

**PROJECT INFORMATION DOCUMENT (PID)  
APPRAISAL STAGE**

Report No.: PIDA12576

<b>Project Name</b>	Yunnan Highway Asset Management Project (P132621)
<b>Region</b>	EAST ASIA AND PACIFIC
<b>Country</b>	China
<b>Sector(s)</b>	Rural and Inter-Urban Roads and Highways (75%), Sub-national government administration (25%)
<b>Theme(s)</b>	Infrastructure services for private sector development (65%), Managing for development results (25%), Natural disaster management (1 0%)
<b>Lending Instrument</b>	Investment Project Financing
<b>Project ID</b>	P132621
<b>Borrower(s)</b>	Peoples Republic of China
<b>Implementing Agency</b>	Yunnan Highway Bureau
<b>Environmental Category</b>	B-Partial Assessment
<b>Date PID Prepared/Updated</b>	23-Oct-2014
<b>Date PID Approved/Disclosed</b>	24-Oct-2014
<b>Estimated Date of Appraisal Completion</b>	
<b>Estimated Date of Board Approval</b>	16-Mar-2015
<b>Decision</b>	

**I. Project Context**

**Country Context**

1. China has achieved remarkable economic growth in the past three decades and lifted more than 600 million people out of poverty. The Government's priorities in the 12th Five-Year Plan (FYP, 2011-2015) are to: support economic development in the lagging western and central regions; provide more assistance to poor regions and regions with ethnic minorities; promote green and low carbon development; enhance capacity for resilience to natural disasters; and encourage innovations in governance mechanisms.

2. Yunnan Province, located in the southwest of China and bordering Laos, Vietnam and Myanmar, is one of the least developed provinces in China in terms of GDP per capita. Yunnan's GDP per capita in 2012 was only USD3,530, about 58% of the national average. It has a population of 46 million, 394,000 square km of territory, and rich natural and cultural resources. Yunnan's economic development is partially constrained by less developed transport infrastructure that is costly to build and maintain, as 94 percent of Yunnan's territory is mountainous and is vulnerable to landslides, floods and earthquakes. The Government considers Yunnan as a priority in its

Western Region Development Strategy and a gateway connecting China to the Association of South East Asian Nations (ASEAN). The provincial government has placed transport infrastructure improvement at the top of its development agenda.

### **Sectoral and institutional Context**

3. China's highway system has significantly increased since the initiation of the country's open policy in 1978. The total length of the highway system increased from about 900,000 km in 1981 to 4.24 million km in 2012. Of this, about 96,200 km were expressways and the rests were ordinary highways. The Ministry of Transport (MoT) projected that by 2015 the total length of the highway system would be over 4.5 million km.

4. The responsibilities and funding sources for highway development and maintenance are shown in the Table 1.1 of the PAD.

5. Funds for the highway system development increased from RMB6 million (USD0.98 million) in 1979 to RMB1,150 billion (USD188.52 billion) in 2010. The central government contributed about 14.9% of the funds prior to the fuel tax reform in 2009, and local governments provided the rest of the funds. Due to the gap between fund revenues and development demands, local governments commonly diverted a large share of the proceeds of road maintenance fees to address funding shortfalls for road construction and other needs. As part of fuel tax reform, the central government introduced a fuel tax to replace six types of existing fees, including road maintenance fees, and required local governments to cancel all tolls on Class II Highways. The central government provided RMB26 billion per year to local governments to compensate the loss in revenue and for repaying debts. However, this amount covered only about 40% of annual debt repayment and local governments were responsible for the remaining debt repayment.

6. As the first 'generation' of highways reached an age of 15-20 years and the needs for maintenance increased, MoT noted that highway maintenance lagged behind highway development and encouraged provincial DoTs to explore institutional reform and promote market-oriented maintenance. DoTs launched a variety of institutional reforms, including separating the road maintenance delivery function from the management function, spinning off maintenance divisions into separate maintenance companies, and retaining the planning and policy functions within the Highway Bureaus of DoTs. These maintenance companies competed for periodic maintenance, rehabilitation, and construction contracts.

7. Under the 12th Five-Year Plan, MoT emphasized provincial Highway Bureaus' responsibilities on national and provincial highways (trunk highways) maintenance. MoT has set a series of objectives in the 12th Five-Year Program of Highway Maintenance and Management Development, which include the development of a scientific decision-making system for maintenance management, improvement of maintenance technologies, enhancement of network operation monitoring, and improvement of emergency response capacity. Computerized maintenance management tools, such as China Pavement and Bridge Management Systems, have been introduced by over 20 provinces, and a national highway network monitoring and emergency response center was established by MoT in 2012. However, China currently has no policies and procedures in place for highway asset valuation and accounting, which makes it difficult to review how well the massive investment in infrastructure is managed.

8. Yunnan Highway Sector Development and Challenges. Yunnan's highway system expanded from about 42,000 km in 1978 to 222,940 km in 2013, reaching a density of 56.6 km per 100 square kilometers, i.e., above the national average of 44 km per 100 square kilometers. However, Yunnan still lags behind the average of 101 km per 100 square kilometers in the Eastern region and has a strong development demand.

9. According to a survey conducted by Yunnan Highway Bureau (YHB) in 2012, only 49.74 % of trunk highways in Yunnan were in good or fair condition, about 1,400km remained unpaved, and 59 % of the trunk highways were below Class II Highway standard. In addition, the total length of the trunk highway system will increase from about 26,000 km to near 39,000 km after the 2013 adjustment of national and provincial highway master plans, and this will increase the demand of upgrading works.

10. YHB, which is responsible for administration and maintenance of trunk highways, is a well-established organization with a management structure in place, clearly defined responsibilities, 14,377 staff, and 550 Emergency Response and Maintenance Centers and Stations around the province. YHB separated administration and maintenance functions in 1998. YHB, prefecture-level General Sections and county-level Sections are responsible for the administration of trunk highways, while the Emergency Response and Maintenance Centers and Stations are responsible for emergency rescue and routine maintenance works. Large periodic maintenance and rehabilitation works are carried out through contracts awarded on a competitive basis.

11. YHB's managerial and implementing capacities need to be improved to adequately perform its duties. Key issues facing YHB include: (a) lack of an asset management system to assist in analyzing maintenance demands, providing a robust budget plan, optimizing maintenance strategies, planning and programming, and reducing life cycle costs; (b) lack of road network monitoring and emergency commanding system to deal with frequent natural disasters. Yunnan is situated in a mountainous area, at the far eastern edge of the Himalayan uplift and vulnerable to seasonal flood, landslides and earthquakes; (c) lack of integral database and management system. The existing databases and business systems are operated by different units, and data have to be shared manually among systems and units; (d) many frontier staff lack adequate equipment and rely on simple tools to carry out maintenance works, which leads to low productivity and compromised maintenance quality; (e) Emergency Response and Maintenance Centers and Stations have limited equipment and some of them are in poor condition; (f) YHB has piloted various maintenance technologies, e.g. asphalt pavement recycling, chip seal, and slurry seal in recent years, but some proved cost-effective technologies are yet to be scaled up or introduced to improve maintenance quality and lower costs; (g) YHB staff need more on-job training on new technologies and skills to meet growing maintenance demands; and (h) YHB lacks tools to identify safety-related characteristics of physical assets and systematically collect accident data for analysis and asset improvement.

12. Revenues of YHB have more than doubled from RMB4.2 billion (USD688 million) in 2010 to RMB9.4 billion (USD1.54 billion) in 2013. YHB spent about 54.5% of its revenues on improvement and rehabilitation and 18.7% on routine maintenance in 2013. However, the current funding level is insufficient to improve the overall condition of the trunk highway based on scenarios tested in the HDM-4 model. Yunnan considers international experience and loans as a way to improve highway maintenance efficiency and complement domestic funds.

## II. Proposed Development Objectives

Improve the efficiency and cost-effectiveness of highway asset management in Yunnan.

## III. Project Description

### Component Name

Highway Asset Management Improvement

### Comments (optional)

### Component Name

Maintenance and Emergency Response Capacities Enhancement

### Comments (optional)

### Component Name

Pilot of Cost-Effective Maintenance Technologies

### Comments (optional)

### Component Name

Strengthening Institutional Capacities

### Comments (optional)

## IV. Financing (in USD Million)

Total Project Cost:	281.00	Total Bank Financing:	150.00
Financing Gap:	0.00		
<b>For Loans/Credits/Others</b>			<b>Amount</b>
Borrower			131.00
International Bank for Reconstruction and Development			150.00
Total			281.00

## V. Implementation

13. Yunnan Province will implement the project through the provincial DoT and YHB. The DoT will be responsible for overall coordination and supervision of project implementation. YHB will implement the project, manage World Bank loan utilization, and pay back the loan under the guidance of the DoT.

14. A leading group (LG) has been formed up within the YHB, which is led by the YHB Director and consists of three YHB deputy directors and representatives from related divisions of the YHB. The LG will provide oversight and coordination on key project implementation issues and ensure the availability of counterpart funds and other resources required for project implementation.

15. A consolidated project management office (PMO) has been established under YHB, which

will be responsible for day-to-day project management and implementation. The PMO is headed by a director and composed of six divisions for different aspects of project implementation, including engineering, procurement and contract management, social safeguards, coordination and liaison, asset and financial management, training. Project Implementation Units (PIU) will be set up at sixteen General Sections at prefecture level to implement civil works under their jurisdiction and at two affiliated agencies of the DoT - Yunnan Transport Vocational Technology College and Yunnan Transport Advanced Technician School -to provide training courses to workers and technicians.

## VI. Safeguard Policies (including public consultation)

<b>Safeguard Policies Triggered by the Project</b>	<b>Yes</b>	<b>No</b>
Environmental Assessment OP/BP 4.01	<b>x</b>	
Natural Habitats OP/BP 4.04	<b>x</b>	
Forests OP/BP 4.36		<b>x</b>
Pest Management OP 4.09		<b>x</b>
Physical Cultural Resources OP/BP 4.11		<b>x</b>
Indigenous Peoples OP/BP 4.10	<b>x</b>	
Involuntary Resettlement OP/BP 4.12	<b>x</b>	
Safety of Dams OP/BP 4.37		<b>x</b>
Projects on International Waterways OP/BP 7.50		<b>x</b>
Projects in Disputed Areas OP/BP 7.60		<b>x</b>

**Comments (optional)**

## VII. Contact point

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