORAF	Operational Risk Assessment Framework
CRF	Central Road Fund	PAC	Public Accounts Committee
CSC	Construction Supervision Consultants	PAP	Project Affected Person
CVC	Central Vigilance Commission	PCC	Project Coordination Consultant
DBFOM	Design-Build-Finance-Operate-Maintain	PCM	Procurement and Contract Management Manual
DEA	Department of Economic Affairs	PCU	Project Coordination Unit
DPR	Detailed Project Report	PDO	Project Development Objective
EIA	Environmental Impact Assessment	PIC	Project Implementation Cell
EMF	Environmental Policy Framework	PMC	Project Management Consultant
EMP	Environment Management Plan	PMGSY	Pradhan Mantri Gram Sadak Yojana
EPC	Engineering, Procurement, Construction	PPP	Public Private Partnership
EPC	Engineering, Procurement and Contracting	PST	Project Site Team
ERP	Enterprise Resource Program	PWD	Public Works Department
FM	Financial Management	R&R	Resettlement and Rehabilitation
FMM	Financial Management Manual	RAP	Resettlement Action Plan
FY	Financial Year	RBI	Reserve Bank of India
FY	Fiscal Year	RO	Regional Office
GAAP	Governance and Accountability Action Plan	RoW	Right of Way
GDP	Gross Domestic Product	RPAO	Regional Pay and Account Office
GOI	Government of India	RPF	Resettlement Policy Framework
IAHE	Indian Academy of Highway Engineers	SBD	Standard Bidding Documents
ICB	International Competitive Bidding		
IE	Independent Engineer	SCHM	Suggestion and Complaint Handling Mechanism
INT	Integrity Department of the World Bank	SE	Superintending Engineer

IRC	Indian Road Congress	SIA	Social Impact Assessment
IUFR	Interim Unaudited Financial Report	SOC	State Oversight Committee
		SPV	Special Purpose Vehicle
		TDP	Tribal Development Plan
		WB	World Bank

Vice President:	Philippe H. Le Houerou
Country Director:	Onno Ruh1
Sector Director:	John H. Stein
Sector Manager:	Karla Gonzalez Carvajal
Task Team Leader:	Mesfin Wodajo Jijo



**India: Rajasthan Road Sector Modernization Project (P130164)**  
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**PAD DATA SHEET**  
*India*  
*Rajasthan Road Sector Modernization Project (P130164)*

**PROJECT APPRAISAL DOCUMENT**

*SOUTH ASIA*

*SASDT*

<b>Basic Information</b>									
Date:	01-May-2013	Sectors:	Rural and Inter-Urban Roads and Highways (100%)						
Country Director:	Onno Ruhl	Themes:	Infrastructure services for private sector development (67%) Public expenditure, financial management and procurement (33%)						
Sector Manager/Director:	Karla Gonzalez Carvajal/John Henry Stein	EA Category:	"B - Partial Assessment"						
Project ID:	P130164								
Lending Instrument:	Specific Investment Loan								
Team Leader(s):	Mesfin Wodajo Jijo								
Joint IFC: No									
Borrower: India									
Responsible Agency: Public Works Department, Government of Rajasthan									
Contact:	Mr. A.K. Sanghi	Title:	Nodal Officer & Chief Engineer (PMGSY), PWD Rajasthan						
Telephone No.:	+91-141-5110510/5110543	Email:	<a href="mailto:rsmpwb@rediffmail.com">rsmpwb@rediffmail.com</a>						
Project Implementation Period:	Start Date: October 29, 2013	End Date:	June 30,2018						
Expected Effectiveness Date:	January 31, 2014								
Expected Closing Date:	December 31, 2018								
<b>Project Financing Data(US\$M)</b>									
<input type="checkbox"/> Loan	<input type="checkbox"/> Grant	<input type="checkbox"/> Other							
<input checked="" type="checkbox"/> Credit	<input type="checkbox"/> Guarantee								
<b>For Credits</b>									
Total Project Cost (US\$M):	227								
Total Bank Financing (US\$M):	160								
Proposed Terms:									
<b>Financing Source</b>		<b>Amount(US\$M)</b>							
Borrower			67.00						
International Development Association			160.00						
Total			227.00						
<b>Expected Disbursements (in USD Million)</b>									
Fiscal Year	2014	2015	2016	2017	2018	2019			
Annual	25	60	35	20	15	5			
Cumulative	25	85	120	140	155	160			

<b>Project Development Objective(s)</b>			
The project development objective is to improve rural connectivity, enhance road safety and strengthen road sector management capacity of the state of Rajasthan.			
<b>Components</b>			
<b>Component Name</b>			<b>Cost (USD Millions)</b>
• Component A - Rural Connectivity Improvement			138.00
• Component B - Road Sector Modernization and Performance Enhancement			7.75
• Component C - Road Safety Management			10.55
Re-financing Preparation Advance			3.00
Incremental Operating Cost			0.70
Total Bank financing			160.00
<b>Compliance</b>			
<b>Policy</b>			
Does the project depart from the CAS in content or in other significant respects?			Yes [ ] No [ X ]
Does the project require any waivers of Bank policies?			Yes [ ] No [ X ]
Have these been approved by Bank management?			Yes [ ] No [ ]
Is approval for any policy waiver sought from the Board?			Yes [ ] No [ X ]
Does the project meet the Regional criteria for readiness for implementation?			Yes [ X ] No [ ]
<b>Safeguard Policies Triggered by the Project</b>			<b>Yes</b>
Environmental Assessment OP/BP 4.01			X
Natural Habitats OP/BP 4.04			X
Forests OP/BP 4.36			X
Pest Management OP 4.09			X
Physical Cultural Resources OP/BP 4.11			X
Indigenous Peoples OP/BP 4.10			X
Involuntary Resettlement OP/BP 4.12			X
Safety of Dams OP/BP 4.37			X
Projects on International Waterways OP/BP 7.50			X
Projects in Disputed Areas OP/BP 7.60			X
<b>Legal Covenants</b>			
Project Management Unit (PMU) & Environmental and Social Management Cell (ESMC)		Yes	N/A
<b>Description of Covenant</b>			
Rajasthan to maintain a PMU within the PWD, and an ESMC;			
<b>Legal Covenants</b>			
<b>Name</b>	<b>Recurrent</b>	<b>Due Date</b>	<b>Frequency</b>
Project Implementation Unit (PIU)	Yes	Before any civil works commences	N/A
<b>Description of Covenant</b>			

Rajasthan to establish and maintain a District-specific PIU to assist the PMU with the carrying out of the day-to-day implementation of Project Activities in the respective District.

**Legal Covenants**

Name	Recurrent	Due Date	Frequency
Road Sector Modernization Task Force	Yes	N/A	N/A

**Description of Covenant**

Rajasthan to maintain a Road Sector Modernization Task for the implementation of Component B of the Project.

**Legal Covenants**

Name	Recurrent	Due Date	Frequency
Project Working Group	Yes	One month after the effective date	N/A

**Description of Covenant**

Rajasthan to establish and maintain a Project Working Group to provide technical support to the road safety cell (Component C) of the Transport Department and coordinate inter-agency cooperation

**Legal Covenants**

Name	Recurrent	Due Date	Frequency
Road Safety Cell	Yes	N/A	N/A

**Description of Covenant**

Rajasthan to maintain a Project Road Safety Cell within the PWD, headed by the Chief Engineer (PWD), to implement various road safety activities.

**Legal Covenants**

Name	Recurrent	Due Date	Frequency
Project Management Coordination	Yes	Two months after effective date	N/A

**Description of Covenant**

Rajasthan to establish and maintain a project management consulting firm (“PMC”) to assist the PWD with Project planning and implementation

**Legal Covenants**

Name	Recurrent	Due Date	Frequency
Project Documents	Yes	N/A	N/A

**Description of Covenant**

Rajasthan to implement the project in accordance with the FM Manual, the Procurement Manual, the GAAP and the Safeguard Documents;

**Legal Covenants**

Name	Recurrent	Due Date	Frequency
Safeguard Reporting/disclosure	Yes	N/A	Quarterly

**Description of Covenant**

Rajasthan to compile and furnish to the Association after the end of each calendar semester all the social and environmental documentation prepared by during that semester and publicly disclose the summary of these Safeguard Documents at least 30 days prior to respective bidding invitation

**Legal Covenants**

Name	Recurrent	Due Date	Frequency
Bidding restriction/Safeguard Compliance	Yes	N/A	N/A

**Description of Covenant**

Rajasthan to include in all civil works contracts the obligation of the relevant contractor to comply with the relevant Safeguard

Documents applicable to such civil works																																																								
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Rajasthan to maintain a management information system within the PWD; which system shall be computerized by no later than eighteen (18) months after the Effective Date, in a manner an substance acceptable to the Association.																																																								
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Venkata Rao Bayana	Consultant, Social Development		New Delhi		
Muthuthevar Boominathan	Consultant, Economist		Chennai		
Rashi Grover	Consultant, Monitoring Specialist		New Delhi		
<b>Locations</b>					
Country	First Administrative Division	Location	Planned	Actual	Comments
Republic of India	Rajasthan	State of Rajasthan		X	



## **India: Rajasthan Road Sector Modernization Project (P130164)**

### **I. Strategic Context**

#### **A. Country/State Context**

1. Rajasthan is one of the largest states of India covering nearly 10% of total area of the country and having nearly 5% of the total population of India. It is one of the low income states of India. Its per capita income (USD 943) is about 20 percent lower than the national average (USD 1185)<sup>1</sup>. About 75% of the state's population is rural and mainly depends on agriculture for its livelihood. The state has good potential for growth in agriculture<sup>2</sup> and agro-based industries, mining and minerals processing<sup>3</sup>, tourism, handicrafts and cottage industries, but this potential is underutilized due to inadequate road infrastructure and market linkages.
2. In recent years, the Government of Rajasthan (GOR) has taken several reform initiatives including adopting an Industrial and Investment Promotion Policy 2010 which focuses on exploiting the above growth potential and attracting mega investments. The Policy recognizes the need for high quality road infrastructure and better rural connectivity in order to achieve its objectives. Under the Eleventh Five Year Plan period too, a number of innovative policy measures were taken to accelerate economic growth and facilitate sustainable socio-economic development. Some of the achievements under the Plan included widening of state highways on BOT/annuity basis, works on a 16 Mega-Highway project for upgrading secondary corridors, and increase in village connectivity to 81%. Further, about 46% of the influence area of the Delhi Mumbai Industrial Corridor (DMIC) falls in Rajasthan<sup>4</sup>. DMIC will offer unique development opportunities to the state, provided an adequate road network within its area of influence exists. In the area of governance, the state has enacted a "Rajasthan Guaranteed Delivery of Public Services Act 2011" to ensure time bound rendering of 108 services in 15 departments and launched an online citizen's grievance handling mechanism (Sugam – <http://sugamrpg.raj.nic.in>).
3. The Twelfth Five Year Plan proposes to carry forward the achievements of the Eleventh Plan, taking up further works for widening of state highways, proposing completion of the 16 Mega-Highway projects, and targeting connectivity of all revenue villages with population 250 and above. The approach under this Plan emphasizes development of good road infrastructure in the state, specifically focusing on: (i) connecting all villages with population 250 and above; (ii) strengthening and renovation of all highways and district roads to all-weather roads; and (iii) building missing links to connect villages<sup>5</sup>. Accordingly, the target for economic growth as per the Twelfth Five Year Plan has been revised to 7.7% (compared to 6.54% in the Eleventh Five Year Plan), of which growth in agriculture is targeted at 3.5%, and that in industry and services is targeted at 8% and 9.5% respectively. One of the means through which this is hoped to be achieved is through creation of sustainable infrastructure including roads.

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<sup>1</sup> Rajasthan is also lagging in many key socio-economic indicators and stood at 17<sup>th</sup> place out of 29 states of the country in terms of the Human Development Index

<sup>2</sup> The state accounts for 10% of the milk, 35% of the wool and 10% of the meat produced in the country; it is the largest producer of wool and the 2<sup>nd</sup> largest producer of milk in the country

<sup>3</sup> Rajasthan has about 65 varieties of minerals and accounts for more than 70% of India's total mineral production

<sup>4</sup> The DMIC is being managed by DMIC Development Corporation (DMICDC)

<sup>5</sup> The proposed outlay for the transport sector under the Twelfth Five Year Plan is Rs. 105,182 million, a substantial increase (of ~125%) compared to its outlay under the Eleventh Five Year Plan of Rs. 40,330 million

## B. Sectoral and Institutional Context

4. **Road network development and maintenance backlog:** Rajasthan has a state road network of 193,017 km<sup>6</sup>, including 7,260 km of National Highways (NH), 10,953 km of State Highways (SH), 9,900 km of Major District Roads (MDR), 25,033 km of Other District Roads (ODR) and 139,871 km of Village/Rural Roads. Road density in Rajasthan is only about 60 km per 100 sq. km, compared to the national average of 110. Per capita development cost in the state is very high due to the widely dispersed population. The estimated cost of periodic maintenance and ordinary repairs needed to keep this extensive network in good operating condition is approximately INR 21.2 billion (USD 348 million) in 2012/13 alone. Against this requirement of maintenance the provision for maintenance through FC and Non-plan budget works out to INR 6.08 billion (USD 100 million). Further capital investment requirements estimated for structural rehabilitation and other capacity augmentations is to the tune of INR 21.1 billion (USD 352 million). In comparison the State Plan provision was INR 16.9 billion (USD 278 million).

5. **Rural road network – connectivity/access deficit:** In recent years Rajasthan has made remarkable progress with developing its rural roads under the flagship program of the Government of India Prime Minister Gram Sadak Yojana (PMGSY) providing road connectivity to about 81% of its habitations<sup>7</sup> above 500 people and to habitations above 250 people in desert and tribal areas of the state. Overall, about 98% of PWD's existing village road network now has bitumen surfacing compared with 76% in 2003. However, about 7,357 villages with population<sup>8</sup> below 500 in the remaining areas of the state are not covered<sup>9</sup> under PMGSY. Providing all-weather road access to these villages has been stated as a priority of GOR in the state's Twelfth Five Year Plan. The local governments are already undertaking some earthwork and gravelling works on the tracks serving these habitations under MGNREGA<sup>10</sup>.

6. **Primary and secondary road network – network capacity deficiencies.** Due to years of under-investment and inadequate maintenance, many of the State Highways and MDRs are in poor condition in terms of riding quality, geometry, pavement strength, drainage, and safety standards, and disjointed due to missing links and dilapidated bridges. Only about 11 percent of SHs and MDRs are double lane. To fully realize the benefits of investments in PMGSY, to provide effective linkages from rural areas to markets and to support growing economic potential of the state, significant improvements in the highway network are required. There has been some investment in widening state highways and district roads to accommodate greater volumes of traffic, but much more is required to develop the state highway network. The state has identified about 7000 Km of core network out of about 34,000 Km SH/MDR/ODR, and proposed highly trafficked corridors for upgrading under the BOT/PPP schemes. The GOR/PWD now proposes to carry out a network analysis and prioritization of the critical SH and MDR totaling to about 13,000 km and identify priority corridors for feasibility study and DPR preparation.

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<sup>6</sup> Excluding National Highways 6,576 km and 61,000 km other roads in border areas

<sup>7</sup> While at the beginning of the Eleventh Five Year Plan about 26,581 villages were connected by road, by the end a total of 32,277 villages had been connected. About 4,588 of these additional villages were connected under PMGSY

<sup>8</sup> In terms of habitations the number is 72,624. Several habitations make a village.

<sup>9</sup> The project will improve connectivity to about 1,300 of these villages.

<sup>10</sup> Mahatama Gandhi National Rural Employment Guarantee Act – a flagship centrally funded program ensuring 100 days of employment/yr to each household

7. ***Growth in traffic and deteriorating road safety.*** The number of vehicles registered in the State of Rajasthan has increased dramatically over the past decade. Statistics from the State Transport Department show that the state has approximately 5.8 million more vehicles registered in 2012 than in 2002. Two wheelers account for much of this growth (4.4 million more than in 2002). However, the number of cars on Rajasthan's roads has increased at a faster rate with 14% compounded average year on year growth for the last ten years. The road safety situation in Rajasthan is serious and deteriorating. Severity Index<sup>11</sup> of Rajasthan roads is about 40 compared to a national average of 29 and it ranks fifth in the total number of fatalities in 2011 contributing 6.5% of all fatalities in India.

8. ***Road Sector Management – agencies, their scope and management capacity:*** The Public Works Department (PWD), Rajasthan is responsible for managing the majority of the state road network. The network managed by PWD includes 133,435 km NH/SH/MDR/ODR/VR which is 65% more than it managed in 2003. The length of village roads under PWD's mandate increased by 97% between 2003 and 2013 and the PWD's rural road network now totals 95,085 km. This is a substantial asset that requires a sound institutional structure to manage and sustain it to provide satisfactory service to the road users and other end-beneficiaries. Other public sector institutions have also transferred 21,350 km (net) of already-constructed rural roads to PWD for maintenance over the last decade. The PWD manages the NHs under MoRTH on an agency basis. Of the total annual expenditure of Rs 30.3 billion for the previous FY, Rs 12.72 billion was spent on state roads (SH, MDR and ODR) while Rs 15.28 billion was spent on village/rural roads.

9. There are a few other agencies which manage and maintain roads in the Rajasthan. Rajasthan State Road Development and Construction Corporation Ltd. (RSRDC)<sup>12</sup> also exists mainly to implement road sector investments under PPP style projects and building works. However, RSRDC has to further develop its capacity to effectively manage its PPP contracts and adequately enforce contractual terms of PPP agreements in practice. NHAI manages all the NH identified for investments and maintenance under the NHDP for GoI/MoRTH within Rajasthan. Border Roads Organization manages roads within Rajasthan in the sensitive areas near the near the national borders of India. Some roads are also managed by the special purpose vehicle called Road Infrastructure Development Company of Rajasthan (RIDCOR) Ltd which has been created through a partnership between GOR and IL&FS.

10. ***Key Road Sector Issues and Challenges:*** When viewed in the above context of managing such a large network of public roads, ranging from arterial to village roads, with a clear focus on the road user and other important stakeholders, there are some critical deficiencies and problems in the current system which need to be addressed –

- a) **Need for modernizing the PWD:** Since the majority of the roads in the state are being managed by the PWD there is an urgent need to strengthen the capacity of the agency to meet the latest requirements of road management. Its original institutional structure and procedures are based on sound principles but need to catch up with the latest industry practices and the

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<sup>11</sup> Number of persons killed per 100 accidents

<sup>12</sup> The Rajasthan State Road Development and Construction Corporation Ltd. (RSRDC) is a wholly owned undertaking of GOR and is a premier nodal agency for construction of bridges, roads and buildings

changing shape of Rajasthan's road network. Some of the key institutional strengthening issues are:

- *The need for enhanced Planning of investments:* Investment decisions give little importance to economic priorities - required planning and data collection tools and database for making sound investment decisions are lacking;
- *The need to enhance road engineering practices and business procedures* leading to overall low value for money of the investments and less efficient service delivery;
- *The need to enhance capacity of road agency staff* including their limited exposure to international road industry practices: effective in-service training of PWD staff is largely missing.

b) Inadequate sector funding:

- *Capital works:* GOR's budget for capital road works is about Rs. 9,000 million annually, which is less than 3% of the total state's plan budget. This is inadequate to undertake any significant road development works. Rajasthan's budgeting for capital investment could have been much improved had the state make use of the ample fiscal headroom;
  - *Maintenance backlog:* Resource allocation favors investments over maintenance; adequate policies, procedures, and institutional structure to plan, fund, and implement maintenance works need to be in place. Maintenance expenditure is about Rs. 52,000 per km per annum compared to Rs. 140,000 and above as per the norms<sup>13</sup>. Under spending is particularly acute with respect to ordinary repairs needed to sustain existing assets. Adjusting for inflation, the Public Works Department's (PWD's) budget for ordinary repairs was actually 12% less in FY 12-13 than it was in FY 08-09 – despite a 14% increase in the number of road kilometers under PWD's care.
- c) Gaps in Road Safety Management: Road safety management capacity in the state needs to be improved, vital safety engineering and enforcement interventions are need to be adequately resourced; prevalent unsafe behaviors demonstrate that road user awareness of associated risks is low. Apart from the PWD, this needs to be coordinated and secured through the participation, cooperation and contribution from other sectors like Transport, Education, Enforcement and Health.

11. **Road sector modernization and reforms.** In order to improve its performance and transform it into a modern road agency PWD needs substantial enhancements and revisions in its traditional way of doing business. GOR has initiated a Road Sector Modernization Plan (RSMP) which seeks to address key priorities of the state and taking into account best practice road industry examples available in India and abroad. These include organization revitalization, improved asset management, sustainable road financing, better road safety and accident management system, maintenance contracting, bridge designs, and computerization of business processes. Several reforms have been initiated and need further support:

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<sup>13</sup> GOR also mobilizes additional local resources to clear maintenance backlogs

- a) *Asset management:* In the recent past, PWD adopted a Maintenance Action Plan and deployed the Road Maintenance Management System (RMMS) alongside a Road Maintenance Planning Budgeting and Programming System (ROMAPS) to assist with planning and budgeting for road sector investments. However, these systems do not appear to be functioning any longer in any substantive way. Rajasthan's current approach to planning and funding road maintenance does not show strong linkages between asset condition, maintenance needs, and funding allocations. This needs to change with the road inventory and condition data being kept up to date and the funding requirements coming out of the actual road conditions and traffic levels.
- b) *Financing gaps:* On the other hand, as has been discussed in the previous paragraphs, the financial resources available for carrying out maintenance, repairs and capacity enhancements are falling short of requirements. Thus there is a need to look at ways and means to enhance the available finances to be dedicated to this sector, from the government and other sources like road fund and private sector, which cannot be diverted for purposes other than originally intended.
- c) *Policy framework:* Rajasthan was the first state to formulate a policy on Build-Operate-Transfer (BOT) projects in India. GOR is currently revising its Road Policy adopted in 1996 to incorporate current priorities and developing sixteen high traffic density highways on PPP basis by setting up a 'Mega Highways Project' through RIDCOR<sup>14</sup>. A well-functioning Road Fund is mobilizing about Rs. 2,100 million annually<sup>15</sup> but is being put to use for leveraging private financing rather than maintenance. There is need to re-look at strengthen the policy framework to support generation of more funds and strengthen the institutional capacity to plan for the road sector especially road maintenance.
- d) *Institutional and Human Resources Development:* PWD has undertaken a study on computerization of its various offices and prepared a comprehensive training plan for its staff;
- e) *Road Safety Management:* PWD has undertaken iRAP<sup>16</sup> surveys and GOR has started to make specific budget provisions for road safety improvements. This survey needs to be expanded to ensure that these are carried out on all roads so that road safety interventions can be prioritized and properly funded so that the ratings can be improved to an acceptable level;
- f) *Improved Road Engineering and Business Procedures:* PWD has established a statewide core-network for rural roads and is using e-procurement, ESMF and OMMAS under PMGSY<sup>17</sup>. GOR now seeks to further enhance and deepen these initiatives and use them more widely across its road sector for its other arterial roads like SHs and MDRs, using the Bank's knowledge and technical support through the project.

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<sup>14</sup>A Joint Venture between GOR and IL&FS which aims at leveraging both the budgetary resources of the state and the strength of the private sector

<sup>15</sup> Through a levy of Rs. 0.5 per litre on sale of petrol and high speed diesel in the state

<sup>16</sup> International Road Assessment Program through the support from World Bank Global Road Safety

<sup>17</sup> OMMAS – Online Monitoring, Management, and Accounting System, ESMF – Environment and Social Management Framework

12. GOR has already prepared a letter of sector development policy and a comprehensive Road Sector Modernization Plan (RSMP), with a view to transform PWD into a modern road agency.

13. **World Bank Engagement:** The Bank has a long engagement in the road sector of Rajasthan through the multi-state national PMGSY program (Rural Roads Project and PMGSY Rural Roads Project)<sup>18</sup>. The state has shown consistently good performance in these projects. Rajasthan is one of the participating states in the proposed National Highway Interconnectivity Improvement Project (NHIIP). The Bank is supporting the development of improved quality of infrastructure, maintenance management, road safety management, and capacity building of PWD through these operations. Evidence from Indian projects suggests that road improvements lead to significant impacts on poverty reduction by way of increased household income, employment generation, and increased agriculture production and prices of agriculture products; improved access to markets, health and educational services specifically for females; and integration of scattered population in the state's economy.

14. In order to improve the rural infrastructure and enable the road users and other beneficiaries to get access to all season and safer roads, the proposed IDA credit would support three broad categories of interventions:

- a) Improvements to rural access through the construction of about 2500 km of rural roads connecting about 1,300 villages with population between 250 to 499 people in areas not covered by PMGSY and associated services for project management and quality monitoring.
- b) Modernization of the road sector management through advisory and technical assistance services for developing and strengthening the policy framework for better management of the sector, improving sector funding and strengthening the PWD and building its capacity for better planning and resource utilization, and for preparing projects of priority state roads for future investments.
- c) Investments in improving road safety through demonstration state road corridors and other technical assistance services for formulation of multi-sector road safety strategy, safety education and awareness programs, safety audits and procuring safety equipment for enforcing agencies.

### **C. Higher Level Objectives to which the Project Contributes**

15. The project is fully aligned with the World Bank's new Country Partnership Strategy (CPS) for India (2013-17), across the three Bank's engagement areas – **Integration, Transformation and Inclusion**. While the provision of connectivity to smaller habitations enables the rural hinterlands to integrate in the mainstream state's economy, the people living in these remote locations who otherwise suffer from lack of basic services will benefit from improved access to these services, thereby achieving the goal of Inclusion. Farmers diversify

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<sup>18</sup> Rural Roads Project; completed in March 2012 with Both DO and IP as satisfactory PMGSY Rural Roads Project was approved in December 2010 with a closing date of November 2015Rajasthan was also a participating state of the State Roads Project (completed 1997) and has also prepared a State Roads Project using the technical assistance under the State Roads Technical Assistance Project but it was not processed for Bank support

their sources of income when market opportunities emerge triggered by improved road access. The project will also support the GOR's development goal of growth that is faster, more socially and regionally inclusive, and more sustainable as detailed in the 12th Five-Year Plan (FY2013–17). This would be achieved by improving transport connectivity, through new rural road connections as well as by strengthening institutions, enhancing accountability and building capacity in PWD- the main state agency responsible for managing the state road network - which would in turn lead to increased GSDP growth. The project will help GOR to fully realize the benefits of the large rural road network developed under PMGSY as well as to scale up and carry forward the reforms, improved systems and procedures being introduced under the PM GSY Rural Roads Project. In addition it will also have synergy with other Bank funded operations such as National Highways Interconnectivity Improvement Project and Rajasthan Agriculture Competitiveness Project.

## **II. Project Development Objective**

16. The project development objective is to improve rural connectivity, enhance road safety and strengthen road sector management capacity of the state of Rajasthan.

### **Project Beneficiaries**

17. The project is expected to provide all season access to economic opportunities and social services to 1,300 small revenue villages. The inhabitants in the area of influence of the project roads, local businesses, as well as users of the project roads will be the direct beneficiaries of the project. Those businesses and people will have improved access to markets and services through improved connectivity. Road users will also benefit from a safe transport system developed and implemented on the demonstration corridors. Modernization of the PWD will improve road sector management and build capacity of its staff and indirectly will benefit all road users.

### **PDO Level Results Indicators**

18. Progress towards achievement of PDO will be measured by the following outcome indicators:

- An increased share of rural population with access to an all-season road;
- Increased percentage of core road network in good/fair condition ;
- A reduction in annual fatality count on model road safety corridors;

19. The project's results framework is presented in Annex 1.

## **III. Project Description**

20. The objective will be achieved through implementing the following components: (a) Rural Connectivity Improvement; (b) Road Sector Modernization and Performance Enhancement; and (c) Road Safety Management.

21. The project is designed to enhance the effectiveness of Bank's support through a two pronged strategy focusing on: (a) *Investments*: supporting poverty alleviation through improved

connectivity of smaller habitations; and (b) *Technical and knowledge support*: facilitating gradual transformation of the PWD into a modern road agency by adopting best practice examples of sector policies, strategic planning, and project and asset management, as well as piloting some innovations to optimize cost and time of construction as well as minimize environmental foot print. The project will also finance preparatory activities of follow on operations including network analysis of about 13,000 km of SHs/MDRs to prioritize about 700 km corridors for which detailed engineering design and project reports will be prepared.

## A. Project components

22. The project has three components as described below and detailed in Annex 2.
23. **Component A: Rural Connectivity Improvement** (USD 197 million, including IDA credit USD 138 million; civil works): This component would support construction of about 2500 km rural roads to provide connectivity to about 1,300 revenue villages with population between 250 and 499 people in the areas of the state not covered by PMGSY and introduce good practices of cost effective low volume technologies. The roads will predominantly be built to a bitumen surface standard and will include all necessary bridges and cross drainage works to maintain year round connectivity. Contracts for civil works worth US\$ 51 million have been already awarded, bids worth US\$ 21 million is finalized for award, and contracts worth US\$ 59 million are expected to be awarded soon.
24. **Component B: Road Sector Modernization and Performance Enhancement** (USD 11 million including IDA credit USD 7.75 million; technical assistance and goods): This component will support implementation of a Road Sector Modernization Plan (RSMP)<sup>19</sup> in the following key areas:
  - *Improved policy framework*: strengthening of existing road sector policies and strategies including an assessment of sector financing framework for both road construction and maintenance and recommendations for enhancing the resources, strengthening of policy framework for participation of local governments in managing road access to small communities;
  - *Modernization of Engineering Practices and Business Procedures*: including introduction of modern project preparation and management practices, design and construction standards, new technologies specifically to promote cost-effective road construction for low trafficked roads, improved procurement procedures, and a PWD-wide procurement and contract management manual;
  - *Sustainable Asset Management*: modifying and putting to use the current MMS into a simple asset management system to prepare prioritized plans for both construction and maintenance

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<sup>19</sup> RSMP is intended to establish a dynamic and regular mechanism in PWD for sector reforms not confining to the proposed project duration. It will be regularly reviewed and modified, and implemented in a Phased manner by targeting a subset of key priority activities. Its implementation will go well beyond the proposed project period.

- of state roads using rational criteria for investment decisions; introduction of area-wide maintenance contract system and other forms of maintenance contracting<sup>20</sup>;
- *Institutional and Human Resource Development:* Strengthening of PWD institutional structure, building of staff capacities<sup>21</sup> to keep them abreast with latest road industry practices, and computerization of PWD offices;
  - *Preparing a pipeline of feasible projects for implementation:* Feasibility and DPR preparation of about 700 km of SH/MDRs ready for financing after initiation of pre-construction activities. At appraisal, shortlisting of consultants for the service is ongoing; and
  - *Enhancing Governance & Accountability in PWD.* Bringing in transparency and openness in all major activities involving public procurement and financing through improved voluntary sharing of information and on demand as per the RTI.

25. **Component C: Road Safety Management** (USD 15 million including IDA credit USD 10.55 million; technical assistance and goods): This component will support the strengthening of road safety management systems in Rajasthan with the objective of reducing the number of fatalities and serious injuries from traffic accidents in the state. This will be accomplished through:

- (i) Safe Corridor Demonstration Program (SCDP)
  - a. iRAP surveys financed by GOR on some major state roads with high volume and high-risk,
  - b. Multi-sector road safety interventions on selected road corridors.
- (ii) Establishing a multi-sector Road Safety Strategy through:
  - a. SCDP (incorporating safe system principles),
  - b. Select policy reviews (such as crash investigation training for Police<sup>22</sup>) for the state.
- (iii) Road safety education and awareness programs.
- (iv) Road safety audits in some of the Rural Roads constructed under Component A above (in each zone), including roads linking to them.
- (v) Support to the state's other stakeholder Departments on procurement of some road safety equipment and related training under some ongoing initiatives.

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<sup>20</sup> By building on the initiatives underway in PMGSY Rural Roads Project. Actual maintenance works will be funded by GOR through its own maintenance funds

<sup>21</sup> Through implementation of a Human Resources Development Strategy

<sup>22</sup> Which will complement the implementation of the Road Accident Database Management System under the proposed NHIIP of MoRTH

## B. Project Financing

### Lending Instrument

26. The Bank will finance the project through a Credit from the International Development Association (IDA) as a Specific Investment Loan. The Project will be implemented over a five year period from November-2013 to June-2018.

### Project Cost and Financing

27. The total cost of the project is estimated at the equivalent of US\$ 227 million. The Bank share is estimated at US\$ 160 million. The IDA Credit will be used to finance various civil work contracts, goods and TA service up to 70 percent of the total project cost. The table below presents the detailed project costs for each component.

**Table 1: Project Cost & Financing (US\$ million)**

Component	Costs including Contingency	Bank Financing	%Bank Financing	GOR Financing
<b>A - Rural Connectivity Improvement</b>	<b>197.00</b>	<b>138.00</b>	<b>70%</b>	<b>59.00</b>
a) Civil Works (2500 km)	195.00	<b>136.60</b>	<b>70%</b>	<b>58.40</b>
b) Project Management and Audit Services	2.00	<b>1.40</b>	<b>70%</b>	<b>0.60</b>
<b>B – Road Sector Modernization</b>	<b>11.00</b>	<b>7.75</b>	<b>70%</b>	<b>3.25</b>
<b>C - Road Safety Management</b>	<b>15.00</b>	<b>10.55</b>	<b>70%</b>	<b>4.45</b>
<b>Incremental Operating Costs</b>	<b>1.00</b>	<b>0.70</b>	<b>70%</b>	<b>0.30</b>
<b>Sub-total Project Cost</b>	<b>224.00</b>	<b>157.00</b>	<b>70%</b>	<b>67.00</b>
<b>Re-financing preparation advance*</b>	<b>3.00</b>	<b>3.00</b>	<b>NA</b>	<b>0.00</b>
<b>Total Project Cost</b>	<b>227.00</b>	<b>160.00</b>	<b>70%</b>	<b>67.00</b>

28. **Retroactive Financing:** GOR intends to use the proceeds of the credit to finance eligible expenditures made prior to effectiveness of the project up to 20% of the total Bank financing up to a period of 1 year before the credit signing.

29. Re-financing of Project Preparation Advance (PPA) (*USD 3 million, IDA Credit 3 million*): A PPA was provided by the Bank to GOI/GOR to part-finance the preparation activities of the project. As per the terms & conditions, the disbursed amount of this PPA would be refinanced from the credit as and when it becomes effective.

### C. Lessons Learned and Reflected in the Project Design

30. The project builds upon the experience gained during implementation of completed and on-going rural roads and highway lending operations in India (including the recently-completed

Rural Roads Project I and ongoing PMGSY Rural Roads, wherein Rajasthan was one of the participating states among others) as well as analytical work done in the sector. Some of the notable lessons include:

31. *Ensuring robustness of monitoring indicators.* One of the lessons from implementation of recent projects is that possible value additions of the Bank engagement, identified during project preparation, should be built into the monitoring indicators so as to avoid these not getting implemented. Further, in projects with a strong focus on institutional development, there is a need to choose more granular targets/indicators to measure achievements and impacts. Such targets, ideally, should relate not only to completion of all sub-activities components but also to the change in beneficiaries' situation and improvement of operational efficiencies.

32. *Use of innovations introduced by earlier projects to ensure effective maintenance of assets:* One of the problems in all rural roads projects is neglect of the subsequent maintenance of assets. Innovations that have emerged from earlier projects such as RRPI should inform the design of subsequent projects. These include the use of the Environmental Management Framework (EMF) and Social Management Framework (SMF) to address social and resettlement issues. Development of the current maintenance management system into a full-fledged asset management system. State government commitment to fund and improve delivery of road maintenance is also essential for sustainability of the road assets. GOR has agreed to enhance its road maintenance funding and put in place Term-based area-wide Maintenance System (AMS); and to explore other innovative maintenance contracts.

33. *Institutional development initiatives require active engagement of policy makers and road agency staff and sufficient flexibility to modify the reform agenda based on implementation experiences.* RSMP has been prepared through active consultations with PWD staff and GOR has set-up a Road Sector Modernization Plan Task Force (RSMPTF) to implement it. RSMP will be reviewed and modified periodically during project implementation.

34. *Introduction of appropriate technologies for design and construction of roads could lead to significant reduction in costs and environmental footprints:* The project will support the introduction of new and improved technologies for road design and construction and environment friendly road construction.

35. *Regular project performance and quality audits during project implementation are important to enhance both the quality of construction and project outcomes.* The project will strengthen the existing quality audit mechanisms in PWD by engaging a project performance audit consultant.

## **IV. Implementation**

### **A. Institutional and Implementation Arrangements**

36. *Overall implementation strategy:* The project will be implemented by PWD, using its existing structures to the extent possible through support from other departments within Government of Rajasthan, including transport, police, health, revenue, forest, and district

collectors and local offices. An adequately staffed Chief Engineer (CE) (PMGSY) office has been functional in the state to implement various Bank funded projects, including the Rural Roads Project I. The CE office will be responsible for implementing the project under the overall guidance of the Principal Secretary, PWD. The CE office has designated units for engineering designs, procurement, contract management, social, environmental, financial management, computerization, institutional development, governance and accountability, and road safety. The team will further be reinforced with the hiring of a multidisciplinary team of Project Management Consultant (PMC). A cell consisting of 1-2 persons will be established and tasked with the coordination of monitoring, evaluation and reporting functions. An annual independent technical audit and the PMGSY model of SQM will be employed to ensure quality of rural roads.

37. *Arrangements at Project Districts:* All activities under the project will be implemented through the 8 Zonal offices (Jaipur 1&2, Udaipur, Kota, Bharatpur, Ajmer, Jodhpur, Bikaner), providing oversight, each responsible for 4-5 districts. At the district level, the project activities will be implemented by the PIU (Project Implementation Unit) and supported by 3-4 PWD field divisions responsible for implementing most of the road improvement works. The PWD agreed to depute dedicated project divisions in the districts, if required having high concentration of road improvement works under the project.

38. *Project Management Consultant (PMC):* The PMC consultant will be mobilized to provide high quality technical advice and implementation support to PWD. The PMC will also undertake half-yearly project performance assessment of the overall project. The main functions of the PMC would be to: (i) monitor the whole project and all its components with periodic visits to the site; (ii) remind the client of any major action they would need to take as per the contracts or in response to the credit covenants of the Bank; (iii) assess the overall progress of the project with suitable indicators included in the project's M&E framework, as well as any cost variations; (iv) act as the a technical agent of the department during their site visits to bring to the notice of PWD any glaring quality aberrations; (v) support the client on all environmental and social management activities/ requirements of the project, including preparatory studies, site supervision, reporting, documentation and capacity building; (vi) prepare monthly and quarterly project reports for the PWD; and to the Bank as per the credit and other good practice requirements of projects; and (vii) help and advise the client in monitoring the output and outcome indicators as per the M&E framework.

39. *State Quality Monitor:* PWD will extend the services of the State Quality Monitor (SQM) adopted in PMGSY to perform inspection of the quality of rural road works included in RRSMP. The procedures, frequency of site visit and reporting will follow the same arrangement adopted for PMGSY.

40. *Technical/Financial Audit:* a periodic independent audit covering procurement, contract management and financial management of the project will be carried out.

41. The detailed description of the project implementation arrangements are provided in Annex 3.

## **B. Results Monitoring and Evaluation**

42. The Results Monitoring Framework in Annex 1 will be used to monitor and evaluate the achievement of the PDO and the outcome indicators. The framework broadly indicates the performance indicators, target values and available baselines.

43. The overall responsibility for monitoring project results would be with the PWD/PMGSY which would receive regular monthly progress reports from each of the three divisions – Procurement, ESMF and Design. Data on the status of the results indicators, including road condition, travel time, and road safety ratings, will also be collected by the PWD zones, through the respective circle and division offices, and regularly reported to Headquarters. In addition, PWD wide data collected by the Statistics office published in the form of periodic (monthly, quarterly and annual) PWD wide statistical reports would also form inputs to the overall monitoring framework for the project.

44. The physical and financial progress of various project components would be monitored through quarterly progress reports to be prepared by PWD and submitted to the Bank. The report will include the status of achieving agreed targets for various monitoring indicators.

45. Some of the indicators being measured as part of the project would be expanded to develop a sector wide monitoring framework in line with the current initiative on Result Framework Document (RFD) piloted for Ministry of Road Transport and Highways a few other states (e.g. Himachal Pradesh). GOR, in consultation with the Bank, would develop a draft sector wide monitoring framework.

## **C. Sustainability**

46. The project will ensure sustainability of investments through good quality of construction works and adequate maintenance to prevent premature failure of roads. Quality will be verified by regular technical audits, and five-year performance based maintenance is to be included in the civil works contracts for all project roads making maintenance an integral part of the construction contractor's responsibilities as well as instituting routine maintenance eventually as part of road management. In addition, the financing study will explore options for sustainable financing of the network. The project will strive to achieve sustainability through enhancing project and contract management practices.

47. The sector modernization initiative was driven by PWD's own demand, external stakeholders and other financing/development partners. This led PWD to initiate various reform initiatives well ahead of the project, these include computerization of its business processes, capacity building of staff, trying out new contracting modalities and others explained in paragraph 11 of the PAD. The project will only build on these efforts and support PWD to consolidate gains and institutionalize them.

## **V. Key Risks and Mitigation Measures**

48. The detailed risk assessment is presented in Annex 4. PWD has successfully prepared an earlier project, which was a simple one involving implementation of an ongoing national program (PMGSY). This project however was designed with a strong focus on institutional development and road safety for which PWD's project team needed strengthening to match with the capacity called for preparing such complex activities. As such the risk during preparation is rated as *moderate*.

49. PWD implemented the earlier project successfully- with no time/cost overruns and virtually no contractual disputes; nevertheless, considering the nature of project activities under this project that involve institutional/sector reforms; the challenges of coordinating different governmental departments and stakeholders to implement multi-sectoral road safety interventions and implementing new cost-effective technologies, the overall risk is rated as *substantial*.

50. While GOR has shown strong commitment to reforms, continuity of the same during implementation of RSMP and PWD's own capacity to implement the RSMP are significant risks. To mitigate these, RSMP has been prepared through active consultations within GOR and PWD staff to capture their perceived key priorities and integrating it well with the ongoing reform initiatives. Further, RSMP will be implemented in a phased manner starting from a subset of priority activities, gradually building the momentum, and making modifications as required based on the implementation experiences. Insufficient maintenance funding is another issue. GOR has decided to set up a Taskforce to find ways and means to fill the maintenance funding gap considering the experiences available in India and internationally. An agreement will be reached before appraisal on the level of maintenance funding and mechanisms to gradually increase it. The detailed Operational Risk Assessment Framework (ORAF) matrix is provided in Annex 4.

## **VI. Appraisal Summary**

### **A. Economic and Financial Analysis**

51. A recent impact assessment of rural road connectivity in seven states including Rajasthan<sup>23</sup> by the Planning Commission Government of India had revealed that the improvement or provision of rural road connectivity had resulted in many fold socio-economic benefits to the villagers. With this background, the entire benefit assessment for Rajasthan State rural roads is centered on the results of the GoI Planning Commission Study findings with the focus in the following domains: (i) Increased household income from agriculture and non-agriculture based activities; (ii) Creation of additional employment opportunities; (iii) Better vehicle ownership and increased travel for work and social trips resulting in reduced travel time and vehicle operating cost; and (iv) promoting the formation of human capital through improved access to education and health facilities. However, for analysis purpose, the education and health

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<sup>23</sup> Evaluation Study on Rural Roads Component of Bharat Nirman, Programme Evaluation Organization Planning Commission Government of India, New Delhi, May, 2010

benefits were not considered on account of double counting. For the remaining available appropriate quantitative parameters arrived from the evaluation study in the state were used to estimate the project benefits. The total benefits from new road provision are closely correlated with the number of people served by those roads.

52. Given the size of the project (2500 km length of roads), the economic analysis was carried out on a sample which is the Phase-1 length of road i.e. 1227 km length in 513 roads and 510 habitation connections. The average approach is followed to represent district variations. The results of economic feasibility and the sensitivity analysis show that the overall project is socially profitable (**Table 2**). The district wise analysis indicates that there are some variations in the economic analysis results. However it is to be underlined that the present project objective is the connectivity to less populated villages in the state.

**Table 2: Results of Economic Analysis**

No. of Roads	Average Population coverage / Road	Average Length of Road in Km / Road	Average Cost (Rs. Million/ Km)	Base Case Results			Sensitivity Results for EIRR			
				EIRR	MIRR	NPV @ 12 (Rs.)	20% increase in Construction Cost	20% increase in O&M Cost	20% decrease in project benefit	Combined effect (Worst Scenario)
513	362	2.41	3.417545	14.11%	12.82%	740,607	13.02%	13.55%	9.07%	5.17%

Source: Analysis

Note: Above result is for the average road for the total 513 roads considered in the analysis.

EIRR – Economic Internal Rate of Return; MIRR- Modified Internal Rate of Return; NPV-Net Present Value

53. Detailed Economic analysis is in Annex 6.

54. **Financial Impacts:** The project size is \$227 million with a counterpart fund requirement is \$67 million. This would be equivalent to an average annual project requirement of \$37.8 million (equivalent to INR 2300 million) and an average annual counterpart fund requirement of \$11.2 million (equivalent to Rs 681 million). The expected maximum outflow of funds is about \$86 million (equivalent to INR 5210 million) and the corresponding counterpart funding requirement is about US\$25.8 million (equivalent to INR 1568 million). The first year fund requirement during Bank FY ending June 30 2014 is about US\$35 million (equivalent to about INR 1520 million). It was noted that against this requirement a budgetary provision of INR 2100 million has been made for the Indian FY 2013-14 (ending March 31, 2014). GOR would therefore need to ensure that proper provisioning in the annual budgets are made, based on the latest forecast of expenditure, to ensure timely payments to contractors and consultants.

## B. Technical

55. *Selection of Roads for components A and C:* The rural roads to be funded under the project are part of the rural roads core network and mostly to provide connectivity to smaller habitations with population between 250 and 499 people in the areas which are not covered under PMGSY<sup>24</sup>. The roads for demonstration of safe transport systems will finally be identified

<sup>24</sup> Such habitations are addressed by PMGSY in desert and tribal areas.

on the basis of the iRAP surveys to be conducted on the state roads.. The Bank intends to finance interventions on road lengths of about 100-120 km, which have been recently completed and are in the priority lists as per the iRAP surveys

56. *Engineering Designs:* The rural road works mostly involve improving existing earth and gravel roads developed under MNREGA to thin bituminous surfaced standard by providing suitable sub-base and base layers underneath. Generally the rural roads will have single lane carriageway of 3.75 m. with shoulders of 1.125 m. on either side on a formation of 6 meters. The standalone road safety improvements packages would mainly be curve flattening, junction improvement, widening/repair of narrow/weak bridges, physical segregation of the vehicle and pedestrian traffic through provision of side barriers and pedestrian lanes, pedestrian over/underpass, provision of truck-bye and other measures as appropriate. The safety demonstration corridors would be designed to pilot good practice design, specifications and construction methods; and include multi-sector interventions identified to minimize road traffic accidents as part of Component C.

57. *Pilot Projects on New Technologies:* Being a mineral rich state, Rajasthan has huge quantities of quarry wastes which could be effectively used in road construction. There is also a need to find cost-effective solutions to provide road access to sparsely populated areas in the State as conventional technologies are costly and unaffordable to such low-traffic situations. The project will pilot new technologies for cost-effective road construction, utilizing quarry wastes in road construction including environment friendly road construction. This will include use of crushed rock or improved aggregate-based roads covered with chip sealing or thin bitumen surfacing. Mechanical and chemical stabilization to enhance the performance of otherwise weaker locally available materials will be explored and piloted. About 100 km of rural road sections will be put aside to pilot these innovative technologies under component A after further assessment and technical advisory services under component B.

58. *Sector Modernization:* The mission discussed and noted that few encouraging initiatives to modernize PWD have already taken place on which the component can build on to take the sector modernization activities forward. These include the availability of Road Maintenance Management System (RMMS), a Road Maintenance Planning Budgeting and Programming System (ROMAPS) though not fully functional, draft Rad Sector Policy, a study on PWD computerization and associated training plan, a GIS enabled core network database and mapping platform, e-procurement system, Online Monitoring and Management System (OMMAS) created under PMGSY. The mission was also informed that PWD has formed a Sector Modernization Task Force to oversee the design and implementation of the institutional development activities.

### **C. Financial Management (FM)**

59. *Summary Assessment.* The project shall use the existing financial management arrangements of the PWD and the state (*country systems approach*) except in the area of internal audit. The internal audit system needs strengthening and it was agreed that a joint fiduciary audit covering procurement, financial management and contract management aspects shall be carried

out by a consulting firm to be hired under the project. Project funds shall be budgeted under separate project specific budget line(s) within the overall budget of PWD. The existing system of funds flow in the PWD (*letter of credit or L/C system*) shall be used for the purposes of the project. The L/C system has been computerized starting from the current financial year and is now part (*module called Works Accounts Monitoring System*) of the state wide Integrated Financial Management System (IFMS). Project accounting shall be done as per the existing system of the state. Under the existing system, a basic set of accounts is maintained by PWD and the compilation of these accounts is done by Accountant General (Accounts and Entitlements) or AG (A&E) based on Monthly Compiled Accounts (MCA) submitted by PWD. The Interim Unaudited Financial Reports (IFR) shall be used for the purposes of project financial reporting and disbursements. The IFR shall be prepared on quarterly basis and shall be based on AG (A&E) reports reporting expenditure under the project specific heads and the information provided by the divisions. The external audit of the project shall be carried out by the Rajasthan State Accountant General (AG) in accordance with the standard terms of reference already agreed for the Bank funded projects. At PWD Head Office, the Financial Advisor (National Highways) (*FA (NH)*) shall have the overall responsibility for project FM arrangements. The FA (NH) shall be supported by a dedicated Accountant and a Jr. Accountant for the project purposes. At the divisional level, the existing staffing arrangements of PWD with Divisional Accounts Officer (DAO) supported by other accounting staff will be used for the purposes of the project. PWD is already implementing the Bank funded Rural Roads Project<sup>25</sup>. A simple Financial Management Manual shall be prepared setting out the principles of Project Financial Management. Based on the financial management arrangements proposed in Annex 3, the financial management risk is considered “Moderate”.

#### **D. Procurement**

60. At this stage bids for 345 NCB works contracts for rural roads have been invited in two batches and 106 contracts have been awarded with a total contract value of INR3110 million (US\$ 51.16 million @ US\$ 1 = INR 60.79). As per communication from IA another 60 contracts with estimated contract value of INR 1600 million (US\$ 26.32 million) are ready for award and are expected to be awarded well before project effectiveness. Based on this the project meets the criteria of finalization of award of 30% works contracts prior to negotiations. The project has created a procurement cell of five personnel comprising of two Executive Engineers, one Assistant Engineer, one Assistant Accounts officer and one support staff. Three project staffs have undergone two weeks' training in World Bank procurement methods in July 2013. The draft Procurement Risk Assessment and Management System (PRAMS) had been done and procurement risk rating is moderate. Appropriate Evaluation Committees with composition detailed later in the PAD will meet as required to consider and make recommendations on procurement. This Committee is supported by a dedicated procurement cell in the PMU.

61. Given the importance of efficient contract management, the project will give particular emphasis to ensure improved decision flow and reporting. Contracts Management will be strengthened under the project. It was agreed that a joint fiduciary audit covering procurement,

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<sup>25</sup> PMGSY Rural Roads Project (P124639)

financial management and contract management aspects shall be carried out by a consulting firm to be hired under the project.

62. For all ICB and NCB contracts, the project seeks to use e-procurement system which uses the NICNET platform. For shopping, Framework and Consultancy contracts, the project will explore the possibility of using e-procurement. The World Bank has carried out an assessment of the e-procurement system and the Bank has accepted the use of e-procurement in the project with suitable modifications being undertaken by PWD as per the Bank's suggestions. The procurement of goods, works and consulting and non-consulting services will follow Bank guidelines and agreed bidding/RFP documents. All procurement under the project including that under project preparation advance PPA) /retroactive financing will follow: (a) Procurement of Goods, Works, and Non-Consulting Services under IBRD Loans and IDA Credits & Grants by World Bank Borrowers (January 2011); and (b) Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers(January 2011). Bank's Standard Bidding documents (SBDs) would be used for procurement of Goods, Works, IT Systems and Standard Request for Proposal (SRFP) document will be used for consulting services.

#### **E. Social (including safeguards)**

63. **Social development outcomes.** The project will provide better physical access to basic infrastructure facilities such as schools, health care and other government services. By strengthening rural roads, markets for agriculture produce are expected to develop further and access to inputs and sale of produce at competitive prices will improve the socioeconomic conditions of communities adjacent to the road. In summary, the expected social outcomes of the project are decreased vulnerability, from: (i) strengthened social capital from enhanced habitation connectivity; (ii) increased access to employment, education and other social services; and (iii) improved road safety. All things being equal, the quality of life of the adversely affected population should improve once the support and assistance provided under the entitlement framework is actually delivered.

64. **Social Impacts.** Construction of rural roads is proposed along the existing tracks in general, and restricted to the width as available in the Revenue Records. These are mostly the existing earth/gravel roads, built under GoI's MNERGA program. However, where available width is too small, additional land may be required for construction of the road, potentially triggering OP 4.12. In such cases the most common outcome is the loss of small strips of agricultural land and in some cases losses of entire or substantial parts of land holdings and even structures. Thus the potential adverse social impacts of the project are likely to be low. Additional strips of land required for the RRSMP will be provided by the people/community through voluntary donations, a pattern was followed under the Bank funded PMGSY RRP II which is under implementation in state Rajasthan.

65. **Management of Social Risks.** To improve the overall safeguard management and ensure compliance with OP 4.12 and OP 4.10, exclusive operational document – the Social Management Framework (SMF) that includes the Vulnerability Framework (VF) - has been adopted with suitable modifications from PMGSY RRP II, for RRSMP. This Framework has

been in operation in the state for another on-going Rural Road project - PMGSY RRP II. The SMF clarifies the gaps relating to land donation and provides guidelines for land transfer by donation. The Vulnerability Framework (VF) that is included in the SMF, address vulnerability resulting from social identity, notably gender, scheduled caste and scheduled tribe. The goal of the VF is to support compliance with OP 4.10 and help promote equitable distribution of project benefits among the Scheduled Tribes and Scheduled Caste populations. Where Scheduled Tribes represent over ten per cent of a participating village, the VF will require holding a free, prior and informed consultation with schedule tribes to seek their broad support for the project as required by OP 4.10.

66. While implementation of the original SMF under PMGSY RRP II has provided reasonable experience to PWD, annual reviews of the functioning of the SMF within the RRSMP will improve understanding of their efficacy in supporting compliance with OP 4.12 and OP 4.10 respectively, and enable modification where necessary.

67. **Stakeholder Participation.** Stakeholder participation is central to design and implementation. Participation has been incorporated in planning road alignments: mainly through transect walks and systematic consultations. Participatory monitoring through Audit Teams, local committees using pro-forma checklist, and grievance redress mechanisms, on the other hand, will help strengthen the quality of construction and improve outcomes.

68. **Monitoring.** The outcomes will be monitored by the designated Social and Environmental Specialist at Head Quarter level and through observation and review of progress and audit reports. Data will, where possible, be disaggregated to reflect the situation of vulnerable populations. The monitoring reports from these actions will be submitted to the Bank periodically, and communicated to the Gram Panchayats. An audit will be undertaken once in every year to assess for the compliance with the provisions of the SMF.

## F. Environmental safeguards

69. **Environmental Issues.** The rural road works and road safety interventions on selected road corridors are likely to create some adverse environmental impacts, particularly during the construction stage. While the adverse impacts are likely to be fairly limited in the local context, the exact nature and magnitude of impacts will vary in accordance to the location and type of engineering intervention. Deficiencies in planning and design of sub-projects can lead to insufficient arrangements to conserve natural drainage pattern leading to impairment to or worsening of the local/regional drainage. On the whole, the typical likely impacts from the operation include: i) felling of some limited number of roadside trees; (ii) adverse impacts on water resources, including from silt flow during execution of works; (iii) soil erosion; (iv) construction phase impacts, including those related to camp site operation, dust generation, and pollution from plants, machinery, and vehicles and disposal of debris/other construction wastes; (v) appropriate management of materials (such as aggregates, sand, water, earth); (vi) safety concerns during construction works and due to increased traffic speeds during operation for both road-users and road-side residents and; (vii) the potential for poorly planned or managed development induced by the improved roads. In view of the project's potential impacts on the

environment, the Bank's OP 4.01 on Environmental Assessment and OP 4.11 on Physical Cultural Resources have been triggered, and the project is designated as Category B.

70. Diversion of some forest land may also be required for widening/spot improvement in case of sub-projects involving safety interventions. More so, as part of Component B (Road Sector Modernization and Performance Enhancement), various sector level initiatives would be supported under the project. These include improving policy framework, strengthening of existing road sector policies and strategies, modernization of engineering practices and business procedures and creating asset management system to prepare prioritized plans for both construction and maintenance of state roads. While no civil works will be financed under the project on roads passing through designated protected areas, the larger institutional development plan for the road sector in Rajasthan would need to address the issues of biodiversity management in the interest of road user safety, environmental sustainability and tourism related reasons. Appropriate strategies and mechanisms will have to be built into the institutional systems to ensure that the over-all network planning/development and road selection/construction takes into account such factors. Accordingly, the operational policies on Natural Habitats (OP/BP 4.04) and Forests (OP/BP 4.36) have also been triggered for the project.

71. ***Environment Management:*** The environment management process and tools for the project have been designed keeping in mind the varied scope of work, which includes construction of about 2,500 km of rural roads to provide connectivity to about 1,300 villages, road safety interventions and preparatory studies for improvement of about 700 km priority sections of State Highways/MDRs. Accordingly, to effectively plan, design and integrate environmental dimensions into the over-all project preparation and implementation, an Environment Management Framework (EMF) has been prepared. The EMF has been informed by: (a) the results of an environment screening exercise; (b) experiences from the Bank-funded road projects in the state, particularly the completed Rural Roads Project I and the on-going PMGSY project and; (c) experiences from similar state road projects implemented/under implementation elsewhere in the country.

72. The other key elements of the environment management instruments developed for the project include: (i) a screening exercise to identify key issues including those related to forests/biodiversity/wildlife and consider those in the selection and design of sub-projects; (ii) revision of the Environmental Codes of Practice (ECoPs) currently in-use for Bank-funded PMGSY - Rural Roads Project in the state for application to the rural connectivity works and; (iii) preparation of Environmental Impact Assessment (EIAs) along with preparation of corridor-specific Environment Management Plans (EMPs) for state highways that would be prepared under Component B.

73. The nature and scale of civil works under the Rural Connectivity Improvement component of this project are essentially the same as that being executed under the on-going PMGSY – Rural Roads project. Therefore, the environment safeguard instruments currently in-use in Rajasthan after necessary modifications (such as inclusion of GoI/GOR's regulatory requirements for non-rural works under the project) have been used for this project as well.

74. Biodiversity protection and management also forms the core of the over-all environment management approach in the project. Following this approach, it has been ensured that no road traversing through a designated protected area is included in the project. The project will support development of appropriate mechanisms as part of asset management and road prioritization activities to deal with biodiversity/ wildlife issues in the larger context of the road sector development in the state. Further, with huge quantities of quarry wastes that could be used in road construction, the project will explore the opportunities for piloting new technologies/materials for cost-effective road construction. More details are in Annex 3.

75. ***Disclosure.*** The two environment management tools, namely, Environment Management Framework (EMF) and the Environmental Codes of Practice (ECoPs) have been disclosed in the Bank's Infoshop and in Project Authority's website. The executive summary of the documents is being translated in vernacular language (Hindi) and will also be made public at the local level. Once the project commences implementation, the project team is expected to have regular consultations with local stakeholders on issues related to environmental, health and safety aspects.

## Annex 1: Results Framework and Monitoring

**Country: India**

**Project Name: Rajasthan Road Sector Modernization Project (P130164)**

### Results Framework

#### **Project Development Objectives**

##### PDO Statement

The project development objective is to improve rural connectivity, enhance road safety and strengthen road sector management capacity of the state of Rajasthan.

**These results are at** Project Level

#### **Project Development Objective Indicators**

Indicator Name	Core	Unit of Measure	Baseline	Cumulative Target Values					Frequency	Data Source/Methodology	Responsibility for Data Collection
				YR1	YR2	YR3	YR4	End Target			
Share of rural villages with access to an all-season road* *Population category: 250-500	<input checked="" type="checkbox"/>	Percentage	67% <sup>26</sup>					81% <sup>27</sup>	Mid Term Review (MTR) and End of Project (EOP)	PWD Statistics Division	PWD
Increased percentage of core road network in good/fair condition season road	<input checked="" type="checkbox"/>	Percentage	Baseline data will be collected by March 2014					To be determined after baseline data is collected	Once a year	PWD GIS unit	PWD
A reduction in annual road accident fatality count on model road safety	<input type="checkbox"/>	Number/year	To be filled after iRAP is done on the					To be determined after the iRAP survey	EOP	First Incident Reports	CE (PMGSY)

<sup>26</sup> Source: Progress Report PWD Rajasthan 31.05.2013

<sup>27</sup> Assuming 1056 additional villages to be connected under this project.

corridors			corridor							
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### Intermediate Results Indicators

Indicator Name	Core	Unit of Measure	Baseline	Cumulative Target Values					Frequency	Data Source/Methodology	Responsibility for Data Collection
				YR1	YR2	YR3	YR4	End Target			
Roads constructed, Rural	<input checked="" type="checkbox"/>	Kilometers		500	750	750	500	2500	MTR & EOP	Consultant reports	CE (PMGSY)
Cost effective technologies piloted for road design and construction and upgradation/maintenance of existing gravel roads	<input type="checkbox"/>	Kilometers	0			50	50	100	EOP	Consultant reports	CE (PMGSY)
Road Asset Management System in place and innovative forms of contracting used	<input type="checkbox"/>	Yes/No	No			Current MMS modified and put to use as a Road Asset Management System		Area wide maintenance contract systems and other forms of contracting used regularly	MTR & EOP	PWD reports	CE (PMGSY)
Computerization of key business processes in PWD	<input type="checkbox"/>	Yes/No	Most key processes are manual			Application development & infrastructure deployment for selected processes		Re-engineering and computerization of key processes completed <sup>28</sup>	MTR & EOP	PWD reports	CE (PMGSY)
Model road safety corridor(s)	<input type="checkbox"/>	Kilometers	0					100	EOP	Consultant reports	CE (PMGSY)

<sup>28</sup> As per Detailed Project Report and Functional Requirement Specifications prepared by a consultant in 2012

developed										
Star rating achieved on model road safety corridor(s)	<input type="checkbox"/>	Text	TBF after iRAP is done on the corridor				3	EOP	Consultant reports	CE (PMGSY)
Road safety policy and action plan approved and implemented	<input type="checkbox"/>	Yes/No	No			Policy & Plan approved	Policy & Plan approved and implemented	MTR & EOP	PWD Reports	CE (PMGSY)

## Annex 2: Detailed Project Description

### India: Rajasthan Road Sector Modernization Project (P130164)

1. The project has three components as described below.
2. **Component A: Rural Connectivity Improvement** (USD 197 million, including IDA credit USD 138 million; civil works): This component would support construction of about 2,500 km rural roads to provide connectivity to about 1,300 revenue villages with population from 250 and 499 in the areas of the state not covered by PMGSY and introduce good practices of cost effective low volume technologies. The roads will predominantly be built using a bitumen surface and will include all necessary bridges and cross drainage works to maintain year round connectivity. Contracts for civil works worth US\$ 51 million have been already awarded, bids worth US\$ 21 million is finalized for award, and contracts worth US\$ 59 million are expected to be awarded soon.
3. This component will also support consultant and technical assistance services to help the PWD in the overall project management including supervising and monitoring the construction packages with periodic site visits and progress/ status monitoring and reporting.
4. This component also would support construction of about 100-120 km of village and other low-trafficked rural roads connecting sparse populations through low-cost new technology materials like quarry wastes, chip sealing or thin bituminous surfacing on a pilot basis to test and confirm the effectiveness of such technologies in rural roads.
5. **Component B: Road Sector Modernization and Performance Enhancement** (USD 11 million, including IDA credit USD 7.75 million; technical assistance and goods): The Project will facilitate gradual transformation of the PWD into a modern road agency by putting in place best practice examples for sector policies, financing, strategic planning, road safety, and project and asset management. This would enable the PWD to: (i) enhance both the quality of delivery and effectiveness of various road programs; (b) sustain the assets created under those programs through better planning and garnering more funds; and (c) improve road safety management.
6. The project will support implementation of an RSMP designed to address key sector issues by considering the best practice road industry examples available in India and abroad. This component will support implementation of an RSMP<sup>29</sup> in the following key areas:
  - *Improved policy framework:* strengthening of existing road sector policies and strategies including a robust financing framework for both road construction and maintenance, strengthening of policy framework for PPP and participation of local governments in managing road access to small communities;
  - *Sustainable Asset Management:* modifying and putting to use the current MMS into a computerized asset management system to prepare prioritized investment and maintenance plans for both construction and maintenance of state roads using rational criteria for

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<sup>29</sup> RSMP is intended to establish a dynamic and regular mechanism in PWD for sector reforms not confining to the proposed project duration. It will be regularly reviewed and modified, and implemented in a Phased manner by targeting a subset of key priority activities. Its implementation will go well beyond the proposed project period.

investment decisions; introduction of area-wide maintenance contract system and other forms of maintenance contracting<sup>30</sup>;

- *Modernization of Engineering Practices and Business Procedures:* including introduction of modern project preparation and management practices, design and construction standards, new technologies specifically to promote cost-effective road construction for low trafficked roads (about 50,000 km), improved procurement procedures, and a PWD-wide procurement and contract management manual;
- *Institutional and Human Resource Development:* Strengthening of PWD institutional structure, building of staff capacities<sup>31</sup> to keep them abreast with latest road industry practices, and computerization of PWD offices;
- *Preparing a pipeline of feasible projects for implementation:* Feasibility and DPR preparation of about 700 km of SH/MDRs ready for financing after initiation of pre-construction activities. At appraisal, shortlisting of international consultants for the service is ongoing; and;
- *Enhancing Governance & Accountability in PWD:* Bringing in transparency and openness in all major activities involving public procurement and financing through improved voluntary sharing of information and on demand as per the RTI.

**Table 3: Detailed Cost-Component B**

Component	Costs including Contingency	Bank Financing	%Bank Financing	GOR Financing
<b>B - Road Sector Modernization</b>	<b>11.00</b>	<b>7.75</b>	<b>70%</b>	<b>3.25</b>
a) Improved Policy Framework*	2.00	1.40	70%	0.60
b) Improved Engineering Practices and Business Procedures*	2.00	1.45	70%	0.55
c) Develop a Sustainable Asset Management System*	3.50	2.45	70%	1.05
d) Enhanced Human Resource Capacity*	1.00	0.70	70%	0.30
e) Improved Governance and Accountability*	0.50	0.35	70%	0.15
f) Project preparation services to prepare a project pipeline*	2.00	1.40	70%	0.60

\* The above sub-component costs are indicative and actual allocation shall be as per the requirement.

**7. Component C: Road Safety Management (USD 15 million, including IDA credit USD 10.55 million; civil works, technical assistance and goods):** This component will support the strengthening of road safety management systems in Rajasthan with the objective of reducing the

<sup>30</sup> By building on the initiatives underway in PMGSY Rural Roads Project. Actual maintenance works will be funded by GOR through its own maintenance funds

<sup>31</sup> Through implementation of a Human Resources Development Strategy

number of fatalities and serious injuries from traffic accidents in the state. This will be accomplished through establishing and implementing a multi-sector *demonstration activity approach* on selected corridor(s), iRAP surveys financed by GOR, on high-risk, high-volume state highways, support to the state on select policy reviews, capacity building of PWD and other agencies in road safety engineering and integration of road safety into asset and project management, road safety audits on project roads, road safety education and awareness programs, and possible support to procure equipment for ongoing safety programs of the state's Transport and/or Police Departments. These interventions have been designed based on a detailed Road Safety Management Capacity Review (RSMCR), which followed established guidelines to assess the preparedness of the state's agencies in tackling the state's road safety challenges. Details of the main sub-components are as follows (and summarized in Table 2):

8. *Safe Corridor Demonstration Program (SCDP, USD 12 million, IDA USD8.4 million):* This sub-component will primarily support multi-sector road safety interventions on select demonstration corridors. Given that GOR is interested to carry out the iRAP surveys on some of its major state highways quickly<sup>32</sup>, it will finance this activity on high-risk, high volume roads to obtain the baseline road safety assessment; a 100 KM stretch will then be selected from among these roads as the demonstration corridors for targeted multi-sector road safety interventions. The focus of these interventions will be on improving the safety of pedestrians, bicyclists and motorized two-wheeler through a range of engineering (as suggested by iRAP), enforcement, education, health care and community awareness measures<sup>33</sup>. It will support procurement of related goods, civil works and consultancy services for implementation of a multi-year result-focused safety action plan. A *road safety management (RSM) consultancy* is envisaged for assisting the PWD's Road Safety Cell in supervision of the design, development and monitoring of the road safety interventions and related performance indicators for these activities and their effects on treated corridors, comparing before-after road safety conditions. It is envisaged that this will develop the capacity of the state agencies to eventually evolve a State Road Safety and Traffic Management Board, which will coordinate and implement multi-sector road safety interventions on all state roads in the long term, including the development of an informed State Road Safety Strategy.<sup>34</sup>

9. *Formulation of State Road Safety Action Plan (USD 1.0 million, IDA USD0.7 million):* Building on the lessons from the SCDP, this sub-component will support consulting services<sup>35</sup> to help the state in formulating a road safety action plan building upon a long-term safe system vision, establishing required institutional structures for multi-sector coordination and decision making that could then be applied on all state roads eventually. This technical assistance will also include benchmarking of current state policies (on road safety aspects) with international best practice to identify and evaluate options and make recommendations for improvements. Proposed tasks under this sub-component are:

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<sup>32</sup> 6 BOT roads that are already under implementation by the Rajasthan State Road Development Corporation

<sup>33</sup> Possible non-engineering measures could include strengthening the post-accident response system, disseminating targeted road safety awareness programs to schools and training in first responder care to establishments, piloting use of speed cameras/radar guns/variable message signs along the corridors and strengthening of the accident data collection processes.

<sup>34</sup> Following the establishment of the National Road Safety and Traffic Management Board at the central level

<sup>35</sup> These consultants may be the RSM consultants or a separate firm

- (i) Review of existing institutional arrangements and recommendations for better set-up for multi-sector coordination
- (ii) Support to the state's other stakeholder departments in preparing their investment plans for road safety across the state
- (iii) Crash investigation training for Police (to complement the implementation of the Road Accident Database Management System under the proposed NHIIP of MoRTH)
- (iv) Development of a Manual of road infrastructure safety principles and good practice (incorporating safe system principles), and associated training for the Public Works Department
- (v) Developing/enhancing University based road safety research capacity in Rajasthan
- (vi) Review of heavy vehicle operations, driver and rider licensing arrangements (including license testing), penalties for offences

10. *Road Safety audits on project roads (USD 1 million IDA USD 0.7 million):* This component will primarily support the conduct of post-construction road safety audits on some of the project roads in each zone including the audit on the routes leading to these link roads.

11. *Road Safety Education & Awareness campaigns (USD 0.25 million, IDA USD 0.18 million):* This sub-component will support the formulation and dissemination of road safety awareness campaigns in the project districts. NGOs that already active in the field will be harnessed to deliver the activities that may involve use of audio-visual media, targeted advertisements, road safety literature to be distributed in schools/colleges and use of existing loud speaker systems at high crash locations. In addition, it may also include imparting first aid transponder training to establishments along some of the project roads.

12. *Equipment for ongoing Road Safety Initiatives (USD 0.75 million, IDA USD 0.53 million):* This sub-component will support the procurement of sample state-of-the-art equipment/goods and associated training in the tactical application of the equipment that could then be used by the state's Transport/Police Departments in their ongoing road safety initiatives. These could be in the form of speed guns, intersection cameras, variable message signs, back office offence processing systems, etc.

**Table 4: Road Safety Management Component**

Activity Description (US\$ million)	Costs including Contingency	Bank Financing	GOR Financing
i. Safe Corridor Demonstration Program* -Multi-sector interventions on select corridors (works, goods) including design, monitoring of road safety interventions (consultancy)	12.00	8.45	3.55
ii. Consultancy services to evolve State Road Safety Action Plan including some policy reviews*	1.00	0.70	0.30
iii. Road Safety audits on project roads (consultancy)*	1.00	0.70	0.30
iv. Road safety education and awareness campaigns (consultancy)*	0.25	0.18	0.07

v. Procurement of equipment for some ongoing state initiatives (goods)*	0.75	0.52	0.23
<b>Total</b>	15.00	10.55	4.45

\*The above sub-component costs are indicative and actual allocation shall be as per the requirement

**Implementation Arrangements:**

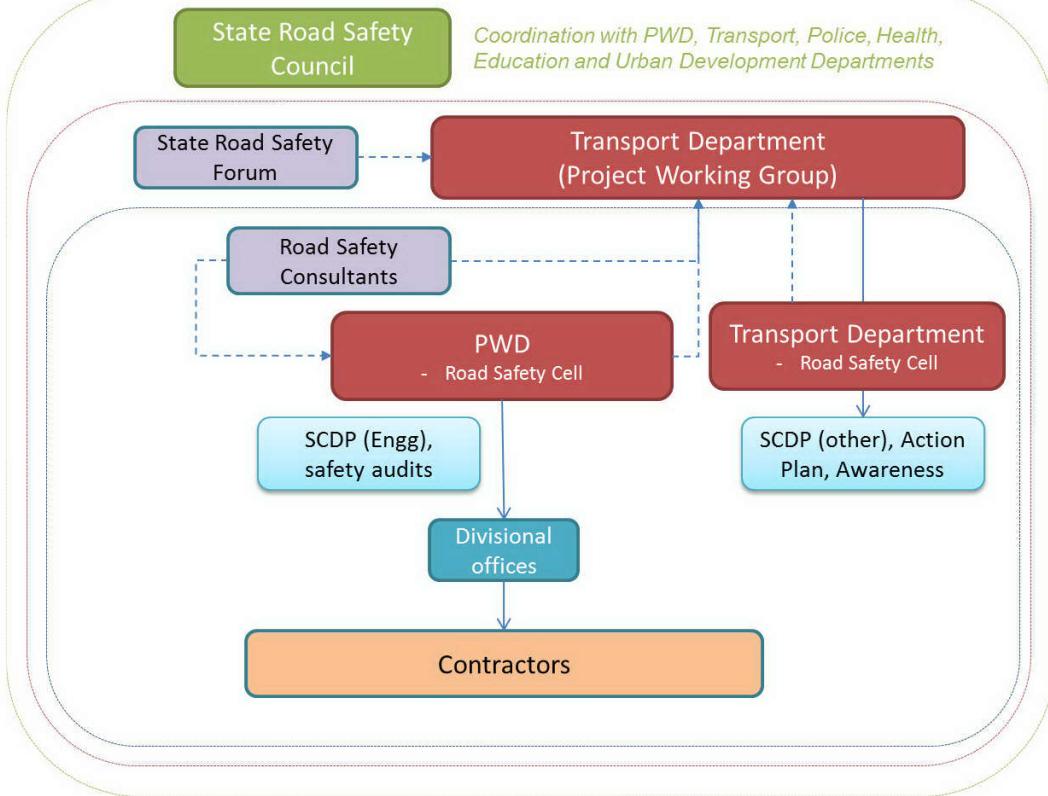
13. The Road Safety Cell of the PWD will be primarily responsible for implementing the engineering related interventions of the SCDP, the road safety audits and for carrying out all procurement under this component. For overall monitoring of the road safety tasks under the SCDP, the awareness campaigns, the review of consultant recommendations and decisions on equipment, the Transport Department will chair a Project Working Group (PWG) comprised of representatives from PWD, Police, Health, Education and Urban Development departments that will meet monthly and more if required. The role of the PWG is to provide the hub and support for the project design, delivery and coordination, including support for related procurement processes and day-to-day implementation of project components. The PWG will consider departmental proposals for possible implementation on the SCDP. If necessary, some of these may be put up for consideration by the State Road Safety Council (SRSC) to resolve inter-departmental issues.

14. To carry out the secretariat role of the PWG, the Transport Department will make available a resourced Road Safety Cell (comprising representatives of all stakeholder departments) that will develop road safety analysis and collect data (to start the research based policy development process), develop departmental proposals for the SCDP, and review consultant outputs on the policy reviews and the road safety action plan. The secretariat may be staffed/supported by outside consultants/experts and the recently formed State Road Safety Forum<sup>36</sup> as required. The monitoring arrangement for this component is shown in the figure below.

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<sup>36</sup> Comprising NGOs and PWD officers

## Road Safety Management



15. This leadership and management structure will be particularly important to the design and delivery of the corridor demonstration project, as it is envisaged that guidelines will ultimately be developed to assist the replication of successful interventions throughout Rajasthan. It is expected that the management of the SCDP may catalyze the establishment of road safety cells in the other stakeholder departments to manage the state's road safety agenda more holistically.

16. The project coordination and liaison role with World Bank will be through a *coordination officer* appointed by PWD (preferably one who is part of the PWD's Road Safety Cell), who will liaise with all the relevant stakeholder departments to monitor overall progress, coordinate scope and cost estimates preparation and support procurement through PWD.

## **Annex 3: Implementation Arrangements**

### **India: Rajasthan Road Sector Modernization Project (P130164)**

#### **A. Project Administration Mechanisms**

1. ***Overall implementation strategy:*** The project will be implemented by PWD, using its existing structures to the extent possible through support from other departments within Government of Rajasthan, including transport, police, health, revenue, forest, and district collectors and local offices. An adequately staffed Chief Engineer (PMGSY) office has been functional in the state to implement various Bank funded projects, including the Rural Roads Project I. The CE office will be responsible for implementing the project under the overall guidance of the Principal Secretary PWD. The CE office has designated units/cells for engineering designs, procurement, contract management, social, environmental, financial management, computerization, institutional development, governance and accountability, and road safety. The team will further be reinforced with the hiring of a multidisciplinary team of Project Management Consultant (PMC). A cell consisting of 1-2 persons will be established and tasked with the coordination of monitoring, evaluation and reporting functions. A technical audit and the PMGSY model of State Quality Monitor (SQM) would suffice to ensure quality of rural roads.
2. ***Procurement and Contract Management Manual:*** A Procurement and Contract Management Manual would be prepared and adopted for the project based on the existing manual for PMGSY works. In addition the Project Management Consultant (PMC) would help PWD to prepare an Operations Manual which would define detailed implementation arrangements for various project components, including project monitoring, fund flow, and management of social and environmental aspects. Separate procurement and financial management manuals will be used under the project.
3. ***Implementation Arrangements in the Project Districts:*** All activities under the project will be implemented through the 8 Zonal offices (Jaipur 1&2, Udaipur, Kota, Bharatpur, Ajmer, Jodhpur, Bikaner), providing oversight, each responsible for 4-5 districts. At the district level, the project activities will be implemented by the PIU (Project Implementation Unit) and supported by 3-4 PWD field divisions responsible for implementing most of the road improvement works. Each PIU would be headed by a Superintending Engineer and would be additionally staffed by one Executive Engineer (called Technical Assistant), 1 Assistant Accounts Officer, 2 Assistant Engineers, 1 Junior Accountant or Accountant, and 7-10 persons of secretarial staff. The PWD agreed to supplement project divisions in the districts, if required having high concentration of road improvement works under the project.
4. ***Project Management Consultant (PMC):*** The PMC consultant will be mobilized to provide high quality technical advice and implementation support to PWD. The PMC will also undertake half-yearly project performance audits of the overall project. The main functions of the PMC would be: (i) monitor the whole project and all its components with periodic visits to the site; (ii) remind the client of any major action they would need to take as per the contracts or in response to the credit covenants of the Bank; (iii) assess the overall progress of the project with suitable indicators as well as any cost variations; (iv) act as the a technical agent of the

department during their site visits to bring to the notice of PWD any glaring quality aberrations; (v) support the client on all environmental and social management activities/ requirements of the project, including preparatory studies, site supervision, reporting, documentation and capacity building; (vi) prepare monthly and quarterly project reports for the PWD and the Bank as per the credit and other good practice requirements of projects; and (vii) help and advise the client in measuring the output and outcome indicators in a periodic manner to enable them to review the impacts of the project.

5. Table 3 summarizes the implementation arrangements for the project.

**Table 5: Implementation Arrangements**

<b>Identity</b>	<b>Role and/or Responsibility</b>
Principal Secretary, PWD	Overall project performance monitoring and guidance to PWD on project implementation, and assignment of responsibilities within PWD; coordination with other GOR departments.
Taskforce for Road Sector Modernization	Responsible for facilitation, review and expediting implementation of the Rajasthan Road Sector Modernization Plan.
CE office	Overall responsibility of project implementation, all project related procurements, and coordination with various units of PWD and GOR offices. All financial management aspects (overall responsibility of project financial management arrangements), i.e., receiving project funds from the finance department, issuance of L/Cs to divisions, making project payments, accounting and financial reporting, and project audit.
PMC	Technical assistance and proactive implementation support to all project related activities including regular performance audits.
PIUs and Field divisions of PWD	Implementation of all project related activities in the field. Receiving project funds from CE office (in form of L/C authorization), making payments, accounting and financial reporting, and project audit.
State Quality Monitor	perform inspection of the quality of rural road works included in RRSMP as per the procedures laid out in PMGSY rural roads project
Technical/Financial Auditor	Performs annual audit of the procurement , contract and financial management aspects of the project
<b>Road Safety Management</b>	
State Road Safety Council	Provide coordination between departments and aid in decision making as needed.
Project Working Group (PWG)	Overall monitoring, coordination, the awareness campaigns qnd review and advise on consultants' recommendations.
Road Safety Cell (within Transport Department)	Lead the coordination in developing road safety analysis and data collection, developing the SCDP, and review consultants' outputs on the policy reviews and the road safety action plan.
Road Safety Cell (within PWD)	Develop and implement the engineering related interventions of the SCDP, the road safety audits and for carrying out all procurement under this component.
State Road Safety Forum/outside technical experts	Provide expert local, state-level and international assistance as needed.

Road Safety Consultants	Assist the Road Safety Cells in both the PWD and Transport Departments in design, development, implementation and monitoring of the road safety interventions and related performance indicators; assist the PWG in formulating a multi-year and multi-sector road safety action plan, based on policy reviews, review of institutional arrangements and recommendations for multi-sector road safety investments.
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## B. Financial Management, Disbursements and Procurement

### i. Financial Management

6. The financial management arrangements of the project will be adequate to account for and report on sources and uses of project resources and to meet the Bank's fiduciary requirements subject to compliance with the financial management framework detailed below. The project's financial management arrangements shall be based on using the country systems approach except in the area of internal audit. The internal audit system needs strengthening and it was agreed that a joint fiduciary audit covering procurement, financial management and contract management aspects shall be carried out by a consulting firm to be hired under the project. The project will be implemented by PWD, Rajasthan with the Chief Engineer having the overall responsibility for project implementation. The zonal/circle offices and divisional offices shall have the supervisory and implementation responsibilities. PWD is already implementing the Bank funded Rural Roads Project<sup>37</sup>. A simple Financial Management Manual shall be prepared setting out the principles of Project Financial Management. Based the financial management arrangements proposed below, the financial management risk is considered "Moderate" at this stage.

7. The key features of the project FM arrangements are presented hereunder.

8. **Budgets and Funds Flow:** A provision of Rs.2,100 million has been made in the state budget for purposes of the project for the financial year 2013-14. A further revision to this budget, if required shall be made when the revised estimates are prepared during the financial year. The budget process, including reviews and approvals, will follow the existing system followed in PWD. Project funds shall be budgeted under separate project specific budget line(s) with separate sub heads for each project component. This will help in simplifying budgeting, accounting and reporting for the project. An example of the budget lines to be created is shown in Table 4. The Financial Adviser (NH), would need to follow-up with the state Finance Department for creation of these budget heads latest by appraisal.

**Table 6: Example of Budget Lines to be created under the project**

Major Head : XXXX		
Sub Major : XX		
Minor : XXX		
Sub-Minor: 01 (RRSMP)		
Component 1	Sub-Head	Object codes
	01	XX

<sup>37</sup> PMGSY Rural Roads Project (P124639)

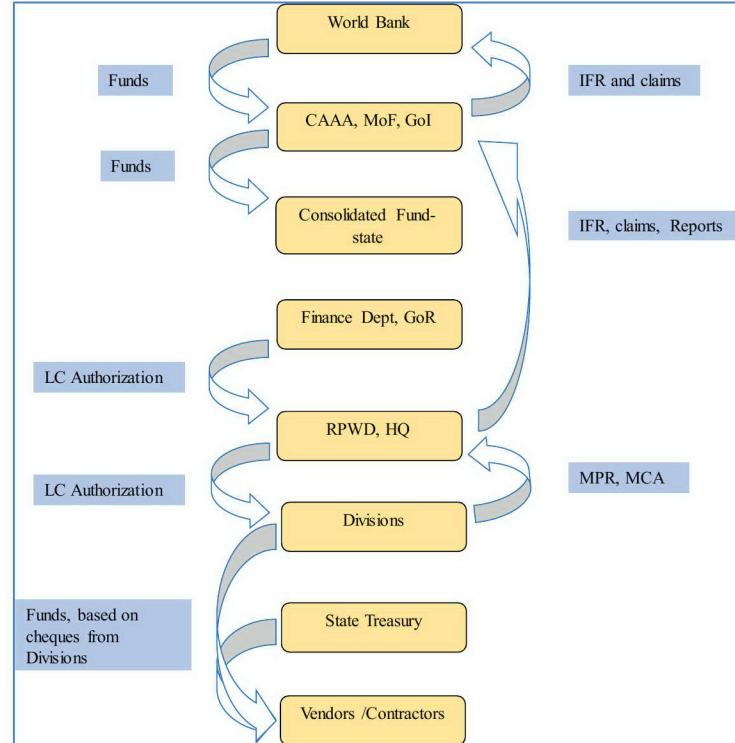
Component 2	02	XX
Component 3	03	XX
Component 4	04	XX
PWD financed expenditure	99	XX

9. The existing system of funds flow in the PWD (letter of credit or L/C system) shall be used for the purposes of the project. The L/C system has been computerized starting from the current financial year and is now part (module called Works Accounts Monitoring System) of the state wide Integrated Financial Management System (IFMS). The HQ staff would need to ensure that sufficient authorizations are provided to the divisions to incur project expenditure. The graphic alongside shows the funds flow and reporting arrangements under the project.

#### 10. Accounting Arrangements:

Project accounting shall be done as per the existing system of the state.

Under the existing system, a basic set of accounts are maintained by the departments (PWD) and the compilation of these accounts is done by Accountant General (Accounts and Entitlements) or AG (A&E) based on Monthly Compiled Accounts (MCA) submitted by the departments (PWD). Hence, project related transactions shall be recorded by PWD in the Divisional Cash books and MCA submitted to AG (A&E). The separate project budget heads will help in identifying the project transactions. All required reconciliations with AG (A&E) and Treasury shall be completed as per the required schedule. Currently the project accounts are maintained on manual basis; however with the roll-out of the Works Accounts Monitoring System (WAM) module with effect from May 1, 2013 these accounts are expected to be computerized. WAM is a new module added recently to the state wise Integrated Financial Management System (IFMS).



11. Internal Controls including Internal Audit: All project related transactions and records shall be maintained as per the existing policies, procedures and rules of the Government of Rajasthan and PWD. Further, any project specific procedures as described in the Bank's Manuals such as Financial Management Manual and Procurement Manual would also need to be complied with by the project staff. The controlling offices (Circle/Zonal offices) shall provide the oversight function over the division. An existing Audit Standing Committee comprising State Dy. Accountant General, Joint Secretary (Audit) from the State Finance Department and the Secretary of the Department would monitor the open audit paragraphs from the state Accountant General's (AG) audit report. The said committee meets on a quarterly basis.

12. Although there is an internal audit cell within the PWD, it has several shortcomings which include shortage of staff, backlog of audit for about two years, no details on overall outstanding audit paragraphs and status of their compliance, focus on transactions audit only and lack of training on modern concept of internal audit. The Bank recommends that the internal audit function within PWD be strengthened over the next 2 to 3 years. In the interim, it was agreed that internal audit for the project shall be carried out by a consultancy firm hired on a competitive basis as per criteria acceptable to the Bank. The scope of the audit shall be defined in the Terms of Reference (ToR) and will include integrated Procurement, Financial Management and Contract management reviews. The said ToR will be available as an annexure to the FM Manual. The audits will begin after the effectiveness of the project and shall be carried out on a quarterly basis in such a manner that each division is audited once every six months. Compliance with the audit report shall be monitored at HQ level; however the controlling offices shall also open the audit observations. A legal covenant has been included in the Project Agreement with regard to PWD maintaining Internal Audit arrangements acceptable to the Bank during the life of the project.

13. **Financial Reporting:** The Interim Unaudited Financial Reports (IFR) shall be used for the purposes of project financial reporting and disbursements. The IFR shall be prepared on a quarterly basis and shall primarily be based on AG (A&E) reports reporting expenditure under the project specific heads and supplemented by the contract level information provided by the divisions. The Monthly Progress Reports (MPR) being already submitted by divisions shall be suitably modified to facilitate IFR reporting. The dedicated accounting staff at PWD HQ shall be responsible for preparation of IFR compiling reports received from AG (A&E) and the divisions. The IFRs shall be prepared on cash basis. Using country systems approach, instead of disallowing retention money/security deposit for each bill, a detailed monitoring sheet as part of the IFR will be maintained through the life of the project and any outstanding balance at the end of the project shall be deducted from the final claims submitted by PWD.

14. **External Auditing (project audit report):** The external audit of the project shall be carried out by the Rajasthan State Accountant General (AG) in accordance with the standard terms of reference already agreed for the Bank funded projects. The project audit report issued by AG would need to be submitted to the Bank within six months from the close of the financial year (by September 30). The divisional staff will follow-up on the compliance with the AG's audit paras and the PWD HQ shall monitor the resolution of all the audit paras at the state level.

15. **Project FM Staffing:** At the divisional level, the existing staffing arrangements of PWD with Divisional Accounts Officer (DAO) supported by other accounting staff will be used for the purposes of the project. At the PWD Head Office, the FA (NH) shall have the overall responsibility for project FM arrangements. The FA (NH) shall be supported by a dedicated Accountant and a Jr. Accountant for the project purposes. The FM staff at PWD HQ shall ensure that all project related FM requirements are complied with, which will include preparation of IFR, follow-up and submission of audit reports, availability of sufficient funds for the project etc.

16. **Training:** The FM staff working on the project will be suitably trained on Bank FM, contract management, maintenance of contract tracking data, disbursement procedures and on other FM areas that will help them in rendering their responsibilities.

## ii. *Disbursements*

17. **Disbursement Arrangements:** Reimbursement method is proposed to be the primary method of disbursement under the project. However any time during project implementation, Government of Rajasthan may decide to have a Designated Account advance for the purposes of the project which shall be maintained by office of Controller of Aid Accounts and Audit (CAAA), Ministry of Finance (MoF), Government of India (GoI), as per the existing procedures. All withdrawal claims, supported by IFR shall be submitted by the PWD HQ to CAAA for further submission to the Bank. Based on these claims, funds will be disbursed to the GoI and thereafter transferred to the state as per the standard center-state arrangements. IDA funds will be disbursed against eligible expenditures under the following categories subject to the allocated amount and the disbursement percentage as indicated in Table 7.

18. Timeline for completion of balance FM related actions:-

S.No.	Action	Timeline
1	Finalization of Financial Management Manual	FM Manual dated September 5, 2013 confirmed by GOR vide email dated September 17, 2013
2	Agree on Internal Audit arrangements and ToR	Confirmed as part of FM Manual as per above email.
3	Create Component wise budget heads	GOR confirmed during negotiation that creation of component wise budget heads is under process, for which state Finance Department has agreed in principle and these will be created when the next state budget is prepared.

**Table 7: Disbursement Arrangements**

Disbursement Category	Amount of the Credit Allocated (million US\$)	Amount of the Credit Allocated (expressed in SDR)	Percent of expenditures to be Financed (inclusive of taxes)
TBD	160,000,000	105,600,000	70%

19. **Retroactive Financing:** GOR intends to use the proceeds of the credit to finance eligible expenditures made prior to effectiveness of the project up to 20% of the total Bank financing. Details will be discussed during appraisal

20. **Re-financing of PPA (USD 3 million, IDA Credit 3 million):** A PPA was provided by the Bank to GOI/GOR to part-finance the preparation activities of the project. As per the terms & conditions, the disbursed amount of this PPA would be refinanced from the credit as and when it becomes effective.

### *iii. Procurement*

21. Procurement of all goods, works and non-consulting services required for the Project and to be financed out of the proceeds of the Financing shall be done in accordance with the requirements set forth or referred to in Section I of the “Guidelines: Procurement under IBRD Loans and IDA Credits” (dated January 2011). Selection consulting services required for the Project and to be financed out of the proceeds of the Financing shall be done in accordance with the requirements set forth or referred to in “Guidelines: Selection and Employment of Consultants by World Bank Borrowers” (January 2011); and the provisions stipulated in the Financing Agreement.

22. The Project has set-up a well-staffed procurement cell. The procurement cell comprises of two Executive Engineers with substantial experience of implementing Bank funded projects and supported by an Assistant Engineer; one Assistant Accounts Officer and one support staff. The procurement cell members have their major responsibilities into full procurement cycle management including development of bidding documents/RFPs, conducting bidding/selection process, contract award, management and completion. In addition, the selection of Project Management Consultants is underway and the REOI has been issued by the IA for the same.

23. For all NCB and Shopping contracts, the project proposed to use PWD’s e-procurement system which uses the NICNET platform. Bank has carried out an assessment of the e-procurement system and subject to (i) revision of the user manual as per GoI CPP model (ii) enabling the facility for withdrawal of bids and (iii) conducting a systems security audit, Bank accepts the use of e-procurement in the project. The procurement of goods, works and services will follow Bank guidelines, SBDs, SRFP and agreed bidding documents.

### **Assessment of the Agency’s Capacity to Implement Procurement**

24. The PWD has been designated as the implementing agency for the project and the Chief Engineer (PMGSY), is designated as the head of PMU. CE (PMGSY) is assisted by one Superintending Engineer, 4 Executive Engineers, 6 Assistant Engineers, one Financial Advisor and 2 accounting personnel. PMU will be supported by a Project Management Consultant (firm). The PMU is supported by Project Implementation Units (PIU) headed by Superintending Engineers (SE) of PWD, one in each of the 21 circle offices (coinciding with revenue districts) where the project is to be implemented. The SE and their staffs are responsible for projects other than RRSMP as well.

25. The State concluded implementation of Rural Roads Project I (RRP I) in March 2011 and is implementing RRP II since last 4 years in Rural Road Sector and is as such familiar with World Bank’s procurement methods and project implementation. Although several members of team which implemented RRP I have been transferred or retired, many members of the current team have been working on RRP II and on the preparation of the RRSMP and are increasingly becoming more familiar with World Bank procurement methods and processes. In addition, the PWD has created a procurement cell of 4 officials for the procurement of works, Goods, Consulting and non-consulting services. 3 Engineers have also attended two weeks’ procurement workshop.

26. The procurement responsibilities and arrangements in the PMU are described in the following paragraphs.

27. Procurement Setup in the Project Management Unit of CE (PMGSY): All Procurement matters are finalized in accordance with the powers delegated in the Schedule of Power (Annexure XIII) of PWF & AR. Under the project, for rural road civil works contracts, the IFBs are invited by PMU based on the model bidding document cleared with the Bank. The bidding documents for specific contract packages are reviewed by the PMU before the same are uploaded by the respective circle offices. The bids are electronically received at respective zonal offices headed by Additional Chief Engineer, evaluated by the evaluation committee at respective Zonal offices. 100% of the Bid Evaluation Reports are reviewed at the PMU before the award can be issued to the contractors. The contract awards are made in accordance the delegation of powers, as follows:

- i) Executive Engineer at Divisional level up to Rs. 3 million
- ii) Superintending Engineer at Circle level up to Rs. 12 million
- iii) Additional CE at Zonal level upto Rs. 25 million
- iv) Chief Engineer at headquarters Jaipur upto Rs. 50 million
- v) Empowered Board for beyond Rs. 50 million

For single bid received under any bidding process, the next higher level accepts the bid for award.

28. Evaluation Committee comprising of following members has been constituted by the PWD to finalize the activities like (i) approval of RFQ documents and Bidding documents for goods, (ii) approval of shortlisting of consultants and (iii) Award of Consultancy and goods

a. Chief Engineer (PMGSY)	....	Chairperson
b. CE Roads	....	Member
c. Financial Advisor (PMU)	....	Member
d. Superintending Engineer (WB)	....	Member
e. Executive Engineer (WB)	....	Member

29. Evaluation Committee comprising of the following recommends/ approves the award of Works.

a. Additional CE	....	Chairperson
b. SE	....	Member
c. Chief Accounts Officer	....	Member
d. Executive Engineer	....	Member

30. **Procurement Set Up in the PMU:** The Procurement Cell provides technical backstopping and oversight of procurement activities for the different units of the PMU and respective Zonal/ Circle offices. The implementation arrangements of the project are described in the corresponding section. A procurement manual for the project prepared by the PMU is agreed by the Bank.

31. Additional help is provided by technical experts, consultants in finalization of technical specifications and proposal evaluations when required. A legal cell helps on legal matters such as arbitration, legal vetting and complex issues in contract agreements etc. A Project Management Consultant (PMC) with multidisciplinary team is being hired by the PMU to assist in management of project.

32. **Risks and Mitigation Measures:** The key procurement risks and mitigation measures have been identified and highlighted below.

33. **Lack of Dedicated Procurement Staff:** Since there is no dedicated Procurement Officers at PMU, the initial procurement actions were carried out through the involvement of PMU engineers who have additional responsibilities. However, this arrangement required strengthening with the re-allocation of a few dedicated procurement officers, who would be responsible not only for executing the planned procurement activities but also for coordination and monitoring procurement progress at PMU and Zonal/ Circle offices, and for overseeing contract administration during the implementation phase. A Procurement cell as described above has been setup by the PMU in March 2013.

34. **Capacity Building Measures:** The PMU staffs have been associated with project preparation and earlier RRP projects and are familiar with Bank procedures. Some of the PMU staffs dealing with procurement have attended a training course on Bank procurement procedures at the Administrative Staff College of India (ASCI) in Hyderabad. The Bank task team has also conducted two procurement sensitization workshops at PWD office in Jaipur and one orientation program at New Delhi with specific focus on selection of consultants. During project implementation, the PMU is working out a training plan for more staff to enhance their exposure and refresh their procurement capacity on a sustainable basis.

35. In addition, as part of the institutional capacity building, PMU engineers who will be associated for the project implementation will undergo an orientation course on the essentials of procurement (advertisement, document preparation, prequalification & bidding process and evaluation procedures) using Bank procedures, as well as a course on Contract Management. The training courses may be designed and conducted in-house by training institutions at the request of PMU, their staff would be sent for the training to different institutions in India for the standard training programs available.

36. **Disclosure Requirements** as per Banks' Procurement Guidelines, January, 2011 will be complied. The provisions for disclosure as detailed in "Governance and Accountability Action Plan (GAAP)" go a step further from Bank's said disclosure requirements and adequately satisfy Bank's requirement.

37. Identification of procurement risks and mitigation plan to address these risks by enhancing the procurement capacity of PMU is archived in the Procurement Risk Assessment and Management System and key risks and their mitigation measures are reflected in ORAF.

38. Based on the efforts made by the project to put in a robust system for managing the procurement activities and improved complaint handling system, the procurement risk has been assessed using PRAMS during appraisal and rated *Moderate*.

39. **Prior-Review Thresholds:** Prior-review and procurement method thresholds agreed with RRSMP for the project based on the risk assessed are detailed in Tables 8 to 10 below. These thresholds shall be reviewed periodically during the life of the project to bring in any changes as demanded by further risk assessments.

**Table 8: Procurement Thresholds, Methods and Value thresholds for Civil Works**

Expenditure Category	Value* (Threshold per contract)	Procurement Method	Contracts subjected to Prior Review/Post Review
Civil Works	(a) Civil Works estimated to cost equivalent to US\$ 100,000 or less per contract.	Shopping (Minimum 3 quotations) Force Account, if any	Post review only Post review only
	(b) Rural roads Civil Works estimated to cost more than the equivalent to US\$ 100,000 per contract and less than US\$ 2.5 Million.	National Competitive Bidding (NCB)	First NCB works contract regardless of value. All other contracts are subject to post review.
	(c) Civil Works (other than Rural Roads) estimated to cost more than the equivalent to US\$ 100,000 per contract and less than US\$ 40 Million.	National Competitive Bidding (NCB)	First NCB works contract regardless of value and all contracts above US\$ 15 Million equivalent each will be prior reviewed by the Bank. All other contracts are subject to post review.
	(d) Civil Works estimated to cost more than US\$ 40 Million	International Competitive Bidding (ICB)	All ICB contracts irrespective of value will be subject to prior review.

\* If a transaction comprises several packages, lots or slices, the aggregate estimated value of contracts determines the applicable threshold amount.

# Irrespective of the prior review thresholds, first NCB contract for works and goods from procuring entity will be subjected to prior review by Bank.

**Table 9: Methods and Value thresholds for Goods**

Goods	Value Threshold	Methods	Review Arrangements
Equipment, Machinery, Vehicles, Furniture, Learning Materials, IT Systems and Non-Consulting Services etc.	(i) US\$ 100,000 equivalent or less per contract.	Shopping (Minimum 3 quotations)	Post review only
	(ii) Proprietary equipment; software; print, audio or visual educational publications; and other learning resources irrespective of value.	Direct Contracting	Prior review above contracts worth \$10,000 with justifications as per Guidelines.
	(iii) Contracts of more than US\$ 100,000 equivalent but less than	National Competitive	First contract will be subject to Prior review by

<b>Goods</b>	<b>Value Threshold</b>	<b>Methods</b>	<b>Review Arrangements</b>
	US\$ 3 Million equivalent.	Bidding (NCB)	the Bank.
	(iv) Contracts of more than US\$ 3 Million equivalent.	International Competitive Bidding (ICB)	All ICB contracts are subject to Prior review by the Bank.
	(v) Framework Agreement (FA) <sup>^</sup> Subject to inclusion of “FA” as procurement method for specific items in the procurement plan.	As per Para 3.6 of GL	All Fas are subject to review for acceptance.

\* If a transaction comprises several packages, lots or slices, the aggregate estimated value of contracts determines the applicable threshold amount.

<sup>#</sup>DGS&D Contracts can be used at par with shopping. However, State Rate Contracts cannot be used at par with Shopping. If state rate contract exists for an item, the same can be considered as one of the 3 quotations to be sought under shopping procedures.

<sup>^</sup> use of DGS&D rate contracts under Framework Agreement (FA) method can be used, provided that:

- Use of DGS&D rate contracts as FA must be reflected on the procurement plan agreed by the Bank for particular goods.
- Before issuing the purchasing order, the borrower carries-out a price analysis on the specific good that is intended to be purchased. If after this due diligence the borrower concludes (and Bank agrees) that the DGS&D rate contract is not suitable, then the borrower will have to proceed using NCB or shopping depending on the value.
- To meet the Bank's requirements for right to audit and F&C, these clauses may be included in the Purchase Orders (in case the purchasers are directly placing the purchase orders to DGS&D rate contract holders). On the other hand, if indent is placed through DGS&D, the Purchaser has the option to sign a separate undertaking with DGS&D rate contract holder, where Bank's right to audit and F&C clauses could be mentioned.

**Table 10: Methods and Value thresholds for Consultancy Services**

<b>Consultancy Services (Firms)</b>	(a) More than US\$300,000 equivalent per contract.	Quality and Cost Based Selection (QCBS) Or Quality Based Selection (QBS)  May comprise entirely of national consultants for all contracts below US\$800,000	Prior Review.  First Contract of each methods of selection irrespective of value and all subsequent contracts valued above \$ 1 Million. All others post review.
	(b) up to US\$300,000 equivalent	Quality and Cost Based Selection (QCBS) Or Quality Based Selection (QBS) Or Selection based on Consultant's Qualification (CQ) Selection based on a Fixed Budget (FBS) Or Selection Based on Least Cost Basis (LCS)	
Individual		Competitive Selection based	Prior Review of all

Consultants		on comparison of the relevant overall capacity of at least 3 qualified in accordance with Section V of the GL	contracts valued above \$100,000. All others post review
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\* If a transaction comprises several packages, lots or slices, the aggregate estimated value of contracts determines the applicable threshold amount.

40. National Competitive Bidding (NCB) method for procurement and goods and works as per the above value thresholds will be conducted in accordance with paragraph 3.3 and 3.4 of the World Bank Procurement Guidelines and the following provisions:

- i. Only the model bidding documents for NCB agreed with the GOI Task Force (and as amended from time to time), shall be used for bidding.
- ii. Invitations to bid shall be advertised in at least one widely circulated national daily newspaper (or on a widely used website or electronic portal with free national and international access along with an abridged version of the said advertisement published in a widely circulated national daily inter-alia giving the website/electronic portal details from which the details of the invitation to bid can be downloaded), at least 30 days prior to the deadline for the submission of bids
- iii. 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.
- iv. Except with the prior concurrence of the Bank, there shall be no negotiation of price with the bidders, even with the lowest evaluated bidder.
- v. Extension of bid validity shall not be allowed with reference to Contracts subject to Bank prior review without the prior concurrence of the Bank (i) for the first request for extension if it is longer than four weeks; and (ii) for all subsequent requests for extension irrespective of the period (such concurrence will be considered by Bank only in cases of Force Majeure and circumstances beyond the control of the Purchaser/ Employer).
- vi. Re-bidding shall not be carried out with reference to Contracts subject to Bank prior review without the prior concurrence of the Bank
- vii. The system of rejecting bids outside a pre-determined margin or "bracket" of prices shall not be used in the project
- viii. Rate contracts entered into by Directorate General of Supplies and Disposals will not be acceptable as a substitute for NCB procedures unless agreed with the Bank on case to case basis. Such contracts will be acceptable however for any procurement under the Shopping procedures.
- ix. Two or three envelope system will not be used (except when using e-Procurement system assessed and agreed by the Bank)

41. **Procurement Planning:** The borrower has prepared a procurement plan for all procurement identified works packages under the project and Bank had reviewed and agreed with the plan. Major items to be procured in the first 18 months of the project are for works and key consultancy services as detailed below:

**Procurement Plan for first 18 months is attached as Annexure 8. (Detailed procurement plan and schedule is archived in the project file)**

42. **Procurement Information:** Procurement information will be collected and recorded as follows:

- a. Prompt reporting of contract award information by the project management units and Districts.
- b. Comprehensive quarterly reports prepared by PWD, indicating:
  - Revised cost estimates for individual contracts and total cost;
  - Revised timings of procurement actions, including advertising, bidding, contract award, and completion time, for individual contracts; and
- c. A compliance report by the borrower within three months of the Loan signing date.

43. **Strengthening Contract Management and Procurement Systems:** The project will give particular emphasis on contract management. Specific training on contract management will be organized and would be repeated bi annually over the project period. Project will have designated Engineers for all key road packages who would be working on the contracts from the bid document preparation stage until completion of the contract implementation, for ensuring continuity in staff handling these key tasks. Similarly, field based engineers would be trained to supervise the contractors and for raising any issues on quality aspects and expediting and facilitating the implementation at field level. During implementation quarterly meetings focused on contract progress and issues will be conducted with participation of contractors, engineers and various sector staff of the project and Bank Task team for monitoring and addressing issues that emerge. For matters that will require escalation to other departments and stakeholders, hearings will be organized with the involvement of state government. Performance of Project Management Consultant will also be reviewed independently, including ensuring continuous availability of all staff committed by the consultants.

44. PWD would also develop a procurement and contract management manual to be used PWD wide by undertaking suitable modifications in the manual developed for the PMGSY Rural Roads Project. The project will make a concerted effort in bringing in beneficiary community and civil society in social audit of the progress.

45. An internal auditor will be selected by the IA to carry out joint Procurement-Finance Management-Contract Management audit during the implementation of the project.

#### **4. Environmental and Social (including safeguards)**

##### **Social**

46. **Benefits.** The social benefits from a rural road project are specific and accrue mainly to the villages targeted under the program. The impoverishment risks and social adversities for rural roads projects are generally minimal because of low land intake. Social assessments to date indicate accrual of net gains to the people affected, from better access to their agricultural fields, higher land values, enhanced productivity aided in part by enhanced participation of female workers in agricultural and other productive activities. Rural communities reported elevation in social status from connectedness to the main road network, and from the road as an important community asset.

47. **Social Impacts.** Construction of rural roads is proposed along the existing tracks in general, and restricted to the width as available in the Revenue Records. These are mostly the existing earth/gravel roads, built under GoI's MNERGA program. However, where available width is too small, additional land may be required for construction of the road, potentially triggering OP 4.12. In such cases the most common outcome is the loss of small strips of agricultural land and in some cases losses of entire or substantial parts of land holdings and even structures. Thus the potential adverse social impacts of the project are likely to be low. Additional strips of land required for the RRSMP will be provided by the people/community through voluntary donations, a pattern was followed under the Bank funded PMGSY RRP II which is under implementation in state Rajasthan.

48. **Management of Social Risks.** To improve the overall safeguard management and ensure compliance with OP 4.12 and OP 4.10, exclusive operational document – the Social Management Framework (SMF) that includes the Vulnerability Framework (VF) - has been adopted with suitable modifications from PMGSY RRP II, for RRSMP. This Framework has been in operation in the state for another on-going Rural Road project - PMGSY RRP II. The SMF provides for information sharing, stakeholder participation in design, implementation and monitoring, grievance redress, technical capacity development, and entitlement remedies for PAPs. It also clarifies the gaps in land donation processes and provides guidelines for all land transfers, to help mitigate adverse impacts on the project and PAPs. The SMF clarifies the gaps relating to land donation and provides guidelines for land transfer by donation. The VF that is included in the SMF ensures that the development process generated by the Project fully addresses the needs of the vulnerable populations and enables measures to promote distributional equity among the project affected populations (PAPs) in a culturally sensitive manner. It underscores the importance of participatory approaches, including information sharing, consultation and collaboration, as a way to give voice to, and strengthen the capabilities of PAPs - especially vulnerable groups, to influence the project's outcomes. These should ensure compliance with national legislation and the Bank's OP 4.10 and OP 4.12, and lay the ground rules for participatory, inclusive and equitable connectivity of rural habitations.

49. In all these approaches, stakeholder participation is central to design and implementation. While, design endorses measures for stakeholder participation in planning road alignments, implementation phase proposes piloting community contracts for road maintenance and facilitating citizen monitoring.

50. While implementation of the original SMF under PMGSY RRP II has provided reasonable experience to PWD, annual reviews of the functioning of the SMF within the RRSMP will improve understanding of their efficacy in supporting compliance with OP 4.12 and OP 4.10 respectively, and enable modification where necessary.

51. **Institutional Arrangements.** A nodal Social and Environment Officer at HQs will oversee and ensure implementation of the safeguards, while officers at district level will facilitate implementation of the safeguards at field level, as well as advise the Project Director at PWD. This Officer will be assisted by Environment & Social Specialist hired from the market. Social and environmental staff of the PMC, as well as field staff will assist these efforts. Training will

be provided by the NRRDA for these officers, on the SMF and VF, to ensure their familiarity with the provisions of the Frameworks.

52. All the Detailed Project Reports (DPRs) prepared by the field offices will have to be certified by the Social and Environmental Specialist at the Head Quarter for their compliance with the provisions of SMF. Implementation of mitigation measures will be completed before the start of civil works. The Performance Management Consultants (PMC) will undertake a sample review of contracts under the project to monitor performance on application of agreed safeguards procedures.

53. **Stakeholder Participation.** Stakeholder participation is central to the design and implementation of road works. Participation has been incorporated in planning road alignments, mainly through transect walks and systematic consultations. Participatory monitoring through Audit Teams, local committees using pro-forma checklist, and grievance redress mechanisms, on the other hand, will help strengthen the quality of construction and improve outcomes.

54. **Monitoring.** The outcomes will be monitored by the designated Social and Environmental Specialist at Head Quarter level and through observation and review of progress and audit reports. Data will, where possible, be disaggregated to reflect the situation of vulnerable populations. The monitoring reports from these actions will be submitted to the Bank periodically, and communicated to the Gram Panchayats. An audit will be undertaken once in every year to assess for the compliance with the provisions of the SMF.

55. **Grievance redress.** Grievance redress will be achieved through informal and formal mechanisms. Community concerns will generally be addressed during the project preparation stage through information dissemination, the transect walk and community consultations. A formal 3-tier Grievance Redress Mechanism will operate at the Panchayat and District levels, at judicial level through the courts of law. The petitioner may access the Panchayat level GRM committee on any grounds related to the preparation or implementation of the Project. If the grievance is not satisfactorily addressed (within 15 days) the petitioner can approach the District level, and if no satisfactory resolution is reached the petitioner can appeal to the court of law. The petitioner is exempted from all administrative and legal fees incurred in pursuit to grievance redress. Key criteria for the effectiveness of the GRM are: accessibility; predictability of the rules and procedures; transparency; fairness and impartiality; and credibility. The GRCs will support both sub-project social goals, and contribute to broader Program effectiveness and outcomes, through purposeful use of lessons learned. A description of the GRM is elaborated in the SMF.

56. **Implementation.** The existing patchy implementation capacity that can affect social outcomes despite adequate safeguard provisions. This dearth in capacity will be addressed through training and sharing of social lessons from roads programs. In addition, specific measures will be necessary to support social goals: (i) introducing social standards for DPR acceptability; and (ii) providing an effective, and predictable grievance redress system. Moreover, continuous monitoring by the Social and Environmental Officer at HQs in support from Environment & Social Specialist hired from market, complimented by Performance Audits

and Annual reviews, will help identify the implementation lags as they emerge, with appropriated modifications made.

57. **Results indicators for longer term action.** Results indicators for social dimensions for the longer term should include:

- Inclusive habitation connectivity
- Incorporation of social standards in DPRs
- Linking of road works with NREGA and other rural employment programs
- Compliance of land transfers with SMF and VF requirements

58. **Budget.** An indicative budget outline to implement the social aspects of the SMF is presented below:

- DPR preparation cost on social aspects (to include in DPR budget preparation)
- Display material (SMF brochures / pamphlets on RRSMP)
- Coordination costs for transect walk
- Conducting Census Survey (cost of forms)
- Public Consultations
- Legal expenses for transfer/acquisition of land/assets per KM (including mutation)
- Mid and end term Social Evaluation by NRRDA
- Performance Audits

### **Environmental Management and Safeguards:**

59. **Process.** The project would support design and construction of roads covering: (a) about 2,500 km rural roads to provide connectivity to about 1,300 villages; (b) road safety interventions/works and; (c) preparatory studies for rehabilitation/ improvement of about 700 km priority sections of State Highways.

60. The rural road works mostly involve improving existing earth and gravel roads developed under MNREGA to thin bituminous surfaced standard by providing suitable sub-base and base layers underneath. The road safety works would mainly involve curve flattening, junction improvement, widening/ repair of narrow/weak bridges, provision of truck-bye and other measures, as appropriate. The sub-project preparation for pipeline projects involving Feasibility study, prioritization and DPR preparation, covering about 700 km of state highways/road corridors may involve widening to two-lane standards and improvements within and outside the existing right-of-way, including road safety engineering measures to remove safety hazards.

61. The environment management process and tools for the project have been designed keeping in mind this varied scope of work. Accordingly, to effectively plan, design and integrate environmental dimensions into the over-all project preparation and implementation, an Environment Management Framework (EMF) has been prepared. The EMF has been informed by: (a) the results of an environment screening exercise; (b) experiences from the Bank-funded

road projects in the state, particularly the completed Rural Roads Project I and the on-going PMGSY project and; (c) experiences from similar state road projects implemented/under implementation elsewhere in the country.

62. ***Environmental Parameters Assessed.*** Key parameters that have been considered in the two environment safeguard instruments include- presence of sensitive natural habitats (Biosphere Reserve, National Parks, Sanctuaries, Wetlands, Reserved and Protected Forests); roadside plantation; water resources (rivers, streams, canals, springs, tube wells, hand pumps) and their use; water logging, flooding and drainage issues; physiographic conditions; soil resources including erosion prone areas; material sources and their requirement (earth, sand, aggregates); management and disposal of spoil materials, debris and scarified bitumen; cultural heritage sites; religious properties and; presence of sensitive receptors along the road such as schools, colleges and hospitals.

63. ***Environmental Issues.*** The rural road works and road safety interventions on selected road corridors are likely to create some adverse environmental impacts, particularly during the construction stage. While the adverse impacts are likely to be fairly limited in the local context, the exact nature and magnitude of impacts will vary in accordance to the location and type of engineering intervention. Deficiencies in planning and design of sub-projects can lead to insufficient arrangements to conserve natural drainage pattern leading to impairment to or worsening of the local/regional drainage. On the whole, the typical key likely impacts from the operation include: i) felling of some limited number of roadside trees; (ii) adverse impacts on water resources, including from silt flow during execution of works; (iii) soil erosion; (iv) construction phase impacts, including those related to camp site operation, dust generation, and pollution from plants, machinery, and vehicles and disposal of debris/other construction wastes; (v) appropriate management of materials (such as aggregates, sand, water, earth); (vi) safety concerns during construction works and due to increased traffic speeds during operation for both road-users and road-side residents and; (vii) the potential for poorly planned or managed development induced by the improved roads. In view of the project's potential impacts on the environment, the Bank's OP 4.01 on Environmental Assessment and OP 4.11 on Physical Cultural Resources have been triggered, and the project is designated as Category B.

63. Diversion of some forest land may also be required for widening/spot improvement in case of sub-projects involving safety interventions. More so, as part of Component B (Road Sector Modernization and Performance Enhancement), various sector level initiatives would be supported under the project. These include improving policy framework, strengthening of existing road sector policies and strategies, modernization of engineering practices and business procedures and creating asset management system to prepare prioritized plans for both construction and maintenance of state roads. While no civil works will be financed under the project on roads passing through designated protected areas, the larger institutional development plan for the road sector in Rajasthan would need to address the issues of biodiversity management in the interest of road user safety, environmental sustainability and tourism related reasons. Appropriate strategies and mechanisms will have to be built into the institutional systems to ensure that the over-all network planning/development and road selection/construction takes into account such factors. Accordingly, the operational policies on Natural Habitats (OP/BP 4.04) and Forests (OP/BP 4.36) have also been triggered for the project.

64. ***Environment Management:*** As the proposed works, including the 2,500 km are dispersed over a large geographic area consisting of several small works (about 800 odd rural roads, typically with a length of 2 to 5 km), a framework approach clearly specifying the selection, planning, design, construction and monitoring requirements is more effective as a management tool.

65. The EMF has two specific sections. One that will apply to the Rural Connectivity Component (adapted from RRP I and PMGSY – Rural Roads Project) and the second that would guide the preparation of Feasibility, DPR and environment safeguard studies for the selected 700 km of State Highway/Major District road corridors. The latter will also guide the preparation and execution of road safety works/interventions on selected road corridors.

66. The EMF has been prepared to guide the over-all sub-project preparation and implementation process and covers aspects such as screening methodology (including on biodiversity/wildlife issues); process and structure for preparing EIAs and corridor specific EMPs; institutional arrangements; supervision, monitoring and reporting requirements to facilitate compliance with the requirements specified in the World Bank Operational Policies and those required under Govt. of India and State Government regulations. The framework will help in addressing environmental issues and risks in a structured and systematic manner.

67. The other key elements of the environment management instruments developed for the project include: (i) a screening exercise to identify key issues including those related to forests/biodiversity/wildlife and consider those in the selection and design of sub-projects; (ii) revision of the Environmental Codes of Practice (ECoPs) currently in-use for Bank-funded PMGSY - Rural Roads Project in the state for application to the rural connectivity works and; (iii) preparation of Environmental Impact Assessment (EIAs) along with preparation of corridor-specific Environment Management Plans (EMPs) for state highways that would be prepared under Component B.

68. The nature and scale of civil works proposed under the Rural Connectivity Improvement component of this project are essentially the same as that being executed under the on-going PMGSY – Rural Roads project. Therefore, the environment safeguard instruments currently in-use in Rajasthan after necessary modifications (such as inclusion of GoI/GOR's regulatory requirements for non-rural works proposed under the project) have been used for this project as well. Following the application of the already developed and disclosed instruments for the PMGSY – Rural Roads project, contracts for civil works worth US\$ 51 million have been already awarded, bids worth US\$ 21 million is finalized for award, and contracts worth US\$ 59 million are expected to be awarded soon. An audit will confirm the application and implementation of agreed systems and procedures prior to the disbursement of expenditure for such works.

69. For the preparatory works of a possible pipeline project, corridor specific EIAs and EMPs may be prepared as required, for about 700 km of State Highways/MDRs as part of the feasibility studies and DPR preparation included in Component B- Road Sector Modernization and Performance Enhancement.

70. While the EIA would cover an assessment of baseline conditions, analysis of alternative options, assessment of potential impacts and identification of mitigation measures, the EMP will detail out the environmental management and supervision arrangements, mitigation measures, training plan, monitoring parameters and budget estimates. The supervision requirements along with reporting formats will be included in the corridor-specific Environment Management Plans (EMPs). For effective implementation, the environmental management plan will be appropriately integrated and cross-referenced in the design drawings, contract conditions and Bills of Quantities.

71. The findings from the environmental studies (including Environmental Screening) and public consultations have been/will be properly integrated into the engineering design and contract documents to help avoid and/or reduce environmental impacts. Appropriate measures have been/will be developed to address the identified issues. The Environment Management instruments have been prepared to address impacts such as: (a) air and noise pollution, dust from material transport, crushers and asphalt plants; (b) water and soil pollution from spills of fuel, lubricants and construction camp wastes; (c) soil erosion; (d) operation and rehabilitation of borrow pits, quarries and construction camps; (e) traffic safety and management; and (f) worker's health and safety.

72. For effective implementation of the rural road works, the requirements set forth in the EMF and more specifically the ECoPs will be appropriately integrated and cross-referenced in the Detailed Project Reports, contract conditions and Bills of Quantities.

73. Further, principles on biodiversity protection and management also form the core of the over-all environment management approach in the project. As part of the sub-project preparation process, an environmental screening was/will be conducted. This exercise allows for identification of key environmental issues early-on. To address potential impacts on biodiversity and natural habitats, the project's environment screening mechanism was designed to identify and avoid impacts on critical/ecologically significant natural habitats. Following this, it has been ensured that no road traversing through a designated protected area is included in the project. This will apply to both rural and non-rural works proposed under the project. The project will support development of appropriate mechanisms as part of asset management and road prioritization activities to deal with biodiversity/ wildlife issues in the larger context of the road sector development in the state. Further, with huge quantities of quarry wastes that could be used in road construction, the project will explore the opportunities for piloting new technologies/materials for cost-effective road construction.

**74. Consultations:** Stakeholder consultation mechanisms are central to the design and implementation of sub-projects and provide for information sharing, consultation and collaboration measures. It provides procedures for dissemination of information and consultation with communities and the affected people in particular through various stages of the sub-project cycle. While design stage involvement requires stakeholder participation in planning road alignment and providing for local level interventions (such as those related to cultural/religious properties, provision of cattle ramps and drainage), implementation phase requirements encourage community feedback for a more participatory monitoring.

75. A consultation framework has been laid out in the Environment Management Framework (as part of ECoPs) and Social Management Framework to ensure proper stakeholders consultation at all key stages of sub-project preparation and implementation. The framework provides for encouraging participation of women and representatives from the local community in districts under Schedule V (tribal) in the consultation process.

76. The consultation process is designed such that: (i) affected people are included in the decision making process; (ii) links between communities and their natural resource base adjacent to project locations are explored; (iii) public awareness/information sharing on project alternatives, benefits and entitlements is promoted and; (iv) views and design solutions from the communities are solicited.

77. Over-all, the consultation strategy/process is designed to enhance positive and manage negative impacts from the project. Findings from these consultations will be considered in deciding on the selection of preferred alignment/s, drainage facilities and other design interventions. Follow-up consultations will also be conducted, as needed through pre-construction and construction stages of the project. Outputs from this process have been/will be integrated into the engineering design to the extent possible. Once the project commences implementation, the project team is expected to have regular consultations with local stakeholders on environmental and social issues. The project will also establish a Grievance Redressal Mechanism (GRM) at the sub-project level and at the state level. A framework for GRM is presented in the RPF.

78. In accordance with applicable Bank policies, public consultations at local (along the project roads) are being carried out. For the rural roads connectivity component (Component A), the process, including transect walk and village meetings as part of the DPR preparation, as agreed for the on-going Bank funded PMGSY – Rural Roads project are being/will be followed.

79. For the component on preparatory studies for state highway/MDRs, consultations on environmental and social issues and design propositions, with both primary and secondary stakeholders would be conducted as part of the EA/SA process. Key stakeholders such as project affected persons, opinion makers, experts, elected representatives and different department personnel would be consulted both through individual discussions, village meetings and block level meetings.

80. The public consultation process so far has indicated that the people strongly support the project interventions. Some concerns have also been highlighted by the people and these pertain to drainage; accidents and road safety; compensation and resettlement issues; disturbances to religious property and water sources. These have been/are being addressed during design preparation, to the extent possible.

81. ***Staffing for Environmental Management.*** Specifically to manage environment management activities of the project, the staffing arrangements in the project would be as follows:

a. At the headquarters, an Environment Management Cell has already been created to handle all matters pertaining to environmental management in road projects, including all

activities related to project planning and preparation, supervision, monitoring, evaluation, reporting, documentation, training and over-all co-ordination with concerned agencies on environment management. The staffing of this cell will be as follows:

82. A Nodal Environment Officer (Executive Engineer level) who will deal with matters pertaining to integration of EA/EMPs into project design/contract documents; preparation/integrating environmental aspects in the ToRs for various studies; integrating environmental aspects in the modernization plan and other institutional studies; co-ordination with various departments/agencies of Govt. of Rajasthan and other units involved in project implementation and; over-all monitoring and supervision of environmental activities in the project. The Nodal EO will deal with matters pertaining to regulatory clearances; planning, preparation and execution of plantation works including compensatory afforestation and; co-ordination with Department of Forests and Wildlife Wing.

83. An Assistant Environment Officer (Assistant Engineer level) who will deal with matters pertaining to supervision and monitoring of environmental aspects related to construction management during project implementation and assist the Nodal Environment Officer in supervision, reporting documentation and data management.

84. An independent expert hired from the market to guide, support and assist the activities of the environmental cell of the PWD.

85. Data and Documentation Assistant: The EMU officials will be supported by a Data and Documentation Assistant (PWD employee or hired from market).

b. At the division level, an Assistant Engineer/ Junior Engineer from the PWD division will be designated as the Project/ Site Environment Officer, whose main responsibilities will include regular supervision, monitoring and co-ordination of environmental aspects related to pre-construction, construction and operation stages of the project. The Project/ Site Environmental Officer shall also be responsible for data collation and selected verification at the field level.

86. ***Capacity Building for Environmental Management.*** The project may result in improving PWD's exposure and over-all capacity in managing environment issues. A training plan has been prepared incorporating the project needs as well as the short and longer term capacity building needs of the PWD. The plan consists of a number of training modules specific to various target groups. The training will cover basic principles and methods of environmental assessment; mitigation plan/s; implementation techniques; monitoring and reporting requirements; regulatory requirements and; other relevant environmental management methods and tools.

87. ***Monitoring and Evaluation:*** The environment management instruments provide guidance on monitoring and evaluation parameters and describe the institutional arrangements to facilitate the 'process' and 'progress' monitoring. The application/implementation of environment management instruments, EMF (already prepared) and corridor specific EMPs (when these will be prepared during the course of the project) will be monitored using parameters prescribed in these instruments. A third party audit/review agency will also be selected by PMU to evaluate the level of compliance with the project's environment safeguard

instruments. A comprehensive assessment report on environmental performance will be prepared by the Project Authority at mid-term and end-term.

## **5. Monitoring and Evaluation**

88. **Monitoring by Principal Secretary (PS), PWD.** Principal Secretary, PWD would be responsible for overall project performance monitoring and guidance to PWD on project implementation, and assignment of responsibilities within PWD and coordination with other GOR departments.

89. **Monitoring by Chief Engineer PWD:** Chief Engineer PWD will review the progress on project implementation every month, and would have overall responsibility for project implementation, monitoring and coordination with various units of PWD and GOR offices.

90. **Quarterly Progress Report and Monitoring Indicators:** The physical and financial progress of various project components will be monitored through quarterly progress reports to be prepared by PWD and submitted to the Bank. The report will include the status of achieving agreed targets for various monitoring indicators.

91. **Results Monitoring and Evaluation.** Project results will be monitored using the results framework detailed in Annex 1.

**Annex 4 - Operational Risk Assessment Framework (ORAF)**  
**India: Rajasthan Road Sector Modernization Project (P130164)**

Project Stakeholder Risks											
Stakeholder Risk	Rating	Low									
Risk Description:	<b>Risk Management:</b>										
(a) Lack of communities' interest and participation in project implementation.	(a) There is already strong public demand and political support for providing all-weather road access to the habitations not covered under PMGSY which will be supported under the project.										
	Resp:	Status:	Stage:	Recurrent:	Due Date:	Frequency:					
	Client	Not Yet Due	Both	<input type="checkbox"/>							
	<b>Risk Management:</b>										
	(b) Awareness of the project will be built-up through active stakeholders' consultations and a project website.										
	Resp:	Status:	Stage:	Recurrent:	Due Date:	Frequency:					
	Client	Not Yet Due	Both	<input type="checkbox"/>							

Implementing Agency (IA) Risks (including Fiduciary Risks)											
Capacity	Rating	Low									
Risk Description:	<b>Risk Management:</b>										
(a) Risk of poor quality of engineering designs, and poor supervision and contract management which may impact the quality of construction and lead to cost and time overruns.	(a) PWD has shown good performance under the Bank funded Rural Roads Project and Rajasthan is one of the good performing states under PMGSY. The mitigating factors include: <ul style="list-style-type: none"> <li>Independent review of all engineering designs and the quality of construction</li> <li>Implementation of customized training programs of PWD engineers and contractors to further enhance their engineering skills for project preparation and execution</li> <li>Capacity building of PWD's training and quality control units</li> </ul>										
	Resp:	Status:	Stage:	Recurrent:	Due Date:	Frequency:					
	Client	Not Yet Due	Both	<input checked="" type="checkbox"/>							

<p>(b) Design of upgradation and maintenance works especially on rural roads may not meet value for money objectives</p>	<p><b>Risk Management:</b></p> <p>(b) The ERRs for the rural roads funded under the RRP and PMGSY Rural Roads Projects were quite satisfactory due to the relatively low cost of construction in Rajasthan. The proposed rural roads will be designed using least-cost engineering solutions and would encourage the use of locally available materials and mainstreaming of existing technologies</p> <table border="1" data-bbox="792 326 1848 432"> <thead> <tr> <th>Resp:</th><th>Status:</th><th>Stage:</th><th>Recurrent:</th><th>Due Date:</th><th>Frequency:</th></tr> </thead> <tbody> <tr> <td>Client</td><td>Not Yet Due</td><td>Both</td><td><input checked="" type="checkbox"/></td><td></td><td></td></tr> </tbody> </table>	Resp:	Status:	Stage:	Recurrent:	Due Date:	Frequency:	Client	Not Yet Due	Both	<input checked="" type="checkbox"/>		
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Client	Not Yet Due	Both	<input checked="" type="checkbox"/>										
<p>(c) Inconsistent application of fiduciary processes due to lack of familiarity of the PWD staff with the agreed procedures.</p>	<p><b>Risk Management:</b></p> <p>(c) PWD staff is familiar with the Bank's fiduciary and safeguard requirements through implementation of the RRP and PMGSY Rural Roads Project. Further training of PWD staff will be organized on procurement, financial management, and management of social and environment issues. The project will use an e-procurement system to procure all civil works contracts.</p> <table border="1" data-bbox="792 652 1848 775"> <thead> <tr> <th>Resp:</th><th>Status:</th><th>Stage:</th><th>Recurrent:</th><th>Due Date:</th><th>Frequency:</th></tr> </thead> <tbody> <tr> <td>Client</td><td>Not Yet Due</td><td>Both</td><td><input checked="" type="checkbox"/></td><td></td><td></td></tr> </tbody> </table>	Resp:	Status:	Stage:	Recurrent:	Due Date:	Frequency:	Client	Not Yet Due	Both	<input checked="" type="checkbox"/>		
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Client	Not Yet Due	Both	<input checked="" type="checkbox"/>										
<p>(d) Inadequate in-house capacities to implement the technical assistance program.</p>	<p><b>Risk Management:</b></p> <p>(d) Additional support of experienced personnel and consultants will be provided for implementation of the technical assistance program.</p> <table border="1" data-bbox="792 897 1848 1019"> <thead> <tr> <th>Resp:</th><th>Status:</th><th>Stage:</th><th>Recurrent:</th><th>Due Date:</th><th>Frequency:</th></tr> </thead> <tbody> <tr> <td>Client</td><td>In Progress</td><td>Both</td><td><input checked="" type="checkbox"/></td><td></td><td></td></tr> </tbody> </table>	Resp:	Status:	Stage:	Recurrent:	Due Date:	Frequency:	Client	In Progress	Both	<input checked="" type="checkbox"/>		
Resp:	Status:	Stage:	Recurrent:	Due Date:	Frequency:								
Client	In Progress	Both	<input checked="" type="checkbox"/>										
<b>Governance</b>	<p><b>Rating</b> Moderate</p>												
<p>Risk Description:</p> <p>(a) Implementing agency not complying with agreed upon fiduciary, contract management and safeguard policies and procedures.</p>	<p><b>Risk Management:</b></p> <p>(a) PWD will implement a Governance and Accountability Action Plan (GAAP), including several measures to improve road sector management. The internal audit for the project shall be carried out by a consultancy firm hired on a competitive basis as per the criteria acceptable to the Bank. The scope of the audit shall be defined in the Terms of Reference (ToR) and will include financial management, procurement and contract management aspects. The external audit for the project shall be carried out by state Accountant General as per the standard ToR agreed for the Bank.</p> <table border="1" data-bbox="792 1354 1848 1401"> <thead> <tr> <th>Resp:</th><th>Status:</th><th>Stage:</th><th>Recurrent:</th><th>Due Date:</th><th>Frequency:</th></tr> </thead> </table>	Resp:	Status:	Stage:	Recurrent:	Due Date:	Frequency:						
Resp:	Status:	Stage:	Recurrent:	Due Date:	Frequency:								

	Client	Not Yet Due	Both	<input type="checkbox"/>		
<b>Risk Management:</b>						
(b)	The project design will include use of the PMGSY On-Line Monitoring, Management, with suitable modifications as an effective monitoring and management tool. The project will also establish effective mechanisms to receive regular feedback from stakeholders.					
<b>Responsible Person:</b>						
Client	Status:	Stage:	Recurrent:	Due Date:	Frequency:	
	Not Yet Due	Both	<input type="checkbox"/>			
<b>Risk Management:</b>						
(c)	A project specific website will be established which will disclose key documents and performance parameters.					
<b>Responsible Person:</b>						
Client	Status:	Stage:	Recurrent:	Due Date:	Frequency:	
	Not Yet Due	Both	<input type="checkbox"/>			
<b>Risk Management:</b>						
(a)	PWD will implement the agreed GAAP, including new institutional and community based measures for F&C minimization. The project will use an e-procurement system to reduce this risk. As mentioned above internal audit and external audit arrangements shall be in place under the project.					
<b>Responsible Person:</b>						
Client	Status:	Stage:	Recurrent:	Due Date:	Frequency:	
	Not Yet Due	Both	<input checked="" type="checkbox"/>			
<b>Risk Management:</b>						
(b)	Independent quality monitoring and audits will be used.					
<b>Responsible Person:</b>						
Client	Status:	Stage:	Recurrent:	Due Date:	Frequency:	
	Not Yet Due	Both	<input checked="" type="checkbox"/>			
<b>Risk Management:</b>						
(c)	A Project Management System would be developed to facilitate efficient exchange of project information and reporting on contract execution, building on the existing MIS.					
<b>Responsible Person:</b>						
	Status:	Stage:	Recurrent:	Due Date:	Frequency:	

	Client	Not Yet Due	Both	<input checked="" type="checkbox"/>				
<b>Project Risks</b>								
<b>Design</b>	<b>Rating</b>	<b>Substantial</b>						
Risk Description:		<b>Risk Management:</b>						
(a) Implementation by PMGSY team may pose the risk of the project getting less attention		(a) The core team is composed of staff most of are fully dedicated to the project; the project implements largely rural roads under the PMGSY framework, an advantage that outweighs the risk of sharing resources with the PMGSY.						
(b) Too many rural roads contract spread throughout the state, posing challenges of inadequate supervision to ensure the required quality control.		<b>Resp:</b>	<b>Status:</b>	<b>Stage:</b>	<b>Recurrent:</b>	<b>Due Date:</b>	<b>Frequency:</b>	
		Client	Not Yet Due	Both	<input checked="" type="checkbox"/>			
(c) Ambitious modernization activities versus the natural resistance to reforms in public organizations		<b>Risk Management:</b>						
		(b) The state having shown good performance under both the Rural Roads project I and ongoing PMGSY, this risk is strongly mitigated						
		<b>Resp:</b>	<b>Status:</b>	<b>Stage:</b>	<b>Recurrent:</b>	<b>Due Date:</b>	<b>Frequency:</b>	
		Client	Not Yet Due	Implementation	<input checked="" type="checkbox"/>			
(d) The challenges of coordinating a number of stakeholders to implement the road safety component		<b>Risk Management:</b>						
		(c) PWD has initiated the modernization agenda early in the project preparation through developing a Road Sector Modernization Plan (RSMP); started to implement the quick wins. The project will focus on the scope of modernization that could be reasonably achieve within the project life.						
		<b>Resp:</b>	<b>Status:</b>	<b>Stage:</b>	<b>Recurrent:</b>	<b>Due Date:</b>	<b>Frequency:</b>	
		Both	Not Yet Due	Implementation	<input checked="" type="checkbox"/>			
<b>Social and Environmental</b>		<b>Rating</b>	<b>Moderate</b>					

<p><b>Risk Description:</b></p> <p>(a) Risk of delays in the implementation of LA and RAP.</p> <p>(b) Risk of some local level adverse environmental impacts if project activities are not properly managed and mitigated.</p> <p>(c) Risk of delays due to diversion of some forest land which may be required for widening/spot improvement of some sub-projects under the road safety program.</p> <p>(d) Need to address issues of biodiversity management in the interest of road user safety, environmental sustainability and tourism related reasons for some of the institutional development activities under Phase II.</p>	<p><b>Risk Management:</b></p> <p>(a) The proposed rural roads will be developed by paving the existing rural roads, thus the requirement for additional land is minimal.</p> <table border="1"> <thead> <tr> <th>Resp:</th><th>Status:</th><th>Stage:</th><th>Recurrent:</th><th>Due Date:</th><th>Frequency:</th></tr> </thead> <tbody> <tr> <td>Both</td><td>In Progress</td><td>Preparation</td><td><input checked="" type="checkbox"/></td><td></td><td></td></tr> </tbody> </table> <p><b>Risk Management:</b></p> <p>(b) The environment assessment process and management tools for the project have been designed keeping in mind the varied scope of work of the project. Most of the environmental impacts will be mitigated through the Environment Management Framework (EMF), which has been informed by: (a) the results of an environment screening exercise that was conducted for both the rural roads; (b) experiences from the Bank-funded road projects in the state, particularly the completed Rural Roads Project I and the on-going PMGSY project and; (c) experiences from similar state road projects implemented/being implemented elsewhere in the country.</p> <table border="1"> <thead> <tr> <th>Resp:</th><th>Status:</th><th>Stage:</th><th>Recurrent:</th><th>Due Date:</th><th>Frequency:</th></tr> </thead> <tbody> <tr> <td>Both</td><td>In Progress</td><td>Preparation</td><td><input checked="" type="checkbox"/></td><td></td><td></td></tr> </tbody> </table> <p><b>Risk Management:</b></p> <p>(c) The environment management strategy for the project also involves a screening exercise to identify key issues including those related to forests/ biodiversity/wildlife and consider those in the selection and design of sub-projects</p> <table border="1"> <thead> <tr> <th>Resp:</th><th>Status:</th><th>Stage:</th><th>Recurrent:</th><th>Due Date:</th><th>Frequency:</th></tr> </thead> <tbody> <tr> <td>Both</td><td>In Progress</td><td></td><td><input checked="" type="checkbox"/></td><td></td><td></td></tr> </tbody> </table>	Resp:	Status:	Stage:	Recurrent:	Due Date:	Frequency:	Both	In Progress	Preparation	<input checked="" type="checkbox"/>			Resp:	Status:	Stage:	Recurrent:	Due Date:	Frequency:	Both	In Progress	Preparation	<input checked="" type="checkbox"/>			Resp:	Status:	Stage:	Recurrent:	Due Date:	Frequency:	Both	In Progress		<input checked="" type="checkbox"/>		
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<p><b>Delivery Monitoring and Sustainability</b></p> <p>Risk Description:</p>	<p><b>Risk Management:</b></p> <table border="1"> <thead> <tr> <th>Rating</th><th>Low</th></tr> </thead> </table> <p>(a) PWD is using OMMAS under PMGSY as an effective tool for monitoring</p>	Rating	Low																																		
Rating	Low																																				

<p>(a) Inadequate monitoring leading of implementation delays, poor quality of works, and sub-optimal outcomes.</p>	<p>which will also be used for the project. Independent quality and performance audits will be undertaken to regularly monitor the quality of construction and performance of project implementation.</p> <table border="1"> <thead> <tr> <th>Resp:</th><th>Status:</th><th>Stage:</th><th>Recurrent:</th><th>Due Date:</th><th>Frequency:</th></tr> </thead> <tbody> <tr> <td>Client</td><td>Not Yet Due</td><td>Implementation</td><td><input checked="" type="checkbox"/></td><td></td><td></td></tr> </tbody> </table>	Resp:	Status:	Stage:	Recurrent:	Due Date:	Frequency:	Client	Not Yet Due	Implementation	<input checked="" type="checkbox"/>								
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<p>(b) Risk of poor sustainability of the assets created under the project due to inadequate instructional arrangements and funds for maintenance.</p>	<p><b>Risk Management:</b></p> <p>(b) The project will focus on mobilizing adequate funds for the maintenance of the existing road network and improved methods to plan and execute maintenance.</p> <table border="1"> <thead> <tr> <th>Resp:</th><th>Status:</th><th>Stage:</th><th>Recurrent:</th><th>Due Date:</th><th>Frequency:</th></tr> </thead> <tbody> <tr> <td>Client</td><td>Not Yet Due</td><td>Implementation</td><td><input checked="" type="checkbox"/></td><td></td><td></td></tr> </tbody> </table>	Resp:	Status:	Stage:	Recurrent:	Due Date:	Frequency:	Client	Not Yet Due	Implementation	<input checked="" type="checkbox"/>								
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<p>(c) Risk of poor sustainability of the institutional development initiatives due to lack of commitment of the GOR officials.</p>	<p><b>Risk Management:</b></p> <p>(c) The project will focus on those institutional development initiatives for which there is a strong demand and support within PWD. A new road sector strategy will be adopted by PWD containing the institutional development initiatives. Implementation of the strategy will ensure long terms sustainability of the initiatives.</p> <table border="1"> <thead> <tr> <th>Resp:</th><th>Status:</th><th>Stage:</th><th>Recurrent:</th><th>Due Date:</th><th>Frequency:</th></tr> </thead> <tbody> <tr> <td>Client</td><td>Not Yet Due</td><td>Implementation</td><td><input type="checkbox"/></td><td></td><td></td></tr> <tr> <td></td><td></td><td></td><td><input type="checkbox"/></td><td></td><td></td></tr> </tbody> </table>	Resp:	Status:	Stage:	Recurrent:	Due Date:	Frequency:	Client	Not Yet Due	Implementation	<input type="checkbox"/>						<input type="checkbox"/>		
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			<input type="checkbox"/>																
<p><b>Overall Risk</b></p>																			
<b>Overall Implementation Risk:</b>	<b>Rating</b> <b>Substantial</b>																		
<p><b>Risk Description:</b></p> <p>PWD implemented the earlier project successfully- with no time/cost overruns and virtually no contractual disputes; nevertheless, considering the nature of activities under this project that involve institutional/sector reforms; the challenges of coordinating different governmental departments and stakeholders to implement multi-sectoral road safety interventions and implementing new cost-effective technologies, the overall risk is rated as substantial</p>																			

**Annex 5: Implementation Support Plan**  
**India: Rajasthan Road Sector Modernization Project (P130164)**

**Strategy and Approach for Implementation Support**

1. The Implementation Support Plan (ISP) provides the support required for implementation of all mitigation measures identified in the ORAF in order to ensure that all major risks (in particular, risks that are rated higher than moderate, e.g. risks due to use of innovative materials, sustainability risks, F&C risks) are addressed. The ISP is designed to review and ensure that the safeguards defined under the project are effective and are implemented. The ISP is also designed to enhance PWD's capacity in a range of technical and specialized areas, specifically areas such as implementation of the road safety component and the road sector modernization plan. The ISP will be undertaken by World Bank staff and is based on four major principles: (i) continual high level policy dialogue with GOR on areas such as road sector modernization, institutional development and maintenance policy; (ii) frequent local level and field based supervision of project activities including consultation with project beneficiaries; (iii) training programs and exposure of staff to best practices introduced under the project; and (iv) consistent review of fiduciary procedures and controls within PWD.
2. GOR and PWD have a long history of successful implementation of projects with the support of the World Bank – in particular, the Bank funded Rural Roads Project and the ongoing PMGSY project. The Bank team will conduct due diligence on relevant documentation, data and field based conditions to ensure compliance with the selection criteria for the works. Divergence from the selection criteria will be immediately discussed with PWD. Each field visit will involve group conversations with the project beneficiaries to gauge the impact of the projects and beneficiary satisfaction. This information will be used to continually improve project practice.
3. The Bank team will provide regular and comprehensive fiduciary implementation support to PWD management procedures. This will include thorough attention to procurement capacity and standards and regular financial management reviews. Particular attention will be given to the findings of the annual procurement post review of contracts, financial audit and integrated performance audit and implementation of recommendations provided in these reports.

**Implementation Support Plan**

4. The Bank's supervision team will include a country-based Task Team Leader (TTL) and country-based fiduciary, procurement and safeguards staff. Additional technical support will be provided in the following areas:
5. *Technical Support for Components A B and C:* The Bank's task team will include:
  - a. A country-based highway engineer to review the adequacy of the road design and specifications, the quality of the works and performance of the contractors and supervision consultants. The specialist will perform site supervision and spot-checks of construction and completed works. This will require on average two missions and an input of four weeks per year through the life of the project.
  - b. An institutional specialist to review PWD's medium and long-term strategies related to improved planning, financing, and asset management aspects. This will require on average two missions and an input of four weeks per year through the life of the project.

- c. A transport economist to review economic justification of annual programs proposed to be funded under the project, use of agreed criteria to select the roads and ex-post economic evaluation of the project. This will require on average one mission and an input of one week per year during the first two years and a two-week mission at project completion.
6. The task team will confirm that the project management and other consultant support provided to the project agencies is effective. It will also establish and maintain linkages with research institutes and provide implementation support for selected areas of expertise including conduct of training programs and capacity building workshops in areas such as asset management and use of IT systems. The TTL will maintain regular contact with key officials of PWD to exchange views on strategic issues of project implementation and address any critical issues, including compliance with legal covenants and implementation of the recommendations of the performance audits, including procurement, financial management, social, and environment.
7. *Technical Support for Component D:* The Bank's task team will include a road safety specialist with international experience, through the Global Road Safety Facility (GRSF). The specialist will follow up periodically with the PWD's counterpart on the main activities envisaged under this component. The specialist will also monitor the progress in supporting PWD-wide staff training in aspects of road safety engineering and practices.
8. *Financial Management and Procurement supervision:* A Bank's financial management specialist based in Delhi will conduct two or more FM supervision missions every year throughout the life of the project. FM supervision will cover, in addition to the operational status and capability of financial management systems, quality of financial reports, reconciliation of financial data, capacity of FM staff, review of audit reports and follow up on implementation of recommendations. A procurement specialist based in Delhi will provide support related to procurement aspects of the project, through two or more procurement supervision missions during the life of the project. In addition to the regular half-yearly implementation support missions, thematic implementation support missions may be undertaken, if required.
9. Given that the PWD staff is already familiar with the Bank's fiduciary and safeguards requirements through implementation of two previous Bank funded engagements (RRPI and PMGSY Rural Roads), implementation support for FM and procurement aspects will focus on the following issues: (a) reviewing procurement documents and providing timely no objection; (b) providing detailed guidance on the Bank's Procurement Guidelines to the PWD staff; (c) monitoring procurement progress against the detailed Procurement Plan; (d) ensuring that the auditing, reporting, and disbursement arrangements are adhered to, and the computerized FM system (e.g. TALLY® software) is operational; (e) identifying the capacity building/training needs for PWD staff on procurement processing, financial management, and management of social and environmental issues, and providing training if required; and (f) ensuring that dedicated specialized teams remain in place to deal with procurement and FM issues and the agreed procedures under the OM are widely disseminated and adhered to. The FM and Procurement Specialists, together with the Governance Specialist, will monitor the disclosure of project information on the dedicated project website and the use of a comprehensive complaint handling system by all project stakeholders and beneficiaries.
10. *Environmental Safeguards supervision:* A Bank environmental specialist based in Delhi will be a member of the project team throughout the project. Besides supervision of compliance with environmental safeguards, the specialist will provide guidance to PWD towards effective management of environmental issues during design and construction and will confirm that

regulatory clearances are in place. Given that there is no forest land involved and thus no need for forest clearances, most of the environmental impacts in the project would be construction related, and these will be mitigated using the EMF and ECOPs as agreed. The implementation support will be provided through regular interactions, half-yearly implementation support missions and thematic review missions, if required.

11. *Social Safeguards supervision:* A Bank social specialist based in Delhi will be a member of the project team throughout the project. Given the minimal requirement for additional land for the project, the specialist would focus on ensuring that awareness is created among PAPs regarding the key features of the entitlement matrix through public consultations, publications, and the project website. The specialist will also ensure that GOR hires an NGO or a consultant to implement the RAP, as well as an independent consultant to periodically evaluate RAP implementation. The specialist will make field visits on at least a semi-annual basis to ensure that SMF&VF, RP&F and RAPs are being implemented in a satisfactory manner and resolve any issues in a timely fashion. The environmental and social specialists will also ensure that related training programs and capacity building activities are implemented both for PWD and contractors' staff.

12. *Governance Aspects:* The Governance Specialist will support and monitor the preparation and implementation of a Governance and Accountability Action Plan (GAAP), which would include measures to improve road sector management and new institutional and community based measures for F&C minimization. As stated above, the Governance Specialist would, together with the FM and Procurement Specialists, monitor the implementation of a comprehensive complaint handling system and disclosure of all project specific information on a dedicated project website.

13. The Implementation Support Plan (ISP) given in Table 11 indicates the focus areas and skill needs required to provide implementation support during the initial and subsequent periods of the project. It will remain a living document and will be reviewed regularly and updated as and when required during the implementation. Table 12 shows the skill mix required.

**Table 11: Implementation Support Plan (ISP)**

Time	Focus	Skills Needed	Resource Estimate (SW)
First twelve months	Regular coordination with PWD staff and internal Bank team	Task Team Leader	10 SW
	Technical review of the civil works bidding documents	Highway Engineer	8 SW
		Road Safety Specialist	2 SW
		Procurement Specialist	4 SW
	Road sector reforms	Asset management, road sector strategy, institutional development initiatives	12 SW
	Road safety component monitoring	Road Safety Specialist	2 SW
	Computerization initiative	IT Specialist	4 SW
	Environmental monitoring	Environmental Specialist	2 SW
	Resettlement/Other social issues monitoring	Social Development Specialist	2 SW
	Review of FM arrangements	FM Specialist	2 SW
12-60 months	Monitoring of GAAP	Governance Specialist	2 SW
	Economic analysis of selected roads	Transport Economist	2 SW
	Regular coordination with PWD staff and internal Bank team	Task Team Leader	7 SW/year
	Major construction and improvement	Highway Engineer	6 SW/year

Time	Focus	Skills Needed	Resource Estimate (SW)
	works		
	Review of procurement documents	Procurement Specialist	2 SW/year
	Road sector reforms	Asset management, road sector strategy, institutional development initiatives	10 SW/year
	Road safety component monitoring	Road Safety Specialist	3 SW/year
	Computerization initiative	IT Specialist	4 SW/year
	Environmental monitoring	Environmental Specialist	2 SW/year
	Resettlement/ Other social issues monitoring	Social Development Specialist	2 SW/year
	Review of FM arrangements	FM Specialist	2 SW/year
	Monitoring of GAAP	Governance Specialist	2 SW/year
	Economic analysis of selected roads	Transport Economist	2 SW/year

Note: SW – Staff Weeks

**Table 12: Skills Mix Required**

Skills Needed	Number of Staff Weeks	Number of Trips	Comments
Task management country-based	38	10	Field-based
Procurement specialist	12	10	Field-based
Financial management specialist	10	10	Field-based
Environment specialist	10	10	Field-based
Social development specialist	10	10	Field-based
Institutional development specialist	52	10	Field-based
Highway engineer	32	10	Field-based
IT specialist	20	10	Field-based
Road safety specialist	14	5	International trip
Transport economist	10	5	Field-based
Governance specialist	10	5	Field-based

## **Annex 6: Economic and Socio-Economic Analyses**

### **A. Introduction**

1. Rural roads are the most essential infrastructure for socio-economic uplift of the rural community. These create a congenial environment for economic prosperity and thereby ensuring healthy living conditions for the rural inhabitants. Provision of rural roads increases mobility of men and materials thus facilitates economic growth.
2. In 2000, the Government of India (GoI) launched the PMGSY program to provide all weather road access to all of India's habitations with populations exceeding 500 persons (250 in hilly and desert areas) by 2015. At that time, about 170,000 habitations were eligible; in 2010, about 40 percent of the roads are completed. In 2005, Government of India conceived 'Bharat Nirman' as time bound business plan to provide rural infrastructures during 2005-06 to 2008-09. Six major rural infrastructures namely, rural roads, telephone connection, irrigation, water supply, housing and electrification were identified. Rural Roads, as one of the six components of Bharat Nirman initiated in 2005-06 aims at achieving the goal of connecting every habitation of 1000 or more population (500 or more in hill, tribal and desert area) with all-weather roads by 2009. It is actually embedded in the PMGSY with wider funding base and extended scope. The program envisaged generating multiplier effect in rural economy by linking production to market and services.
3. The aim of these programs was to draw India's villages into the mainstream. First, with improved connections to markets, villagers should face more favorable prices for inputs and outputs, which will raise their incomes and sharpen the incentives for them to cultivate more intensively, pursue new activities and invest in new methods. Second, by reducing the time spent travelling to and from school (and in the rainy season, by making the trip actually possible), an all-weather road should improve the attendance rate, not only of students, but also of their teachers, thus promoting the formation of human capital and the growth of productivity over the long run. Third, by likewise improving the villagers' access to timely treatment, especially in the event of accidents and bouts of acute sickness, the connection should lower mortality and morbidity. Improvements in these domains will, if realized, reduce poverty and increase productivity in the short and the long run.
4. This Annex is primarily concerned with the salient elements of an economic evaluation of this program:
  - a) The feeder roads must be constructed, and thereafter maintained, to some desired engineering standard. This public investment activity also involves making choices among alternative techniques of construction (machines vs. labor), sequences of connections, tendering processes and financing.
  - b) Upon completion, a feeder road will reduce transportation costs and otherwise enlarge villagers' economic opportunities. All villagers will also enjoy better access to various services provided elsewhere, often in towns. Of central importance here are schools and health facilities.
  - c) Each feeder road forms part of a network, which is potentially subject to so-called 'technological' externalities. Connecting one village to the nearest secondary or main road

will typically lower the costs of connecting other nearby villages to the same, depending on the sequence chosen.

- d) There remain the so-called ‘pecuniary’ externalities. Connecting one or two villages to the main road is unlikely to have a measurable effect on the prices of goods ruling in the nearest towns; but connecting many may have significant repercussions. The prices farmers receive may actually rise if larger marketed volumes promote market efficiency. PMGSY is so large that these pecuniary effects cannot be ignored *a priori*. Any attempt at a full-blown analysis of such an investment program would, therefore, be a formidable undertaking, and as such some fairly drastic simplifications are unavoidable.
- e) Taking each road by itself, the central problem is to estimate the benefits it generates for the villagers in its catchment area. The classical, direct approach is to establish (or forecast) the levels of traffic with and without the road, together with the associated reductions in trip-costs. There are two drawbacks to this approach when applied to poor, backward areas. First, village resources may not be fully employed and the changes in the prices of goods bought and sold may be large, so that the road induces a reallocation so great as to cast doubt on estimates derived in this way. Second, the lion’s share of the benefits arising in the domains of education and health is likely to be missed, so that arriving at an estimate of these benefits by other means is essential. To deal with the issue in a comprehensive manner, village economy related benefits like increase in the agriculture productivity and related increased income levels; generation of additional employment to the village population due to better access to employment opportunities outside village; benefits in education, health and social related areas in terms of quick and timely trips and shifting of existing trips by slower modes to convenient faster travel modes are adopted in this analysis. In this bundle of benefits, for quantification purpose, economy and human capital related benefits are treated separately and all the remaining are together treated separately. The second bundle of benefits was all related to travel and they are converted into trips and trips related benefits were accounted in the analysis. However, for education and health trips, apart from trip related quantifiable benefits, there may be more qualitative benefits such as saving life due to quick travel etc which to some extent covered in this analysis by considering the time value for the village passengers by different modes.

#### A. The Cost of Construction and Maintenance

5. At the aggregate level the project will directly fund about 2500 km of rural roads to provide connectivity to about 1300 revenue villages with population between 250 and 499. However, since the costs and completed details of this entire scope is unavailable currently, sample of 1227 km of Phase 1 roads which connect 510 habitations at a cost of INR 4193 million in Rajasthan State have been considered for analysis, the district wise average is considered as shown in **Table 13**. It is assumed that routine maintenance costs will average one percent of construction costs per annum and that periodic maintenance costs will be 35 percent after 10 years over a sixteen year analysis period (one and half year construction and fourteen and half year maintenance). Given a conversion factor of 0.85 and discount rate of twelve percent the present value of the new road and subsequent maintenance was INR 7.744 million on an average for a single road.

**Table 13: District wise Distribution of Rural Roads**

Sl. No.	District	No. of Roads	Average Population coverage / Road	Average Length of Road in Km / Road	Average Cost (INR Million/ Road)	Average Cost (INR Million/ Km)
1	Ajmer	12	375	1.65	4.553	2.762781
2	Alwar	11	417	1.38	4.159	3.019406
3	Baran	19	366	2.54	9.007	3.546736
4	Bharatpur	25	372	1.74	6.574	3.783526
5	Bhilwara	93	363	2.28	7.672	3.363843
6	Bundi	14	413	2.72	9.679	3.554230
7	Chittorgarh	84	348	2.36	9.169	3.878997
8	Dausa	4	351	1.68	4.698	2.791976
9	Dholpur	13	386	1.96	5.155	2.632842
10	Hanumangarh	3	399	3.58	9.297	2.594419
11	Jaipur	34	336	2.02	7.468	3.702267
12	Jhalawar	28	385	2.54	8.840	3.482372
13	KARAULI	4	374	2.19	6.855	3.124900
14	Kota	12	345	2.51	9.993	3.982630
15	Rajsamand	21	364	2.01	6.304	3.142504
16	Sriganganagar	40	339	3.38	8.587	2.544311
17	Sirohi	1	318	3.40	16.155	4.751471
18	Sawai Madhopur	17	376	2.65	11.156	4.212171
19	Tonk	45	372	2.38	8.259	3.471945
20	Udaipur	33	351	3.17	9.779	3.082818

Source: PWD, Rajasthan; INR-Indian Rupee

## B. Estimating the Benefits

6. A recent impact assessment of rural road connectivity in seven states including Rajasthan<sup>38</sup> by the Planning Commission Government of India had revealed that the improvement or provision of rural road connectivity had resulted in many fold socio-economic benefits to the villagers (**Table 14**). With this background, the entire benefit assessment for Rajasthan State rural roads is centered on the results of the GoI Planning Commission Study findings. Accordingly the economic analysis has focused on assessing the benefits for the overall program in the following domains.

7. First, improved connections to markets should result in villagers facing more favorable prices for agriculture inputs and outputs resulting in increased in agricultural productivity. Second, improved road and its access to nearby market / urban centers provide employment opportunities and create additional employment to the villagers. Third provision of better road connectivity increase the vehicle ownership pattern and the resultant additional vehicle trips for

<sup>38</sup> Evaluation Study on Rural Roads Component of Bharat Nirman, Programme Evaluation Organization Planning Commission Government of India, New Delhi, May, 2010

various work and social trips resulting in reduced travel time and cost. Fourth by reducing the time spent travelling to and from school, an all-weather road should improve the attendance, not only of pupils, but also of their teachers, thus promoting the formation of human capital. Fifth, by likewise improving the villagers' access to timely treatment, especially in the event of accidents and bouts of acute sickness, the connectivity should lower mortality and morbidity. Assessments conducted to support this analysis suggest that the education and health benefits from improved roads access are substantial. However, two benefits comprising of educational and health benefits are felt already captured in saving in travel time and cost and accordingly on the account of avoiding double counting, the education and health benefits from improved roads access are not considered in the present analysis. The total benefits from new road provision are closely correlated with the number of people served by those roads.

**Table 14: Assessment Benefits to the Rural Roads in Rajasthan**

Rural Road Scenario	Total No. of Sample Beneficiaries Assesses	Economic Wellbeing	No. of Vehicles			Enrolment of children	Employment opportunities	Patients seeking treatment	Immunization facilities	Others
			Bicycle	Rickshaw	Motorized vehicle					
Before Rural Roads	200	91	40	15	48	189	61	122	93	1
		[45.50%]	[20.00%]	[07.50%]	[24.00%]	[94.50%]	[30.50%]	[61.00%]	[46.50%]	[00.50%]
After Rural Roads		195	144	100	136	200	200	200	199	1
		[97.50%]	[72.00%]	[50.00%]	[68.00%]	[100.00%]	[100.00%]	[100.00%]	[99.50%]	[00.50%]

Source: Evaluation Study on Rural Roads Component of Bharat Nirman, Programme Evaluation Organization Planning Commission Government of India, New Delhi, May, 2010

8. For the present analysis, the following benefits were considered and quantified with suitable reference data base:

1. Increase in household income through agriculture and non-agriculture based activities
2. Additional employment benefits
3. Traffic related benefits
  - i. Savings in Vehicle Operating Cost (VOC)
  - ii. Savings in travel time

### **1. Increase in Household Income**

9. A household is endowed with labour, land and other assets, which it supplies to productive activities, either in the household's own enterprises or those run by others. A new all-weather road will raise export prices and reduce import prices. Hence, income (and welfare) will rise, even if households stick to their old plans. In fact, households will normally respond to these new opportunities in various ways: by changing cropping patterns and farming techniques; by switching into livestock activities; by choosing new marketing channels; and by taking up non-farm business and employment. In Rajasthan, the agricultural productivity had increased by 18.23% due to the road connectivity from INR 16850 per acre to INR 19923 per acre and 24.57% increase in income from non-farm activities (from INR 19050 per household to INR 23730 per household). For the present analysis, the increase in household income from (i) agriculture and (ii) non agriculture (as expressed by the beneficiaries due to the rural road connectivity) was captured by converting in to per capita unit with the help of available data on average increase in

agriculture productivity and non-agriculture sources, average landholding, average household size with respect to Rajasthan state, as shown in **Table 15** below. Increase in per capita income in terms of weighted average through agriculture and non- agriculture based activities was estimated to INR 1954 at 2013 price levels.

**Table 15: Details of Estimated Increase in Per capita Annual Income due to Rural Road Connectivity in Rajasthan**

Average Increase in Agricultural Income / Acre Rs.	3073
Average Land Holding / Person (Acres)	0.56
Percapita Increase in Agricultural Annual Income	1,735
Percapita Increase in Non-Agricultural Annual Income (Rs)	807
Percapita Increase in Total Annual Income (weighted) Rs. -2010	1,577
Percapita Increase in Total Annual Income (weighted) Rs. -2013 @7.4%	1,954

Note: For weighted average the average occupation composition (Agriculture 83% and non-agriculture 17%) are considered.

## **2. Increase in Income through Additional Employment Generation**

10. It was observed from the survey findings that the rural road connectivity could generate additional employment to the village population in trade, agriculture related industrial establishments and in the nearby towns to the tune of 10 -15 persons. With the assumption of 300 working days and INR 150 as daily wage and 10 additional employment per village, an additional income of INR 0.45 million is estimated as employment benefit. With average population size of 350 persons, the per capita income through additional employment is estimated to INR 1286 per year.

**Table 16: Estimate Additional Employment Benefits**

Addl. Employment generated /village (No.)	10
Total addl. Annual Income (INR)	450,000
Average Village Population (No.)	350
Per capita Addl. Employment generation (INR)	1,286

## **3. Traffic related Benefits**

11. It was assumed that when villages are connected with an all-weather road, their vehicle generation pattern will change to approximately those found in the presently connected villages, as arrived from the earlier mentioned post evaluation study results. Vehicle generation pattern

used in the present analysis for without and with all-weather road connectivity is summed up in **Table 17**. The traffic was assumed to grow at 5 percent for the normal traffic. No attempt is made to differentiate between “normal” and “generated” traffic and to apply different values to the flows in general.

**Table 17: Travel Pattern**

Vehicle Category	Vehicle Km /1000 Population	
	Before Connectivity	After Connectivity
Cycle	34	124
Rickshaw	13	86
Motorised Vehicle	41	117
M/C	15	46
Car	14	39
Tractor	12	13
Bus	0	16
Truck	0	3

Note: Estimated based on the data from ‘Report No: 29742-IN, PAD, Rural Roads Project, August 2004’

12. The savings in the vehicle operating costs (VOC) and passenger time value, for each vehicle type were adapted from the RRP-I evaluation studies<sup>39</sup> with suitable update to 2013 level. The unit values adopted from the Initial Analysis are summed up below in **Tables 18** and **19**. Considerable benefits in health, education and other social sector areas like accessibility to markets, railway stations, bus stands, post offices, banks etc. in terms of reduced travel time and operating cost were reported from the evaluation study results. However, all these accessibility benefits to social services will be reflected in the additional vehicular trips generated after the road improvements. Thus in order to avoid duplication of benefit calculations, only traffic related benefits in terms of VOC savings and savings in travel time were considered as the third benefit.

13. For benefit calculations, existing traffic and generated traffic are treated separately. Differences in unit rates of VOC and travel time were used to estimate the benefits for the existing traffic (before connectivity). For generated traffic, 50% of the VOC and time cost for the improved situation were treated as project benefit.

**Table 18: Estimate of Vehicle Travel Time Cost (Rs. / Vehicle Km) - 2013**

Vehicle Type	Value of Travel Time					
	Rs/Hr (2009)	Rs/Hr (2013)	Av. Speed (Km/Hr)	Average Occupancy (Nos.)	Average Load (Tonne)	Rs/vehicle Km
M/C	22.0	27.8	25	1.5		1.67
Car	52.5	66.3	20	4		13.26
Tractor	5.4	6.8	15		2	0.91
Bus	14.5	18.3	20	25		22.88
Truck	6.7	8.5	15		9	5.09

Note: Estimated based on the data available from Indian Roads Congress, SP 30, 2009

<sup>39</sup> (i) Report No: 29742-IN, PAD, Rural Roads Project, August 2004; (ii) ICR, Rural Roads Project, July 2012.

**Table 19: Unit Rates for Calculating VOC and Travel Time for Rural Roads (at 2013 Price)**

Vehicle Type	Value of Time: Rs/ vehicle Km			Vehicle Operating Cost: Rs / vehicle Km		
	Earth	Gravel	Paved	Earth	Gravel	Paved
M/C	4.3	3.0	1.67	4.4	2.8	1.59
Car	26.4	17.7	13.26	15.7	10.7	6.39
Tractor	1.7	1.2	0.91	20.6	16.7	14.30
Bus	45.7	38.0	22.88	21.2	17.1	14.02
Truck	9.5	7.0	5.09	21.7	16.8	14.30

Note: Estimated based on the data available from Indian Roads Congress, SP 30, 2009

### C. Economic Analysis Results

14. The economic model was applied to the identified rural roads in the Rajasthan State to be covered under RRP2, covering over 513 roads covering 513 villages representing a total of about 1227 km. As the project size, its composition etc. vary considerably along with large number of individual project roads, the present economic analysis was developed for average road arrived from district and state aggregates. Both the economic rates of return and modified economic rates of return (assumes that the returns from the investment only yield the opportunity cost of capital, both at 12%) were calculated along with associated Net Present Value discounted at 12% (EOCC). Base case EIRR for the state average representing the full 1227 km length network was found to be above the minimum required EOCC of 12% and so viable from the economic feasibility angle. The base analysis and their sensitivity tests indicated a relatively wide spread in the economic results among the districts as shown in **Table 20** below. Detailed calculation for state average is presented in **Table 21**.

15. More than the quantifiable project benefits considered in the economic analysis which are incidental, provision of the minimum required but essential connectivity shall be considered along with the economic feasibility results.

**Table 20: Results of Economic Analysis**

Sl. No .	District	Base Case Results			Sensitivity Results for EIRR			
		EIRR	MIRR	NPV @ 12 (INR)	20% increase in Construction Cost	20% increase in O&M Cost	20% decrease in project benefit	Combined effect (Worst Scenario)
1	Ajmer	31.75%	18.90%	4,495,615	25.02%	28.50%	22.07%	17.21%
2	Alwar	39.07%	20.93%	5,849,020	30.59%	35.23%	27.75%	22.28%
3	Baran	12.25%	12.10%	93,338	9.91%	9.42%	5.28%	1.40%
4	Bharatpur	20.37%	15.15%	2,518,298	16.11%	17.51%	12.55%	8.45%
5	Bhilwara	15.85%	13.49%	1,284,299	10.66%	10.43%	6.20%	2.31%
6	Bundi	13.41%	12.55%	574,421	8.84%	7.94%	3.93%	0.04%
7	Chittorgarh	10.75%	11.50%	-465,789	8.84%	7.94%	3.93%	0.04%
8	Dausa	28.59%	17.95%	3,808,853	22.63%	25.58%	19.58%	14.96%
9	Dholpur	28.58%	17.94%	4,186,642	22.49%	25.42%	19.43%	14.82%
10	Hanumangarh	13.54%	12.60%	603,712	10.79%	10.61%	6.37%	2.48%

11	Jaipur	14.59%	13.01%	831,359	11.77%	11.91%	7.54%	3.64%
12	Jhalawar	13.84%	12.72%	692,631	11.06%	10.97%	6.70%	2.81%
13	KARAULI	19.48%	14.83%	2,320,108	15.42%	16.64%	11.77%	7.71%
14	Kota	8.63%	10.65%	-1,329,108	7.30%	5.73%	1.88%	-2.06%
15	Rajsamand	20.90%	15.34%	2,582,178	16.55%	18.06%	13.03%	8.91%
16	Shriganganagar	11.56%	11.83%	-154,321	9.47%	8.81%	4.73%	0.85%
17	Sirohi	-3.36%	5.85%	-7,762,391	-0.41%	-8.19%	-11.62%	-18.69%
18	Sawai Madhopur	8.10%	10.44%	-1,700,597	6.84%	5.07%	1.26%	-2.72%
19	Tonk	14.64%	13.03%	936,093	11.70%	11.83%	7.47%	3.57%
20	Udaipur	9.50%	11.00%	-977,633	7.91%	6.63%	2.71%	-1.20%
<b>21</b>	<b>Rajasthan State</b>	<b>14.11%</b>	<b>12.82%</b>	<b>740,607</b>	<b>13.02%</b>	<b>13.55%</b>	<b>9.07%</b>	<b>5.17%</b>

Source: Analysis

EIRR – Economic Internal Rate of Return; MIRR- Modified Internal Rate of Return; NPV-Net Present Value

**Table 21: Details of Economic Analysis – Base Case for State Average**

Value in INR

Year	Construction Cost	Maint. Cost	Savings in Vehicle Operating Costs	Savings in Travel Time Costs	Increased Agricultural Production	Additional Employment Generation	Total Project Benefits	Net Project Benefits
1	4,193,471	-	-	-	-	-	-	-4,193,471
2	2,795,647	34,946	8,380	11,181	424,458	232,759	676,777	-2,153,816
3	-	69,891	17,597	23,479	718,749	465,517	1,225,343	1,155,452
4	-	69,891	18,477	24,653	730,249	472,966	1,246,345	1,176,454
5	-	69,891	19,401	25,886	741,933	480,533	1,267,753	1,197,862
6	-	69,891	20,371	27,180	753,804	488,221	1,289,577	1,219,685
7	-	69,891	21,389	28,539	765,865	496,033	1,311,827	1,241,935
8	-	69,891	22,459	29,966	778,118	503,970	1,334,513	1,264,622
9	-	69,891	23,582	31,465	790,568	512,033	1,357,648	1,287,757
10	-	69,891	24,761	33,038	803,217	520,226	1,381,242	1,311,351
11	-	69,891	25,999	34,690	816,069	528,549	1,405,307	1,335,416
12	-	69,891	27,299	36,424	829,126	537,006	1,429,855	1,359,964
13	-	2,446,191	28,664	38,246	842,392	545,598	1,454,900	-991,292
14	-	69,891	30,097	40,158	855,870	554,328	1,480,453	1,410,562
15	-	69,891	31,602	42,166	869,564	563,197	1,506,529	1,436,638
16	-	69,891	33,182	44,274	883,477	572,208	1,533,141	1,463,250
<b>Total</b>	<b>6,989,119</b>	<b>3,389,722</b>	<b>353,260</b>	<b>471,346</b>	<b>11,603,460</b>	<b>7,473,143</b>	<b>19,901,209</b>	<b>9,522,368</b>
<b>NPV @12%</b>	<b>6,689,585</b>	<b>1,054,755</b>	<b>141,002</b>	<b>188,135</b>	<b>4,972,726</b>	<b>3,183,084</b>	<b>8,484,947</b>	<b>740,607</b>

NPV (12%)	740,607
IRR	14.11%
MIRR	12.82%
NPV/Cost	1.27

## **Annex 7: Governance and Accountability Action Plan**

### **India: Rajasthan Road Sector Modernization Project (P130164)** **Governance and Accountability Action Plan**

1. Worldwide, the construction sector is perceived to be most susceptible to corruption, and especially so in public works contracts<sup>40</sup>. India's road sector (and by extension, Rajasthan's road sector) suffers from some of the same issues applicable to the road construction industry elsewhere: project delays due to issues in land acquisition and rehabilitation and/or environmental clearances, poor coordination among departments, law and order problems in some areas, frequent design changes, poor project planning, funding and management, pseudo joint ventures, contractual failures, resource constraints and corruption in the construction industry<sup>41</sup>. Several projects in the road sector in India have suffered from these implementation challenges - according to a recent report by the Ministry of Statistics and Program Implementation (MOSPI), 68% of central road sector projects (each worth more than \$30 million), have been plagued by time overruns in the range of one month to five years<sup>42</sup>. Specific to Rajasthan's road sector, there have been time overruns of 32% on projects in the state<sup>43</sup>.

2. Rajasthan has been promoting several progressive initiatives to make its governance citizen-friendly, transparent, and responsive. Notable among these are:

- An online public grievance redressal system called SUGAM (<http://sugam.ra.nic.in>) that has been designed to cater to redress public grievances related to all government departments to promote administrative accountability in the state.
- Enactment of The Rajasthan Guaranteed Delivery Public Service Act 2011- aimed at reducing corruption by public officials and enhance their efficiency through increased transparency and accountability in public services.
- Enactment of The Rajasthan Right to Hearing Act, 2012<sup>44</sup>, with effect from 1<sup>st</sup> August 2012, which provides for citizen's charter and right of the citizen to approach competent officers to hear the grievance and sort out the same within a fixed time schedule.
- Enactment of The Rajasthan Right to Information Act 2005 with effect from 15<sup>th</sup> June 2005 to provide for setting out the practical regime of right to information for citizens, in order to promote transparency and accountability in the working of every public authority, and for the constitution of a Central Information Commission and State Information Commissions.
- Formulation of the Rajasthan Transparency in Public Procurement Act, 2012 that is currently under consideration of the state's legislators.

3. With specific reference to the road sector, the state has been the best in terms of implementation of the PMGSY. This is also reflected in the Bank's engagement in RRPI and RRPII in the state. The state also has an established system for investigation of alleged cases of irregularities in respect of duties discharged by public servants. Complaints of corruption and

<sup>40</sup> *Bribe Payer's Index 2011*, Transparency International, Berlin, Germany, November 2011.

<sup>41</sup> *Indian Road Construction Industry—Capacity Issues, Constraints, and Recommendations*. The World Bank, Washington, DC, 2008

<sup>42</sup> *Bumpy ride for road sector, tops list of delayed projects*, Hindustan Times, New Delhi, January 26, 2012

<sup>43</sup> Deputy Director Statistics, PWD Rajasthan

<sup>44</sup> Effective from August 1, 2012

vigilance are dealt by the Anti-corruption Branch (ACB) attached to the Home department that makes detailed inquiries into complaints and submits the reports to the concerned departments for taking corrective action and for sanctioning the delinquent government officials. There is also an independent authority called the Lokayukta<sup>45</sup> or Ombudsman, which has jurisdiction over all serving public officials, including ministers, politicians, bureaucrats and other government employees<sup>46</sup>.

4. All these initiatives and enabling factors would undoubtedly provide the impetus for ensuring good governance and accountability on the RRSMP. However, the GOR may need to take some additional measures to ensure effective and efficient project implementation. In support of this objective, this Governance and Accountability Action Plan (GAAP) has been prepared, to improve the overall risk management, enhance efficiency and development impact and ensure that allocated resources are spent for the intended purposes. To this end, it identifies key risks and the various procedures/processes that GOR proposes to mitigate the same.

#### ***Key Governance Risks and existing risk-mitigation arrangements***

5. Notwithstanding the good governance of Rajasthan in building its rural road infrastructure, some of the key areas of vulnerability<sup>47</sup> and factors that engender fraud and corruption in India's road sector<sup>48</sup> (that are applicable to Rajasthan as well) are as follows:

- Overdesign features and overstated specifications or standards, understated/ inflated cost estimates, delays in utility shifting;
- Several levels of official approvals and permits for road construction projects, that often delay land acquisition and obtaining of regulatory clearances
- Procurement - inadequate level of competition, collusion, fraud such as misrepresentation of bidders' qualifications, leakage of bid evaluation information and deficient bid evaluation;
- Poor quality of work that remains undetected by a poor quality control setup;
- Project Management - difficulties in supervising large number of projects widely dispersed geographically given the weak oversight capacity of PWD and involvement of a large number of subcontractors that makes monitoring of transactions difficult.
- Contract management - lack of independent technical audits, misrepresentation of project progress information, lack of computerized project progress reports, and poor public disclosure of project information, ineffective performance monitoring, large contractual deviations, late payments;
- Poor enforcement of contractual remedies for breach of contract or poor performance – compounded by ineffective grievance redress and dispute resolution mechanisms;

6. All the above risks contribute to bad governance in a variety of ways. For instance, understated cost estimates may allow bidders to tailor their bids to achieve a low overall bid price, with high unit rates on items for which the quantities have been under-estimated; the contractor can then make windfall profits on those items during construction. Inflated cost

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<sup>45</sup> Under the RAJASTHAN Lokayukta and Upalokayuktas Act, 1973 (with amendments) and the RAJASTHAN Lokayukta and Upalokayuktas Rules, 1988.

<sup>46</sup> Only ex-chief ministers, ex-ministers and ex-bureaucrats are not under its purview

<sup>47</sup> *Problem areas of corruption in construction*, Chief Technical Examiners Organization, CVC, GOI, August 2002

<sup>48</sup> *Fighting Corruption in the Road Sector: An illustration of the issues in India*, Sanjeet Singh, Indian Revenue Service, RoutesRoads No. 331, PIARC, October 2005

estimates serve as a reference cover to hide high bid prices downstream as highlighted in a recent World Bank report<sup>49</sup>. Collusion and other fraud in procurement of contractors/consultants often results in sub-standard work and associated time and cost overruns. Poor design with little or no accountability of the design consultants or ground-truthing often leads to profile course corrections that may inordinately delay the project due to need for further land acquisition and/or other clearances. Delays of pre-construction activities in projects lead to waste of contractor resources that in turn lead to payment disputes that often end up in long-drawn litigation and/or re-negotiation of the contract.

7. Within the overall governance context in the state, PWD has undertaken several measures to improve its governance and accountability arrangements such as:

- Computerization of data collection of all roads in the state;
- Implementation of e-procurement and e-payment for PMGSY tenders;
- Development and adoption of Standard Bidding Document (SBD) based on international practices;
- Establishment of the RSRDC with a mandate of overall planning, development and maintenance of high traffic corridors under public private partnership modes;
- Formulation of a Roads Policy;
- Initiation of performance-based road maintenance contract in 5-6 districts;
- Creation of a separate unit under CE PMGSY to undertake rural roads connectivity program;
- Dovetailing MGNREGA funds for development and maintenance of rural roads.

8. The CE Office has benefited from the state-wide and PWD-wide governance initiatives and from the implementation of the Bank-financed projects, RRP1 and RRP2, and thus possesses the capacity to implement the project adopting Bank guidelines. As part of the project implementation of RRSMP and the requirements for a follow-on project, the CE Office has undertaken several steps to improve its governance structure:

- Adoption of a R&R policy and constitution of Grievance Redress Cell to address grievances of PAPs;
- Conduct of road user satisfaction surveys on a periodic basis and collection of road data for asset management;
- Strengthened financial management system comprising budgeting, accounting, internal controls, financial reporting, and auditing;
- Proposal to make e-payments to Contractors/Consultants;
- Creation of task force for sudden inspections of road construction works.

9. Based on an assessment of the above risks, existing systems, procedures and processes in the state PWD (see snapshot in Table 22), GOR initiatives and performance on the RRPI and RRPII, the overall governance risk of the project has been assessed as **Moderate**.

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<sup>49</sup> Curbing fraud, corruption, and collusion in the roads sector, Integrity Vice-Presidency, The World Bank, Washington DC, June 2011, pp 31

**Table 22: Snapshot of Mechanisms for road works**

Type of Existing Mechanisms	Yes/No	Mechanisms Missing
<b>A) Information Disclosure Mechanisms</b>		
Annual Reports online	✓	Results Framework Document online
Citizen Charter online?	✓	Rajasthan Rural Roads Project Information online
Display Boards at Site	✓	
Physical progress of SH works online?	●	
<b>B) RTI Mechanism</b>		
Public Information Officer in place	✓	
Section 4(a) compliant	✓	
<b>C) Complaint Handling Mechanisms</b>		
Online Mechanism in place?	✓	Process described on website
Online Tracking Enabled?	✓	Telephone Helpline/Hotline
Internal Vigilance Mechanism in Place	✓	Vigilance Information Online
<b>D) Quality Monitoring</b>		
Peer Review of feasibility studies and DPRs	●	
Third Party Quality Monitors?	●	
<b>E) Procurement</b>		
Tender information online?	✓	Online registration of contractors operational
e-Procurement operational?	●	List of debarred contractors online
Robust online procurement complaint handling system	●	Features of system to be enhanced
<b>F) Financial Management</b>		
e-payments?	●	Status of bill payments online
Financial progress of road works online?	●	
<b>G) Familiarity with World Bank projects</b>		
Familiarity with World Bank road sector projects	✓	
<u>Note:</u> ● denotes partial compliance (only for PMGSY)		

## The GAAP

10. The GAAP has been prepared through extensive discussions with the PWD, taking into consideration the key risks in project implementation, lessons from RRP1 and RRP2, Bank's sector experience, studies/reports<sup>50</sup> and the existing measures to mitigate the impact of these risks on the achievement of the PDO. It builds on GOI's Right to Information Act, 2005 (RTIA), the Prevention of Corruption Act (1988) and the several initiatives of GOR (listed above) to foster governance in PWD. Actions in the GAAP (Table 23) have been designed to improve the PWD's capacity for good governance through better project, contract and asset management, mechanisms for quality control, project coordination and foster public participation in project planning and implementation through enhanced transparency and grievance redress. Each of these is discussed in the following sections.

<sup>50</sup> Notably, the *Transport Sector GAAP Guidance Note*, the *India Health Sector Detailed Investigation Review (DIR)*, and the Integrity Vice Presidency's Report on *Curbing Fraud, Corruption, and Collusion in the Road Sector*.

## **Actions to reduce collusion, fraud and corruption**

11. Within the PWD, there is a Chief Vigilance Officer (CVO), who acts as a watchdog to handle complaints of fraud and corruption (F&C) complaints. The CVO's responsibilities include:

- Conducting investigations into cases based on specific allegations or complaints;
- Forwarding investigation reports for further consideration of the Govt.;
- Referring cases to the ACB if considered fit for further investigation;

12. The CVO has established a task force consisting of four vigilance teams at the State level headquarters (Jaipur) for random inspection and conducting quality control checks. The teams are headed by an Executive Engineer with supporting staff<sup>51</sup>. These teams inspect and check work quality of various works in PWD as mandated by the GOR and submit the inspection reports to the PWD Secretary, typically within four days of inspection. Reportedly, most complaints relate to sub-standard quality of works wherein; anonymous complaints are not entertained. In addition, the CVO also takes *suo moto* cognizance of newspaper articles of fraud, misappropriation and decides the necessary follow-ups based on their veracity.

13. In line with the Bank's current strategy of relying on country systems, the project will rely on this system to tackle cases of F&C during project implementation. In addition, the project specifically envisages the following strategies for combating F&C during procurement stage and contract implementation:

- a) To reduce chances of collusion in procurement, the PWD will be using *e-procurement* for RRSMP. This would help automate and optimize the objectivity of bid openings and evaluations, and would preclude issues such as intimidation of non-local bidders. Collusion may also be prevented through proven safeguards like making bid opportunities more accessible to potential single bidders and emerging joint ventures (JV) of several bidders. This could be achieved by setting pre-bid qualification requirements commensurate with the actual complexities of the works and by being equally reasonable in respect of formation and structure of emerging JVs. However, to prevent pseudo JVs, PWD should ensure that each member of a JV is vetted, and their specific role is defined in the contract to be accounted during the bid evaluation process.
- b) The project also envisages concurrent *third-party technical audits* at least twice a year on project road works during the project implementation period to ensure work quality, identify any deviations in quantity or value over 15%<sup>52</sup> (for BOQ- based contracts), flag relevant F&C issues, assess compliance to environmental and social safeguards, and review implementation of the TA. Large deviations would trigger mandatory inspections by the Task Force of the PWD which would be in addition to their own *regular* inspections. The technical audit reports would be shared with the Bank.

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<sup>51</sup> Typically, a Testing Officer and a Junior Engineer

<sup>52</sup> Curbing fraud, corruption, and collusion in the roads sector, Integrity Vice-Presidency, The World Bank, Washington DC, June 2011, pp 25

- c) To facilitate efficient exchange of project information and reporting on contract execution, the project will support development of a suitable *Project Management System*. For this purpose, the existing MIS in the PWD could be utilized and customized to enable access, input and reporting by consultants, regional and nodal officers on each contract to the PIU. This should also strengthen internal accountability during bidding and contract management. In addition, the project disclosure and complaint handling mechanisms (described below) should also enhance transparency and thereby minimize chances of F&C.

#### **Actions to incorporate road user input in planning and execution of works**

14. The RTIA (2005) mandates the disclosure of and universal access to information wherever in the public interest. Compliance to the Act is required for all public entities including the CE Office. The PWD already publishes Annual Reports and monthly status reports on PWD works. To enable the PWD staff to respond better to public requests for information, periodic training programs on RTIA will be arranged under RRSMP. To catalyze best practice in information dissemination, the project will provide support for creation of a dedicated project website<sup>53</sup> (with a link to the PWD website). For disclosure of information on RRSMP in a systematic manner, GOR has formulated a disclosure policy<sup>54</sup>, with the documents to be disclosed, and their frequency and mode. Contract-related information<sup>55</sup> will be disseminated at work sites through citizen information boards. In addition, the CE Office/PWD, in coordination with the Department of Public Relations (DPR) will disseminate project-related information at the district and village levels through brochures, public announcements, hoardings, and newspaper advertisements. An annual review of the requests received under the RTIA will be undertaken to identify and address systemic weaknesses for better governance.

15. To manage project-related complaints, in addition to the conventional avenues of telephone, drop boxes at offices, regular mail and the PWD website, the RRSMP website will have a link to the state's existing *SUGAM* system (see Box 1). Contact information of all RRSMP officers will also be provided on the PWD and RRSMP websites, Gram Panchayat offices, public libraries and citizen information boards on site. All types of complaints (related to procurement, construction quality, F&C and/or land acquisition, R&R etc.) received from all sources will be duly registered, catalogued, forwarded to the concerned authority and tracked. Based on the frequency of complaints/grievances received, social audits will be conducted to assess work quality and implementation, in coordination with the local authorities<sup>56</sup>. Statistics of all complaints received and their status will also be provided to the Third-party auditors and included in the quarterly progress reports to the Bank. Tracking of the status of all complaints, related investigations and measures taken will be done monthly and reported to the Project Director. Further, an independent audit of the complaint handling system is envisaged at least twice over the duration of the project (at the start and at mid-term of project implementation) to identify any systemic deficiencies.

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<sup>53</sup> As done by Orissa Works Department on the Orissa State Roads Project

<sup>54</sup> See Operations Manual

<sup>55</sup> Contract value, duration, start and estimated end dates, name of contractor and engineer in charge

<sup>56</sup> As done under the PMGSY

**16.** In addition to the above avenues, the project will support the conduct of two *beneficiary satisfaction/perception surveys* (during the second and fourth years of project implementation) to assess work quality and to incorporate stakeholder input as appropriate into the planning and execution of future road works.

### **Actions to Enhance Quality and Sustainability**

17. The current quality monitoring system involves various levels of checks—by the contractor, PWD Executive Engineers and quality control staff in each district. At all thirty-three district quality control units, ISO certified laboratories have been established<sup>57</sup>. Each of these is typically headed by an Executive Engineer (EE), who reports directly to the Additional Chief Engineer of that zone. The EE is supported by 3-4 AEs, a testing officer, a lab assistant and an administrative assistant. It conducts inspections on about 10% of all works a year, which are tested at the department's labs, and in special cases, at the labs of the publicly-funded engineering institutions<sup>58</sup>. Further, the Vigilance Task Force also monitors quality through specific investigations, either on the advice of the PWD or based on complaints received from the public or media. However, at present, there is no independent verification of project quality.

18. To enhance the quality of works and broaden stakeholder participation in ensuring quality, the project will support mandatory third-party technical and safeguard audit/monitoring of project works<sup>59</sup> twice a year to assess compliance with specifications and design requirements, social and environmental management plans, and in-depth scrutiny of select IPCs, use of mobilization advances, excise duty exemptions, insurance provisions and action on encumbrances.

19. To mitigate the risk of understated/overstated cost estimates, the project also proposes to support the development of a road cost database to facilitate the review and comparison of cost estimates and actual contract costs in all future projects. The use of e-Procurement in the project (already being used) will greatly facilitate population of this database with relevant information as well.

### **Monitoring Indicators for Compliance and Outcomes**

20. A dedicated officer will be tasked with the implementation of the GAAP. The CE Office and the Bank team will review the implementation of the GAAP during implementation support missions and at mid-term through the performance benchmarks (shown in Table 15). This will enable evaluating the GAAP's effectiveness and present an opportunity for any mid-course corrections.

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<sup>57</sup> Seven of these labs that have enhanced testing facilities act as regional labs.

<sup>58</sup> MBM Engineering College (Jodhpur), Malaviya National Institute of Technology (Jaipur), BITS (Pilani) and Engineering College (Kota)

<sup>59</sup> Guidelines for which are given in *How third party oversight of public construction projects can increase value for money and fight corruption*, CoST Working Paper 3, August 2009

***Box 1: Brief Description of the SUGAM System***

- On May 12<sup>th</sup>, 2011, Rajasthan launched the *SUGAM* Call Centre in the State Secretariat. The State's Department of Administrative Reforms and Grievances (DARPG) is the nodal department for implementation of this project. The Call Centre accepts complaints through telephone, email and by regular mail.
- All twenty-three departments of the state including the PWD are linked on this system, which is also been linked to the Chief Minister's Videoconference based grievance redressal system (e-samadhan) and all the thirty-three District Collectarates. The system has language interfaces both for Hindi and English.
- Complaints forwarded by the GOI's Central Public Grievance Redressal and Management System (CPGRAMS – pg.portal.gov.in) to the GOR are also tracked and monitored automatically through this system.
- Grievances are scrutinized, registered and instantly transmitted online to the concerned authorities at the Secretariat level, District level and Sub-District level, whereupon the authorities input their replies within 15 days. An important feature of the system is that if a complaint is lodged with any of the departments, it can also be viewed by the District Collector of the concerned district to which the complaint relates. Similarly any complaint lodged at any district can be viewed by the concerned Head of the department. This facilitates effective monitoring of grievances.
- *SUGAM* has been shortlisted for **e-India Public Choice Award** in the Category of Government to Citizen (G2C) Governance

### **Indicative Costs**

21. The cost of the GAAP implementation is part of the technical assistance component of the project and comprises: (a) cost of developing the website and for project publicity (brochures, advertisements, hoardings etc.); (b) costs to assess the existing online complaint handling system; (c) costs to commission third-party technical monitors/quality assurance consultants; (d) costs to commission the annual impact assessment and user satisfaction surveys; (e) cost of training staff; and (f) cost of social audits.

**Table 23: Governance and Accountability Action Plan**

Risk(s)	Action(s) to be Taken to Mitigate Risk	Level*	Timeline/ Status	Entity	Performance Indicator
<b>A. Actions to reduce collusion, fraud and corruption</b>					
Risk of collusion in procurement and fraud and corruption (F&C) in contract execution.	Use of e-procurement in project works	P	Continuous	CE Office	Use of e-procurement in project.
	Enable <i>online contractor registration</i> and maintain list of blacklisted contractors and consultants on RRSMP website.	S	By Appraisal	CE Office	Online registration operational.
	Creation of a database on procurement related information (number of bids, bid prices, unit prices, specifications, time and cost overruns) for benchmarking of related indicators.	P	Starting with the first contract	RRSM P official s	Updated database; All bid related information online.
Risk of cost and time overruns due to weak project preparation and monitoring.	Third-party technical and financial audit of works at project sites to flag major deviations in value, quantity or length & compliance with technical standards, social and environmental safeguards, and in-depth scrutiny of IPCs, use of mobilization advances etc.	P	Six-monthly	CE Office	Audit reports.
Risk of poor value-for-money due to F&C in execution.	Develop a <i>project MIS</i> for effective project monitoring and review and link it to the web for quick review and follow-up action	P	First year of Project	RRSM P	Implementation of M&E and project management tools.
<b>B. Actions to enhance Transparency and road user input</b>					
Lack of transparency and accountability that may adversely affect project outcomes.	Formulate a project-specific <i>public disclosure policy</i> ; disclose all project related information based on the policy, including through a <i>dedicated, clear and updated RRSMP website</i>	P	Appraisal; Implementation	CE Office	Comprehensiveness of online project information & onsite citizen boards.
	Start use of <i>SUGAM</i> system to address all project complaints and publish complaint handling procedures on the RRSMP website	P	By Appraisal	RRSM P, DARP G	Periodic review of complaint statistics & QPRs; field-level checks.
	Widely publicize—both internally and externally—the existing Civil Service Conduct Rules governing <i>sanctions</i> for staff.	S	By Appraisal	PWD, CVO	
Risk of insufficient citizen oversight/inputs into the planning process due to weak complaint handling procedures.	Coordinate with the DPR for public consultations and to highlight project issues through appropriate media at village/district levels	P	Periodically	CE Office, DPR	Number of such campaigns conducted.
	Periodic Training on RTIA for all RRSMP officers and staff	S	Continuous	PIO, APIO	Number of trainings conducted on RTIA.
	Conduct independent review of RTIA requests to identify systemic deficiencies	S	Annual	PWD	Audit reports.
	External review of the complaint handling process with report on performance, systemic	S	Periodically	PWD	Compliance to audit reports.

Risk(s)	Action(s) to be Taken to Mitigate Risk	Level*	Timeline/ Status	Entity	Performance Indicator
	issues & remedial action(s)				
<b>C. Actions to enhance quality and sustainability and project coordination</b>					
Risk that key stakeholder concerns are not incorporated in the project; risk of substandard quality of works.	Commission beneficiary perception/satisfaction surveys to obtain user feedback and publish findings on project website  Third-party review of DPRs, cost estimates and designs, including integration of safety and construction safety aspects	P  P	Second and Fourth years  Negotiations	PIUs  PIU	Periodicity of reports of surveys and actions taken.  Review reports.
Risk of poor estimation and related time and cost overruns.	Establishment of a road cost database to review and compare cost estimates in future projects	S	Negotiations	PWD	Cost database developed.
<b>D. Measures to enhance project coordination</b>					
Risk of delays in pre-construction activities or approvals required to execute the project efficiently.	Enhanced capacity of PWD staff in works project planning and in managing pre-construction activities	P	As in the RSMP	CE Office	Perceptible reduction in delays in pre-construction activities.

\*S=sector wide, P=project specific

## **Annex 8: Procurement Plan**

### **FOR THE FIRST 18 MONTHS OF IMPLEMENTATION**

India: Rajasthan Road Sector Modernization Project (RRSMP)

#### 1. General

##### **1. Project information**

Country : **India**  
Borrower : **Government of India**  
Project Name : **Rajasthan Road Sector Modernization Project (RRSMP)**. The project objective is to assist the Public Works Department, Rajasthan to improve the quality, connectivity, and management of its road network. This project will support critical investment needs and introduction of good practice examples for design and construction of rural road core network roads mainly through strengthening of existing MNREGA roads to provide all-weather road connectivity to village between 250 to 499 population, through PWD

Project I.D. for RRSMP : P130164

Credit No. : (to insert)

Project Implementing Agency (PIA): Public Works Department, **Government of Rajasthan**

- 2. Bank's approval Date of the procurement Plan:** September 10, 2013
- 3. Date of General Procurement Notice:** 28 December 2012
- 4. Period covered by this procurement plan:** First 18 months of the project.

## II. Goods, Works and Non-Consulting Services

### 1. Procurement Thresholds, Methods and Value thresholds

#### (a) Civil Works

Expenditure Category	Value* (Threshold per contract)	Procurement Method	Contracts subjected to Prior Review/Post Review
Civil Works	(a) Civil Works estimated to cost equivalent to US\$ 100,000 or less per contract.	[i] Shopping (Minimum 3 quotations) [ii] Force Account	[i] Post review only [ii] Force Account method shall be followed, if included in the approved Procurement Plan. Bank will provide prior no objection to the use of Force account for the works proposed if justified in terms of Para 3.9 of the Procurement Guidelines.
	(b) Rural roads Civil Works estimated to cost more than the equivalent to US\$ 100,000 per contract and less than US\$ 2.5 Million.	National Competitive Bidding (NCB)	First NCB works contract regardless of value. All other contracts are subject to post review.
	(c) Civil Works (other than Rural Roads) estimated to cost more than the equivalent to US\$ 100,000 per contract and less than US\$ 40 Million.	National Competitive Bidding (NCB)	First NCB works contract regardless of value and all contracts above US\$ 15 Million equivalent each will be prior reviewed by the Bank. All other contracts are subject to post review.
	(d) Civil Works estimated to cost more than US\$ 40 Million	International Competitive Bidding (ICB)	All ICB contracts irrespective of value will be subject to prior review.

\* If a transaction comprises several contracts, lots or slices, the aggregate estimated value of all contracts, lots or slices will determine the applicable threshold amount.

# Irrespective of the prior review thresholds, first NCB contract for works and goods will be subject to Bank's prior review.

#### (b) Goods, IT Systems and Non-Consulting Services

Goods	Value Threshold	Methods	Review Arrangements
<b>Equipment, Machinery, Vehicles, Furniture, Learning Materials, IT Systems and Non-Consulting Services etc.</b>	(i) US\$ 100,000 equivalent or less per contract.	Shopping (Minimum 3 quotations) DGS&D rate contracts <sup>#</sup>	Post review only
	(ii) Proprietary equipment; software; print, audio or visual educational	Direct Contracting	Prior review for all contracts valued US \$10,000 and above

<b>Goods</b>	<b>Value Threshold</b>	<b>Methods</b>	<b>Review Arrangements</b>
	publications; and other learning resources irrespective of value.		with justification as per Para 3.7 of Procurement Guidelines.
	(iii) Contracts of more than US\$ 100,000 equivalent but less than US\$ 3 Million equivalent.	National Competitive Bidding (NCB)	First NCB contract will be subject to Prior review by the Bank.
	(iv) Contracts of more than US\$ 3 Million equivalent.	International Competitive Bidding (ICB)	All ICB contracts are subject to Prior review by the Bank.
	(v) Framework Agreement (FA) <sup>@</sup> Subject to inclusion of “FA” as procurement method for specific items in the procurement plan.	As per Par 3.6 of GL	All FAs except for DGS&D are subject to review for acceptance.

\* If a transaction comprises several contracts, lots or slices, the aggregate estimated value of all contracts, lots or slices will be considered to determine the applicable threshold amount.

<sup>#</sup>DGS&D Contracts can be used at par with shopping. However, if State rate contract exists for an item, the same can be considered as one of the 3 quotations to be sought under shopping procedures.

<sup>@</sup> use of DGS&D rate contracts under Framework Agreement (FA) method can be used, provided that:

- Use of DGS&D rate contracts as FA must be reflected on the procurement plan agreed by the Bank for particular goods.
- Before issuing the purchasing order, the borrower carries-out a price analysis on the specific good that is intended to be purchased. If after this due diligence the borrower concludes (and Bank agrees) that the DGS&D rate contract is not suitable, then the borrower will have to proceed using NCB or shopping depending on the value.
- To meet the Bank's requirements for right to audit and F&C, these clauses may be included in the Purchase Orders (in case the purchasers are directly placing the purchase orders to DGS&D rate contract holders). On the other hand, if indent is placed through DGS&D, the Purchaser has the option to sign a separate undertaking with DGS&D rate contract holder, where Bank's right to audit and F&C clauses could be mentioned.

## 2. Pre-qualification : Not Applicable

## 3. Proposed Procedures for CDD Components (as per paragraph. 3.17 of the Guidelines)

Not Applicable

## 4. Reference to (if any) Project Operational/Procurement Manual:

A Procurement Manual is under preparation by the Implementing Agency. The manual will be reviewed with the Bank and after clearance of the Manual by the Bank all procurement in the project will be done as per procedures described in it.

## 5. 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 Credit Agreement.
- B. National Competitive Bidding (NCB) method for procurement and goods and works as per the above value thresholds will be conducted in accordance with paragraph 3.3 and 3.4 of the World Bank Procurement Guidelines and the following provisions:
  - (i) Only the model bidding documents for NCB agreed with the GOI Task Force (and as amended for time to time), shall be used for bidding;
  - (ii) Invitations to bid shall be advertised in at least one widely circulated national daily newspaper (or on a widely used website or electronic portal with free national and international access along with an abridged version of the said advertisement published in a widely circulated national daily inter-alia giving the website/electronic portal details from which the details of the invitation to bid can be downloaded), at least 30 days prior to the deadline for the submission of bids;
  - (iii) 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.
  - (iv) Except with the prior concurrence of the Bank, there shall be no negotiation of price with the bidders, even with the lowest evaluated bidder;
  - (v) Extension of bid validity shall not be allowed with reference to contracts subject to prior review without the prior concurrence of the World Bank (i) for the first request for extension if it is longer than four weeks; and (ii) for prior approved packages, all subsequent requests for extension irrespective of the period. (Such concurrence will be considered by the Bank only in cases of Force Majeure and circumstances beyond the control of the Purchaser/Employer);
  - (vi) Re-bidding shall not be carried out with reference to Contracts subject to Bank prior review without the prior concurrence of the Bank.
  - (vii) The system of rejecting bids outside a pre-determined margin or "bracket" of prices shall not be used in the project.
  - (viii) Rate contracts entered into by Directorate General of Supplies and Disposals will not be acceptable as a substitute for NCB procedures **unless agreed with the Bank on case to case basis**. Such contracts will be acceptable however for any procurement under the Shopping procedures.
  - (ix) Two or three envelop system will not be used (except when using e-Procurement system assessed and agreed by the Bank).

6. Summary of Procurement Packages planned during the first 18 months after project effectiveness (including those that are subject to retroactive financing and advanced procurement)

(1 US\$ = INR

60.00)

<b>SN</b>	<b>Districts in which works are planned</b>	<b>Estimated Cost in INR million/ US\$ million</b>	<b>Number of Packages</b>	<b>Domestic Preference (yes/no)</b>	<b>Review by Bank (Prior / Post) / Remarks*</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
<b>A. New Connectivity - Phase I - NCB - Construction &amp; maintenance of Roads - District wise details of packages</b>					
1	AJMER	54.63 / 0.911	2	No	Post
2	ALWAR	45.74 / 0.762	4	No	Post
3	BARAN	171.13 / 2.852	5	No	Post
4	BHARATPUR	164.35 / 2.739	6	No	Post
5	BHILWARA	713.47 / 11.891	22	No	Post
6	BUNDI	135.51 / 2.259	5	No	Post
7	CHITTORGARH	770.16 / 12.836	25	No	Post
8	DAUSA	18.79 / 0.313	3	No	Post
9	DHOLPUR	67.02 / 1.117	3	No	Post
10	HUMAN-GARH	27.89 / 0.465	2	No	Post
11	JAIPUR	253.92 / 4.232	13	No	Package No RJ-16-WB-RSSMP-03 is Prior Review rest Post Review
12	JHALWAR	247.53 / 4.126	10	No	Post
13	KARAULI	27.42 / 0.457	2	No	Post
14	KOTA	119.92 / 1.999	7	No	Post
15	PRATAPGARH	0.00 / 0.00	0	No	Post
16	RAJASMAND	132.38 / 2.20	7	No	Post
17	S. MADHOPUR	189.65 / 3.161	8	No	Post
18	SIROHI	16.16 / 0.269	1	No	Post
19	S. GANGA-NAGAR	343.48 / 5.725	11	No	Post
20	TONK	371.64 / 6.194	13	No	Post
21	UDAIPUR	322.70 / 5.378	8	No	Post

<b>SN</b>	<b>Districts in which works are planned</b>	<b>Estimated Cost in INR million/ US\$ million</b>	<b>Number of Packages</b>	<b>Domestic Preference (yes/no)</b>	<b>Review by Bank (Prior / Post) / Remarks*</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
<b>A. New Connectivity - Phase II - NCB - Construction &amp; maintenance of Roads</b>					
1	AJMER	12.89 / 0.215	1	No	Post
2	ALWAR	80.33 / 1.339	7	No	Post
3	BARAN	760.73 / 12.679	28	No	Post
4	BHARATPUR	103.13 / 1.719	4	No	Post
5	BHILWARA	472.00 / 7.867	14	No	Post
6	BUNDI	125.19 / 2.087	4	No	Post
7	CHITTORGARH	799.65 / 13.32	33	No	Post
8	DAUSA	365.72 / 6.095	11	No	Post
9	DHOLPUR	144.01 / 2.40	3	No	Post
10	HANUMAN-GARH	61.71 / 1.03	4	No	Post
11	JAIPUR	12.39 / 0.21	1	No	Post
12	JHALWAR	779.23 / 12.99	31	No	Post
13	KARAULI	0 / 0	0	No	Post
14	KOTA	0 / 0	0	No	Post
15	PRATAPGARH	76.69 / 1.28	3	No	Post
16	RAJASMAND	424.62 / 7.08	17	No	Post
17	S. MADHOPUR	199.15 / 3.32	8	No	Post
18	SIROHI	0 / 0	0	No	Post
19	S. GANGA-NAGAR	79.64 / 1.33	4	No	Post
20	TONK	456.87 / 7.62	14	No	Post
21	UDAIPUR	136.35 / 2.273	4	No	Post

<b>SN</b>	<b>Districts in which works are planned</b>	<b>Estimated Cost in INR million/ US\$ million</b>	<b>Number of Packages</b>	<b>Domestic Preference (yes/no)</b>	<b>Review by Bank (Prior / Post) / Remarks*</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
<b>D. ICB Procurement of Goods</b>					
1	Computers & IT Equipments for HQ and fields offices	50.7 / 0.845	1	Yes	Prior
<b>E. Non Consulting Services for Improvement of SHs - using Shopping method</b>					
1	Survey Work	0.8 / 0.013	1	No	Post
2	Soil Testing etc.	0.33 / 0.006	1	No	Post

3	Road Testing	0.7 / 0.012	I	No	Post
4	Printing Work	0.5 / 0.008	I	No	Post

- First NCB contract for works irrespective of value will be subject to prior review by the World Bank.

### III. Selection of Consultants

#### 1. Methods and Value thresholds for Consultancy Services

Consulting Services	Value Threshold	Methods	Review Arrangements
<b>Consulting Services (Firms)</b>	(a) More than US\$300,000 equivalent per contract.	Quality and Cost Based Selection (QCBS)	First Contract of each method of selection irrespective of value and all subsequent contracts valued above \$ 1 Million will be subject to Prior Review by the World Bank. All other contracts will be subject to post review.
<b>Consulting Services (Firms)</b>	(b) up to US\$300,000 equivalent per contract	Quality and Cost Based Selection (QCBS) Or Quality Based Selection (QBS) Or Selection based on Consultant's Qualification (CQ) Selection based on a Fixed Budget (FBS) Or Selection Based on Least Cost Basis (LCS)	
Individual Consultants		Competitive Selection based on comparison of the relevant overall capacity of at least 3 qualified candidates in accordance with Section V of the Consultant Guidelines	Prior Review of all contracts valued above \$100,000 per contract. All other contracts will be subject to post review.

\* If a transaction comprises several packages, lots or slices, the aggregate estimated value of contracts will determine the applicable threshold amount.

**2. Short list comprising entirely of national consultants:** Short list of consultants for services, estimated to cost less than **\$800,000** equivalent per contract, may comprise entirely of national consultants in accordance with the provisions of the World Bank Consultant Guidelines.

**3. Any Other Special Selection Arrangements:**

- (a) Contracts procured in advance will be financed under retroactive financing within the specified limits, if agreed to in the Credit Agreement.
- (b) Requests for Expression of Interest (REOI) for assignments expected to cost more than US\$ 300,000 shall be advertised in *UNDB online* in accordance with Para 2.5 of the Consultant Guidelines. Besides, all REOIs prepared by the PIA shall be submitted to the World Bank for publishing them on the Bank's external website.

#### 4. Consultancy Assignments with Selection Methods and Time Schedule

(1 US\$ = INR 60.00)

Reference No.	Description of Assignment	Estimated Cost (Rs. Millions/US\$ million)	Selection Method	Review by the Bank Prior/Post	Expected Proposals Submission Date	Comments
1	Individual Consultant for ESMF	2.5/0.042	Individual Consultant	Prior	05.07.2013	
2	Consultancy services for Feasibility, Design, Preparation of DPR	80/0.883	QCBS	Prior	11.11.2013	
3	Project Management Consultancy	120/2	QCBS	Prior	11.12.2013	
4	PWD Business Process Re-engineering	60/1.0	QCBS	Prior	27.12.2013	
5	Road sector Expenditure review & Road financing study	45/0.75	QCBS	Post	02.01.2014	
6	Asset Management System with cost effective road design, construction & maintenance	50/0.833	QCBS	Post	08.01.2014	
7	Institutional & Human Resources Development	12/0.2	QCBS	Post	15.01.2014	
8	Road Safety Management	80/1.333	QCBS	Prior	21.01.2014	
9	Social, Technical, independent Audits & beneficiary satisfaction/perception Surveys	20/0.333	QCBS	Post	31.01.2014	