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Report No: 75639-IN

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED LOAN

IN THE AMOUNT OF US\$216 MILLION

TO THE

GOVERNMENT OF INDIA

FOR A

KERALA STATE TRANSPORT PROJECT II (KSTP II)

April 17, 2013

Transport Unit  
Sustainable Development Unit  
South Asia Region

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**CURRENCY EQUIVALENTS**  
(Exchange Rate Effective March 2013)

Currency Unit = Rs.  
Rs. 54 = US\$1

**FISCAL YEAR**  
January 1 – December 31

**ABBREVIATIONS AND ACRONYMS**

AADT	Annual Average Daily Traffic	IFR	Interim Financial Reports
BoQ	Bill of Quantity	iRAP	International Road Assessment Program
BOT	Built Operate Transfer	IRC	Indian Roads Congress
C&AG	Comptroller & Auditor General	ISP	Implementation Support Plan
CAAA	Controller of Aid Accounts & Audit	KRFB	Kerala Road Fund Board
CapEx	Capital expenditure	KSTP	Kerala State Transport Project
CCC	Citizen's Call Centre	LA	Land Acquisition
CHS	Complaint Handling System	MAT	Minimum Alternative Tax
CM	Chief Minister	MDR	Major District Road
CPS	Country Partnership Strategy	MMS	Maintenance Management System
CRZ	Coastal Regulation Zone	MOSPI	Ministry of Statistics and Program Implementation
CSC	Construction Supervision Consultant	MTFP	Medium-Term Fiscal Plan
CSO	Civil Society Organization	MVTA	Motor Vehicles Taxation Act
DIPR	Department of Information and Public Relations	NATPAC	National Transportation Planning and Research Centre
DLPC	District Level Purchase Committee	NCB	National Competitive Bidding
DPR	Detailed Project Report	NeGP	National e-Governance Project
DRSCs	District Road Safety Councils	NICNET	National Informatics Centre Network
EA	Environmental Assessment	NREG	National Rural Employment Guarantee Program
EIRR	Economic Internal Rate of Return	ORAF	Operational Risk Assessment Framework
EMP	Environmental Management Plan	PAF	Project Affected Family
ENPV	Economic Net Present Value	PAPs	Project Affected Persons
EPC	Engineering, Procurement, and Construction	PPP	Public-Private Partnership
F&C	Fraud and Corruption	PRAMS	Procurement Risk Assessment and Management System
FC	Finance Commission	PSB	Public Sector Benchmark
FIDIC	Fédération Internationale des Ingénieurs-Conseils	PSC	Public Sector Comparator
FM	Financial Management	PSU	Public Sector Undertakings
GAAP	Governance and Accountability Action Plan	PWD	Public Works Department
GDP	Gross Domestic Product	R&B	Roads and Bridges
GHG	Green House Gas	R&R	Resettlement and Rehabilitation
GOI	Government of India	RAP	Resettlement Action Plan
GoK	Government of Kerala	RSA	Road Safety Authority
GRM	Grievance Redressal Mechanism	SBDs	Standard Bid Documents
GRSF	Global Road Safety Facility	SDI	Spatial Data Infrastructure
HDM	Highway Development and Management Model	SPVs	Special Purpose Vehicles
I&PR	Information and Public Relations Department	VfM	Value for Money
ICB	International Competitive Bidding	VOC	Vehicle Operating Costs

Regional Vice President:	Isabel M. Guerrero
Country Director:	Onno Ruhl
Sector Director:	John H. Stein
Sector Manager:	Karla Gonzalez Carvajal
Task Team Leader:	Simon David Ellis/Arnab Bandyopadhyay

## India: Kerala State Transport Project II

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*India*  
*India Second Kerala State Transport Project (P130339)*

**PROJECT APPRAISAL DOCUMENT**

*SOUTH ASIA*

SASDT

Basic Information			
Project ID	Lending Instrument	EA Category	Team Leader
P130339	Specific Investment Loan	A - Full Assessment	Simon David Ellis/ Arnab Bandyopadhyay
Project Implementation Start Date		Project Implementation End Date	
July 30, 2013		December 31, 2018	
Expected Effectiveness Date		Expected Closing Date	
July 30, 2013		April 30, 2019	
Joint IFC			
No			
Sector Manager	Sector Director	Country Director	Regional Vice President
Karla Gonzalez	John Henry Stein	Onno Ruhl	Isabel M. Guerrero
Borrower: Government of India			
Responsible Agency: Kerala State Transport Project			
Contact:	Mr T.O. Sooraj, IAS	Title:	Secretary PWD
Telephone No.:	+91-471-2327803	Email:	<a href="mailto:Secy@pwd.kerala.gov.in">Secy@pwd.kerala.gov.in</a>
Contact:	Mr Joseph Mathew. K	Title:	Project Director
Telephone No.:	+91-471-2318946	Email:	<a href="mailto:pdkstp@gmail.com">pdkstp@gmail.com</a>
Project Financing Data(US\$M)			
<input checked="" type="checkbox"/> Loan	<input type="checkbox"/> Grant	<input type="checkbox"/> Other	
<input type="checkbox"/> Credit	<input type="checkbox"/> Guarantee		
<b>For Loans/Credits/Others</b>			
Total Project Cost (US\$M):		445.00	
Total Bank Financing (US\$M):		216.00	
Financing Source	Amount(US\$M)		
Borrower	229.00		
International Bank for Reconstruction and Development	216.00		
Total	445.00		

<b>Expected Disbursements (in USD Million)</b>									
Fiscal Year	FY14	FY15	FY16	FY17	FY18	FY 19			
Annual	22	43	45	54	32	20			
Cumulative	22	65	110	164	196	216			
<b>Project Development Objective(s)</b>									
The project's development objective is to improve condition, traffic flow and road safety with a focus on vulnerable road users on selected roads in Kerala.									
<b>Components</b>									
<b>Component Name</b>							<b>Cost (USD Millions)</b>		
<b>Component A: Road Network Upgrading and Safety Improvement:</b> This component will include upgrading 363 km of strategically important State Highways to complete network connectivity in the state with the objective of reducing travel time between key socio-economic centers.							413.00		
<b>Component B: Road Safety Management:</b> This component will support the strengthening of the road safety management systems in Kerala with the objective of arresting the increase of crash fatalities in the state. This component will finance various initiatives building on the work already undertaken during the first project including a <i>safe corridor demonstration project, implementation of a local level challenge fund, and advisory support for road safety activities</i>							22.00		
<b>Component C: Institutional Strengthening:</b> The objective of this component is to improve the sustainability of Kerala's state road network with respect to its functional adequacy, financial viability and capacity of key state road sector institutions to deliver road infrastructure and services that are responsive to road user needs.							10.0		
<b>Compliance</b>									
<b>Policy</b>									
Does the project depart from the CPS 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 [X]	
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>	<b>No</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>			
<b>Name</b>	<b>Recurrent</b>	<b>Due Date</b>	<b>Frequency</b>
Implementation Units	Yes	N/A	N/A
<b>Description of Covenant</b>			
Kerala to maintain: (i) a Project Steering Committee, for policy guidance, general oversight and procurement approvals; (ii) management unit (KSTP) within the PWD, for day-to-day coordination/implementation of Project activities; (iii) an Evaluation Committee, for the evaluation of procurement bids and the preparation of recommendation reports; and (iv) an Environmental & Social Management Cell for assisting KSTP with the implementation of the safeguard documents, and monitoring and evaluating contractors' compliance therewith.			
<b>Name</b>	<b>Recurrent</b>	<b>Due Date</b>	<b>Frequency</b>
Construction Supervision Consultant	Yes	Twelve (12) months as of the Effective Date (applicable to the Independent Engineer only)	N/A
<b>Description of Covenant</b>			
Kerala to: (i) maintain a supervision consulting firm (Construction Supervision Consultant) to assist KSTP with the management and supervision of regular construction contracts, overseeing payments to contractors, and carrying out quality control of civil works; and (ii) to engage and maintain a supervision consulting firm (Independent Engineer) in order to serve as the <i>construction engineer</i> for the civil works to be carried out under the Project, all of them with qualifications and experience, and terms of reference acceptable to the Bank.			
<b>Name</b>	<b>Recurrent</b>	<b>Due Date</b>	<b>Frequency</b>
Internal Auditors	Yes	Six (6) months after the Effective Date	N/A
<b>Description of Covenant</b>			
Kerala to engage and maintain a firm of chartered accountants with qualifications and experience, and under terms of reference acceptable to the Bank, in order to perform the internal audit functions within PWD, monitor payments and ensure compliance with internal control mechanisms.			
<b>Name</b>	<b>Recurrent</b>	<b>Due Date</b>	<b>Frequency</b>
Project Documents	Yes	N/A	N/A

<b>Description of Covenant</b>			
Kerala to implement the Project in accordance with the Project Implementation Plan, the FM manual, the GAAP and the Safeguard Documents (i.e. EIAs, EMPs, EMF and RAP).			
<b>Name</b>	<b>Recurrent</b>	<b>Due Date</b>	<b>Frequency</b>
Challenge Fund & Cost Sharing Agreements	Yes	N/A	N/A
<b>Description of Covenant</b>			
Kerala through collaborative efforts of the PWD and the RSA shall mobilize local stakeholders to prepare proposal for the implementation of safe corridors/zones and the piloting of road safety measures; and upon screening and selecting feasible proposals shall cause PWD and the RSA to enter into cost sharing agreement for the financing of such proposal (to be implemented by KSTP).			
<b>Name:</b>	<b>Recurrent</b>	<b>Due Date</b>	<b>Frequency</b>
Bidding Restriction / Safeguard Compliance	Yes	N/A	N/A
<b>Description of Covenant</b>			
Kerala to refrain from inviting bids and/or selecting any contractors for roads for which: (i) EMPs have not been prepared and disclosed; and/or (ii) further details to the existing social impact assessments might be needed. Kerala to ensure that each contract for civil works includes the obligation of the relevant contractor to comply with the relevant safeguard documents.			
<b>Name:</b>	<b>Recurrent</b>	<b>Due Date</b>	<b>Frequency</b>
Government Permits/Clearances	Yes	Before any civil work commences	N/A
<b>Description of Covenant</b>			
Kerala to ensure that, prior to commencement of any civil works on roads or sections thereof, all relevant government permits/clearances have been obtained, and/or any conditions imposed have been fulfilled/met.			
<b>Name:</b>	<b>Recurrent</b>	<b>Due Date</b>	<b>Frequency</b>
Safeguard Reporting & Monitoring	Yes	N/A	Quarterly
<b>Description of Covenant</b>			
Kerala to (i) maintain monitoring and evaluation protocols and record keeping procedures to supervise and assess compliance with Safeguard Documents; and (ii) to report on quarterly basis on compliance with Safeguard Documents.			
<b>Name:</b>	<b>Recurrent</b>	<b>Due Date</b>	<b>Frequency</b>
Removal of Water Utilities	No	March 31, 2015	N/A
<b>Description of Covenant</b>			
Kerala to ensure that the Kerala Water Authority shall have removed and relocated all water utilities along the Primbilavu-Perinthalmanna Link corridor, avoiding to the extent possible, any disruption to civil works.			
<b>Name:</b>	<b>Recurrent</b>	<b>Due Date</b>	<b>Frequency</b>
Suggestions & Complaint Mechanism	Yes	N/A	N/A



<b>Description of Covenant</b>			
Kerala to maintain and operate a district level grievance redressal mechanism, satisfactory to the Bank, for resettlement and rehabilitation and a state level grievance redressal mechanism for all other aspects of the Project.			
<b>Conditions</b>			
<b>Name</b>			<b>Type</b>
<b>Description of Condition</b>			
<b>Team Composition</b>			
<b>Bank Staff</b>			
<b>Name</b>	<b>Title</b>	<b>Specialization</b>	<b>Unit</b>
Gizella Diaz	Program Assistant	Program Assistant	SASDO
Simon David Ellis	Senior Transport Economist	Team Lead	SASDT
Arnab Bandyopadhyay	Senior Transport. Engr.	Highway Engineer/ Co-Team Lead	SASDT
Ritu Sharma	Program Assistant	Program Assistant	SASDO
Atul B. Deshpande	Senior Financial Management Specialist	Financial Management Specialist	SARFM
A.K.Kalesh Kumar	Senior Procurement Specialist	Procurement Specialist	SARPS
Said Dahdah	GRSF Program Coordinator	Road Safety Specialist	TWITR
Mridula Singh	Sr. Social Development Specialist	Social Development Specialist	SASDS
Bernard Aritua	Transport Specialist	Transport Specialist	SASDT
<b>Non Bank Staff</b>			
<b>Name</b>	<b>Title</b>	<b>Office Phone</b>	<b>City</b>
Krishnan Srinivasan	Governance Specialist, Consultant		New Delhi
Vaideeswaran Sankaran	Environment Specialist Consultant		New Delhi
Shashi Nambisan	Road Safety Consultant		USA
Rashi Grover	Economist, Consultant		New Delhi

<b>Locations</b>					
<b>Country</b>	<b>First Administrative Division</b>	<b>Location</b>	<b>Planned</b>	<b>Actual</b>	<b>Comments</b>
<b>Institutional Data</b>					
<b>Sector Board</b>					
Transport					
<b>Sectors / Climate Change</b>					
Sector (Maximum 5 and total % must equal 100)					
Major Sector		Sector	%	Adaptation Co-benefits %	Mitigation Co-benefits %
Transportation		Rural and Inter-Urban Roads and Highways	100		
Total			100		
<input checked="" type="checkbox"/> I certify that there is no Adaptation and Mitigation Climate Change Co-benefits information applicable to this project.					
<b>Themes</b>					
Theme (Maximum 5 and total % must equal 100)					
Major theme		Theme	%		
Financial and private sector development		Infrastructure services for private sector development	90		
Human development		Injuries and non-communicable diseases	10		
Total			100		
<b>Gender Flag</b>					
Does the activity support (select all that apply)					
<input checked="" type="checkbox"/> Analysis and/or consultation on gender related issues					
<input checked="" type="checkbox"/> Specific actions to address the distinct needs of women and girls, or men and boys, or positive impacts on gender gaps					
<input checked="" type="checkbox"/> Mechanisms to monitor gender impact to facilitate gender-disaggregated analysis					

## I. STRATEGIC CONTEXT

### A. Country Context

1. Kerala has the highest human development outcomes in India with 99 percent literacy, the highest life expectancy and the lowest rates of infant mortality in the country. Despite first world human development indicators the economy is heavily dependent on the service sector for 64 percent of its Gross Domestic Product (GDP) with 21 percent coming from the secondary sector (i.e. manufacturing and construction); and 15 percent coming from the primary sector (i.e. agriculture and allied activities). Remittances are the primary driver for Kerala's economy accounting for 25 percent of GDP. Public Sector Undertakings (PSU) also play a significant role in Kerala's economy and the state's fiscal affairs. In 2009/2010 the state's 96 PSUs registered turnover equivalent to 5.3 percent of Kerala's 2009/10 GDP and employed approximately 110,000 people.

2. Despite the impact of the global economic down turn on the Central Government, the domestic economy of Kerala performed much better than expected. Between 2006/07 and 2009/10, Kerala's GDP growth rate averaged 3.2 percent. The state's fiscal position improved and is in line with 13th Finance Commission targets thanks to an increase in the state's own tax receipts. The fiscal deficit as percentage of GDP lowered from 3.4 percent in 2009/10 to 2.8 in 2010/11. Similarly, the ratio of debt to GDP decreased from 30.5 percent in 2009/10 to 28.4 percent in 2010/11. Low capital investment in economic infrastructure has been an unfortunate consequence of fiscal constraints and high revenue expenditures. Kerala's politics have historically shown a strong socialist influence and a deliberate focus on wealth redistribution via public sector employment, and expenditures on social services such as health and education. This has historically challenged the state's ability to promote economic growth and maintain a sound fiscal position. For example, only 10 percent of Kerala's 2012/13 budget will fund capital investment which includes about US\$ 113 million for road and bridge maintenance. Kerala's draft Road Development Policy estimates that improving existing roads alone will require investing US\$ 885 million per year over the next 10 years.

### B. Sectoral and Institutional Context

3. ***Kerala's Transport Network:*** Kerala has a dense road network, roughly three times the national average. Of the 152,000 km of road network in the state 1500 km are national highways, 32,600 km district and state highways and 117,900 km rural roads. Whilst Kerala has an extensive road network relative to its geographical size, the poor quality and suboptimal alignment of many roads constrain the state's development. Of the 4,340 km of State highways around 70 percent are still single-lane with 54 percent in poor condition. The dense population and ribbon development along the main transport links have resulted in dispersed settlement patterns with few concentrated urban centers. Much of Kerala resembles a rural-urban continuum which the State Planning Commission has termed 'rurban' development. This type of development adversely impacts traffic flows due to "side friction" and numerous road intersections, and complicates efforts to re-align or widen the roads.

4. ***Road Asset Management:*** The Public Works Department's (PWD's) organizational structure consists of four program 'Wings,' with the Roads and Bridges (R&B) wing having the

executing responsibilities for state highways and major district roads. PWD Wings rely on a geographically decentralized structure of 'Circles', 'Divisions' and 'Sub-Divisions' to undertake design, procurement, construction, and maintenance operations at the local level. Maintenance is mainly carried out by private contract and tends to be undertaken on an ad-hoc basis steered mainly by urgency. For the first Kerala State Transport Project (KSTP I) a project implementation unit was set up called KSTP, this unit has now taken responsibility for much of the new project work in the state whether domestically or externally funded. Under KSTP I there was a component to develop and implement an asset management system but while the software has been installed there have been problems in making it operational and to date there is still no formal system. As such getting an accurate picture of road condition and maintenance priorities is difficult. The state is starting to use simple long term performance based maintenance contracts as a way to both lock in longer term maintenance commitments but also to secure a more reliable stream of funding. To take full advantage of the gains registered under KSTP I, future efforts must integrate the asset management software within a wider institutional context.

5. A number of Special Purpose Vehicles (SPVs) have also been set up to support road development in Kerala. In 2001 the Kerala Road Fund Board (KRFB) was established which receives funds from motor vehicle taxes. Unlike road funds in other parts of the world the KRFB is used solely for development of new infrastructure through Public Private Partnership (PPP) deals. There is also the Road and Bridge Corporation which has been set up to finance bridge over and under passes. Funds that these entities control are not part of the state's budget framework and carry over across fiscal years. This project will help to undertake the necessary network, finance and organizational assessments to provide a roadmap for the sector and support their implementation.

6. **Road Safety:** Road safety is a major challenge in many of Kerala's roads. While the number of road crashes in Kerala has been declining from a peak of 42,400 in 2005 to 35,000 in 2011 (a 17 percent reduction), the number of traffic fatalities has increased during the same period from 3,200 to 4,100 (a 27 percent increase). As part of KSTP I a Road Safety Authority (RSA) - the first of its kind in India - headed by the Transport Minister was established in 2007 and this was followed by a Road Safety Fund in 2009 which receives 10 percent of motor vehicles tax, 50 percent of fuel tax and a portion of traffic violations income. The budget of the road safety fund has reached about US\$ 10 million in 2011. The fund primarily funds a black-spot improvement program, implemented by the road safety cell of the PWD, and equipment for the traffic police including speed radars and alcoholmeters. It also funds public awareness, education programs, coordination with other agencies and driver training. This project will continue to support the activities of the RSA particularly related to improved data collection, integration, and analysis to help prioritize interventions and establishment of a monitoring and evaluation framework. Further, it will focus on working with local authorities to adopt and adapt lessons learned from the Road Safety Demonstration Corridor developed under the project so as to develop and evaluate "safe road corridors" in other locations across Kerala with a focus on improving road safety.

7. **Traffic management:** Related to the road safety issue is the problem of traffic management in a state where development is "rurban". It provides a unique challenge for the smooth and safe flow of traffic through long stretches of road that are semi-urban, and traffic is

routinely interrupted by road junctions, road side activity, pedestrians and frequently stopping public transport vehicles. There is an urgent need to move some activities from the immediate road side such as bus/auto rickshaw stops, markets and parking. The state is already looking at using “ox-bow lands” (i.e. land that has been freed by the improved alignment of roads) to accommodate some of these services. In the process there is also the potential of concessioning out these facilities as another source of funding. The other priority is the segregation of pedestrian and slow moving, mainly non-motorized traffic from the faster moving vehicles. This project will support the design, implementation and evaluation of some of these initiatives particularly in dense semi-urban locations. There is also an urgent need for enhanced community engagement in design and operation of traffic and safety management schemes which this project would promote and pilot in selected locations.

8. ***Relevant Road Policies in Kerala:*** There are four important legislative Acts that have the largest influence on Kerala’s road infrastructure, including: (i) the Kerala Highway Protection Act (1999) which empowers the state to classify roads, protect rights of way from encroachment, and acquire land for road development; (ii) the Kerala Road Fund Act (2001) which established KRFB along with its mandate and funding streams; (iii) the Kerala Road Safety Authority Act (2007) which established the RSA along with its mandate and associated resource streams; and (iv) the Kerala Motor Vehicles Taxation Act (MVTA, 1976 & 2000a) which provides the legal basis for taxes on motor vehicle licenses. The MVTA provides a major source of revenue receipts for the state. In 2009/10 motor vehicle tax receipts totaled US\$ 213 million – roughly 6.4 percent of the Kerala’s own tax receipts – of which 10 percent is allocated to the Road Fund and 10 percent to the Road Safety Fund. The remaining 80 percent flows to the state’s Consolidated Fund where it remains subject to standard appropriation processes.

9. ***Draft State Road Development Policy 2009-2021:*** Kerala has developed a draft Road Development Policy for the period 2009-2021. This policy includes proposed means for part-funding additional road development and maintenance via existing or proposed State revenue generating powers. By 2021, the policy envisages all state highways to be designed and converted to two lane carriage ways with paved shoulders; 10 percent of state highways to be upgraded to four lanes (based on needs) and all major district roads to be upgraded to single/intermediate lane roads. Kerala’s draft Road Development Policy estimates that roughly Rs 550 crore per annum (about US\$ 104 million) can be raised for road development from the State’s own sources such as bridge tolling and State Cess on fuel. However, these additional revenues are small compared to the Rs 4,705 crore (US\$ 885 million) *per year* of investment which the State’s Draft Policy suggests will be necessary to support the roads and bridges sector between 2011 and 2021.

10. ***Road Development Financing Challenges in Kerala:*** One of the key challenges facing Kerala’s road sector is an incomplete state-level framework for funding and financing road sector investments particularly given the financing gap that currently exists. The PWD is currently contemplating how best to involve the private sector in this framework and how to leverage existing revenue streams, such as that from the road fund, to increase debt financing for infrastructure provision. The use of IBRD finance can also help to leverage other financing through high quality appraisal of individual sub-projects. One outcome from this policy debate

may be an increased use of annuity-style PPPs for financing, asset development, and maintenance over a defined period.

11. Regardless, the state will need to identify increased funding resources to support whichever financing methods (public or private) it chooses to deploy. The state's primary options for increasing funding are: (i) increased user charging (e.g. through higher fuel cess or some form of tolling); or (ii) increased transfers from the state's other tax revenues. The technical assistance component of this project will support the state in analyzing and articulating these issues on a sector wide level.

12. Kerala's medium term fiscal policy shows the State achieving 13<sup>th</sup> Finance Commission's targets for fiscal consolidation. Reducing Kerala's revenue deficit in line with targets ranks foremost amongst the State's fiscal challenges. However, the 13<sup>th</sup> Finance Commission has fiscal deficit targets to accommodate continued capital spending whilst Kerala addresses its revenue deficit. This will provide the State with headroom for making investments in infrastructure or other economically vital assets. Between 2010/11 and 2013/14 Kerala's future estimates envisage an additional Rs 32,027 crore (US\$ 6 billion) in borrowings which will partially finance an additional Rs 6,158 crore (US\$ 1.1 billion) in capital expenditure over this same period. The state is also entitled to some national transfers to support maintenance of roads and bridges under the 13<sup>th</sup> Finance Commission grants, which has allocated annual grants-in-aid totaling 953 crore (US\$ 180 million) to support Kerala's road and bridge maintenance programs between 2011 and 2015. However, these funds are contingent upon the State spending enough of non-grant funds on road and bridge maintenance. Under the 12<sup>th</sup> Finance Commission period, Kerala was not able to fully avail of all central government support potentially available to the State<sup>1</sup>. Addressing this issue for the period 2011 to 2015 must be a key priority for the state.

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

13. The proposed project is fully aligned with the Country Partnership Strategy (CPS) for FY13-17 to support poverty reduction and shared prosperity in India. That objective is closely aligned with the vision for development outlined in the country's 12th Five-Year Plan (FY2013–17), which calls for “faster, sustainable, and more inclusive growth” focusing on poverty reduction, group equality, regional balance, empowerment, environmental management, and employment. The project supports the first pillar of the CPS of “integration” which has a focus on physical connectivity, strengthening of market mechanisms and improving the models for private participation in the highways sector. This pillar also places increased emphasis on safety in the use of infrastructure including making transport safer for women.

14. The Government of India is now assessing the “finance plus” aspects of new operations as a means of leveraging the institutional knowledge of the World Bank and other multi-laterals. The “finance plus” agenda for this operation will be reflected through several dimensions of the project's design and building on the work already undertaken through KSTP I, with enhancing road safety being a key ingredient:

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<sup>1</sup> The CAG notes that failure to meet conditions resulted in Rs 160.58 crore (about US\$ 30m) of lost grant receipts for road and bridge maintenance between 2005/06 and 2009/10.

- (a) Road safety and urban traffic management: the Bank will bring global knowledge—such as that from the Global Road Safety Facility (GRSF)— to inform and encourage policymakers, engineers, and the public to go beyond business as usual in road construction, and build-in safety considerations from the outset. The project will draw upon South-South learning in engineering design for traffic calming, driver education, citizen awareness, effective law enforcement and the broader issues of corridor and traffic management.
- (b) Institutional strengthening: the Bank’s engagement will support the on-going modernization of the PWD through emphasizing greater efficiency and effectiveness in asset management; by leveraging private sector finance and moving into the PPP arena through the use of an annuity based concession arrangement on one of the project roads; and by supporting initiatives that provide greater road user engagement in the activities of the PWD.
- (c) Environmental management: Given the sensitive environment in Kerala a focus will be given to bringing international best practice in environmental management. This will include strengthening the implementation of the environmental requirements of the new PWD Code and Manual, use of solar lighting for junctions, piloting of oxbow land development (land made available from road realignments) and integrating occupational health & safety management as a part of the Environmental Management Plan.

## **II. PROJECT DEVELOPMENT OBJECTIVES**

### **A. PDO**

15. The project's development objective is to improve condition, traffic flow and road safety with a focus on vulnerable road users on selected roads in Kerala.

### **B. Project Beneficiaries**

16. The improved state highways resulting from the project are expected to enhance the road network's capacity and condition, provide better connectivity with national highways, and reduce Vehicle Operating Costs (VOCs) for vehicular traffic using the project roads and travel times for passengers and goods carried in transit within Kerala. This is expected to result in better inter- and intra-state passenger movement and improved marketing and distribution of agricultural and industrial products. The other major benefit is likely to be in terms of reduced cost to the Government/PWD in the form of reduced road maintenance costs and improved effectiveness of investments to enhance road safety. The main beneficiaries of the project will accordingly be users living along the project corridors, mainly the travelling public, agricultural and industrial producers, consumers and local communities, as well as the Government/PWD and RSA. The benefits will be mainly in the form of reduced transport bottlenecks and lower passenger and freight transport costs, reduced travel time and improved road safety in terms of reducing severe crashes and injury outcome. The roads identified for improvement under the project pass through

about 87 villages and cover eight districts (with a total population of about 13.4 million of which more than 50 percent are women<sup>2</sup>).

17. Vulnerable road users such as pedestrians, bicyclists, and motorcyclists will be specific road user beneficiaries of safety enhancements. Two-wheelers account for about 30 percent of the Average Daily Traffic of about 10,000 vehicles in Kerala on the project's roads. Data for 2009-2011 for the road safety demonstration corridor indicate that pedestrians and 2-wheelers are involved in about 50 percent of the road accidents. A road survey assessment for safety conducted in 2012 by International Road Assessment Programme (iRAP) indicates that for the demonstration corridor, the extent of the corridor in the highest risk category was more than 85 percent for motorcyclists and more than 99 percent for pedestrians.

### **C. PDO Level Results Indicators**

18. The key results indicators to demonstrate achievement of the PDO are as follows:

- (a) The number of direct beneficiaries, including female beneficiaries, from the improved roads;
- (b) Reduction of travel time for travelling public on the improved roads by 20 percent;
- (c) Improvement in number of km of improved roads with riding quality as measured by IRI<sup>3</sup> to less than 4 by end of project; and
- (d) Reduction in number of fatality count for total as well as for vulnerable road users on the demonstration corridor by 30 percent.

19. A more detailed list of project indicators and their respective baseline and annual target values can be found in Annex 1: Results Framework and Monitoring.

## **III. PROJECT DESCRIPTION**

### **A. Project Components**

20. The proposed project will have three components building on the work already undertaken in KSTP I. All civil works costs include contingencies, environmental management, land acquisition and resettlement. The components are as follows:

21. ***Component A: Road Network Upgrading and Safety Improvement (US\$413 million):*** This component will include upgrading 363 km of strategically important State Highways to complete network connectivity in the state with the objective of reducing travel time between key socio-economic centers. The existing intermediate lane roads will be upgraded to a full two lane standard with paved shoulder of 1.5 m on either side for the entire length. The civil works would include road widening and strengthening of pavement, geometrical improvements to the road alignment, improving bridges, cross drainage and longitudinal drainage structures, improving stability of side slopes in rolling / hilly stretches and enhancing road safety and traffic

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<sup>2</sup> The 2011 census gives a sex ratio in Kerala of 1084 females for every 1000 males.

<sup>3</sup> IRI – International Roughness Index is used to measure road riding quality.



management measures. Particular attention has been given to protection of vulnerable road users such as through the provision of sidewalks, raised pedestrian crossings and segregation of slow moving traffic. This component will consist of two sub-components, A1 and A2, to be procured through FIDIC based input contracts and PPP modified annuity concessions respectively.

22. ***Sub-Component A1 (US\$322 million)***: This sub-component will include upgrading 281 km state highways through FIDIC based input contracts. This sub-component would also include the associated pre-construction activities including resettlement and utility relocation, environmental management and supervision and quality control services.

23. ***Sub-Component A2 (US\$91 million)***: This sub-component will include upgrading 82 km state highway through a PPP modified annuity concession to pilot the approach in the state. In this approach, an upfront construction grant of 40 percent of the estimated construction cost will be paid linked to completion of specified construction milestones. In addition, there will also be performance linked annuity payments throughout the concession period. The component will also include transaction advisory services, concession management by independent engineers, environmental management and preconstruction activities such as resettlement and utility relocation.

24. ***Component B: Road Safety Management (US\$22 million)***: This component will support the strengthening of road safety management systems in Kerala with the objective of reducing the number of fatalities and serious injuries from traffic crashes in the state. The strategic planning and the development of this work will also be supported and funded in collaboration with the World Bank GRSF. This component will finance various initiatives building on the work already undertaken during KSTP I as follows:

- (a) ***Safe Corridor Demonstration Project***: Multi- sectoral interventions will be implemented on a high-risk corridor (Kazhakkootam-Taikod-Kottarakkara-Adoor, 80 km) to demonstrate the effectiveness of road safety best practice. This road safety demonstration corridor will focus on targeted infrastructure design and behavioral interventions with a particular emphasis on measures improving the safety of pedestrians, bicyclists and motorized two-wheelers. The safe corridor will benefit from a multi-sectorial approach including improved engineering, enforcement, health care and community awareness. The project will support procurement of related goods, civil works and consultancy services and implementation of a multi-year result focused safety action plan.
- (b) ***Challenge Fund***: Lessons from the safe demonstration corridor will be used to help district road safety councils (DRSCs) learn and replicate this model by using funds from the challenge fund. The objective of this program is to develop, through local partnerships, another 10 “Safe Corridors/Zones” across the State, and rigorously evaluate the impact and effectiveness of various safety and traffic management strategies, and refine the strategies in order to continuously improve road safety and mobility. The DRSCs will be supported in their planning activities by the RSA and road safety cell at PWD.
- (c) ***Strengthening Road Safety Management Capacity***: This would include mobilizing a team of road safety specialists to form a program management team under the existing secretariat of the RSA. The team would support the planning of the safe corridor

demonstration project and the challenge fund. It would also provide advisory support to the RSA and Road Safety Cell in PWD, on international best practices in road safety management. A particular emphasis will be on monitoring and evaluation, data analysis and the consequent rationalization of funding and resource allocation. The National Transportation Planning and Research Center (NATPAC) will be appointed for collecting base line data and long term monitoring of project outcomes.

25. **Component C: Institutional Strengthening (US\$10 million):** The objective of this component is to improve the sustainability of Kerala's state road network with respect to its functional adequacy, financial viability and capacity of key state road sector institutions to deliver road infrastructure and services that are responsive to road user needs. The following sub-components would be financed:

(a) **Road Sector Modernization (US\$8.0 million):** This sub-component is designed to support the strengthening of the institutional and financial capacity of Kerala PWD and related entities to efficiently develop and maintain the physical assets of the road network, and mobilize necessary financial resources for this task. The main tasks financed include institutional studies for future development, management and finance of the state's road network; implementation of a simple maintenance management system; various aspects of e-government; and capacity building and training.

(b) **Community Engagement and Road User Satisfaction (US\$2.0 million):** This sub-component will support the PWD and KSTP in enhanced public outreach through a combination of measures to improve the dissemination of information, obtaining user feedback on public perception/satisfaction with road infrastructure provision, and enhanced user engagement, especially to help promote, design and monitor initiatives to improve road safety and asset management. Local partnerships will be developed with Gram Panchayats, faith-based organizations, Non-Governmental Organizations (NGOs) and extensions of local initiatives such as KudumbaSree and Anganwadi.

## **B. Project Financing**

### **Lending Instrument**

26. The Bank's investment lending instrument for the proposed project consists of a Specific Investment Loan (SIL).

### **Project Cost and Financing**

27. The Bank will finance US\$216 million of the overall project costs which will account for 49 percent of the overall project costs:

Component	Total Costs (Million USD)	Bank Financing (Million USD)
A- Road Upgrading	368	169
B – Road Safety	22	12
C – Institutional Strengthening	10	5
Total Baseline Costs	400	186
Physical Contingencies	16	11
Price Contingencies	29	19
<b>Total Project Cost</b>	<b>445</b>	<b>216</b>

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

28. The first project had a number of very important institutional successes but there is also an unfinished agenda. This project seeks to build and consolidate on the successes from the first project while finding more effective ways to address the issues that remain unresolved. The following table provides a summary of the experience from the first project and the proposed approach for this project:

Lesson/experience from first project	Approach in this operation
<b>Institutional issues</b>	
- PWD manual prepared which sets out modernized business processes for the PWD.	- Focus on broader implementation of the manual through capacity building and awareness raising. This is key to modernizing the functions of the PWD.
- Computerization of core business process of the PWD was only partially implemented (e-procurement and FM).	- Revisit the computerization agenda with a focus on e-governance, integration of systems and mandated use.
- The asset management system failed to get technical/institutional traction within the PWD.	- Revisit this agenda but focus only on core network, simplify the asset management system and concentrate on <i>institutionalizing</i> the need for good asset management.
- Road user surveys highlighted the general satisfaction of road users with project roads but there was little outreach to local communities.	- Outreach and community participation and engagement will form a core principle to developing the road safety and road asset management agenda.
<b>Road safety issues</b>	
- Creation of a Road Safety Authority financed by license fees is a first in India.	- Continue support to RSA with a focus on improving their monitoring and evaluation and coordination capacity
- Introduced new concepts in road safety management.	- Good road safety principles mainstreamed through project and extended through road safety corridor with a focus on vulnerable road users.
<b>Implementation capacity</b>	
- KSTP transitioned from low to high capacity implementing entity	- Continue support for KSTP but increase focus on the adoption of best practice within PWD

<b>Lesson/experience from first project</b>	<b>Approach in this operation</b>
- Quality of final roads considered very good	- Maintain focus on quality but now increase emphasis on traffic management and protection of vulnerable road users
- Significant delays associated with land acquisition impeded project progress but experience also led to redrafting of relevant state legislation along WB lines	- Land acquisition is now 98 percent complete and the target is 100 percent prior to contract award.
- Poor contract management also adversely impacted project progress	- This project will provide intensive support to improving contract management both for client and Bank team.

#### **IV. IMPLEMENTATION**

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

29. PWD has overall responsibility for implementation of the project. The PWD has delegated the offices of KSTP, which was formed for KSTP I, to undertake the day to day management of the project. The functions of KSTP have now been more widely integrated within the overall PWD structure and they now also undertake domestically funded projects while still using the World Bank procedures.

30. KSTP will be responsible for planning, budgeting, procurement, implementation, co-ordination, management and monitoring of various components of the project including implementation of the Resettlement Action Plan and the Environmental Management Plan. It will also be responsible for keeping overall project accounts, processing disbursement requests, reporting progress and liaising with the World Bank. KSTP is managed by a Project Director, in the rank of a senior level Chief Engineer and assisted by one Chief Engineer. KSTP will be supported on the ground by five divisional offices located at Kottarakkara, Muvattupuzha, Kuttippuram, Kannur, Ponkunnam each headed by an Executive Engineer.

31. The planning, monitoring and coordination for the road safety component will be undertaken by RSA and the road safety cell of the PWD. They will be supported by a team of road safety specialists sitting within the secretariat of the RSA. The day to day implementation of the safety component will be with KSTP. Details of the project implementation arrangements are presented in Annex 3.

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

32. The Results and Monitoring Framework developed for the project is included in Annex 1. The overall monitoring and evaluation will be the responsibility of the KSTP. The PDOs will be monitored and reported through periodic World Bank implementation support missions every six months. The KSTP will conduct frequent inspections to prepare quarterly progress reports with detailed evaluation surveys and analysis.

33. There will also be a significant monitoring and evaluation exercise for the road safety component, particularly the demonstration corridor. This will include detailed base-line survey and follow-up surveys through the life of the project and will be undertaken by NATPAC. This exercise will be supported by the Global Road Safety Facility to support with the accurate measurement of impacts and to subsequently disseminate findings through the state and to other parts of India. The monitoring and evaluation will be designed in such a way that impacts on all road users will be measured with data disaggregated for vulnerable users, by age group and gender.

### **C. Sustainability**

34. The Bank's Transport Business Strategy<sup>4</sup> defines sustainability in transport systems as having financial, economic, operational, institutional, environmental and social dimensions. The project is economically viable as the accumulated discounted benefits exceed costs. However, sustainability of economic benefits requires good quality of construction works and adequate maintenance to prevent premature failure of roads.

35. The financial sustainability of the project will be assured both by a continued commitment from government to fund improved network connectivity under KSTP and a commitment from government and the states to adequately fund maintenance and road safety initiatives. Despite some recent pressures on finance, the Government of Kerala remains highly committed to funding the program.

36. Operational sustainability will be achieved by the enhanced road maintenance processes, strong institutions, effective planning and management systems, and innovative construction and maintenance works. With increased funding levels for maintenance, at least in the short term, the operational sustainability of the project investments will only be assured if the necessary road maintenance policies, strong institutions, effective planning and management systems, and innovative ways to execute maintenance works are in place. The project will enhance PWD's planning and management processes, skills and resources

37. All subprojects have had an environmental screening and mitigation plans will be put in place. The Environmental Management Plan (EMP) will be part of the bidding document and PWD will put a fixed budget for implementation of the EMP and ensure contractors are aware of their responsibilities. In continuation of KSTP I, the project will further build the capacity of PWD officials on environmental management.

38. Social sustainability will be assured by building stakeholder ownership through enhanced interaction of project affected persons (PAPs) and road users in project design, implementation, monitoring and evaluation. The suggestion and complaint mechanism will allow stakeholders to address grievances, a key contributor to project sustainability.

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<sup>4</sup> World Bank. "Transport Business Strategy for 2008-2012: Safe, Clean and Affordable Transport for Development." 2008. Washington, D.C.

## V. KEY RISKS AND MITIGATION MEASURES

### A. Risk Ratings Summary Table

Stakeholder Risk	Rating
<b>Implementing Agency Risk</b>	
- Capacity	Moderate
- Governance	Substantial
<b>Project Risk</b>	
- Design	Substantial
- Social and Environmental	Moderate
- Program and Donor	
- Delivery Monitoring and Sustainability	Substantial
- Country	Low
- Sector and Multi-Sector	Moderate
<b>Overall Implementation Risk</b>	Substantial

### B. Overall Risk Rating Explanation

39. The overall risk rating during implementation of the project is rated Substantial. There is a relatively advanced state of readiness for the project and familiarity of the implementing agency with World Bank procedures. There is also strong stakeholder demand for the project and the quality of the first project roads was high. However, there are a number of specific risks that may affect implementation of the institutional issues and long term outcomes of the project:

- (a) There is particularly high turn-over of senior staff within PWD and the RSA which makes dialogue on a long term institutional reform agenda difficult. Staffing at KSTP has been more consistent than under the previous project but given the overall environment within PWD there is still a risk from high staff turn-over.
- (b) Given the current environment in the country, and that PPP projects in the highways sector are new to Kerala<sup>5</sup>, there is a risk of either low competition and/or high bids for the one road proposed to be bid out under the hybrid annuity.
- (c) While the fiscal position of Kerala has been improving in recent years there is still a risk of fiscal strain on GoK, leading to an inability to provide project counterpart funding, delaying implementation and raising costs. This risk is likely to be small during the

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<sup>5</sup> There has been one urban roads project of 50km in Trivandrum that has been successfully taken up under PPP.

project implementation period but may increase in the longer term and adversely affect maintenance commitments and annuity payments.

- (d) Specific to this project, the following pose governance challenges: political interference in project implementation, poor quality of works, delayed payments to contractors, delayed decision-making, repeated termination and rebidding of contracts, poor sustainability arrangements for roads and lack of mechanisms for adequate citizen feedback and public disclosure. The detailed Operational Risk Assessment Framework (ORAF) matrix is provided in Annex 4. Mitigation of some of these risks will be through an agreed upon Governance and Accountability Action Plan (GAAP – see Annex 7) that will complement the institutional strengthening activities.

## VI. APPRAISAL SUMMARY

### A. Economic and Financial Analyses

40. *Economic analysis.* The economic evaluation was conducted for all roads being improved under the project. The economic evaluation was carried out using the Highway Development and Management Model (HDM-4), a globally accepted analytical tool for economic analysis for highways with investment alternatives, which simulates life cycle conditions and costs and provides economic decision criteria for multiple road design and maintenance alternatives. The main project economic benefits considered by the analysis are: (i) road user cost savings primarily including vehicle operating cost (VOC) savings for vehicular traffic using the project road, and time savings for passenger and goods carried in transit; (ii) savings associated with improved road safety measures; and (ii) reduced cost to the Government/PWD in the form of reduced road maintenance costs.

41. The cost-benefit analysis of the project indicates that the project economic benefits are satisfactory. The Economic Net Present Value (ENPV) of these roads is positive for all the road sections, at a 12 percent discount rate over a fifteen-year evaluation period. The Economic Internal Rate of Return (EIRR) of the candidate links vary between 27 percent and 69 percent and remain viable even in the case of a 15 percent increase in agency costs and a 15 percent reduction in user benefits.

42. An initial economic analysis has also been carried out for the road safety demonstration corridor. The analysis is based on a standard methodology to estimate the direct economic costs of lost output and the cost of injuries that could be prevented<sup>6</sup>. The benefits of the intervention include a reduction in: (a) crash fatalities; (b) serious injuries; and (c) minor injuries. The costs include the value of direct economic costs of lost output; medical costs; pain and suffering cost assumed at 20 percent of lost output; and vehicle repair costs. The direct economic costs of lost output are estimated at US\$93,400 using the iRAP methodology. The analysis shows that the interventions on the demonstration corridor are viable and return an ENPV of US\$ 1.3 million (EIRR of 14 percent). The full economic analysis is detailed in Annex 6.

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<sup>6</sup> See references at <http://www.irap.org/anout-irap-3/methodology>

43. **Financial analysis.** The GoK has expressed interest in exploring alternative options to finance road improvements in the state and to specifically pilot a PPP project. The GoK wants to be cautious and decided to pilot the use of PPPs in only one of the seven roads included in the project. The two road stretches considered by the GoK are the Punalur-Ponkunnam and Ponkunnam-Thodupuzha stretches, of which the Punalur-Ponkunnam stretch has been chosen for the PPP pilot.

44. The financing options study undertaken for the project considered different delivery models for implementation of public projects. Given the difficulty in collecting user charges in Kerala, the two viable PPP modalities considered for analysis in the Kerala case are BOT with annuity (i.e., annuity payment from public fund) and BOT with hybrid annuity (i.e., annuity payment from public fund along with an upfront capital grant financed by the Bank). Under the PPP options considered the technical, construction and operating risks as well as the revenue risks stemming from changes in taxes are transferred to the private operator, while the risk related to the modification/renegotiation of the contract and the financial risks are shared by both the public sector and the private operator.

45. According to the value for money (VfM) analysis, it is clear that any of the PPP options considered is preferred to the public sector option. Moreover, according to the analysis, the Punalur–Ponkunnam stretch yields a significantly higher VfM than the Ponkunnam–Thodupuzha stretch for a 12-year concession period. Accordingly the Punalur-Ponkunnam stretch has been chosen as the most suitable link for piloting this approach. Also according to the financial analysis, the hybrid annuity with a 40% upfront grant yields the lowest net present value for grant plus annuity.

## **B. Technical**

46. The original designs for six of the seven project roads were prepared in 2002 as part of KSTP I. These designs have now been revised based on the latest developments in the adjoining land, traffic projections and increased attention to road safety and traffic management issues. The roads will be built with a typical 10 meter cross section including 1.5 meter paved shoulders on either side. Given high rainfall, lined drains are provided for almost the entire length of road. Adequate slope protection works will be provided in the rolling / hilly stretches to improve the long term stability of the side slope. Unlike the first project all bridges will be upgraded to the full width of the carriageway to facilitate smooth and safe movement of the traffic.

47. Annual Average Daily Traffic (AADT) is between 9000 and 13000 with about 30 percent being two wheelers and another 20 percent being auto rickshaws. Much of the road network in Kerala passes through urban or semi-urban areas and so there is also a lot of pedestrian activity on the road side. Given the challenging traffic mix and side friction associated with these roads, the design has paid particular attention to vulnerable road users – pedestrians, cyclists and motor cyclists. The design consultants have worked with iRAP to undertake detailed traffic safety surveys and integrate engineering countermeasures into project designs. Particular attention is being given to traffic calming measures, junction design, provision of sidewalks in urban areas, the physical segregation of traffic through rumble strips and flexible reflective posts, and the creation of “safe zones” around bus stops. Oxbow lands (excess land created due to road realignment) are being developed as off-street parking areas to remedy the congestion in urban centers. Community consultation will take place prior to construction to ensure awareness of site



safety and traffic management issues during construction and to create awareness of community responsibilities once the road is open.

48. The contractual framework will also be strengthened from the first project to improve compliance with environmental management measures and construction safety. This will be achieved through a clear framework in the bidding document setting out major and minor lapses and associated penalties for non-compliance. Further, to improve the flexibility, innovation and efficiency during the implementation stage the contractor will be allowed to propose alternative construction methodologies, materials and machinery for selected items. These proposals would be scrutinized by the Employer and Engineer for acceptance, provided the alternatives result in larger societal benefits such as through time savings, improved quality and durability, energy efficiency and reduction of GHG emissions. All roads financed under Component A1 of the project will be handed over after a 1 year defect liability period and the PWD will arrange for subsequent long term maintenance contracts. The road financed under Component A2, undertaken as a pilot PPP modified annuity concession would be maintained by the concessionaire under a performance based operation and maintenance regime for the entire concession period of 12 years.

49. Average costs range from US\$ 740,000 to US\$ 1 million per km which is on the higher end of construction costs for similar types of roads in India. However, replacement and widening of a large number of bridges, very significant length of lined drains and a large number of intersection improvements, all essential elements in this environment have attributed to the large construction costs. Value Engineering Consultants were deployed to undertake a review of project designs and estimates to optimize the costs and some savings were accrued through improved pavement and bridge design, adjustment of vertical profile in the raised sections, reuse of existing pavement materials and additional hydraulic analysis to optimize the size of drains and number of outlets.

### **C. Financial Management**

50. Overall, KSTP has in place a financial management system that is assessed to be adequate for accounting for and reporting project funds and expenditure and providing fiduciary assurance over the use of project funds. The financial management team in the Finance Wing of KSTP is in place and has experience of implementing KSTP I. The financial management arrangements for this project will largely be derived from the systems established in KSTP I and these have been further strengthened and are documented in a Finance Manual, which is based on the Kerala PWD Manual and the Kerala State Financial Code and Rules. The FM Manual documents the delegation of powers to officials at all levels of KSTP and clearly defines their respective roles and responsibilities. The FM Manual also describes in detail the procedures for checking, verifying and passing the bills for payments and the roles and responsibilities of the supervision consultant, the KSTP divisions (Executive Engineers and Divisional Accountants) and the FM team at KSTP in the checking and passing of work bills/ IPCs before making payments.

51. The Project will be pre-financed by the state government through a separate dedicated budget line in the state budget. The funds will be drawn by KSTP, on a need basis, and deposited in a dedicated project bank account. Major payments will be centralized at KSTP based on bills

passed by the concerned project divisions and certified by a Supervision Consultant. Works bills will be certified by a Supervision Consultant and verified by the technical and financial wings of KSTP. Accounting will be centralized at KSTP and based on an off the shelf accounting application. Reporting of project funds and expenditure will be through quarterly interim financial reports (IFR), which will also be the basis for disbursement by the World Bank. The KSTP divisions will submit their accounts to KSTP who will consolidate these with the KSTP accounts and prepare a monthly expenditure statement, which will feed into the quarterly IFRs. Firms of Chartered Accountants will be engaged for half-yearly internal audit of the project under terms of reference agreed with the Bank. External audit of project financial statements will be conducted by the C&AG through the offices of the Accountant General Kerala on standard terms of reference agreed with the C&AG and Government of India. During project missions, the Bank will review the adequacy and operation of the agreed financial management arrangements including review of the audit reports.

52. A designated account in US Dollars will be maintained by the Government of India with the Reserve Bank of India for the purpose of the IBRD financing. Government of Kerala will pre-finance all Program expenditure from its own resources and then seek reimbursement, through IFRs, from the Bank through the office of Controller of Aid Accounts & Audit (CAAA), Government of India. The project will be eligible for retroactive financing per Bank's rules in respect of expenditure incurred in accordance with the project guidelines. Such expenditure will be claimed by KSTP through a stand-alone audited IFR.

#### **D. Procurement**

53. The preparations for the second project had taken into considerations the major lessons of the first project including considerable delays in contract completion due to resettlement problems and poor contract management, though no fraud and corruption were identified during the implementation. At this stage bids for three ICB works contracts and the contract for the selection of the supervision consultant have been received, evaluated and award recommendation made, thus meeting the readiness requirements of completing contracting activities for 30 percent of the infrastructure investments. Preparations for all other key packages are at an advanced stage of completion. The project has also appointed all key procurement staff and a significant number of staff has undergone training in World Bank procurement processes. The Procurement Risk Assessment and Management System (PRAMS) rating is Moderate as it was for the previous project.

54. Given the weaknesses with contract management in the first project, this project will give particular emphasis to the issue through the use of e-tools for project management to ensure improved decision flow and reporting. During implementation quarterly meetings focused on contract progress and issues will be conducted with participation of contractors, Supervision Consultants 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 leadership. Performance of Supervision Consultants will also be reviewed independently, including ensuring continuous availability of all staff committed and third party quality testing for triangulating the findings of

the “designated Engineer”. The project will make a concerted effort in bringing in beneficiary community and civil society in social audit of the progress.

55. For all NCB and Shopping contracts, the project proposes to use PWDs e-procurement system which uses the NICNET platform. The World Bank has carried out an assessment of the e-procurement system and actions are at an advanced stage to make necessary improvements in the areas identified by the Bank assessment, including: (i) recreation and 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; the Bank will accept the use of e-procurement in the project. While the procurement of goods, works and services will follow Bank guidelines and agreed bidding documents, the project will explore possibilities to use the new PWD codes (awaiting formal approval) for bidding for shopping and NCB contracts and delegation of powers during the implementation stage. Procurement arrangements for PPP and performance based contracting will be developed and added to the project procurement system and PWD codes.

56. All procurement under the project including that under 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 Bid documents (SBDs) would be used for procurement of Goods, Works, IT Systems and Consulting services.

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

57. The major cause of delay and cost over-runs from the first project was slow progress in land acquisition and other resettlement activities mainly caused by lack of staff and a centralized approvals process for Land Acquisition. The state also faced delays in domestically funded projects. To address these challenges, the state adopted a resettlement and rehabilitation (R&R) policy 2011, modeled on the World Bank policy, which has expedited subsequent resettlement activities. The new policy provides for enhanced compensation and grants to restore the livelihood of the people. All R&R activities under this project have used this policy which is in full compliance with Bank's Operational Policy 4.12.

58. This project covers a total of seven roads. For six of these roads a Resettlement Action Plan (RAP) had been prepared in 2002 as part of KSTP I. Its implementation has continued to date with impacts on 20,700 families. More than 95 percent of the Project Affected Persons (PAPs) have lost less than 5 percent of their assets; 3 percent between 5-10 percent and the remaining relocated either on their balance land or land purchased for the landless. The total amount of land required for the six roads is 121.2 hectares, of which 117.8 hectares has already been acquired and in the possession of KSTP. To complete these six roads a further 3.4 hectares of land still needs to be acquired and 564 families need to be compensated.

59. As the original RAP, to a great extent, has already been implemented an updated RAP had been prepared and disclosed in December 2012. The updated RAP provides the detailed implementation status of the six roads and estimates of the impacts from the seventh road that is new to this project. It also sets out the details of the Resettlement and Rehabilitation Policy that

will guide the finalization of the RAP for the seventh road. As per initial estimates, the seventh road will impact approximately 1,330 families, 10.2 hectares of land and 1040 assets.

60. The Grievance Redressal Mechanism (GRM) will continue as in KSTP I. The GRM comprises the District Collector, or his nominated representative, who chairs the committee, and representatives of NGOs and local government. The PAPs will have access to the committee throughout the project period. The committee will hear grievances once in 15 days or may meet more frequently depending upon the number of cases to be settled. It will inform the decision to the aggrieved party within 15 days of the hearing. Monitoring of the GRM will include the number of grievance petitions received, resolved and pending and signed by the Chairman of the GRM.

61. The project also aims at catalyzing development, especially for vulnerable road users, and ensuring local stakeholder involvement throughout the process of the project cycle. Appropriate social appraisal tools including quantitative and qualitative methods will be used to collect information to improve the design and implementation of the project. In order to gain a better understanding of the distributional impact of the project on various groups of beneficiaries and the potential risks involved (particularly for pedestrians and riders of two wheelers) systematic and properly designed user surveys will be periodically conducted. The survey data will be disaggregated by gender, age groups and district. Information collected will be made publically available for more informed consultation and deliberation.

#### **F. Environment (including Safeguards)**

62. Being a Category 'A' project, the full Environmental Assessment (EA) is required. As most of the upgradation road corridors were identified under the earlier project, EAs were already completed. In line with Category 'A' project requirements, an independent review of these EAs was done and the review consultants themselves did the updating of the EA. As a part of the updating, community / stakeholder consultations were done and their feedback integrated. In order to ensure consistency and integration, EAs are being finalized alongside the updating of the engineering design and bid / contract documents. Overall, the updating is being done in a phased manner. The EA for five roads is completed and includes five separate EMPs, which are included in the respective bid / contract documents. Three of these roads require statutory clearance under the Coastal Regulation Zone (CRZ) notification and these have been obtained. None of the other road corridors require statutory clearance to be obtained prior to construction. The remaining two roads under the project will prepare EAs and EMPs in accordance with the project's Environmental Management Framework (EMF).

63. The physical environmental impacts include construction-related impacts, slope stability and drainage issues, impacts on mangroves, impacts on rivers / streams due to new bridge construction and improved alignments, illegal coastal sand mining, and Archaeological Survey of India (ASI) sites. All of these impacts will be mitigated through management measures included in the respective corridor EMPs. In addition, environmental enhancement measures such as the use of solar PV for street-lighting and applying green building principles are also being considered. The PWD's Environmental and Social Management Cell has been supporting the EA preparation and will be involved with KSTP in the oversight of the implementation as well.

## Annex 1: Results Framework and Monitoring

### India: Kerala State Transport Project II

#### Project Development Objective

##### PDO Statement

The project's development objective is to improve condition, traffic flow and road safety with a focus on vulnerable road users on selected roads in Kerala.

#### 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			
Direct project beneficiaries, of which female	<input checked="" type="checkbox"/>	Number	13.4 million <sup>7</sup> (7 million)					14.8 million (7.7 million)	End of project	Census data	KSTP
A reduction of travel time on the improved project roads (3 priority corridors)	<input type="checkbox"/>	Minutes	Kasaragod to Kanhangad: 29  Pilathara to Pappinissery: 21  Thalassery to Valavupara: 58					Kasaragod to Kanhangad: 25  Pilathara to Pappinissery: 19  Thalassery to Valavupara: 50	End of project	Consultant report	PWD
Improved riding quality of project roads	<input type="checkbox"/>	Number of Km with IRI <4	0	0		120	250	363	Annual	RMMS	PWD
A reduction in annual fatality count of total and vulnerable road users on demonstration corridor	<input type="checkbox"/>	Number of fatalities/year  Number of vulnerable fatalities/year	80 <sup>8</sup>  49 <sup>9</sup>					56  34	Annual	First Incident Reports	RSA

<sup>7</sup> Assumes direct beneficiaries are all those living in the eight districts covered by project.

<sup>8</sup> The baseline estimates for fatality count on the demonstration corridor has been drawn from the 2012 Kerala State Crime Records Bureau data as available. During the implementation of the project a detailed review and assessment of fatality estimates will be done which may revise the baseline values. In addition to the total fatality count, the assessment will also identify the fatality count for vulnerable road users and female road users for the purposes of the results framework.

<sup>9</sup> The fatality count for vulnerable road users was estimated using the fatal victim to crash victim ratio for all road users and then applying the same ratio for vulnerable road user victims. The vulnerable road users identified in the results framework includes pedestrians and passengers of two wheelers.

**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			
<b>Component A: Road Network Upgrading</b>											
State Highways Upgraded	<input checked="" type="checkbox"/>	Km upgraded	0			120	250	363	Quarterly	Consultant reports	KSTP
Financial closure achieved on PPP pilot project	<input type="checkbox"/>	Yes/No	No			Financial closure achieved on selected pilot			Annual	Consultant reports	KSTP
<b>Component B: Road Safety Component:</b>											
Pilot safety corridor developed	<input type="checkbox"/>	Km improved	0			80		80	Quarterly	Consultant reports	KSTP/RSA
Number of district level road safety improvement schemes implemented through challenge fund	<input type="checkbox"/>	Number	0			4	6	10	Quarterly	Consultant reports	RSA
<b>Component C: Institutional Strengthening:</b>											
Modernization of PWD	<input type="checkbox"/>	Yes/No	No			Review of existing IT system undertaken and recommendations adopted		Study on institutional and financial options for management of road network completed and recommendations adopted	Semi-annual reports	PWD reports	PWD
Functioning Road Asset Management System	<input type="checkbox"/>	Yes/No	No	Strategic options study for maintenance of road network completed		New RAM software implemented on core road network		Annual maintenance plans disclosed	Semi-annual reports	PWD reports	PWD
Communications strategy and interfaces for public engagement implemented	<input type="checkbox"/>	Yes/No	No	Communications strategy developed and action plan adopted		At least two consultations/stakeholder forums held/year		At least two consultations/stakeholder forums held/year	Semi-annual reports	Website and outreach materials	PWD/KSTP/ DIPR
Regular road user surveys conducted	<input type="checkbox"/>	Yes/No		Baseline survey undertaken		Survey Undertaken and user feedback facilitated through development of states mobile governance platform		Final survey undertaken	Every two years	Survey data	PWD

**Annex 2: Detailed Project Description**  
**India: Kerala State Transport Project II**

**Project Components:**

1. The proposed project will have three components building on the work already undertaken in the first KSTP project. All civil works costs include contingencies, environmental management, land acquisition and resettlement. The components are as follows:

**2. Component A: Road Network Upgrading and Safety Improvement (US\$413 million):** This component will include upgrading 363 km of strategically important State Highways to complete network connectivity in the state with the objective of reducing travel time between key socio-economic centers. The existing intermediate lane roads will be upgraded to a full two lane standard including a paved shoulder of 1.5 m on either side, through the entire stretch. The civil works would include road widening and strengthening of pavement, improving bridges and cross drainage structures and enhancing road safety and traffic management measures. This component will consist of two sub-components, A1 and A2, to be procured through FIDIC based input contracts and PPP modified annuity concessions respectively. The Road names included in this component are indicated below:

SN	Road Name	Link No.	Length (km)	Construction Cost Rs. million
1	Chenganoor-Ettumanoor-Muvattupuzha	4 & 5	87.9	4700
2	Kasargod-Kanhangad	69	27.8	1240
3	Pilathara – Pappinessery	68	20.9	1270
4	Thalasery-Valavupara	74	53.1	2470
5	Punalur to Ponkunnam (to be implemented through PPP)	84.1	82.1	3510
6	Ponkunnam –Thodupuzha	84.2	50.3	1910
7	Perimbilavu-Pattambi-Perinthalmanna	41 & 47	41.0	1850
	Total		363.1	16950

**3. Sub-Component A1 (US\$322 million):** This subcomponent will include upgrading 281 km state highways through FIDIC based input contracts. It would also include the associated pre-construction activities including resettlement and utility relocation, environmental management and supervision and quality control services.

4. Improved road safety and traffic management measures have been fully integrated in to the engineering designs. These interventions are based on an automated road safety assessment (conducted through iRAP), manual safety audits, public consultations and detailed traffic surveys. The interventions range from traffic calming, raised pedestrian crossings, signalization of intersections, provision of footpaths, segregation of slow and non-motorized traffic from motorized traffic, off-site parking arrangements and roadside barriers. The attached table summarizes the range of interventions for five links where the designs have been finalized.

	Kasargod - Kanjangad	Pilathara - Pappinesserry	Thalaserry - Valavupara	Chenganoor - Ettumannoor	Ettumannoor - Muvattupuzha
Number of signalized junctions	9	4	8	12	2
Number of table top / pedestrian crossings	24 Table top 35 At-grade crossing	14 Table top 26 At-grade crossing	26 Table top 38 At-grade crossing	36 Table top 70 At-grade crossing	30 Table top 108 At-grade crossing
Km of sidewalk / footpath	20.5km	22.9km	78.4km	77.8km	57.8km
Number of new parking areas / ox-bow land development	12 New Parking Areas 4 Oxbow Land	3 New Parking Areas 4 Oxbow Land	1 New Parking Areas 27 Oxbow Land	13 New Parking Areas 1 Oxbow Land	8 New Parking Areas 1 Oxbow Land
Length of barriers	Crash Barriers - 1.2km Hand rails - 5.8km	Crash Barriers -3.5km Hand rails - 5.4km	Crash Barriers - 2.8km Hand rails - 7.9km	Crash Barriers - 5.9km - Hand rails - 15.4km	Crash Barriers - 13km Hand rails - 8.km
Length of segregation for slow moving traffic.	13.2 km	19.6 km	77.9 km	79.1 km	78.1 km

5. There are a number of consultancy services that will be required for the effective implementation of this component as follows:

- (a) **Construction Supervision Consultants (US\$ 5.7 million):** to provide on-site supervision of construction activities.
- (b) **Technical Audit Consultant (US\$0.6 Million):** an independent audit company to verify that the roads have been built to high quality and according to contract specification.
- (c) **Design of Ox-bow concessions (US\$ 0.2 million):** consultancy to design the concessions for utilizing ox-bow lands. Development costs for the ox-bow lands are included under EMP of civil works contracts.

6. **Sub-Component A2 (US\$ 91 million):** This sub-component will include upgrading the 82 km Punnaloor to Ponkunnam (link 84.1) state highway through a PPP modified annuity concession to pilot the approach in the state. The concession will be designed over a 12 year period with 2 years for construction and 10 years for the subsequent operations. In this approach, upfront construction grant of 40 percent of the estimated construction cost will be paid to the concessionaire based on completion of specified construction milestones. The potential concessionaires will compete on the basis of lowest performance based annuity payments over the 10 year operations period. The Bank Loan will finance 100 percent of upfront construction grant and associated consultancy services. The GoK will finance the long term annuity payments. During the preparation of the project the consultant's analysis suggested that additional links would also benefit from such annuity based contracts on the basis that certain risks (mainly costs associated with time and cost over runs) could be transferred to the private sector. However, given the innovative nature of these contracts and the associated market risks in



the Kerala highways context it was decided to adopt this approach only on a pilot basis for one road.

7. The consultancy services that will be required for the effective implementation of this component would include:

- (a) ***Transaction Advisory Services (US\$ 1.0 million)***: to provide support to KSTP in the design of the transaction. This will include financial modeling, assessment of risk, market sounding and procurement of the concessions. The transaction advisors will help in promoting innovative operational, performance evaluation and risk sharing practices including transferring of road safety related risks to the concessionaires.
- (b) ***Independent Engineering Services (US\$ 1.5 million)***: Independent Engineers will be deployed to manage the concessions by providing adequate oversight services during the construction and operation phase. They would ensure that roads are built to the desired technical standards and specifications and operated and maintained following the specified performance parameters. Cost of the services will be equally shared with the concessionaire.

8. **Component B: Road Safety Management (US\$ 22 million)**: This component will support the strengthening of the road safety management systems in Kerala through focused road safety programs. The focus of the programs will be to develop the capacity of Kerala RSA to introduce sustainable international best practices in designing; implementing and the Monitoring and Evaluation of activities related to road safety interventions. The strategic planning and the development of such multi-sectoral work will be supported and funded in collaboration with the World Bank GRSE<sup>10</sup>. This component will finance:

- (a) ***Safe Corridor Demonstration Project (US\$16 million)***: Multi-sectoral interventions will be implemented on an 80 km corridor (Kazhakkottam-Taikod-Kottarakkara-Adoor) to demonstrate the effectiveness of road safety best practices. The corridor is one of the busiest roads (AADT of 17,500 in 2011) on the state road network with the number of annual fatalities and seriously injured at 80 and 266, respectively, in 2012 (as reported in the Kerala Crime Bureau Records). The majority of the accidents on the road involve pedestrians and motor-cycle riders and as such vulnerable road users will be the focus of this sub-component.

9. The RSA and PWD have already set up a multi-disciplinary working group (RSW), in the role of a steering committee, to oversee the accomplishment of specific objectives of the Safe Corridor Demonstration Program as outlined below:

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<sup>10</sup> GRSE, committed to the UN Decade of Action for Road Safety, is actively engaged in the “Road Safety in 10 countries” project (RS10): an initiative launched in 2010 and funded by the Bloomberg Philanthropies. The RS-10 project supports evidence-based interventions in countries which collectively represent half of all annual road traffic deaths. In India, the facility is using RS10 funds to assist individual states raise their road safety management skills and apply infrastructure safety rating tools aimed at maximizing the road safety outcomes of new and rehabilitated roads.

- Adapt and accelerate the transfer of best practice to the RSA team about evidence-based approaches to preventing death and serious injury;
- Develop a framework for defining road safety performance indicators along with a methodology for monitoring and evaluation of the relevant collected data;
- Strengthen road safety management capacity and operational practices through multi-sectoral action (engineering, public survey, enforcement, health care, community awareness and engagement) and development of a State road safety strategy;
- Achieve quick and proven road safety results to develop an evidence-based model of road safety interventions that can be replicated across the state; and
- Inspire and guide the efforts of all the multi-sectoral stakeholders concerned.

10. This sub-component will finance the procurement of goods and civil works needed to implement the demonstration project. In addition, this sub-component will fund the baseline data collection and the monitoring of outcomes through the National Transportation Planning and Research Centre (NATPAC).

- (a) *Challenge Fund (US\$4.0 million):* The Challenge Fund will build upon the best practices and lessons learned from the safe demonstration corridor. The objective of this program is to develop, through local partnerships, another 10 “Safe Corridors/Zones” across the State, and evaluate the effectiveness of the various safety and traffic management strategies. The Challenge Fund is intended to elicit innovative road safety proposals in a collaborative effort between local road user stakeholder groups and RSA, PWD and KSTP. Examples of local interest groups include the district road safety councils (DRSCs) constituted under the Kerala Road Safety Act of 2007, Gram Panchayats and NGOs and extensions of local initiatives such as KudumbaSree and Anganwadi. Other local partners could also include faith-based organizations and their outreach activities.

The overall responsibility for the management of the Challenge Fund will rest with the RSA and they will provide matching funds. However, a “bottom-up” approach with champions at the local level is critical to the successful implementation of the program. The fund will target high risk locations with opportunities to address highly vulnerable road users (pedestrians, bicyclists, motorcyclists). The evaluation criteria for the fund will be based on the accident history, the innovativeness of approach and the extent of local participation and commitment.

- (b) *Road Safety Management Capacity Building (US\$ 2.1 million):* This sub-component will support the capacity building of the overall organization structure relevant to road safety management in the state. This component will support the hiring of a team of national road safety specialists to work in the secretariat of RSA to strengthen their role as the lead road safety agency. The team of specialists will form a program management team to support in the planning and coordination of the safe corridor and challenge fund. They will also look more broadly in areas such as the rationalization of funding and resource allocation, data analysis, and monitoring and evaluation. This component will also leverage the experience and expertise available locally at the National Transportation Planning and Research Centre (NATPAC) in Thiruvananthapuram, especially in conducting detailed baseline surveys, identifying potential intervention strategies, and in

long term monitoring. This component will further support mobilization of a recognized international road safety expert to provide examples of international best practice in road safety management.

**11. Component C: Institutional Strengthening (US\$10.0 million):** The objective of this component is to improve the sustainability of Kerala's state road network with respect to its functional adequacy, financial viability and capacity of key state road sector institutions to deliver road infrastructure and services that are responsive to road user needs. These objectives will be addressed through a program of road sector modernization and road user engagement as follows:

**(a) Road Sector Modernization (US\$8.0 million)**

- *Study future institutional options for managing and financing the state road network (US\$1.5 million)* - this study will look at the long term requirements for the development, management and finance of the state's road network. It will assess whether the current institutional structure is in need of change and how best to mobilize the resources for new development and maintenance. This study will address the following:
  - (a) An assessment of the current state roads network to enable the PWD to get a clearer basis for planning and decision making about the road sections that have a significant impact on the state's economy and have the greatest social benefits. Initially, it will involve classification of the core strategic network but it will also address the rest of the 33,000 km network and a further 8,500 km of rural roads recently added to the PWDs responsibility.
  - (b) Based on this assessment a number of institutional options will be proposed to manage the future development and maintenance of the network. The study will review the role of the PWD as well as entities related to it such as the road fund board, KSTP and the road and bridge corporation and propose options for maintenance planning, network development and financing options to mobilize budgetary and market financial resources.
- *Development of new asset management policies, system and software (US\$1.25 million)* – taking consideration of the lessons learned from KSTP I, and the results from the institutional study a simpler and more appropriate system for asset management will be developed. This activity will include developing the right institutional context and a policy to mandate its use. In the first instance the asset management system will be implemented on the core strategic road network and gradually rolled out to other road links. The asset management system developed should enable the PWD to use information from basic observation surveys such as those related to road surface condition, drainage structures and road signs. The objective is to disclose annual maintenance plans by the end of the project period.
- *Review and updating of the management information system (US\$0.5 million)* – This sub-component will support the review and propose specifications for the update of the computer systems in PWD in line with the objectives for improved e-governance. The computer systems will be based on the WINGS platform, developed under KSTP I, as a web-based e-governance portal for website, intranet and public interface. Core elements to this will be the

FM systems, cost estimation and e-tendering, the asset management system and public interface for user feedback and complaints handling.

- *Capacity building and training (US\$1.0 million)* – the aim of this activity is to provide the necessary capacity within PWD to implement the initiatives outlined above. It will also support the continued implementation of the PWD manual. This sub-component will include consultant support to develop training programs, produce training materials, and provide appropriate training according to needs of staff.
- *Other Studies and Technical Assistance (US\$3.75 million)* – This sub-component will finance a feasibility study for prioritizing 1000km of state highway for periodic maintenance and the subsequent design of long term maintenance contracts; preparation of Architectural plans for a Green building; development of e-tools for project management; and other activities as become relevant during implementation.

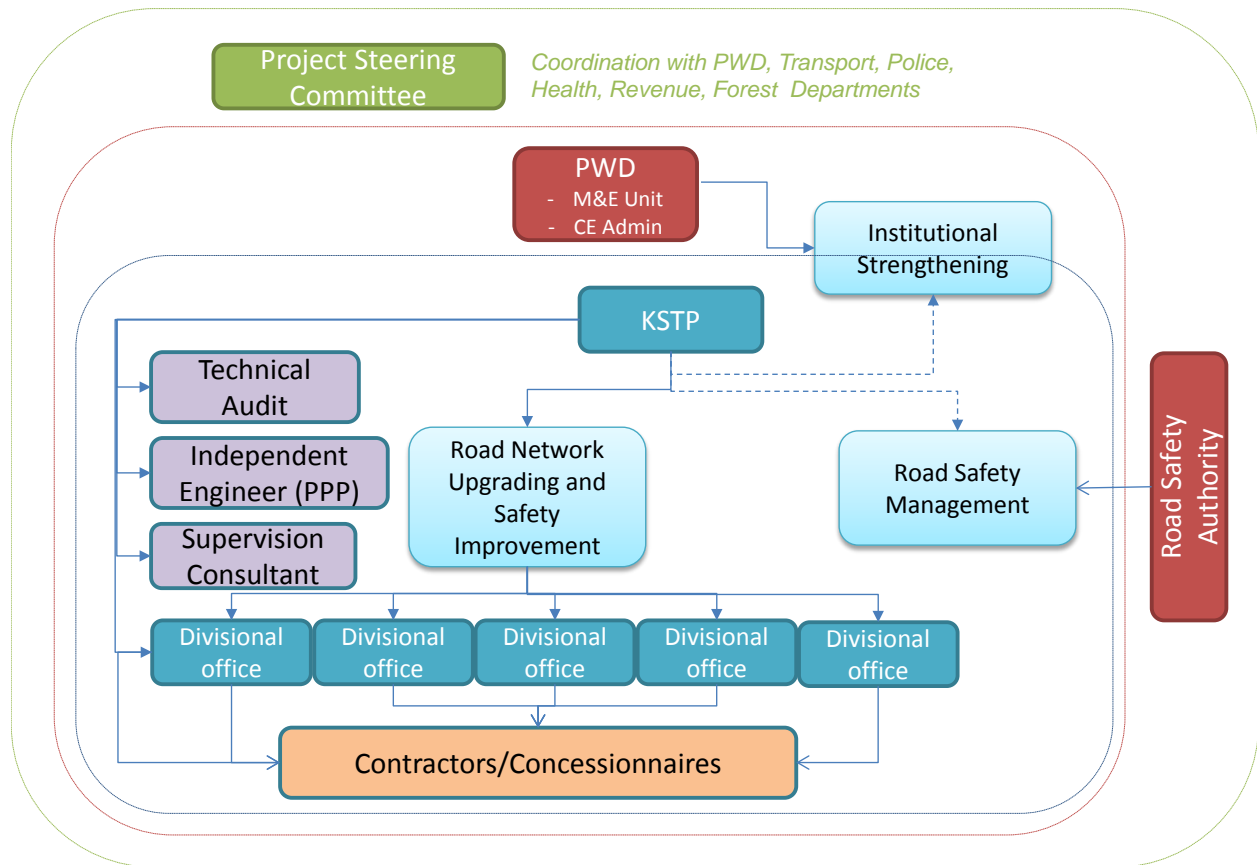
**(b) Improving public communication and user engagement in road development (US\$2.0 million):**

- *Information Dissemination (US\$0.5 million)* - the project and PWD (in coordination with the state's Information and Public Relations Department) will actively look to disseminate information to create awareness of new initiatives through various types of media. A specialist company will be appointed to develop a PWD-specific communications strategy to facilitate enhanced disclosure and public outreach. The tools used for information dissemination in this strategy would include: development of a project-specific website, mobile technology, use of local FM radio stations, press and posters, and conducting independent reviews of Right To Information Act compliance.
- *Feedback and grievance redress (US\$0.5 million)* – to facilitate road user feedback, the project will harness several mechanisms such as periodic road user surveys (as in KSTP I), quick opinion polls through the state's mobile governance facility, and enhancement of the existing complaint handling system. The road user surveys will cover all aspects of the road user experience and target specific road user groups such as truck drivers, motorcyclists, pedestrians, bus drivers, automobile drivers and road side establishments. There will be a large component on road safety to identify specific areas of satisfaction and specific suggestions for improvements. An independent assessment of the complaint handling system will also be conducted twice over the project implementation period to identify any systemic deficiencies.
- *Active user engagement in project design, implementation, greening and asset management (US\$1.0 million)* – the project will foster the engagement of local communities in road development, greening initiatives and local ownership of assets through at least two public consultations annually on selected issues such as road safety. The mechanisms for eliciting user feedback described above would also help in identifying critical issues flagged by the road users for broader consultation.

**Annex 3: Implementation Arrangements**  
**India: Kerala State Transport Project II**

**Project Institutional and Implementation Arrangements**

1. The KSTP will undertake the project implementation and day to day management of the project. The PWD will have overall responsibility for monitoring of the project. The functions of KSTP have been integrated within the overall PWD structure. The entities involved in implementation of the three project components and their envisaged functions are given in the Figure 1.



**Figure 1: Overall Implementation Arrangements**

2. *Project Staffing:* KSTP is managed by a Project Director, in the Rank of a senior level Chief Engineer assisted by one Chief Engineer, one Superintending Engineer, one Executive Engineer and other engineers and officers, each to be assigned the responsibilities of managing key aspects of the project’s activities such as engineering design and procurement of the main civil works contracts, land acquisition, implementation of resettlement and environmental action plans, institutional development plan, financial management, and accounting. In addition, three Superintending Engineers (one at HQ and two in the field) in the Technical Wing headed by a Chief Engineer would be responsible for activities related to engineering, environment, social

and contract management. Further, the legal contract management cell would be headed by a legal professional. KSTP has qualified and experienced social and environmental experts and a project management advisor. The Finance Wing headed by a Finance Controller has a qualified finance manager with support staff. In the field, the KSTP has five divisions located at Kottarakkara, Muvattupuzha, Kuttippuram, Kannur, Ponkunnam each headed by an Executive Engineer, to monitor project progress.

3. *Responsibilities of the Project Director:* The Project Director will be responsible for a) appointing and maintaining suitable staff during the life of the project; b) ensuring that the project is implemented efficiently and on schedule; c) coordinating the inputs of the R&B wing and other government agencies; d) preparation of an annual program for the project for review by the World Bank and e) project accounting and audits, and submission of periodic project progress reports.

4. *Project co-ordination:* GoK has established two committees to monitor, coordinate, and expedite project activities. The *Project Steering Committee*<sup>11</sup> chaired by the Chief Secretary, has as its main functions review and approval of recommendations regarding acceptance of technical and financial bids, pre-qualification tenders, financial bids of contractors, and taking the final decisions on all matters concerning procurement and monitoring of project activities. It will meet every month or as required to monitor the progress of procurement and for taking decisions on the evaluation reports. An *Evaluation Committee* headed by the PWD Secretary and comprising the Project Director, KSTP, and Chief Engineer (Projects) will meet as required to consider and make recommendations on any issues on procurement as may require approval of the Steering Committee. This Committee would be supported by a dedicated procurement team, and will report to the Steering Committee for decisions on bids.

#### *Project Implementation Responsibilities*

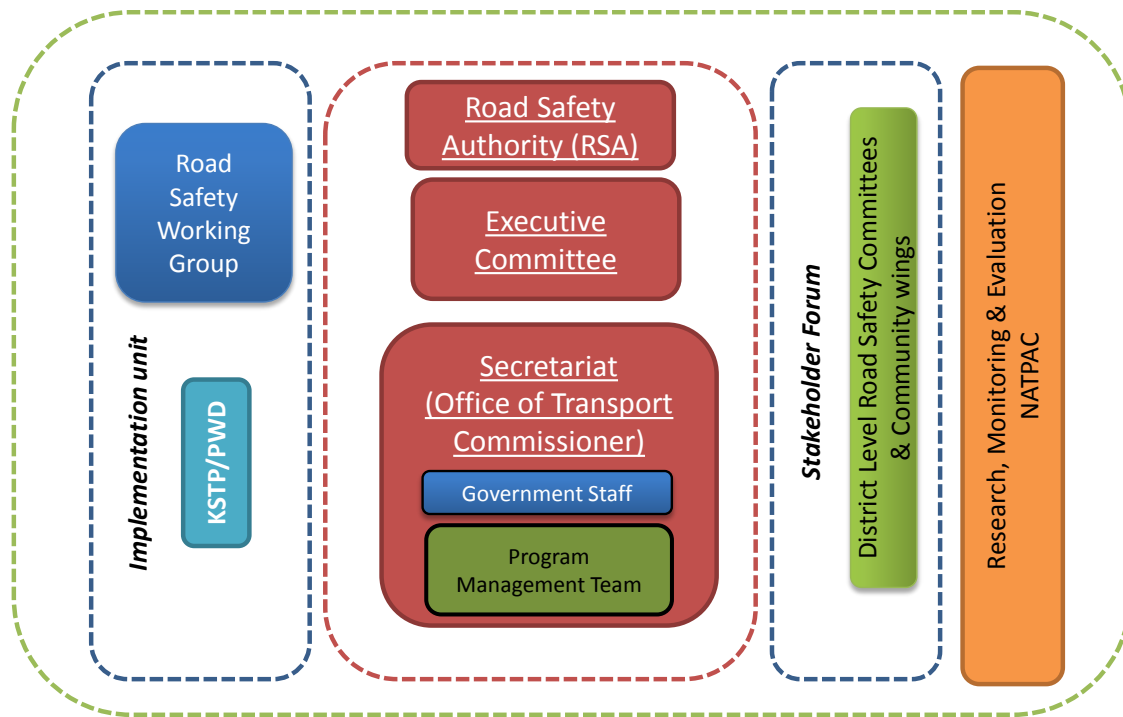
5. *Implementation of civil works and institutional components:* KSTP will be responsible for: (a) planning, budgeting, procurement, implementation, co-ordination, management and monitoring of various components of the project including implementation of the Resettlement Action Plan and the Environmental Action Plan; (b) keeping overall project accounts, processing disbursement requests, reporting progress and liaising with the World Bank; (c) acting as the employer for construction and maintenance contracts and monitoring the progress of the works and the performance of the contractor and Construction Supervision Consultant (CSC) and/or Independent Engineer (IE); (d) reviewing, and acting on the reports of the technical audit consultants; e) producing monthly and quarterly reports for the World Bank and, as required for the Steering Committee. For accomplishing some of these tasks, and for preparation of specifications, bidding documents, and implementation of the institutional strengthening components of the project, KSTP will utilize the services of international and local consultants and independent engineers.

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<sup>11</sup> It consists of Chief Secretary, (Chair Person), Secretary, Finance, Secretary, PWD, Project Director, Chief Engineer (R&B), Secretary Revenue, Secretary Law

6. The field engineers would be responsible for monitoring project implementation of the civil works in coordination with the CSC/IE and overseeing activities related to land acquisition. They will report on status of the works to the KSTP monthly.

7. Implementation of the Road Safety Component: A Program Management Team under the existing secretariat of the RSA comprised of a team of road safety specialists will design and implement the Safety Corridor Demonstration Project and facilitate coordination between the different departments. They will support the RSA’s role as the lead road safety agency particularly in the areas of rationalization of funding and resource allocation, data analysis, monitoring and evaluation. The functioning of the Program Management Team will be complemented by the government staff from different departments hired within the secretariat. The specialists would also support the management of the challenge fund by working with DRSCs in the development, implementation, and evaluation of road safety plans. An overview of the various agencies involved in the road safety component is given in Figure 2.



**Figure 2: Implementation Arrangements for Road Safety Component**

### **Financial Management, Disbursements and Procurement**

#### ***Financial Management: Assessment of FM Capacity***

8. As part of project preparation, an assessment of the financial management (FM) arrangements of the Implementing Entity, the KSTP of the PWD, Government of Kerala (GoK) was carried out. This assessment covered aspects of financial management systems in KSTP, including flow of funds, accounting and financial reporting, approvals and payments, and auditing arrangements, and the level and capacity of FM staffing. KSTP already has experience of implementing KSTP I and is acquainted with the requirements of the Bank. The FM

arrangements have been further strengthened for KSTP II and are documented in a FM Manual which is based on the Kerala PWD Manual and the Kerala State Financial Code and Rules. The FM Manual documents the delegation of powers to officials at all levels within the KSTP and clearly defines their respective roles and responsibilities. The FM Manual also describes in detail the procedures for checking, verifying and passing the bills for payments and the roles and responsibilities of the supervision consultant, the KSTP divisions (Executive Engineers and Divisional Accountants) and the FM team at KSTP in the checking and passing of work bills/ Interim Payment Certificates before making payments.

9. The assessment concluded that the existing FM arrangements in KSTP are satisfactory. Accounting will be computerized; payments for works will be centralized based on verification by the supervision consultants and the technical and finance wings of KSTP; there will be a six-monthly internal audit conducted by Chartered Accountants; and an independent audit will be done by the office of the supreme audit institution, the CAG.

### *Strengths in financial management*

10. GoK has handled KSTP I and is thus familiar with management of externally aided projects and accounting and reporting for the same. The KSTP, as part of PWD generally follows the financial rules and procedures laid down in the relevant codes/ manuals of the GoK. The KSTP will implement the project through dedicated field divisions, supported by Divisional Accountants with experience in the Works' departments of the GoK. FM staff are in place and experienced in implementing KSTP I and the FM arrangements are documented in a Finance Manual.

### *FM Risk Assessment*

11. The table below shows the risks and mitigation measures for KSTP II.

<b>Risks/ weaknesses</b>	<b>Risk Rating</b>	<b>Remarks/ Proposed risk mitigation measures</b>	<b>Residual risk rating*</b>
<b>Inherent Risk:</b> Experience with Road sector Bank projects have been that they have a high level of inherent risk due to large volume transactions and high value of contracts.	H	Payments will be certified by Supervision Consultants and verified by the technical and financial wings of KSTP. This risk will be mitigated by having a regular internal audit of the project by a firm of Chartered Accountants as per agreed TORs which will also cover audit of contracts and high value transactions.	S
<b>Control Risks:</b>			
<b>Budgeting:</b> GoK is committed to provide adequate funding for the project but this could be adversely affected if the financial position of the state changes.	M	Project fund requirement will be provided in a separate budget line in the state budget.	M
<b>Funds flow:</b> Risk of project not receiving adequate	M	Funds will be drawn from the state budget and deposited in a dedicated project bank account.	M



<b>Risks/ weaknesses</b>	<b>Risk Rating</b>	<b>Remarks/ Proposed risk mitigation measures</b>	<b>Residual risk rating*</b>
allocations from the finance department.			
<b>Accounting:</b> Delay in preparation of project accounts.	M	Accounting will be done at the KSTP through an off-the shelf accounting application that was successfully implemented in KSTP I. Since major payments will be made centrally at the KSTP, this will facilitate timely accounting.	M
<b>Internal Controls:</b> Departmental and divisional level controls may not be adhered to, and internal audit system may not be effective.	S	Internal audit will be outsourced to a firm of Chartered Accountants under TORs agreed with the Bank. The Finance Manual documents the internal control mechanism that includes monthly bank reconciliation, verification and approval of expenditure and reporting. These were implemented during KSTP I and will continue for the second phase.	M
<b>Financial Reporting:</b> Risk of delayed and/or incorrect reporting of actual expenditure by the divisions. Risk that supervision consultants may not exercise adequate due diligence in reviewing and verifying the expenditure and physical progress of works.	S	Major payments will be centralized at the KSTP. Reporting through IFRs will be based on the project accounting system. The Finance team is well versed in Bank requirements having experience of working in KSTP I but will need to be trained further on the new procedures. Work of supervision consultants to be monitored by the technical and finance teams within the KSTP through on-site inspections and documentary records.	M
<b>External Audit:</b> The risk of delayed issue of audited financial statements and of audit observations not being attended to and repeating each year	M	External audit will be conducted by the C & AG through the office of the AG Kerala according to the standard TOR agreed with the CAG and the Government of India (Ministry of Finance/DEA) for audit of all the World Bank projects. Audited financial statements were generally issued timely in KSTP I and this standard is likely to be maintained during phase II as well.	M
<b>Overall Control Risk</b>	<b>M</b>		<b>M</b>
<b>Overall Risk Rating</b>	<b>S</b>		<b>M</b>

(M- Moderate, S- Substantial, H- High)

12. **FM Staffing:** PWD has overall responsibility for implementation of the project and the day to day management will be delegated to KSTP under a Project Director of the rank of a Chief Engineer who will also be responsible for the overall project FM responsibilities. There will be a separate Finance Wing (established under KSTP I) under a Finance Controller supported by a professionally qualified Finance Manager and other staff who are already in place and have experience of working in KSTP I. At the field divisions, FM will be the responsibility of an Executive Engineer supported by a Divisional Accountant.

13. **Budgeting and Fund Flow:** The project will prepare an annual budget based on the progress of works in hand and works expected to be awarded and commencing during the ensuing year. This will be reviewed by GoK and the State Planning Board and adequate provision will be made in the state budget under budget line 5054-03-337-97. Need based funds will be drawn from the state budget and deposited in a dedicated project bank account. Payments will be centralized at the KSTP based on bills passed by the concerned project divisions and certified by the Supervision Consultant.

14. **Accounting:** The KSTP will follow double entry system of accounting on cash basis based on generally accepted accounting standards in India. The project had developed a Finance Manual during KSTP I and this has been upgraded for use in this project. Accounting will be done on TALLY, an off-the shelf accounting application, used successfully during the first phase. All accounting will be centralized at the KSTP. Funds provided to the field divisions will be accounted for as imprest and adjusted on receipt of actual expenditure details. Trial balance, cash flow statements and in-year budget analysis report (utilization and variance) will be prepared and reviewed and shared with GoK.

15. **Internal Controls including Internal Audit:** KSTP will follow the Kerala PWD Manual and the Kerala State Financial Rules and Code. All major payments of KSTP will be centralized. Works bills will be raised by the contractor and certified by the Supervision Consultants, recommended by the Executive Engineer and Divisional Accountant, and then verified by the Technical and Finance Wings of KSTP. Payments will be made by issue of cheques under the dual signatures of the Project Director and Finance controller. In the course of time, the project will endeavor to use electronic mechanisms for release of payments. No payments will be made in cash. Funds will be provided to the field divisions as imprest and replenished on submission of expenditure details and bank reconciliation. All bank accounts will be reconciled monthly and reviewed by the Finance Manager and the Finance Controller. The project will also appoint firm/s of Chartered Accountants as the internal auditors on Terms of Reference acceptable to the Bank. Internal audit will be conducted on a six monthly basis and the reports will be placed before the Project Steering Committee chaired by the Chief Secretary. Monthly review meetings to assess the progress of project implementation will be held at KSTP for which the expenditure and fund flow statements generated by the accounting system will be used. Project implementation and budget utilization will also be reviewed by GoK on a regular basis.

16. **Financial Reporting and Monitoring:** The KSTP will compile quarterly Interim Financial Reports (IFRs) on the basis of information received from the project field divisions and the transactions at the KSTP. The IFRs will include a statement of sources and uses of project funds and expenditure information compiled by project components and sub-components. The KSTP divisions will submit their accounts to KSTP who will consolidate these with the KSTP accounts and prepare a monthly expenditure statement that will feed into the quarterly IFRs. IFRs will be submitted to the Bank within 45 days from the close of the quarter. The form and content of the IFRs will be agreed with the GoK during negotiations.

17. **External Audit:** The C&AG of India through the office of the AG (Audit) Kerala will be the external auditor for the project. The C&AG's office will conduct an annual audit of the project financial statements according to the standard TOR agreed by the Bank with the C&AG and the

Government of India (Ministry of Finance/DEA) for audit of all the World Bank financed projects. The standard TOR also has the draft format of the project financial statements and of the various audit opinions required to be expressed by the auditors. The audit report would be submitted to the Bank within 6 months of the close of the fiscal year i.e., by September 30. The following audit reports will be monitored in ARCS.

<b>Implementing Agency</b>	<b>Audit</b>	<b>Auditors</b>
Public Works Department (KSTP), Govt. of Kerala	Audit of project financial statements	CAG of India through the Accountant General Kerala
Department of Economic Affairs/ GOI	Special Account	Comptroller and Auditor General

18. **Implementation Support Plan:** The Bank will undertake six monthly missions to the project. The focus during the supervision will be on reviewing the adequacy and operation of procedures and internal controls in KSTP and field divisions, functioning of project financial reporting system, reviewing the funds flow position and reviewing that the observations of the external and internal auditors are addressed timely.

19. **Disbursement:** GoK will pre-finance all the project expenditure through its own funds (through the budget line) and report the actual expenditure incurred through the IFR to claim reimbursement. The applicable method for Bank funds disbursement will be Reimbursement. KSTP will prepare quarterly IFRs, in agreed format, that will include the “actual expenditure” incurred by the project on all the components. The Bank will approve the IFRs and the KSTP will send the disbursement claims to the Bank through CAAA. The Bank funds will be reimbursed into the account provided in the applications as designated by CAAA.

<b>Category</b>	<b>Amount of the Loan Allocated (expressed in USD million)</b>	<b>Percentage of Eligible Expenditures to be financed (inclusive of Taxes)</b>
(1) Goods, Works and Services under Component A1, B and C	182.5	56%
(2) Goods, Works and Services under Component A2	33	100%
(3) Refund of the Preparation Advance	[ ]	Amount payable pursuant to Section 2.07 (a) of the General Conditions
(4) [Front-end Fee]	[ 0.5 ]	Amount payable pursuant to Section 2.03 of this Agreement in accordance with Section 2.07 (b) of the General Conditions
(5) [Premia for Interest Rate Cap or Interest Rate Collar]	-0-	Amount payable pursuant to Section 2.07 (c) of this Agreement in accordance with Section 4.05 (c) of the General Conditions
(6) Unallocated	[ ]	
<b>TOTAL AMOUNT</b>	<b>216</b>	

20. ***Retroactive Financing:*** Retroactive financing up to a limit of US\$ 12 million will be available to the project to cover eligible project expenditures as agreed with the Bank, between June 15, 2012 and loan signing date. Retroactive financing of all expenditure, including contracts selected for Bank financing, would be based on a separate, stand-alone IFR which will be audited by the C&AG as per standard audit TORs. The audit report will certify the actual expenditure incurred and the eligible expenditure, and also report details of expenditures sought to be reimbursed on contracts procured as per the Bank’s Procurement Guidelines.

## **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); “Guidelines: Selection and Employment of Consultants by World Bank Borrowers” (January 2011); and the provisions stipulated in the Financing Agreement

22. Procurement Assessment: The review of the procurement performance from the KSTP I project shows considerable delays in contract completion, frequent requests for variation orders, disputes etc. that have affected the project implementation as a whole. The reasons for the delays and poor performance were mainly on making land available due to resettlement issues and capacity limitations in contract management. There were no cases of fraud and corruption indicators identified in the first project. For KSTP II, the preparatory activities have gained significantly from this learning. Concerted efforts were made to identify issues that would affect procurement management from the organizational perspective and readiness requirements.

23. The project management team now includes a senior staff managing the procurement function, supported by an experienced Advisor and 6 Assistant Engineers, each dedicated to major works for the full procurement cycle management including development of DPRs and BoQs; bidding, contract award, management and completion. In addition, the selection of Construction Supervision Consultants who will act as the Engineer for each of the contracts awarded is also completed and services hired, so that the agency takes full ownership from the contracting stage onwards.

24. 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) recreation and 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 will be able to accept the use of e-procurement in the project. While the procurement of goods works and services will follow Bank guidelines and agreed bidding documents, moving forward, the project will explore possibilities to use the new PWD codes (awaiting revision) for bidding, for shopping and NCB contracts and delegation of powers during the implementation stage. Procurement arrangements for PPP and performance based contracting will be developed and added to the project procurement system and PWD codes.

25. Based on the efforts made by the project to put in a robust system for managing the procurement activities, the risk rated, subject to final PRAMS rating, is *Moderate* as in the previous project.

26. **Prior-Review Thresholds:** Prior-review and procurement method thresholds agreed with KSTP for the project based on the risk assessed are detailed in Table 1 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 1: 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.	National Shopping	Post review only
		Force Account	Post review only
	(b) Civil Works estimated to cost more than the equivalent to US\$ 100,000 per contract and less than US\$ 20 Million.	National Competitive Bidding (NCB)	First two works NCB contracts regardless of value and all contracts above US\$ 10 Million equivalent each will be prior reviewed by the Bank All other contracts by the post review.
	(b) Civil Works estimated to cost more than US\$ 20 Million	International Competitive Bidding (ICB)	All ICB contracts valued above \$10 Million 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 goods and works from all procurement entities will be subjected to prior review by Bank.

**Table 2: Methods and Value thresholds for Goods**

Goods	Value Threshold	Methods	Review Arrangements
Equipment, Machinery, Vehicles, Furniture, Learning Materials etc.	(i) US\$ 50,000 equivalent or less per contract.	National Shopping  DGS&D rate contracts <sup>#</sup>	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.
	(Contracts of more than US\$ 50,000 equivalent but less than US\$ 1 Million equivalent.	National Competitive Bidding (NCB)	First 2 bidding documents and first contract will be subject to Prior review by the Bank.
	(iv) Contracts of more than US\$ 1 Million equivalent.	International Competitive Bidding	All ICB contracts are subject to Prior review by the Bank.

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

<sup>#</sup>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.

**Table 3: 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)  Would comprise entirely of national consultants for all contracts below US\$800,000	Prior Review.  First two Contracts irrespective of value and all subsequent contracts valued above \$ 300,000.
	(b) More than US\$100,000 and up to US\$300,000 equivalent	Quality and Cost Based Selection (QCBS) Or Selection based on a Fixed Budget (FBS) Or Selection Based on Least Cost Basis (LBS)	
	(c) US\$100,000 Equivalent or less per contract.	Selection Based on Least Cost Basis (LBS) Or Selection based on Consultant's Qualification (CQ) Or Selection based on a Fixed Budget (SFB)	
<b>Individual Consultants</b>		Competitive Selection based on review of 3 shortlisted Consultants	Prior Review of all contracts valued above \$50,000. All others post review

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

27. 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 in the official gazette, or on a widely used website or electronic portal with free national and international access, in English, at least 30 days prior to the deadline for the submission of bids;
- (iii) No special preferences 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) Extension of validity shall not be allowed 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 all subsequent requests for extension irrespective of the period (such concurrence will be considered by the Bank only in case of Force Majeure and circumstances beyond the control of the Purchaser/Employer).

- (v) Re-bidding shall not be carried out without the prior concurrence of the World Bank. The system of rejecting bids outside a pre-determined margin or “bracket” of prices shall not be used in the project;
- (vi) Rate contracts entered into by Directorate General of Supplies and Disposals will not be acceptable as a substitute for NCB procedures;
- (vii) Two or three envelope system will not be used;
- (viii) No negotiations are conducted even with the lowest evaluated responsive bidders.

**28. Procurement Planning:** The government 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:

**Table 4: Procurement plan for key works contracts**

1	2	3	4	5	6	7	8
Ref No	Contract (Description)	Estimated Cost INR million	Procurement Method	Prequal ( Yes/No)	Domestic Preference (Yes/No)	Review by Bank (Prior/Post)	Expected Bid Opening Date
1	UG I/KSTP II/Kasargod – Kanghangad Road	1330	ICB	No	No	Prior	10/01/13
2	UG II/KSTP II/12 Pilathara – Pappiniserry Road	1310	ICB	No	No	Prior	10/01/13
3	UG III/KSTP II/12 Thalasserry – Valavupara Road	2659	ICB	No	No	Prior	06/02/13
4.	UG IV/KSTP II/13 Chengannur-Eattumanoor Road	2750	ICB	No	No	Prior	20/04/13
5.	UG V/KSTP II/13 Eattumanoor – Muvattupuzha Road	2050	ICB	No	No	Prior	20/04/13
6	UG VI/KSTP II/13 Ponkunnam Thodupuzha Road ( 50.3 km)	1910	ICB	No	No	Prior	20/05/13
7	UG VII /KSTP II/13 Perumbilavu-Perinthalmanna Road	1600	ICB	No	No	Prior	12/13

**Table 5: Procurement plan for key consultancy contracts**

No	1	2	3	4	5	6
	Ref No	Description Of Assignment	Estimated Cost	Selection Method	Review by Bank (prior/Post)	Expected Proposals Submission Date
1	KSTP II/CSC/1/12	Construction Supervision Consultancy	US\$ 4 million INR 18 crore	QCBS	Prior	05/09/12

2	KSTP II/CS/DPR/R MC/2/12	Consultancy for 1000 km DPR preparation	US\$ 1.49 Million	QCBS	Post	13/06/12
3	KSTP II/TACS/12	Technical Audit Consultancy for Independent Engineer	US\$ 200,000 INR 1 crore	QCBS	Post	29/10/12
4	KSTP II/CS/IE/12	Consultancy for Independent Engineer	INR 3 crore US\$ 600,000	QCBS	Prior	24/09/13
5	KSTP II/CS/MDR/12	Consultancy for study of 8500 km MDR	INR 1.25 crore	LCS	Post	04/09/12
6	KSTP II/CS/GB/12	Green Building Consultants	INR 30 lakhs US\$ 600,000	QCBS	Post	1/10/12
7	KSTP II/CS/OX/12	Individual Consultant for OX-Bow land development	INR 10 lakhs US\$ 0.02 million	SSS/ NCB shopping	Post	10/8/12
8	KSTP II/CS/IT/12	Consultancy for Integration of PWD IT	US\$ 3 million	QCBS	Prior	29/12/12
9	KSTP II/CS/EPC/13	Consultancy for EPC Contract (Independent Engineer)	INR 3 crore US\$ 0.60 million	QCBS	Prior	1/8/13

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

- a. Prompt reporting of contract award information by the project management units.
- b. Comprehensive quarterly reports prepared by PWD, indicating:
  - i. Revised cost estimates for individual contracts and total cost;
  - ii. 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.

30. **Contract Management:** Given the weaknesses with contract management in the first project, this project will give particular emphasis on the issue. Specific training on contract management have already been organized and would be repeated bi annually over the project period. Project has designated Engineers for all key road packages who would be working on the contracts from the DPR stage until completion of the execution, for ensuring continuity in staff handling these key tasks. Similarly, field based engineers under KSTP were trained to work along with the Supervision Consultants and the contractors for raising any issues on quality aspects and expediting and facilitating the implementation at field level. Contract management team at the state level is instituting a system for ensuring regular feedback from this field based team on progress of contracts. Application of e-tools for project management will be ensured for improved decision flow and reporting. During implementation, quarterly meetings focused on contract progress and issues will be conducted with participation of contractors, Supervision Consultants 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 leadership. Performance of Supervision Consultants and Independent Engineers will also be reviewed independently, including ensuring continuous availability of all staff committed and third party quality testing for triangulating the findings of the “designated Engineer”. The project will make a concerted effort in bringing in beneficiary community and civil society in social audit of the progress.

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

31. **Environment:** Being a Category ‘A’ project, the full Environmental Assessment (EA) is required. As most of the upgradation road corridors were already done as a part of the earlier project, independent consultants reviewed (as per OP 4.01 and other safeguard policies) them and did the updating of the EA. Consultations with the community were carried out when the EAs were first done as well as more recently when the EA updating was ongoing. The design has incorporated community concerns. In order to ensure consistency and integration, EAs are being finalized along with the engineering design and bid / contract documents.

32. Overall, the updating is being done in a phased manner and the first consolidated EA is completed. This includes three road links - Kasaragodu–Kanhangad, Pilathara–Pappinassery and Thalasseri – Valavupara Road that have short stretches in the Coastal Regulation Zone (CRZ) areas – for which CRZ clearance has been obtained. Three separate EMPs were prepared and these are included in the respective bid / contract documents. The second consolidated EA for two other road links - Punnaloor to Ponkunnam and Ponkunnam –Thodupuzha – is also completed. The EA and the EMPs for the five road links have been approved by the Bank. For the two remaining road links, an Environmental Management Framework outlines and commits that EAs and EMPs will be prepared. The completed EA documents have been published locally, disclosed on the project website and in the Bank’s InfoShop. When the subsequent EA documents are ready, these will also be disclosed.

33. The physical environmental impacts include construction-related impacts, slope stability and drainage issues, impacts on mangroves, impacts on rivers / streams due to new bridge construction and improved alignments, illegal coastal sand mining, and Archaeological Survey of India (ASI) sites. All of these impacts will be mitigated through management measures included in the respective EMPs.

34. In addition, environmental enhancement measures are also being considered. These include (a) using solar PV for street-lighting in key junctions / intersections, (b) applying green building principles for the proposed new PWD headquarters, (c) developing an environmental screening software tool for screening like the IRPA tool to prepare strip maps, and (d) establishing EHS management systems as per ISO 14001 and OHSAS 18001 for the KSTP as a model.

35. The PWD’s Environmental and Social Management Cell has been supporting the EA preparation and will be involved with the KSTP in the oversight of the implementation as well. Further building the PWD’s capacity for implementing the new environmental provisions of the PWD manual will also be undertaken. The KSTP’s Environmental Cell will have a team of engineers to coordinate with the Engineer / Supervision Consultants / Technical Audit Consultants in order to oversee the implementation of the environmental management measures.

The capacity developed in the previous project would be gainfully used to oversee this project's implementation as well.

36. **Social:** For KSTP I the GoK identified 581 km of roads for upgradation and 1000 km of roads for heavy maintenance to be taken up for construction in two phases. Due to several reasons including delay in land acquisition, only 254 km of Phase I road was upgraded and maintenance works for 1180 km were carried out from June 2002 to December 2009. Even though civil works on remaining 327 km for upgradation could not be undertaken, land acquisition and Resettlement and Rehabilitation of affected people continued. As a result, the preparation phase of KSTP II coincides with the implementation of Resettlement Action Plan for this project. Hence an Updated RAP has been produced, including information for links 41 and 47 that were not included in the first project, that also includes status of implementation of the original.

37. The GoK adopted a Resettlement and Rehabilitation (R&R) Policy for KSTP I to address the adverse impacts arising out of the project. The efficacy of the R&R Policy motivated GoK to make it applicable to all fast track projects in the state and in November 2011, GoK developed a comprehensive state level resettlement and rehabilitation policy that is applicable to all sectors.

38. As proposed in the RAP, institutional mechanisms were established to implement the RAP. A Steering Committee decides policy matters while KSTP implements and monitors the project through KSTP Divisions at the field level and Land Acquisition units at the district level. District Level Purchase Committees under the Chairmanship of the District Collector have been established to arrive at a land value through negotiation with the PAPs. Grievance Redressal Committees have also been formed at the district level to redress grievances of PAPs. NGOs have been engaged to function as a bridge between the Project and the PAPs promoting participatory processes in the implementation of RAP. NGOs have conducted census and social survey, public consultation and provided counseling and educated the PAPs of their entitlements. They prepared microplans through a consultative process, disbursed assistance and helped PAPs to resettle and rehabilitate.

39. The process of implementation of RAP involved information sharing and public consultation and disclosure of documents, census and counseling the entitled persons of their rights and entitlements, issuing identity cards, fixing land value through negotiation with the entitled persons by the District Level Purchase Committee, preparation of microplans through participatory process, completion of land acquisition under LA Act or through direct purchase method, disbursement of compensation and assistance to titleholders and non-titleholders, grievance redress and monitoring. Date of social survey by the NGO and the notification for acquisition of land under Section 4(1) of the Land Acquisition Act remained the cutoff date for the non-titleholders and titleholders respectively.

40. The land records are based on surveys carried out a few decades ago and as a result land records in the village offices have not been up-dated. In the absence of updated or digitalized land records all survey numbers of the land within the corridor of impact could not be identified. Therefore, the land acquisition notices were issued on the basis of record of rights and excluded plots that were not listed in the records from the preliminary notices. This led to identification of

‘missing’ survey numbers. Requisition for land acquisition continued to exclude some survey numbers leaving intermittent gaps across the link. As and when the ‘missing’ plot was identified, the entire process of land acquisition was initiated, resulting in loss of time that hampered progress.

41. Replacement value of the land acquired was fixed in consultation with the Entitled Persons by the District Level Purchase Committee (DLPC) chaired by the District Collector. In order to ensure that valuation of property was done objectively and systematically, KSTP procured the services of approved valuers from the Institution of Engineers until KSTP personnel became capable of performing the task. Replacement value as per PWD schedule of rates without considering age or depreciation was offered for affected structures. Further, PAPs were permitted to use the salvaged materials of their old structure.

42. A total of 213 Cultural property resources were affected. In most of the cases the compound wall or vacant land in the road frontage was affected, sparing the structures. But some ‘hundis’ (money collection boxes) located on encroached land in the right of way and a few shrines had to be replaced. KSTP held negotiation with the authorities of these properties and provided for the mitigation measures including enhancement of benefits as per agreement reached through negotiation.

43. The total number of grievances received and recorded was 1423 out of which 469 were LA reference forwarded to the Sub Court as per LA Act for enhancement of compensation. Remaining 954 cases were heard and settled through the Grievance Redressal System of the project.

44. Among the displaced, majority demonstrated upward mobility which showed 13% increase in pucca (permanent) structures which was directly linked with the decrease in kutcha (shackle) and semi-pucca structures. Other amenities accessed by the PAFs/PDFs were, drinking water, electric connection and cooking gas showing a shift from firewood by 4.4%. The evaluation also found that the displaced families could retain their income levels and some could improve their household income due to productive use of R&R assistance.

45. The Field division office and the social cell at KSTP carry out the monthly monitoring. This provides an opportunity for GoK to take corrective actions to expedite the land acquisition process. During the course of project implementation a mid-term evaluation by an independent agency will be carried out to ascertain compliance with the R&R policy.

46. Community outreach: The project would continue with road user surveys as before. But in addition, project will engage local communities in environment and social management by involving them in road safety initiatives and greening activities. Other aspects proposed to be covered are the provision of road side amenities such as development of parking areas, eating places, toilets, etc. in Oxbow land with the Operation and Maintenance being carried out by local communities, in particular by vulnerable persons to enable alleviation of poverty. The project would actively disseminate such and other initiatives to create awareness vide a specific communications strategy to be developed by a specialized agency.

**Annex 4: Operational Risk Assessment Framework (ORAF)  
India: Kerala State Transport Project II**

<b>Project Stakeholder Risks</b>		<b>Rating</b>	<b>Moderate</b>	
<b>Description:</b> (a) Risk of sustainability of assets built due to unwillingness of road users to pay user charges or other forms of tolls (b) Risk of inadequate private sector participation in the PPP transactions.	<b>Risk Management:</b> (a) The widespread coverage of the first project has created acceptance for project roads due to their superior standards and durability. Even so, the project will create full awareness of project roads and explain the benefits and costs of paying for road use through public consultations, workshops, publications and project website. (b) Build awareness of the proposed project through full disclosure on a new, dedicated project website and conduct wide market surveys and outreach program.			
	<b>Resp: Client</b>	<b>Stage: Preparation/ Implementation</b>	<b>Due Date : June 2012</b>	<b>Status: Not yet due</b>
<b>Implementing Agency Risks (including fiduciary)</b>				
<b>Capacity</b>		<b>Rating:</b>	<b>Moderate</b>	
<b>Description :</b> (a) Risk of poor quality DPRs, poor supervision and contract management which may impact work quality and lead to cost and time overruns. (b) Risk of mis-procurement and/or project delays, poor quality of contract deliverables, time and cost overruns. (c) Risk of delays/errors in financial management transactions and reporting. (d) Risk of poor ownership given that some of the experienced project staff may retire before end-of-project and risk of high staff turnover given the typical PWD environment.	<b>Risk Management:</b> Under this project: (a) The PWD will have technical support from expert project management consultants, thereby strengthening its review/control of project preparation processes, particularly on consultant outputs on environmental and social safeguards, planning and policy. (b) A dedicated procurement and contract management unit will be established; specific manuals for project procurement and contract management will be prepared early in the project and if necessary, early and ongoing staff training will be provided during project implementation along with support for related e-tools; project contracts will be packaged in an efficient manner and use of SBDs will be mandatory for ICB works; subject to a Bank assessment, the project will avail of the recently rolled out e-procurement system; (c) This risk is moderate as the project will use the FM system developed for the first project. The system of financial reporting and preparation of annual Project Financial Statements (PFS) will be reviewed to identify gaps. (d) Continuous training of lower level staff in related procedures and processes will be emphasized to minimize this risk.			
	<b>Resp: Bank</b>	<b>Stage: Preparation/ Implementation</b>	<b>Due Date: Continuous</b>	<b>Status: Not yet due</b>

<b>Governance</b>		<b>Rating:</b>	<b>Substantial</b>		
<b>Description:</b> (a) Risk of roads not adequately benefiting road users. (b) Risk of road user concerns on social, environmental and/or road safety aspects not incorporated in road development. (c) Poor utilization of community resources in roadside development, maintenance and road safety advocacy.		<b>Risk Management:</b> (a) Support to expand the existing complaint handling system into a comprehensive system of complaints, for ease of monitoring and follow-up. This will enable registration and tracking of complaints that are received online, by email and regular mail. (b) In addition to at least two <i>road user surveys</i> , the project will support development of a mechanism to elicit stakeholder feedback through quick surveys/opinion polls on select issues of interest to the PWD/KSTP. (c) The project will explore ways to foster participation of local community groups in providing value added services such as greening of road sides, improvement of sidewalks of connecting roads, emergency assistance during crashes and awareness building campaigns in schools and selected venues (against drunken driving and speeding and for adhering to traffic rules)			
		<b>Resp: Client</b>	<b>Stage: Implementation</b>	<b>Due Date : Continuous</b>	<b>Status: Not yet due</b>
<b>Project Risks</b>					
<b>Design</b>		<b>Rating:</b>	<b>Low</b>		
<b>Description:</b> (a) Risk of poor market response for the PPP project or high bids that are not acceptable to GoK.		<b>Risk Management:</b> (a) The project will encourage GoK to have road shows and interact with the industry to gauge their appetite for the project. Suitable technical assistance will also be provided to GoK in mechanisms such as the availability based payment (annuity mode) and other innovations in this field. In the event of inadequate market response to PPP, the project will be taken up under traditional contract modes. This risk is also partly mitigated by GoK having decided to bid out a smaller section under PPP on a pilot basis, with a slightly larger upfront grant.			
		<b>Resp: Client/Bank</b>	<b>Stage: Preparation</b>	<b>Due Date :</b>	<b>Status:</b>
<b>Social &amp; Environmental</b>		<b>Rating:</b>	<b>Low</b>		
<b>Description:</b> (a) Risk of delays in the implementation of LA and RAP. (b) Delay in obtaining regulatory environmental and forest clearances may affect project execution.		<b>Risk Management:</b> (a) This risk is low because about 95 percent of the required land for the project roads is now under the possession of PWD. Nevertheless, the project will mandate that at least 60 percent land is available before contract is awarded. (b) Detailed EA and project specific EMPs will be prepared and implemented; greater participation of the staff from the PWD's Environmental and Social Management Unit (ESMU) envisaged to strengthen oversight of related issues in the project; contract documents to include penalties for non-compliance with EMPs.			
		<b>Resp: Client</b>	<b>Stage: Preparation/ Implementation</b>	<b>Due Date :</b>	<b>Status:</b>

<b>Program &amp; Donor</b>	<b>Rating:</b>	N/A		
<b>Description:</b>	<b>Risk Management:</b>			
	<b>Resp:</b>	<b>Stage:</b>	<b>Due Date :</b>	<b>Status:</b>
<b>Delivery Monitoring &amp; Sustainability</b>	<b>Rating:</b>	Substantial		
<b>Description:</b> (a) Quality of construction suffers due to poor quality design and poor execution quality. (b) Risk of poor sustainability of assets created under the project due to poor project selection, planning or management. (c) Risk of poor sustainability of benefits from project-assisted Road Safety (RS) planning / interventions / piloting and Construction Zone Safety policy (CZS) / capacity-building measures.	<b>Risk Management:</b>			
	(a) Quality of works under KSTP I was good but the project will implement measures such as project-centered third party monitoring, new PWD design review process and proof-checking of DPRs in project implementation. (b) Under this project, IT systems for road asset management and newer methods of road maintenance will be introduced that will enable PWD to implement improved sustainability plans for built assets. (c) The RS component envisages multi sectoral interventions on a high risk corridor with robust monitoring and evaluation system aimed at reducing the number of fatalities; subsequent roll out of the approach throughout the State will be based on success of these interventions. The CZS provisions will be integrated in updating of Code(s) and manuals, as well as in training.			
	<b>Resp: Client</b>	<b>Stage: Implementation</b>	<b>Due Date :</b>	<b>Status:</b>

**Annex 5: Implementation Support Plan**  
**India: Kerala State Transport Project II**

**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 insure all major risks are addressed. The design of the project contains safeguards against each of these risks. The ISP is designed to review and ensure that those safeguards are effective and to reinforce them where necessary. The ISP is also designed to enhance PWD's capacity in a range of technical and specialized areas. The ISP will be undertaken by World Bank staff and is based on three major principles: (i) continual high level policy dialogue with GoK on institutional development and maintenance policy; (ii) frequent local level and field based supervision of project activities including consultation with KSTP-II beneficiaries, (iii) consistent review of fiduciary procedures and controls within PWD.
2. GoK and PWD have a long history of successful implementation of institutional development plans with the support of development partners including the World Bank through previous projects. Field visits will also be used to verify that the roads are being built to the agreed specifications and standards. The Bank team will conduct due diligence on relevant documentation, data and field based conditions to ensure satisfactory progress of the works.
3. 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.
4. The Bank team will undertake regular and comprehensive fiduciary implementation support of PWD management procedures. This will include thorough attention to procurement capacity and standards and regular financial management reviews including the assessment of interim financial management reports. Particular attention will be given to the findings of procurement reviews of contracts, financial audit and technical audits and implementation of recommendations provided in these reports.

**Implementation Support Plan**

5. The Bank's implementation support team will be managed from the country office, and will include country-based fiduciary, procurement and safeguards staff. Additional technical support will be provided in the following areas as required:
6. *Technical support for Component A:* The Bank's task team will include 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. The team will also include a contract management specialist and environmental specialist to address sensitive environmental issues as they arise.

7. *Technical support for Component B and C:* The Bank's task team will include a road safety specialist with international experience. The specialist will follow up periodically with the PWD's counterpart on the three main activities envisaged under this component. Also to monitor the progress to support PWD-wide staff training in road safety engineering and practices as planned. For the institutional strengthening component specialists in road asset management, institutional reform and community participation and engagement will be used.

8. *Financial Management (FM):* 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.

9. *Procurement supervision:* A Bank procurement specialist based in Delhi will be a member of the project team throughout the project. During project implementation, the procurement specialist will provide due diligence services for procurement documents and will join the implementation support missions. The frequency of missions is expected to be twice per year. In addition to the prior review due diligence to be carried out by the Bank team, procurement post reviews are to be carried on at least 20 percent of the contracts subject to post review. As a minimum, one post review report which will include physical inspection of sample contracts including those subject to prior review will be prepared each year and not less than ten percent of the contracts will be physically inspected. The specialist will review the red flags required to be checked for all procurement under the project; implementation of the procurement risk mitigation framework; and implementation of recommendations provided in the various audit reports.

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 support in conjunction with the PWD environmental management unit on implementation of the EMF. The specialist will assess performance of project management teams and supervision consultants, discuss recommendations provided in the integrated performance audit and monitor implementation of recommendations.

11. *Social Safeguards supervision:* A Bank social development specialist based in Delhi will be a member of the project team throughout the project. Besides supervision of compliance with social safeguards, the specialist will provide support to PWD on implementation of the RAPs. Field visits of the works sites will include consultations with persons affected by the project and assessment of the grievance redress mechanism. The specialist will assess performance of project management teams and supervision consultants, discuss recommendations provided in the technical audit and monitor implementation of recommendations.

12. In order to support KSTP in the effective implementation and good governance under the project, the task team will undertake enhanced supervision in the areas of implementation of GAAP and institutional strengthening activities and closely monitor the procurement process and contract management under the project. This support will be primarily provided by the



Governance specialist with adequate assistance from FM specialist, Procurement Specialist and other team members.

<i>Time</i>	<i>Focus</i>	<i>Skills Needed</i>
<i>First twelve months</i>	<p><u>Quality of implementation:</u> Ensure that preparation of remaining safeguards documents has the required quality; gender aspects are implemented; implementation of resettlement action plans complies with World bank safeguard policies; information is disclosed on the project website; quality assurance plans in civil works contracts are in place. <u>Governance and accountability:</u> Ensure that project management systems (financial management, contract administration) are in place; technical audit is launched; Random review of check-list of red flags provided with bid evaluation reports.</p> <p><u>Institutional development:</u> Review of terms of reference for consultants selected to implement activities in the institutional development component.</p>	<p>Procurement, financial management, environment, social development, institutional development,</p> <p>highway engineering, governance, gender</p>
<i>12-48 months</i>	<p><u>Quality of implementation:</u> Review quality of works, road safety component, compliance with fiduciary and safeguards policies, implementation of gender aspects; quality assurance plans in civil works contracts are in place; Review monitoring indicators, implementation performance and achievement of objectives.</p> <p><u>Governance and accountability:</u> implementation of resettlement action plans complies with World bank safeguard policies; information is disclosed on the project website; integrated performance audit is carried out;</p> <p><u>Institutional development:</u> Review implementation of institutional component; compliance with maintenance policy; quality of advisory services provided as part of the institutional development component.</p>	<p>Highway engineering, procurement, financial management, environment, social development, institutional development, transport economics, gender, M&amp;E</p>
<i>Other</i>		

#### *Skills Mix Required*

<i>Skills Needed</i>	<i>Number of Staff Weeks</i>	<i>Number of Trips</i>	<i>Comments</i>
Task management country-	80	10	Field-based
Support to task manager	60	10	International
Procurement specialist	20	10	Field-based
Financial management specialist	20	10	Field-based
Environment specialist	20	10	Field-based
Social development specialist	20	5	Field-based
Gender specialist	15	10	Field-based
Highway engineer	20	10	Field-based
Transport economist	5	5	International
Institutional Development Specialist	20	10	International
Governance Specialist	10	10	Field-based

**Annex 6: Economic and Financial Analysis**  
**India: Kerala State Transport Project II**

**I. Economic Analysis**

1. An economic analysis for the proposed road stretches has been carried out at Appraisal stage which has assessed the economic internal rate of return (EIRR) and economic net present value (ENPV) of these road stretches (Table 1). The analysis framework is based on the overall guidelines stipulated by the Indian Roads Congress (IRC) and the World Bank in their manuals<sup>12</sup>. HDM-4 (Version 1.3) is used for the analysis and all the project roads are considered separately. All costs and benefits considered in the analysis are in monetary terms expressed in economic prices to avoid distortions in input prices due to taxes, grants and labor prices.

**Table 1: Details of the project stretches**

Package No.	Section	Design Length (Km)	Total Project Cost (Rs. million)
1	Kasargod - Kanhangad	27.74	1,485
2	Pilathara - Pappinessery	20.90	1,479
3	Thalassery- Valavupara	52.74	2,990
4	Punalur-Ponkunnam-Thodupuzha	131.14	7,134
5	Chengannur-Ettumanoor	47.70	4,053
6	Ettumanoor-Muvattupuzha*	40.72	2,815
7	Perimbilavu-Pattambi-Perinthalmanna*	41.00	3,617

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

2. *General assumptions:* The transport costs for the project roads are compared between the ‘with project’ and ‘without project’ situations during the defined analysis period. In the ‘without project’ (do minimum) case, the existing intermediate lane project road is considered in its present condition and without improvement. In this case future traffic is assumed to continue to flow along the existing road itself. In the HDM model analysis, this ‘do minimum’ alternative forms the base situation against which all other situations are compared. The ‘with project’ situation on the other hand corresponds to a reconstruction of the existing road sections of the project road to two lane carriageway (7m) with hard shoulders and other appropriate improvement works.

3. The analysis assumes the construction period: 2013-14 and concession period: 2015-26. The road user costs considered for the analysis include vehicle operating costs, travel time costs and accident costs. The economic cost inputs used for estimating road user costs are: (a) prices of selected (popular) models, by vehicle type; (b) tyre prices; (c) fuel costs including oil prices; (d) crew costs (wages of drivers/assistants); (e) time costs for passengers and freights (holding costs); and (f) accident trends in the region and their unit costs. The road characteristics for the

<sup>12</sup> These include “Economic Evaluation of Highway Projects in India (SP-30, 1993)”, “Manual for Road Investment Decision Model’ (SP-38, February 1992)” and “Manual for HDM - 4 Version 1.3 (World Bank, 2000)”

existing road are taken as per the site survey findings, and those proposed for the improvement option for the project roads are adopted from the design.

4. *Traffic*: Under the normal growth scenario, traffic growth rates covering the period of analysis 2012-44 have been adopted from the traffic studies carried out for the respective project roads (Table 2). Given the existing land use and habitations along the project road, there is scope for generation of new traffic due to the improvements in the project roads, and therefore a conservative approach is considered for the analysis of generated traffic.

**Table 2: Projected Traffic Growth Rates adopted for the Study (Normal Approach)**

Vehicle Type	Period (2012-14)	Period (2015-19)	Period (2020-24)	Period (2025-29)	Period (2029+)
2 Axle truck	6.0%	5.5%	5.0%	5.0%	5.0%
3 Axle Truck / MAV / LCV	9.1%	8.9%	8.0%	6.8%	5.8%
Car / Two Wheelers	9.5%	8.8%	7.5%	6.1%	5.0%
Auto Rickshaw	7.1%	6.6%	5.6%	5.0%	5.0%
Bus	4.0%	4.0%	4.0%	4.0%	4.0%
NMV	3.0%	3.0%	3.0%	3.0%	3.0%

Source: Estimated by WSA, DPR Consultant

5. Section wise observed Average Annual Daily Traffic (AADT) for the road stretches for the base year 2011 is given in Tables 3 (i) and 3(ii). Diverted traffic, estimated on the basis of vehicle types, is considered in the analysis in addition to the above normal traffic.

**Table 3 (i): Distribution of Average Annual Daily Traffic (AADT) – 2012**

S. No.	Vehicle Type	AADT	%	AADT	%	AADT	%
		Kasargod - Kanjangad		Pillathara – Pappinesserry		Thalassery-Valavupara	
<b>Motorized</b>							
1	Standard Bus	541	5.1	262	3.2	916	8.3
2	Mini Bus	56	0.5	75	0.9	42	0.4
3	MAV	7	0.1	19	0.2	106	1
4	3 Axle Trucks	43	0.4	97	1.2	79	0.7
5	2 Axle Trucks	237	2.2	384	4.6	210	1.9
6	LCV	900	8.5	1067	12.9	1111	10
7	Two Wheelers	2999	28.3	2476	29.8	2676	24.2
8	Car/Jeep/ Van (New Tech)	3594	34	2188	26.4	3582	32.4
9	Car/Jeep/ Van (Old Tech)	400	3.8	10	0.1	400	3.6
10	Auto Rickshaws	1808	17.1	1726	20.8	1946	17.6
11	<b>Total Motorized</b>	<b>10585</b>	<b>100</b>	<b>8034</b>	<b>100</b>	<b>11068</b>	<b>100</b>
12	<b>Total Non-Motorized</b>	<b>29</b>	<b>100</b>	<b>50</b>	<b>100</b>	<b>9</b>	<b>100</b>

Source: WSA Traffic Survey, 2012

**Table 3 (ii): Distribution of Average Annual Daily Traffic (AADT) – 2012 (contd.)**

S. No.	Vehicle Type	AADT	%	AADT	%	AADT	%	AADT	%	AADT	%
		Punalur-Ponkunam		Ponkunnam-Thodupuzha		Chengannur-Ettumanoor		Ettumanoor-Muvattupuzha		Perimbilavu-Pattambi-Perinthalmanna	
<b>Motorized</b>											
1	Standard Bus	477	7.4	227	4.1	1278	7.5	620	5.7	812	5.6
2	Mini Bus	51	0.8	31	0.6	167	1	148	1.4	126	0.9
3	MAV	8	0.1	20	0.4	39	0.2	11	0.1	31	0.2
4	3 Axle Trucks	17	0.3	36	0.7	200	1.2	336	3.1	102	0.7
5	2 Axle Trucks	225	3.5	82	1.5	525	3.1	563	5.2	236	1.6
6	LCV	738	11.4	377	6.8	1264	7.5	1333	12.2	1048	7.3
7	Two Wheelers	1374	21.3	2069	37.3	4380	25.8	2573	23.6	5902	41
8	Car/Jeep/Van (New Tech)	2929	45.4	1673	30.1	7800	46	4267	39.1	3560	25
9	Car/Jeep/Van (Old Tech)	58	0.9	34	0.6	0	0	0	0	0	0
10	Auto Rickshaws	573	8.9	1004	18.1	1309	7.7	1054	9.7	2588	18
11	<b>Total Motorized</b>	<b>6452</b>	<b>100</b>	<b>5553</b>	<b>100</b>	<b>16962</b>	<b>100</b>	<b>10905</b>	<b>100</b>	<b>14405</b>	<b>100</b>
12	<b>Total Non-Motorized</b>	<b>46</b>	<b>100</b>	<b>57</b>	<b>100</b>	<b>29</b>	<b>100</b>	<b>65</b>	<b>100</b>	<b>16</b>	<b>100</b>
Source: WSA Traffic Survey, 2012											

6. *Project costs and phasing:* The capital costs (financial and economic) for the selected roads are given in Table 4. Assumptions relating to construction phasing for the capital costs are shown in Table 5.

**Table 4: Details of capital cost for project stretches**

Details	Cost (Rs. million)						
	Kasargod - Kanjangad	Pillathara – Pappinesserry	Thalassery-Valavupara	Punalur-Ponkunnam-Thodupuzha	Chengannur-Ettumanoor	Ettumanoor-Muvattupuzha	Perimbilavu-Pattambi-Perinthalmanna
Financial Cost*	1,485	1,479	2,990	7,134	4,053	2,815	3,617
Economic Cost**	1,336	1,331	2,691	6,421	3,648	2,534	3,255

\*Includes social costs (costs of LA and R&R) - as taken from the L&T Techno Economic Report; \*\*90% of Financial Cost

**Table 5: Construction program for upgrading existing road stretches**

Details	Project Road
Construction Period (Years)	2
Construction Start Year	2013
Construction End Year	2014
Year of opening for traffic	2015
<b>Phasing of construction cost (in percentage)</b>	
Year 1-%	50
Year 2-%	50
<b>Total-%</b>	<b>100</b>

7. *Maintenance*: The maintenance works considered in the analysis include: (a) annual maintenance (routine maintenance); (b) surface dressing/resealing (periodical maintenance every five years); and (c) overlay (periodical maintenance every ten years).

8. *Project benefits*: The main economic benefits considered by the analysis are: (a) road user cost savings primarily including VOC savings for vehicular traffic using the project road, and time savings for passenger and goods carried in transit; (b) economic benefits due to improved road safety; and (c) reduced cost to the Government/PWD in the form of reduced road maintenance costs. The inputs required for estimating economic benefits (for both vehicle operating cost and travel time cost) through the HDM model, have been assumed specific to Kerala prices. All financial costs pertaining to construction and maintenance (agency costs) have been converted into economic costs using the conversion factor of 0.9.

9. *Estimation of time costs for passengers*: The value for work time was derived based on the average income of full-time employed people in Kerala computed from published macroeconomic and demographic data for the year 2011-2012, with a premium of 33% to allow for business overheads. Journeys in non-work time were valued at 30% of the average income of full-time employed people. This procedure is in keeping with the guidelines contained in the World Bank's Infrastructure Note No. OT-52. The above values estimated at the macro level were taken to represent bus passengers. A notional increase was assumed to estimate the passenger time value by other modes (e.g. minibus, two wheelers and cars), as given in Table 6.

**Table 6: Vehicle Category wise Passenger Travel Time for Kerala (2011-12)**

Vehicle Type	Time value (Rs./Hour), 2011-12		
	Work	Non work	Combined
Bus	66.32	19.89	47.75
Mini Bus	74.29	22.29	53.49
TW	54.15	16.24	38.99
Car - Old Tech	83.39	25.02	60.04
Car - New Tech	107.83	32.35	77.63

Source: KSTP Project Completion Report, 2011

10. *Estimation of time costs for freight*: An estimate of the average load carried by each category of truck and its economic value was made based on discussions with the vehicle operators in the

region and axle load surveys in the region. This was then used as the basis for computing an hourly inventory cost (or freight holding cost), using the social discount rate as the cost of working capital locked up in goods in transit and assuming an effective 2,400-hour working year.

11. *Estimation of vehicle operating costs:* The economic costs of petrol, diesel, oils and lubricant were adopted from a World Bank study<sup>13</sup>.

12. *Estimation of road safety benefits:* The benefits of improvements in road safety include a reduction in: (a) crash fatalities; (b) serious injuries; and (c) minor injuries. These costs were worked out by estimating: (a) direct economic costs of lost output; (b) medical costs, (c) vehicle repair costs, and (d) the costs of human capital (estimated at 20% of lost output)..

13. *Economic analysis:* The cost-benefit analysis of the project indicates that the EIRRs of all selected roads are above 12% (and ENPVs of all selected roads positive), at a 12 percent discount rate over a fifteen-year evaluation period. (Table 7).

**Table 7: Economic viability analysis – Base Case**

S. No	Name of Roads	EIRR (%)	ENPV (Rs. million)
1	Kasargod-Kanjangad	63%	5,156
2	Pilathara-Pappinissery	51%	3,765
3	Thalassery-Valavupara	69%	11,650
4	Punalur-Ponkunnam-Thodupuzha	33%	10,215
5	Chengannur-Ettumanoor	49%	17,648
6	Ettumanoor-Muvattupuzha	31%	4,934
7	Perimbilavu-Pattambi-Perinthalmanna	27%	4,737

14. *Sensitivity analysis:* The project roads have also been subjected to sensitivity analysis to examine the effects of: (a) 15% increase in agency cost; (b) 15% decrease in user benefits; and (c) 15% increase in agency costs along with 15% decrease in user benefits. Even in the worst case scenario the project roads remain viable (Table 8).

**Table 8: Sensitivity analysis – Base vs. Worst Case**

S. No	Normal Scenario	EIRR (%)		ENPV (Rs. million)	
		Base Case	Worst Case*	Base Case	Worst Case*
1	Kasargod-Kanjangad	63%	50%	5,156	4,054
2	Pilathara-Pappinissery	51%	40%	3,765	2,881
3	Thalassery-Valavupara	69%	55%	11,650	9,246
4	Punalur-Ponkunnam-Thodupuzha	33%	25%	10,215	6,934
5	Chengannur-Ettumanoor	49%	41%	17,648	14,032
6	Ettumanoor-Muvattupuzha	31%	25%	4,934	3,524
7	Perimbilavu-Pattambi-Perinthalmanna	27%	22%	4,737	3,163

\*15% increase in agency costs along with 15% decrease in user benefits

<sup>13</sup> “India - Road Transport Service Efficiency Study, Energy & Infrastructure Operations Division”, South Asia Regional Office, World Bank, November 2005

**II. Financial Analysis**

15. The GoK is keen on exploring the use of Public-private partnerships (PPPs) in the road sector. However, the GoK wants to be cautious and decided to pilot the use of PPPs in the road sector by procuring only one of the eight stretches of road included in KSTP II through a PPP. Of the eight stretches of road included in KSTP II, which have a total length of 362.9 km, the GoK is considering the Punalur-Ponkunnam and Ponkunnam-Thodupuzha stretches for PPP. Of the remaining six stretches, KSTP-II plans to take the rest under item rate contracts.

**Table 9: Details of project packages and road stretches considered for PPP**

<b>Packages</b>	<b>Link</b>	<b>Road Stretches</b>	<b>Location</b>	<b>Total Length under KSTP (km)</b>	<b>Total Civil Construction Costs (Rs. million)</b>
Package	8.1-84.4	Punalur-Ponkunnam	SH-8	81.9	3,510
	84.5-84.8	Ponkunnam - Thodupuzha	SH-8	50.3	1,910
<b>Total</b>				<b>132.2</b>	<b>5,420</b>

16. The financing options study for KSTP II considers different delivery models for implementation of public projects. These models differ in the allocation of responsibilities and risks between the public and private partners. Given the difficulty in collecting user charges in Kerala, the two viable PPP modalities considered for analysis in the Kerala case are BOT with annuity (i.e., annuity payment from public fund) and BOT with hybrid annuity (i.e., annuity payment from public fund along with an upfront capital grant). Under these two modalities the private operator will be responsible for (i) upgrading the road stretches during the first two years of concession, (ii) maintaining the stretches during the following 10 years, and (iii) financing the project through a mix of equity and debt. The GoK responsibility will be to pay the annuity during the 10-year period, and in the case of the hybrid annuity, provide an upfront capital grant. Consequently, under the PPP options considered the technical (regarding design), construction and operating risks are transferred to the private operator as well as the revenue risks stemming from changes in taxes, while both, the public sector and the private operator share the risk related to the modification/renewal of the contract and the financial risks.

**Annuity Estimation**

17. The first step in the financial analysis is to estimate the annuity payments a hypothetical private operator would bid for each of the two road stretches and for different PPP procurement modes. The annuity payments will be the same throughout the period of concession and there will be no escalation during the concession period in the annuity amount. However, the costs will be escalated over the years assuming annual inflation of 5%. Furthermore, it is assumed the hypothetical bidder would require a 16% IRR on equity. The source of funding for the project will be a mix of debt and equity. In the case of the hybrid annuity, the upfront capital grant is a percentage of the estimated initial capital expenditures (CapEx). The options considered range from 30% to 50% of estimated initial CapEx. The calculated annuity payments are based on a set of operational and financial assumption summarized below.

**Table 10: Operational Assumptions**

<b>Operation &amp; Maintenance Costs (Rs. million per km per annum)</b>	
Routine Maintenance Cost (every year)	0.3
Periodic Maintenance Cost (every 5 years)	3.0
Electricity & Patrolling expenses (every year)	0.1
<b>Other Operational Assumptions</b>	
Concession Period	10 years
Construction Period	2 years
Concession Operation Period	8 years
Estimated Escalation in Cost (% p.a.)	5%
Corporate Tax Rate (30%+10% Surg+2% ED)	33%
Minimum Alternative Tax (7.5%+10% Surg+2% ED)	20%
Tax Holiday (80 I A)	10 years
Depreciation Rate SLM	8 years (100%)
Depreciation Rate WDV	10%
Expected Equity Internal Rate of Return	16%
<b>Financial Assumptions</b>	
Debt : Equity ratio*	70% : 30%
Interest cost for debt	12% p.a.
Term of debt (door-to-door maturity)	9 years
Moratorium for debt (from completion of construction)	1 year
Discount rate for public sector	10%

Note: \* In the hybrid annuity case, the debt: equity ratio is based on the CapEx net of grants. Furthermore, there is a minimum equity the private operator needs to put in the project, which is the greatest of 14% of total CapEx and 50% of total grants.

18. The annuity payments for different project roads under different procurement modes are presented in Table 11. These annuity payments are before tax. Even though the private operator will be exempt from corporate tax, it will have to pay the Minimum Alternative Tax (MAT) of about 20%, which will reduce the annual government outlays. As can be seen from Table 11, the higher the upfront capital grant, the lower the annuity required for a 16% IRR on equity. If the project costs (civil and financial) were higher, the annuity payments required by the private operator (for a given expected IRR) would also be higher. Similarly, if the private operator required a higher IRR, then the annuity payments would also be higher. Finally, if the concession period were to be decreased from 12 to 10 years, the annual annuity payment would increase. However, the present value of the annuity payment would be lower for a shorter concession period due to the different discount rates used by the public and private sector.



**Table 11: Annuity Payments**

Packages	Link	Road Stretches	Rs. million p.a.			
			Annuity Mode	Hybrid Annuity @30% Grant	Hybrid Annuity @40% Grant	Hybrid Annuity @50% Grant
Package	8.1-84.4	Punaloor-Ponkunnam	1,163	874	782	702
	84.5-84.8	Ponkunnam - Thodupuzha	715	537	480	431
Total			1,878	1,411	1,262	1,133

### Value for Money Analysis

19. In order to assess the suitability of the PPP mode for the different road stretches, a value for money analysis was carried out. Value for Money (VfM) analysis compares the total cost of procuring the project under the public procurement mode, known as Public Sector Benchmark (PSB) or Public Sector Comparator (PSC), with the estimated total cost of procuring the project under the PPP mode. The VfM takes into consideration the full life project cost and the associated risks (viz. construction risk, operating risk and political & legal risk). The assessment was done for different PPP modes - annuity, hybrid annuity with 30% grant, hybrid annuity with 40% grant and hybrid annuity with 50% grant - and compared to PSB to derive the value for money for the three modes for each of the two road stretches. For the purpose of the analysis, the probability distribution for the state highways as indicated in the VfM Indicator tool package available on the website of Department of Economic Affairs, Government of India has been taken. The probability distributions considered for VfM analysis are presented in Table 12. The probability distributions for construction cost and time overrun are based on a dataset of about 800 public and private projects in India.<sup>14</sup>

**Table 12: Probability Distributions considered for VfM analysis**

Risks	Mean	Standard Deviation
Construction cost overrun	16%	62%
Construction time overrun	50%	57%
Opex Risk	15%	10%
Contract modification/renegotiation risk	5%	10%

20. One of the expected benefits of a PPP comes from the expectation that a private operator will be able to upgrade the road stretches at a lower capital cost than the public sector, if the private operator can profit from such efficiency gains. Experience shows that private operators in the road sector in India tend to bring a 10% reduction in capital costs relative to government estimates (excluding cost and time overrun). Therefore, if the upfront grant were around 90% of the estimated initial capital costs, then the incentives to efficiently upgrade the road stretches will be highly, if not fully, undermined. However, the incentives of private operators to efficiently

<sup>14</sup> Singh, R. (2010), "[Delays and Cost Overruns in Infrastructure Projects: Extents, Causes and Remedies.](#)" Economic and Political Weekly, Vol XLV No 21, pages 43-54

upgrade the roads would not be affected by upfront grants of up to 50% of estimated initial capital expenditures, because it is unthinkable that a private operator would be able to bring such a significant efficiency gain. Therefore, the value for money analysis assumes any of the PPPs options considered will bring the same efficiency gains. Consequently, the benefit of an upfront grant is the reduction in the average financial cost due to the substitution of high cost finance (i.e., debt and equity) by low cost finance (i.e., public funds).

21. According to the VfM analysis, it is clear that any of the PPP options considered is preferred to the public sector option. Furthermore, given the upfront grant reduces the financial cost, the hybrid annuity with 50% grant is the preferred PPP option, but just marginally better than the hybrid annuity with 40% grant, as shown in Table 13. For example, in the case of the Ponkunnam-Thodupuzha stretch, if the public sector undertakes the upgrading and maintenance, the expected present value of the cost will amount to Rs. 3,160 million. The largest part of the expected cost comes from the planned construction and operating costs. But, about Rs. 680 million of the Rs. 3,160 million come from the expected construction and operating costs overrun and construction time overrun – risk that can be transferred to a private partner. If the government procures the same stretch under the hybrid annuity with 40% grant, the GoK would have to incur the cost of (i) the 40% upfront capital grant, which will be financed by the World Bank, (ii) the annual annuity payment of Rs. 480 million before tax (table 11), (iii) the cost of procuring the PPP (assumed to be 1.5% of construction and operating costs), which all amount to about Rs. 3,370 million in present value. The GoK will also receive taxes (MAT) paid by the private operator (about Rs. 210 million in present value), decreasing the net financial cost of the PPP to the GoK. In the PPP case, the GoK will not face construction and operating risks, but it will face the risk of contract renegotiation/modification. It is assumed that in average the GoK will benefit from a 5% decrease in the cost of the PPP through renegotiation, which amount to about Rs. 170 million (in present value). Hence, the main benefits for the GoK of undertaking a PPP comes from the shift of construction and operating costs to the private sector and from the likely cost reduction through renegotiation.

**Table 13: VfM across different modes**

				Rs. Million			
Packages	Link	Road Stretches	PSB	VfM (PSB - cost of PPP)			
				Annuity	Hybrid Annuity @30% Grant	Hybrid Annuity @40% Grant	Hybrid Annuity @50% Grant
Package	8.1-84.4	Punalur–Ponkunnam	5,160	1,120	1,320	1,400	1,420
	84.5-84.8	Ponkunnam – Thodupuzha	3,160	680	830	850	890
Total			8,330	1,800	2,140	2,250	2,310

22. The GoK is keen on exploring the use of Public-private partnerships (PPPs) in the road sector. However, the GoK wants to be cautious and decided to procure only one of the two stretches of road considered in this analysis through a PPP. According to the financial analysis, the Punalur–Ponkunnam stretch yields a significant higher VfM than the Ponkunnam–Thodupuzha stretch. Also according to the financial analysis, the hybrid annuity with a 50% front grant yields the highest VfM. However, the difference with the VfM in the 40% grant

alternative is only marginal. Moreover, given the preference of the GoK to follow a cautious path by piloting the use of PPPs, limiting the upfront grant to only 40% of the initial CapEx seems to be the most sensible alternative.

### **Sensitivity of Value for Money Analysis**

23. The sensitivity analysis on the VfM has been performed only for the Ponkunnam-Thodupuzha road stretch, but the main findings also apply to the other stretch. The analysis confirmed the robustness of the project to changes in risks that can be transferred to the private partner (i.e., construction cost and time overrun, Opex), risk for the GoK of entering into a PPP (i.e., renegotiation risk), and IRR on equity required by the private partner. Table 14 summarizes the switching value analysis for the 50% upfront grant option. The Switching values for the other options considered in the analysis are smaller than those in Table 14.

24. The baseline case assumes the government benefits from an average 5% decrease in the cost of the PPP in the event of a renegotiation. The sensitivity analysis shows that if instead the private operator is the partner who profits from renegotiating the contract and the cost of a PPP to the government increases in average by 21 percent after renegotiation, then the public sector option becomes the preferred option.

**Table 14: Sensitivity analysis on Ponkunnam–Thodupuzha road stretch - @50% grant**

<b>Parameter</b>	<b>Baseline value</b>	<b>Switching value</b>	<b>Comments</b>
Average construction cost overrun	16%	N/A	When zero, VfM still Rs. 520 Million
Average construction time overrun	50%	N/A	When zero, VfM still Rs. 630 Million
Average Opex increase	15%	N/A	When zero, VfM still Rs. 780 Million
Average change of PPP cost due to contract modification/renegotiation	-5%	21%	420% increase of baseline value
IRR on Equity	16%	30%	88% increase of baseline value

## Annex 7: Governance and Accountability Action Plan

### India: Kerala State Transport Project II

1. Worldwide, the construction sector is perceived to be most susceptible to corruption, and especially so in public works contracts.<sup>15</sup> India's road sector (and by extension, Kerala'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>16</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>17</sup>. On six of these road sector projects (valued at more than \$200 million each), the cost overrun is more than 100%!<sup>18</sup> In Kerala, even the Bank-aided KSTPI had an overall cost overrun of 35% and a time overrun of 60% compared to the originally estimated project cost and time of completion.<sup>19</sup>

2. The State of Kerala has been very successful in implementation of the pilot National e-Governance Project (NeGP) and has pioneered several ICT initiatives, such as the pilot e-district program to reach out to its citizens and the business community. These have enabled the State to provide a host of citizen-centric services efficiently and seamlessly: about a million digital certificates have been issued since the launch of the pilot e-district program in 2010. Impending state-level roll-out of the program to all 12 districts would make Kerala the first Indian state to be fully e-enabled.<sup>20</sup> Notable other GoK governance initiatives that impact the road sector are in:

- **M-Governance:** The objective of the project is to integrate mobile technology with more than ninety Government departments to create cost effective, efficient and round the clock Government information systems. Besides improving inter-departmental and inter-office communication, it would facilitate quick citizen feedback.<sup>21</sup> An integral part of the system is the *Mobile Crime and Accident Reporting Platform (MCARP)*, which can help the State Police tackle accidents, traffic enforcement and crime efficiently.<sup>22</sup>
- **e-governance:** GoK intends to implement *e-Procurement* and *e-payment* to enhance transparency and efficiency in all public procurement. Currently e-procurement is in use for

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<sup>15</sup> *Bribe Payer's Index 2011*, Transparency International, Berlin, Germany, November 2011.

<sup>16</sup> *Indian Road Construction Industry—Capacity Issues, Constraints, and Recommendations*. The World Bank, Washington, DC, 2008

<sup>17</sup> *Bumpy ride for road sector, tops list of delayed projects*, Hindustan Times, New Delhi, January 26, 2012

<sup>18</sup> *Cost overrun hurting project implementation*, The New Indian Express, Hyderabad, October 22, 2012

<sup>19</sup> *Implementation Completion & Results Report*, Report No. ICR00001896, The World Bank, June 2011

<sup>20</sup> <http://www.newstrackindia.com/newsdetails/2012/10/11/79--e-governance-a-big-hit-in-Kerala-districts-.html>

<sup>21</sup> For instance, the State Planning Board successfully used this system to conduct a survey of more than 25,000 citizens on their energy needs under the *Sampoorna Oorja Suraksha* (Total Energy Security Mission)

<sup>22</sup> MCARP has been running successfully in Cochin City

all PMGSY works and e-payment is being piloted in the Water Authority, Motor Vehicles and Tax departments.

- **Digitization of Records:** The GoK has encouraged digitization of records through initiatives such as the *Secretariat Digitization Project* aimed at enabling the creation of data repository for all public documents. It has also decided to set up a State Spatial Data Infrastructure (SDI) to serve as a state level repository of spatial data, along the lines of the National SDI.
- **Better public interfaces:** The Government is promoting the use of websites (in English and Malayalam), e-mails and other new communication facilities in all government organizations. It has also set up a *Citizen's Call Centre (CCC)*<sup>23</sup> that acts as a complaint registry for senior officials/Ministers of Government Departments. It also accepts complaints under the Chief Minister's (CM) *Sutharya Keralam* program, which are transferred electronically to the public grievance redress cell of the CM and forwards complaints regarding check posts to the Commissioner of Commercial Taxes.
- **Modern File Tracking, Governance and Personnel Management Systems:** GoK has implemented *IDEAS*<sup>24</sup> as an advanced file information system in all departments including PWD, to track files of the offices of the state government electronically, using ICT. It has also initiated *MESSAGE*<sup>25</sup>, an integrated file tracking and management system, with an Internet based application for citizen-centric services in some of the state's Departments and the CCC. In addition, it has also implemented *SPARK*<sup>26</sup>, an **integrated web-based personnel, payroll and accounts information system** that helps departments to achieve high level of transparency in employee relations, facilitate accurate and automatic payroll processing and ensures uniform application of rules and regulations.

3. Kerala also has a four-tiered system of vigilance namely a State Vigilance & Anti-Corruption Bureau (VACB) that conducts vigilance enquiries, confidential verifications, surprise checks and collects intelligence reports about corrupt officials, the PWD's CVO who acts as a watchdog to handle fraud and corruption (F&C) complaints/cases for the entire PWD, the Chief Technical Examiner's (CTE) Office (which is under the State's Finance Department) to inspect work quality; and a Lok Ayukta (Ombudsman)<sup>27</sup> for investigating into allegations of corruption and mal-administration against all public servants<sup>28</sup>, and for speedy redress of public grievances.

4. All these initiatives and enabling factors would undoubtedly provide the impetus for ensuring good governance and accountability on the proposed KSTPII. However, the GoK 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 GoK proposes to mitigate the same.

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<sup>23</sup> It is open 24 x 7 (except on national holidays)

<sup>24</sup> *Information and Data Exchange Advance System*

<sup>25</sup> *Modern Electronic Systems & Service Agility & Governance in Enterprises*, being implemented now in PWD

<sup>26</sup> *Service and Payroll Administrative Repository for Kerala*

<sup>27</sup> Constituted under the Kerala Lok Ayukta Act, 1999 (Act 8 of 1999) - [www.lokayuktakerala.gov.in](http://www.lokayuktakerala.gov.in)

<sup>28</sup> Including ministers, politicians, bureaucrats and other government employees

## Key Governance Risks

5. Notwithstanding the good governance initiatives of the GoK in building its infrastructure, some of the key areas of vulnerability and factors that engender bad governance in its road sector are as follows: *political interference in project implementation (identification stage), pre-construction delays especially in land acquisition and in obtaining regulatory clearances, repeated termination and rebidding of contracts (pre-construction/design stage), inadequate level of competition, collusion, fraud such as misrepresentation of bidders' qualifications, leakage of bid evaluation information and deficient bid evaluation (procurement stage), poor quality control and sustainability arrangements for roads, ineffective performance monitoring due to difficulties in supervising large number of projects widely dispersed geographically and/or involvement of large number of subcontractors, poor enforcement of contractual remedies, delayed payments to contractors, delayed decision-making (contract execution stage) and lack of adequate mechanisms for independent technical audits, citizen feedback, record maintenance and public disclosure of project information.*

6. All these risks contribute to bad governance in a variety of ways. For instance, poor selection of roads leads to wastage of scarce public monies that may not really benefit road users; 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. Collusion and other fraud in procurement of contractors often results in sub-standard work and associated time and cost overruns.

7. Based on an assessment of the above risks, existing systems, procedures and processes in the KSTP/state PWD (see snapshot in Table 1), GoK initiatives and performance on the KSTPI, the overall governance risk of the project has been assessed as **Substantial**.

Table 1: Snapshot of Existing Mechanisms for road works		
Type of Mechanism	Yes/No	Mechanisms missing
<b>A) Information Disclosure Mechanisms</b>		
Results Framework Document online?	✓	Annual Reports online
Citizen Charter online?	✓	Physical progress of works online
Display Boards at Site	✓	KSTPII information online
<b>B) RTI Mechanism</b>		
Public Information Officer in place	✓	
Section 4(a) compliant	✓	
<b>C) Complaint Handling Mechanisms</b>		
Online Mechanism with tracking in place	✓	Process description on website
Telephone Helpline/Hotline	✓	Handling of anonymous complaints
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 contractor registration
e-Procurement operational?	●	List of debarred contractors online
<b>F) Financial Management</b>		
	<input type="checkbox"/>	e-payments and online status of bills
	<input type="checkbox"/>	Financial progress of works online
<b>G) Familiarity with World Bank projects</b>		
Familiarity with World Bank road sector projects	✓	

Note:

denotes pa

## **The GAAP**

8. The GAAP has been prepared through extensive discussions with the PWD, taking into consideration the key risks in project implementation, lessons from KSTPI, Bank's sector experience, studies/reports<sup>29</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), the PWD's Results Framework Document (2011-12) and GoK's own initiatives to foster good governance in the PWD's working. Actions in the GAAP (Table 2) have been designed to supplement actions under the Institutional Strengthening (IS) Component to improve the capacity of both the PWD and the KSTP for good governance. The GAAP actions focus on better project, contract and asset management, mechanisms for quality control, project coordination and seek to foster public participation in project planning and implementation through enhanced transparency and grievance redress.

### **Focus areas and indicative costs**

9. The cost of the GAAP implementation (US\$2 million) is part of the IS Component of the project and comprises costs for:

- (a) Development of a project-specific website and an online complaint handling system
- (b) Independent review of RTIA compliance and independent audit of complaint handling system to identify systemic deficiencies;
- (c) Support to the State's Information and Public Relations Department (I&PR) for designing project-specific public information & communications campaigns for enhanced active user engagement;
- (d) Commissioning the beneficiary satisfaction/perception surveys;
- (e) Development of a mechanism to enable the conduct and analysis of quick surveys/opinion polls (through online, SMS or other electronic media) to elicit stakeholder feedback on select issues of interest to the PWD/KSTP.

### **Implementation & Monitoring of GAAP**

10. The overall responsibility for the GAAP implementation will rest with the PD, KSTP. The progress on GAAP actions will be included in the project's quarterly progress reports to the Bank. The KSTP and the Bank team will assess the GAAP actions during implementation support missions and at mid-term through the performance benchmarks (given in Table 2) to enable an evaluation of its effectiveness. The GAAP may be updated as necessary to deal with emergent issues and to include any supplemental measures based on identified systemic weaknesses/vulnerabilities/shortcomings during implementation.

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<sup>29</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*.

**Table 2: GAAP Matrix**

Risk(s)	Action(s) to be Taken to Mitigate Risk	Level*	Timeline/ Status	Entity	Performance Indicator
<b>A. Actions to enhance Sector Management &amp; Governance</b>					
Risk of poor project management due to poor capacity, sector research and inadequate preparedness for newer modes of contracts.	Finalize and train PWD staff on the new PWD Manual – develop training plan with resource based schedule, identify trainers, produce training materials, and put PWD staff through initial training. Include training on dealing constructively with the public and road users.	S	As in the Institutional Strengthening (IS) Component	PWD	Use of new PWD Manual.
	Conduct knowledge-sharing workshops for PWD staff on PPP, performance based and other new contracting methods; conduct outreach programs to attract private sector participation in road sector projects.	S	Periodically	PWD/ KSTP, Bank	Number of workshops and road shows conducted.
<b>B. Actions to reduce collusion, fraud and corruption</b>					
Risk of collusion in procurement and fraud and corruption (F&C) in contract execution.	Foster use of e-procurement in project works once e-procurement system is satisfactorily assessed by Bank.	P	Implementation	KSTP/ Bank	Use of e-procurement in project.
	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	KSTP	Updated database; All bid related information online.
Risk of cost and time overruns due to weak project preparation and monitoring.	Independent, random inspection of works based on third-party reviews to identify F&C during execution.	P	As needed	PWD/CTE	Inspection reports.
	Third-party audit of work quality 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, excise duty exemptions etc.	P	Six-monthly (as under civil works)	KSTP	Audit reports.
Risk of poor value-for-money due to F&C in execution of road programs.	Complete development of project management system – including file tracking, project and program management, procurement, financial management, and web-based access with required security features.	P	As in the IS Component.	KSTP	Implementation of M&E and project management tools.
<b>C. 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 KSTPII website</i> .	P	April 2014	KSTP	Comprehensiveness of online project information & onsite citizen boards.
	Develop an online complaint handling system on the KSTPII website and publish established procedures to deal with and maintain all project complaints on the website.	P	April 2014	KSTP	Periodic review of complaint statistics & QPRs; field-level checks.



<b>Risk(s)</b>	<b>Action(s) to be Taken to Mitigate Risk</b>	<b>Level*</b>	<b>Timeline/ Status</b>	<b>Entity</b>	<b>Performance Indicator</b>
Risk of insufficient citizen oversight/inputs into the planning process due to weak complaint handling procedures.	Initiate PWD-specific public information & communications campaigns in coordination with the Information and Public Relations Department.	S	Periodically	PWD	Number of such campaigns conducted.
	Develop a mobile-Governance facility for PWD on the state's M-Governance platform to elicit road user feed-back and enable conduct of opinion polls, quick surveys etc.	S	April 2015	PWD	Timely development and use of the facility for obtaining road user feedback.
	Explore ways to foster local community participation in road side periphery/street furniture development, maintenance, emergency road assistance and road safety advocacy.	P	Two public consultations annually	KSTP	Type and number of such activities performed by local communities.
	Conduct independent review of RTIA requests to identify systemic deficiencies.	S	Annual	KSTP	Audit reports.
	External review of the complaint handling process with report on performance, systemic issues & remedial action(s).	S	June 2014, June 2016	PWD	Audit reports.
<b>D. Actions to enhance quality and sustainability</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.	P	Start and mid-term of project	KSTP	Periodicity of reports of surveys and actions taken.
	Third-party review of DPRs, cost estimates and designs, including integration of safety and construction safety aspects.	P	Preparation	KSTP	Review reports.
Risk of poor sustainability due to weak project management and/or asset maintenance.	Develop simple e-tools for project management.	P	September 2014	PWD	Development and use of e-tools.
	Develop a simple Road Asset Management System to facilitate annual planning and prioritizing of road maintenance works.	S	As in the IS Component	PWD	Progressive use of RAMS by PWD.
<b>E. Measures to enhance project coordination</b>					
Risk of delays in pre-construction activities or approvals required to execute the project efficiently.					
Risk of delays in pre-construction activities or	Enhanced capacity of PWD staff in works project planning and in managing pre-construction activities	P	As in the IS Component.	PWD	Perceptible reduction in delays in pre-construction activities.

Risk(s)	Action(s) to be Taken to Mitigate Risk	Level*	Timeline/ Status	Entity	Performance Indicator
<p>approvals required to execute the project efficiently. Risk of poor project management due to poor capacity, sector research and inadequate preparedness for newer modes of contracts.</p>	<p>Finalize and train PWD staff on the new PWD Manual – develop training plan with resource based schedule, identify trainers, produce training materials, and put PWD staff through initial training. Include training on dealing constructively with the public and road users.</p>	<p>S</p>	<p>As in the Institutional Strengthening (IS) Component</p>	<p>PWD</p>	<p>Use of new PWD Manual.</p>

\*S: Sector/entity level; P: Project level