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Report No: PAD1128

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED LOAN

IN THE AMOUNT OF US$150 MILLION

TO THE

PEOPLE'S REPUBLIC OF CHINA

FOR A

GUIZHOU TONGREN RURAL TRANSPORT PROJECT

September 3, 2015

Transport and ICT Global Practice
East Asia and Pacific Region

CURRENCY EQUIVALENTS
(Exchange Rate Effective January 14, 2015)

Currency Unit	=	RMB
RMB1.00	=	US$0.16
US$1.00	=	RMB6.20

FISCAL YEAR
January 1 – December 31

ABBREVIATIONS AND ACRONYMS

AADT	Average Annual Daily Traffic
BP	Bank Policy
CNAO	China National Audit Office
CPS	Country Partnership Strategy
CQS	Consultant Qualification Selection
DA	Designated Account
D-PMO	Dejiang PMO (sub-PMO)
DRC	Development and Reform Commission
EA	Environmental Assessment
ECOP	Environmental Code of Practices
EHS	Environment, Health and Safety
EIA	Environmental Impact Analysis
EIRR	Economic Internal Rate of Return
EMP	Environmental Management Plan
ENPV	Economic Net Present Value
FM	Financial Management
FMM	Financial Management Manual
FMSB	Financial Management Supervision Bureau
FSR	Feasibility Study Report
GDP	Gross Domestic Product
GPAO	Guizhou Provincial Audit Office
GPFB	Guizhou Provincial Finance Bureau
GRS	Grievance Redress Service
GTP	Guiyang Transport Project
IBRD	International Bank for Reconstruction and Development
ICB	International Competitive Bidding
IDA	International Development Association
IPF	Investment Project Financing
LA	Loan Agreement
LIBOR	London Inter-Bank Overnight Rate
MOF	Ministry of Finance
MOT	Ministry of Transport
NCB	National Competitive Bidding
O&M	Operation and Maintenance
OP	Operations Policy
ORAF	Operational Risk Assessment Framework
PCU	Passenger Car Unit
PDO	Project Development Objective
PLG	Project Leading Group
PMO	Project Management Office
PRC	Public Resources Center
QBS	Quality Based Selection
QCBS	Quality and Cost Based Selection
RAP	Resettlement Action Plan
SA	Social Assessment
SARDP	Shanxi Ankang Road Development Project
SOE	Statement of Expenditure
S-PMO	Sinan PMO (sub-PMO)
SS	Summary Sheet
TA	Technical Assistance
TMTB	Tongren Municipal Transport Bureau
TOR	Terms of Reference
TPMO	Tongren PMO
VOC	Vehicle Operating Costs
WA	Withdrawal Application
WB	World Bank

Regional Vice President:	Axel van Trotsenburg
Country Director:	Bert Hofman
Senior Global Practice Director:	Pierre Guislain
Practice Manager:	Michel Kerf
Task Team Leader:	Holly Krambeck

CHINA: Guizhou Tongren Rural Transport Project

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China

Guizhou Tongren Rural Transport Project (P148071)

PROJECT APPRAISAL DOCUMENT

EAST ASIA AND PACIFIC

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Report No.: PAD1128

Basic Information			
Project ID P148071	EA Category B - Partial Assessment		Team Leader(s) Holly Krambeck
Lending Instrument Investment Project Financing	Fragile and/or Capacity Constraints [ ]		
	Financial Intermediaries [ ]		
	Series of Projects [ ]		
Project Implementation Start Date 25-Sep-2015	Project Implementation End Date 31-Dec-2020		
Expected Effectiveness Date 25-Mar-2016	Expected Closing Date 30-Jun-2021		
Joint IFC No			
Practice Manager/Manager Michel Kerf	Senior Global Practice Director Pierre Guislain	Country Director Bert Hofman	Regional Vice President Axel van Trotsenburg

Borrower: People's Republic of China			
Responsible Agency: Tongren World Bank Project Management Office, Tongren Transport Bureau			
Contact:	Mr. Li Shifan	Title:	Director, Tongren PMO
Telephone No.:	86136-7856-7088	Email:	trpmo@vip.163.com

Project Financing Data(in USD Million)					
[X] Loan	[ ] IDA Grant	[ ] Guarantee			
[ ] Credit	[ ] Grant	[ ] Other			
Total Project Cost:	231.79		Total Bank Financing:	150.00	
Financing Gap:	0.00				

Financing Source	Amount
Borrower	81.79
International Bank for Reconstruction and Development	150.00
Total	231.79

Expected Disbursements (in USD Million)

Fiscal Year	2016	2017	2018	2019	2020	2021				
Annual	1.00	15.00	27.00	32.00	45.00	30.00				
Cumulative	1.00	16.00	43.00	75.00	120.00	150.00				

Institutional Data

Practice Area (Lead)

Transport & ICT

Contributing Practice Areas

Cross Cutting Areas

[X] Climate Change

[ ] Fragile, Conflict & Violence

[X] Gender

[ ] Jobs

[ ] Public Private Partnership

Sectors / Climate Change

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	15	
Total		100		

☐ I certify that there is no Adaptation and Mitigation Climate Change Co-benefits information applicable to this project.

Themes

Theme (Maximum 5 and total % must equal 100)

Major theme	Theme	%
Rural development	Rural services and infrastructure	100
Total		100

Proposed Development Objective(s)
The project development objective is to improve rural transport connectivity in Dejiang and Sinan Counties.

Components	
Component Name	**Cost (USD Millions)**
A. Dejiang Rural Transport	150.02
B. Sinan Rural Transport	80.77
C. Technical Assistance and Project Management	1.00

Compliance

Policy

Does the project depart from the CAS in content or in other significant respects?	Yes [ ]	No [X]
Does the project require any waivers of Bank policies?	Yes [ ]	No [X]
Have these been approved by Bank management?	Yes [ ]	No [ ]
Is approval for any policy waiver sought from the Board?	Yes [ ]	No [X]
Does the project meet the Regional criteria for readiness for implementation?	Yes [X]	No [ ]

Safeguard Policies Triggered by the Project	**Yes**	**No**
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

Legal Covenants

Name	**Recurrent**	**Due Date**	**Frequency**
Tongren Project Management Office	X		Continuous

Description of Covenant

PA Schedule I.A.1(a): The Tongren Project Management Office, to be responsible for the overall coordination, management and supervision of the Project, including the implementation of Part C,

review and approval of Annual Work Plans, revisions to the Project budget and allocation of resources, coordination of fiduciary aspects, and provision of guidance to sub-PMOs on Project implementation.

Name	Recurrent	Due Date	Frequency
Annual Work Plan	X		Annually

Description of Covenant

PA, Schedule, Section I.A.2(b): The Tongren PMO shall prepare and furnish to the Bank by November 30 in each year, beginning in 2015, a draft Annual Work Plan for review and comment, summarizing the implementation progress of the Project for the said year and the Project activities to be undertaken for the following calendar year, including the proposed annual budget for the Project.

Name	Recurrent	Due Date	Frequency
Safeguards	X		Continuous

Description of Covenant

PA, Schedule, Section I.C.5: The Project Implementing Entity, through Tongren Municipality, Dejiang and Sinan Counties, shall maintain policies and procedures adequate to enable them to monitor and evaluate, in accordance with guidelines acceptable to the Bank, the implementation of the Safeguards Instruments.

Name	Recurrent	Due Date	Frequency
Mid-Term Review		September 1, 2018	Once

Description of Covenant

PA, Schedule, Section II.A.2: The Project Implementing Entity, through Tongren Municipality, Dejiang and Sinan Counties, shall prepare, under terms of reference satisfactory to the Bank, and furnish to the Bank no later than September 1, 2018, a consolidated mid-term review report for the Project, per Bank-provided guidelines.

Team Composition

Bank Staff

Name	Role	Title	Unit
Holly Krambeck	Team Leader (ADM Responsible)	Senior Transport Specialist	GTIDR
Xiaoke Zhai	Team Member, Co-TTL	Senior Transport Specialist	GTIDR
Jingrong He	Procurement Specialist	Procurement Specialist	GGODR
Yi Geng	Financial Management Specialist	Senior Financial Management Specialist	GGODR
Haiyan Wang	Financial Officer	Senior Financial Officer	WFLAN
Aimin Hao	Safeguards Specialist	Social Development Specialist	GSURR
Li Qu	Transport Consultant		GTIDR
Alejandro Alcala Gerez	Legal	Senior Counsel	LEGES

Maria Luisa Juico	Program Assistant	Program Assistant	GTIDR
Limei Sun	Program Assistant	Program Assistant	EACCF

Extended Team

Name	Title	Office Phone	Location
Peishen Wang	Environment Consultant		Calgary
Serge Cartier van Dissel	Rural Road Maintenance Specialist		Jakarta
Guoqing Huang	Bridge Specialist		Chengdu
Yiwei Qi	Road and Bridge Design Consultant		Beijing

Locations

Country	First Administrative Division	Location	Planned	Actual	Comments
China	Guizhou Province	Tongren Municipality		X	

I. STRATEGIC CONTEXT

A. Country Context

1. For the past twenty years, the Chinese economy has grown at a remarkable average rate of more than nine percent per year. However, this growth has not been spread evenly throughout the country, and there are growing wealth disparities between coastal and inland regions, as well as between urban and rural areas. In support of shared prosperity for all Chinese people, the Government of China has given priority to economic development in the lagging western and central regions and is providing financial support to transport infrastructure development in rural areas.

2. Among these prioritized areas for transport infrastructure development is Guizhou Province (pop. 35 million), which on a GDP per capita basis, is the poorest province in China. Guizhou's GDP per capita was USD 3,700 in 2012, which was only 50 percent of the national average. Within Guizhou, Tongren Municipality (pop. 4.2 million) has fallen particularly behind in its economic development. Tongren's GDP per capita is less than USD 2,000, and 25 percent of residents have incomes below the national poverty line.

3. Tongren Municipality's geography - where more than 96 percent of its 18,000 square-km area comprises hilly and mountainous terrain - has resulted in a highly dispersed and isolated population, with little connectivity between rural and urban areas. The lack of connectivity is reflected in Tongren's income disparity, where rural disposable incomes are only 24 percent of urban disposable incomes.

4. To overcome these topographical barriers to development and lift the rural population above the national poverty line, the Guizhou Provincial Government and Tongren Municipal Government have prioritized improvement of the rural roads network, targeting areas with the most need, as well as the most economic development potential. These include Dejiang and Sinan counties, where only 21 percent of villages have access to classified, all-weather roads, and the urbanization rate is less than 35 percent.

5. Dejiang County (pop. 540,000), located in northwestern Tongren, comprises 20 townships and 345 administrative villages, and is home to 18 ethnic minorities, including the Miao and Tujia peoples. In 2013, average urban and rural disposable incomes in Dejiang were USD 2,844 and USD 771, respectively, representing 65 percent and 54 percent of the national urban and rural averages. In recent years, new highway connections to Chongqing and Hunan provinces have been built in Dejiang, improving its strategic importance - Dejiang has been designated as one of Guizhou's nine future regional transport and logistics hubs and has thus been prioritized for further investment in its transportation network.[1]

[1] Issue of Office of the Party Committee in Guizhou [2010] No. 9 and Urban System Planning in Guizhou Province [2012]

6. Sinan County (pop. 680,000), located in western Tongren, comprises 27 townships and 571 administrative villages, and is also home to a mix of ethnic minorities. In 2013, average urban and rural disposable incomes were USD 2,858 and USD 808, respectively, which represented 66 percent and 56 percent of the national average. Sinan has been targeted for transport network improvements to support further growth in its tourism, agriculture, and mining industries. Sinan is listed as one of 12 key tourism areas in Guizhou and has favorable natural conditions to support development of its agriculture and mining industries.

B. Sectoral and Institutional Context

7. The county-level road network is mostly complete in Tongren; however, township and village-level roads are still mostly unpaved, limiting the access of hundreds of thousands of residents to the transport network. As of 2013, only about half of township-level roads were paved in Tongren, and only 14 percent of village roads were paved. Table 1 below provides an overview of the status of the road network in Tongren Municipality as well as Dejiang and Sinan counties.

Table 1. Tongren, Dejiang, and Sinan Road Inventory (km, 2013)

	Dejiang			Sinan			Tongren		
Road	**Total**	**Paved**	**% Paved**	**Total**	**Paved**	**% Paved**	**Total**	**Paved**	**% Paved**
County	127	127	100%	247	247	100%	1,677	1,538	92%
Township	257	87	34%	234	123	53%	1,845	906	49%
Village	2,050	699	34%	3,039	746	25%	17,773	2,418	14%
Total	2,434	913	38%	3,520	1,116	32%	21,295	4,862	23%

8. Tongren's 12th Five-Year-Plan (2011-2015) has set the following targets for rural road development: (a) connect 70 percent of villages with paved roads; (b) enhance rural roads maintenance management, improve supporting facilities, optimize the road network, and increase the level of service and disaster risk management capabilities; and (c) extend the road network for passenger travel and provide public transport services between urban and rural areas. The Tongren Transportation Bureau is responsible for coordinating with the county-level bureaus to implement this plan. The Tongren 13th Five-Year Plan (2016-2020) will build on the 12th Five-Year Plan and is expected to set the following targets for rural roads: (a) connect 100 percent of inhabited villages with paved roads; (b) establish a basic rural logistics system and improve the efficiency of passenger and freight transport; and (c) enhance technical capacity for disaster risk management, road safety, and emergency response.

9. The proposed project will support completion of Tongren's 12th Five-Year Plan for Rural Roads Development in Dejiang and Sinan counties by upgrading selected rural roads to Class IV and building rural bridges. These investments will increase connectivity by reducing the travel time between rural areas and urbanized areas and by increasing the reliability of access; these will improve accessibility to markets, education, healthcare, work opportunities and other resources. By improving connectivity in these counties, the project will provide the necessary foundation for the implementation of the proposed 13th Five-Year Plan.

10. The Bank has financed two similar projects in Guizhou province: the Guiyang Transport Project (P093963, which closed on December 31, 2013) and the Guiyang Rural Roads Project (P129401, under implementation). However, this will be the first transport project that the Bank has financed in Tongren Municipality.

C. Higher Level Objectives to which the Project Contributes

11. The proposed project supports Strategic Theme #2 of the World Bank Group's (WBG) China Country Partnership Strategy (CPS) FY 2013–2016 (Report 67566-CN), "Promoting More Inclusive Development", by increasing rural people's access to education, healthcare and markets. In particular, the project contributes to two CPS outcomes: (a) Outcome 2.3: Enhancing Opportunities in Rural Areas and Small Towns; and (b) Outcome 2.4: Improving Transport Connectivity for More Balanced Regional Development.

12. Projects that support the WBG's strategic goals of ending extreme poverty and boosting shared prosperity will help raise people above the poverty line and/or ensure that the bottom 40 percent of income-earners will benefit from the project investment. As mentioned above, Guizhou province is the poorest province in China, while Dejiang and Sinan Counties are themselves relatively poor compared to the rest of the province. Poverty in the two counties can be at least partially attributed to lack of connectivity between rural and urban areas, because of Tongren's hilly and mountainous terrain. By improving connectivity through the upgrading of rural roads and building of bridges, the project will be supporting these goals: it will help poor residents in both counties through faster travel and expanded access to market, education, and healthcare services and it will also reduce road accidents and fatality rates which disproportionately affect the economic prospects of the most vulnerable households.

II. PROJECT DEVELOPMENT OBJECTIVES

A. PDO

13. The project development objective is to improve rural transport connectivity in Dejiang and Sinan counties.

B. Project Beneficiaries

14. **Direct Beneficiaries**. The proposed project roads will pass through villages that are home to over 333,000 residents, which comprise 35 percent of the total population in the two counties. Of the residents in the project area, over 46,000 live below the national poverty line, 161,800 are women, and nearly 1,000 belong to vulnerable groups, including the disabled, orphaned, widowed and extremely poor. Of the total number of residents of these affected villages, 262,000 live within 2 km of the project roads.

15. **Indirect Beneficiaries**. The project will support transporters and passengers traversing the upgraded rural roads in Dejiang and Sinan counties (including those who are not resident of these counties), who will benefit from reduced travel times, safer road conditions, and more reliable access during inclement weather.

C. PDO Level Results Indicators

16. "Connectivity" refers to road transport connections to and from villages. "Improved connectivity", stated in the PDO, refers to road transport connections to and from villages that will become faster and more reliable, resulting from investment in smoother, safer, all-weather surfaces.

17. The achievement of the PDO will be measured through the following key indicators:

a) Number of beneficiaries, defined as persons who live within 2 km of a project road (#, core)
b) Percent of beneficiaries who are women (%, core)
c) Travel time savings on upgraded/improved roads (%)

18. These indicators are directly linked to the PDO: the number of beneficiaries will show how many villagers and village women benefit from improved connectivity; and the travel time savings indicator will measure improvement in connectivity.

19. Intermediate results indicators will be used to evaluate project progress during implementation, including completion of civil works and technical assistance activities, as well as citizen engagement.

III. PROJECT DESCRIPTION

A. Project Components

20. The proposed project components are designed to improve transport connectivity in Dejiang and Sinan counties through the upgrading of rural roads and the construction of small and medium-sized bridges. Project roads have been selected from the Tongren 12th Five-Year Plan.

21. **Component A: Dejiang Rural Transport** (Cost, inclusive of base cost and share of financing costs: USD150.02 million, IBRD Loan: USD104.5 million). Upgrading selected unclassified rural roads to Class IV standard, as well as construction of selected rural bridges in Dejiang County.

22. **Component B: Sinan Rural Transport** (Cost, inclusive of base cost and share of financing costs: USD80.77 million, IBRD Loan: USD44.5 million). Upgrading of selected rural roads to Class IV Standard, as well as construction of selected rural bridges in Sinan County.

23. **Component C: Technical Assistance and Project Management** (Cost: USD1.00 million, IBRD Loan: USD1.00 million). Provision of: (a) technical assistance support and training activities, including the carrying out of Project related studies in areas related to rural road network planning, road safety and road maintenance; and (b) Project implementation support, carrying out of monitoring and evaluation activities, as well as Project management-related training, capacity building, and study tours.

24. Through these investments, the percentage of paved township roads in Dejiang and Sinan will increase from 34 percent to 100 percent and from 53 percent to 62 percent, respectively. In addition, the percentage of paved village roads will increase from 34 percent to 46 percent and from 25 percent to 31 percent, respectively. Further details on the components, as well as the criteria used in the road and bridge selection process, are in **Annex 2**.

B. Project Financing

Lending Instrument

25. The proposed lending instrument is Investment Project Financing (IPF). Guizhou Province has selected a US dollar denominated, commitment-linked variable spread loan based on six-month LIBOR, plus an additional variable spread, all available conversion options, level repayment of principal, and a final repayment period of 32 years, including an 8-year grace period.

Project Cost and Financing

26. The total estimated cost of the project is USD231.79 million, of which the Bank loan will finance USD150 million. The table below presents project costs and Bank financing by component.

Table 2. Project Costs and Bank Financing (USD million)

Project Components	Project Cost	IBRD Financing	% Financing
A. Dejiang Rural Transport	144.25*	98.73	68.44
B. Sinan Rural Transport	78.29*	42.03	53.68
C. Technical Assistance	1.00	1.00	100.00
Total Project Cost	**223.54**	**141.75**	**63.41**
Front-End Fee	0.38	0.38	100.00
Commitment Fee	1.13	1.13	100.00
Interest during construction	6.75	6.75	100.00
Total Financing Required	**231.79**	**150.00**	**64.71**

**Note: Costs for Component A and Component, shown in the DATA Sheet, include the base cost shown above, plus the share of financing costs.*

C. Lessons Learned and Reflected in the Project Design

27. **Institutional Arrangements**. Lessons learned under the Guiyang Transport Project (GTP, P093963), which closed in December 2013, have been applied to the design of the project's institutional arrangements. Two different institutional arrangements were utilized during the implementation of GTP – one where Guiyang PMO engaged a third-party implementing agency to manage all contracts, and the other where Guiyang PMO acted as the implementing agency. Roads completed under the former approach encountered substantial delays, largely due to lack of coordination with county-level governments, while roads completed under the latter arrangement were completed on-time and without issue. Dejiang County PMO and Sinan County PMO have elected to act as the lead implementing agencies, as they are best positioned to coordinate with village-level governments.

28. **Counterpart Funding**. Implementation of GTP was substantially delayed due to the delays in availability of counterpart funds. To avoid a similar issue, fiscal sustainability has been analyzed, focusing on the impact of the proposed project on counterpart funding requirements as a proportion of forecast annual local fiscal revenue. The project implementation plan has been designed to specifically ensure that counterpart funding requirements do not exceed 1 to 2 percent of expected local fiscal revenue in a given construction year. Further, the availability of additional national subsidy for the project, as well as support from Tongren Municipality in the event of a short-term funding shortfall, have been confirmed.

29. **Training and Study Tours**. Lessons learned under the Shanxi Ankang Road Development Project (SARDP, P075613), which closed in December 2012, were applied in the design of the training and study tour component. Overseas training and study tours under SARDP were delayed and were not fully implemented because during project implementation the Government had tightened restrictions on overseas travel of government officials. The Tongren Project training plan therefore includes a higher proportion of domestic training and study tours and takes into account local regulations regarding international travel for government officials.

IV. IMPLEMENTATION

A. Institutional and Implementation Arrangements

30. The two project counties, Dejiang and Sinan, will be responsible for the implementation of their respective project components, under the leadership and coordination of a Project Management Office (PMO), housed under Tongren Transport Bureau.

31. **Leading Groups.** Tongren Municipal Government has established a Project Leading Group (PLG), headed by the Vice Mayor and comprised of senior officials from the relevant municipal departments (including the DRC, Finance Bureau, and Environment Protection Bureau) as well as representatives of Dejiang County Government and Sinan County Government, to provide overall guidance on the project. Similar leading groups have been established in Dejiang County and Sinan County, which are led by the County Mayors.

32. **Project Management Offices (PMOs).** A coordinating PMO has been established under the Tongren Municipal Transport Bureau to facilitate information sharing between the county-level PMOs, as well as for coordinating all Bank-reporting duties, consolidating project financial statements, coordinating hiring of consultants to support project management (including external monitoring of safeguards implementation and planning overseas training), and leading the technical assistance component (including the signing of contracts for technical assistance activities). Sub-PMOs have been established in the transportation bureaus of each county with responsibility for project management and implementation, including procurement, contract signing, financial management reporting, and internal social safeguards monitoring.

B. Results Monitoring and Evaluation

33. The Results Framework provided in **Annex 1** will be the main tool for monitoring and

evaluation of the outcome and intermediate indicators for the project. The PMOs will be responsible for collecting the required data and will report the results as part of Project Progress Reports.

C. Sustainability

34. With its long experience in the rural road sector in China, the Bank is well placed to ensure that the project will support sustainability of interventions through technical assistance to build the capacity of the participating governments in civil works and services procurement, financial management, and safeguards implementation, as well as in maintenance and planning. Support for maintenance will improve the longevity of project and non-project roads, and technical support for planning (which includes rural transit services) will ensure that the roads are appropriately connected and utilized. See **Annex 2** for further details.

V. KEY RISKS AND MITIGATION MEASURES

A. Risk Ratings Summary Table

Risk Category	Rating
Stakeholder Risk	Moderate
Implementing Agency Risk	
- Capacity	Substantial
- Governance	Moderate
Project Risk	
- Design	Moderate
- Social and Environmental	Substantial
- Program and Donor	Low
- Delivery Monitoring and Sustainability	Substantial
Overall Implementation Risk	Substantial

B. Overall Risk Rating Explanation

35. The overall implementation risk is rated substantial because of: the large size of the project, relative to the county governments' local fiscal revenue; the proposed implementation of a new compensation policy for affected peoples (social risk); uncertain technical capacity of the county-level PMOs to manage a project of this magnitude; and the untested role of Tongren PMO to coordinate the activities of the sub-PMOs.

36. **Counterpart Funding**. The Bank has confirmed the availability of a national subsidy of RMB500,000 per km for upgrading rural roads and the counties' eligibility to receive such subsidy. In July 2014 Tongren Municipal Government confirmed its ability and willingness to provide

additional funding support in the event of a funding shortfall.

37. **Implementation of the New Compensation Policy**. As of Appraisal, Tongren has not traditionally compensated villagers for land acquired for rural roads in a manner that conforms with the Bank's social safeguards policies. As part of project preparation, a new policy that conforms with domestic and Bank guidelines, which is presented in the Resettlement Action Plan, was discussed with villagers and government officials during the social assessment, and the policy has been disclosed in local media. The two participating county-level governments have been asked to issue formal decrees that reiterate their commitment to the compensation plan presented in the Resettlement Action Plan prior to commencement of each batch of roads. The first of these decrees for the first batch of roads proposed for retroactive financing has been issued, and it has been agreed that subsequent decrees will be issued after completion of detailed designs and prior to the procurement of each batch of road/bridge contracts.

38. **Technical Capacity and Coordination**. Substantial training and guidance was provided during project preparation and the lessons learned will be carried forward through implementation. A "PMO twinning" relationship has been established between Tongren PMO and the more experienced Guiyang PMO for the Guiyang Transport Project and the Guiyang Rural Roads Project.

VI. APPRAISAL SUMMARY

A. Economic and Financial Analysis

Economic Analysis

39. The primary economic benefits of the project are improved connectivity through reduced travel times along upgraded corridors, increased reliability of travel (i.e., ability to travel on all-weather surfaces during inclement weather), and safer infrastructure. Project economic costs include: investment costs (including associated resettlement and environmental mitigation costs) and operation/maintenance costs during the operating period. The project's direct quantifiable economic benefits are reduction in passenger travel time and reduction in the total number of accidents and fatalities, relative to traffic volumes. Ancillary benefits from faster, safer and more reliable routes, such as expanded access to markets, education, healthcare, and other resources, were also considered in the economic analysis but were not quantified. The project is not expected to have any climate change mitigation benefits.

40. The economic internal rate of return (EIRR) of the project (calculated by comparing economic costs and benefits over a period of 25 years, including a 5 year construction period and 20-year operating period) is 16.49 percent. The EIRRs for the Dejiang component and the Sinan component are 16.80 percent and 16.00 percent respectively. These EIRRs are higher than the World Bank recommended economic opportunity cost of capital of 12 percent. Sensitivity analyses conducted for increased/decreased construction costs, increased/decreased operations and maintenance costs, increased/decreased economic benefits, and combinations of these, indicates that the project EIRR remains above 12 percent in all scenarios. More details of the economic analysis are provided in **Annex 6**.

Financial Analysis

41. The governments of Dejiang and Sinan counties will take full responsibility for counterpart funding and debt service. Upon completion, all project roads will be provided as public goods, with no tolls. Counterpart funding, debt levels, and maintenance funding are discussed in the subsequent paragraphs. More details of the financial analysis are provided in **Annex 6**.

42. **Counterpart Funding**. To support their share of counterpart funding, the two counties will leverage a dedicated national rural road subsidy of RMB500,000 per km for upgrading rural roads to paved surfaces. With this subsidy, the average annual counterpart funding requirement for the project over the construction period amounts to 0.85 percent and 1.07 percent of the local fiscal revenue in Dejiang and Sinan, respectively. These percentages are considered a reasonable burden for a project of this type and magnitude.

43. **Debt Levels**. In 2012, the accumulated debt levels in Dejiang and Sinan were USD87 million and USD16 million, respectively and represented about 73 percent and 11 percent of the 2012 annual local fiscal revenues in Dejiang and Sinan. During 2015 – 2018, the counties' expected annual repayments towards servicing existing and new accumulated debt will equal about 12 percent and five percent respectively of the forecast annual fiscal revenues of Dejiang and Sinan.

44. Repayments on the Bank loan principle will begin in 2023, and payments will range between 0.10 percent and 0.38 percent of the forecast annual fiscal revenues in Dejiang and Sinan each year. The two counties will need to manage debt servicing of additional debts to be incurred in order to ensure that annual debt service payments do not exceed the current levels of 12 percent and five percent of forecast annual fiscal revenue in Dejiang County and Sinan County respectively.

45. **Funding for Maintenance**. In 2013, funding from provincial and city-level governments for maintenance in Dejiang and Sinan counties was lower than mandated by the standard formula applied in Guizhou and in Tongren, and county-level governments have been filling the gap. In 2013, Dejiang and Sinan had to make up the funding shortfall from higher level governments by doubling the allocation of their own funds. To help Dejiang and Sinan optimize the length of roads that can be maintained under their limited budgets, the project includes technical assistance to develop strategies for improving maintenance efficiency and efficacy, as well as support for the preparation of a report on maintenance funding needs for the consideration of the province.

B. Technical

46. **Design Standards**. Designs for upgrading rural roads and upgrading and construction of small and medium-sized bridges in Dejiang and Sinan counties are based on national technical codes; where the terrain is particularly challenging, Guizhou provincial standards have been adopted to avoid large scale cutting and filling works and to reduce construction costs and environmental damage. Drainage needs have been taken into account. The design standards used under the project are acceptable.

47. **Alignments**. Project roads and bridges mostly follow existing alignments. Deviation from alignments (where essential) are based on analysis of alternatives, taking into account construction costs, land acquisition requirements, and environmental impacts, as well as beneficiaries' inputs.

48. **Traffic Safety**. Traffic safety measures have been adequately considered, and include guardrails in dangerous sections, traffic calming measures, and signboards in villages, schools and intersections.

49. **Technology**. Technologies proposed are already in common use in Guizhou and China.

C. Financial Management

50. Guizhou Provincial Finance Bureau (GPFB) will manage the proceeds of the Bank loan as well as oversee the designated account (DA). Tongren Project Management Office will manage and supervise overall project implementation and prepare the consolidated project financial statements.

51. The financial management capacity assessment of project implementing agencies identified the main financial management (FM) risk to be the lack of knowledge of Bank FM requirements and experience in managing Bank-financed projects. The following risk mitigation measures will be taken: (a) preparation and distribution of a Financial Management Manual (FMM) to standardize project financial management procedures for coordination and reporting (prepared as of Appraisal); (b) provision of financial management training, including workshops for technical training and experience sharing, to be arranged by GPFB and TPMO; and (c) each disbursement application will be reviewed by GPFB to ensure proper usage of Bank loan proceeds. With these actions, the project's financial management arrangements satisfy Bank requirements under OP/BP 10.00.

D. Procurement

52. TPMO will be responsible for overall project procurement management and supervision. In addition, TPMO will also take the lead in carrying out procurement under Component C for capacity building purpose. D-PMO and S-PMO will be independently responsible for procurement under their respective project components, under the leadership and coordination of TPMO.

53. The principal procurement risk is the weak procurement capacity of TPMO and the two sub-PMOs, since all are new to Bank procurement requirements. Other risks include: (a) potential weak coordination between TPMO and the sub-PMOs; and (b) differences between Bank procurement guidelines and procurement requirements of local Public Resources Centers. To mitigate these risks, the following measures have been taken: (a) a Procurement Management Manual for the project, acceptable to the Bank, has been prepared and distributed to key staff; (b) a qualified procurement agent with Bank-financed project experience has been hired; and (c) a training plan has been agreed to provide on-going training on Bank procurement policies and requirements to staff of the PMO and sub-PMOs. The Bank will monitor coordination with local Public Resources Centers to ensure that the Bank's procurement requirements are complied with.

54. A Procurement Plan for the first 18 months of project implementation (dated April 2015), acceptable to the Bank, has been prepared by the PMO and will be posted on the project website and on the Bank website. Further details on procurement arrangements are provided in **Annex 3**.

E. Social (including Safeguards)

55. The project will bring substantial social and economic benefits to the rural population of Dejiang and Sinan counties. The social assessment for the project involved consultation of the population in the project areas, including ethnic minorities and women. Compliance with the legitimate concerns expressed, especially by women and ethnic minorities (e.g., on participation in resettlement consultations, protection of land rights, and opportunities to obtain jobs from the project) will be monitored during project implementation on an on-going basis.

56. **Involuntary Resettlement OP/BP4.12**. The project triggers World Bank safeguards policy on Involuntary Resettlement, OP/BP4.12. Land acquisition and structure relocation are expected to be minor, since: (a) resettlement minimization was a criterion used in road selection; and (b) project roads will be upgraded on existing rights-of-way. A resettlement action plan (RAP) was prepared for each village, which includes the compensation policy and detailed land acquisition requirements. The RAP was disclosed in Sinan on March 4, 2015 and in Dejiang on March 9, 2015.

57. **Indigenous Peoples OP/BP4.10.** The project does not trigger OP/BP4.10 policy on Indigenous Peoples. There are 18 ethnic groups identified in the project areas. After generations of inter-marriage and cultural integration, these groups share a common language and are assimilated into the wider society. This aspect has been extensively analyzed in the Social Assessment Report. Awareness raising among construction workers to respect local people's traditions has been included in the RAP and will be monitored during implementation.

58. **Women**. The current female population in the proposed project area is 161,800, accounting for about 48.5 percent of the total population. Social survey results show that in Dejiang and Sinan counties, rural male workers tend to work outside of the villages, while rural women tend to work locally and are thus more frequently seen on and alongside roads. To ensure that the project is sufficiently gender-informed, the following measures have been taken:

a) Analysis. The project will increase accessibility of women to local and regional goods and services. Since women regularly cross and use the roads as pedestrians, they are exposed to, and are vulnerable to, accidents.

b) Action. Safety measures recommended in the Feasibility Study and Social Assessment reports for Dejiang and Sinan will be included in the project preliminary and detailed designs. For example, it was agreed that traffic safety facilities would be installed along project rural roads with adjacent villages.

c) Monitoring. A results indicator has been added to the Results Framework for monitoring the number of women beneficiaries. An indicator will also measure the number of project villages adjacent to project roads with new road safety features.

59. **Disclosure.** The draft RAP was disclosed in the Sinan and Dejiang daily newspapers on March 4 and 9, 2015 respectively. The RAP and SA were disclosed in the Info Shop on May 6, 2015.

F. Environment (including Safeguards)

60. The project is classified as an environmental Category B project and triggers three World Bank environmental safeguard policies: Environmental Assessment (OP4.01); Natural Habitats (OP4.04); and Physical Cultural Resources (OP4.11).

61. **Environmental Assessment OP/BP 4.01**. The project includes upgrading and improvement of existing rural roads and construction of small and medium bridges on these existing rural roads, where currently pedestrians and vehicles traverse small rivers through shallow river beds or simple bridges. Construction activities will have potential environmental and social impacts during construction, including soil erosion, material borrow and waste spoil management, nuisance from dust and noise, wastewater management, community impacts, traffic disturbance, safety issues, etc. An environmental impact assessment (EIA) and a stand-alone environmental management plan (EMP), acceptable to the Bank, have been prepared.

62. **Natural Habitats OP/BP 4.04**. One of the project's rural roads, which is to be upgraded, is located within a county-level nature reserve. The project will also include construction of bridges over small creeks and rivers. The potential impacts on natural habitats have been assessed in the EIA and necessary mitigation measures have been presented in the EMP.

63. **Physical Cultural Resources OP/BP 4.11**. About 120 private family graves of local villagers will need to be relocated as a result of the project; their relocation is addressed adequately in the Resettlement Action Plan. In addition, there is a horse-shape stone ("stone horse") about 20 meters from a project rural road in Dejiang, which is regarded as a natural heritage site by local communities. Precautionary measures to avoid adverse impacts on the stone-horse during construction are included in the EMP. In addition, chance-find procedures have also been included in the EMP.

64. **Adaptation**. The project supports the upgrading of unpaved roads to Class IV all-weather roads, which are more resilient to the effects of extreme weather that may result from climate change.

65. **Consultation**. During the project preparation and design process, public consultations were conducted in the project area through a combination of opinion surveys and public meetings along the project corridors. Information about the project, potential environmental and social impacts, and planned mitigation measures were provided to the public during these consultations. The main concerns from the public include adequate compensation for land acquisition and resettlement, traffic disturbances, accessibility impacts during construction, and nuisance of noise. These concerns are addressed in the EIA, and necessary mitigation measures have been included in the EMP and in the project design.

66. **Disclosure**. The draft EIA was locally disclosed on December 11, 2014 on the Dejiang and Sinan county government websites, and the final EIA and EMP were re-disclosed on March 27, 2015. The EIA and EMP were disclosed in the Info Shop on April 14, 2015.

G. World Bank Grievance Redress

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

Annex 1: Results Framework and Monitoring

China: Guizhou Tongren Rural Transport Project

Project Development Objectives

The project development objective is to improve rural transport connectivity in Dejiang and Sinan counties.

These results are at | Project Level

Project Development Objective Indicators

Indicator Name	Baseline	Cumulative Target Values					
		2016	2017	2018	2019	2020	End Target
Direct project beneficiaries (Number) - (Core)	0	20,000	115,000	172,000	262,000	262,000	262,000
Female beneficiaries (Percentage) – (Sub-Type: Supplemental) - (Core)	0	48	48	48	48	48	48
Travel Time Savings on Upgraded / Improved Roads (Percentage)	0	-	-	-	-	30	30

Intermediate Results Indicators

Indicator Name	Baseline	Cumulative Target Values					
		2016	2017	2018	2019	2020	End Target
Roads rehabilitated, Rural (Kilometers) (Core)	0	84	293	438	646	646	646
Number of Bridges Improved / Constructed (Number)	0	0	15	28	30	30	30
Number of Villages with New Road Safety Measures (Number)	0	23	80	125	147	147	147
Number of Trainees who Attended Training and Study Tours (Number)	0	100	180	240	300	300	300
Technical Assistance: Studies and Plans Completed (Text)	No	No	No	Yes	Yes	Yes	Yes
Direct Project Consultations with Beneficiaries Undertaken (Text)	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Indicator Description

Project Development Objective Indicators

Indicator Name	Description (indicator definition etc.)	Frequency	Data Source / Methodology	Responsibility for Data Collection
Direct project beneficiaries	Direct beneficiaries are people or groups who directly derive benefits from an intervention (i.e., children who benefit from an immunization program; families that have a new piped water connection). Please note that this indicator requires supplemental information. Supplemental Value: Female beneficiaries (percentage). Based on the assessment and definition of direct project beneficiaries, specify what proportion of the direct project beneficiaries are female. This indicator is calculated as a percentage.	Annually	Project monitoring report	D-PMO and S-PMO
Female beneficiaries	Based on the assessment and definition of direct project beneficiaries, specify what percentage of the beneficiaries are female.	Annually	Project monitoring report	D-PMO and S-PMO
Travel Time Savings on Upgraded / Improved Roads	Travel time savings are based on a 30% sample of road segments. It will be measured in a consistent manner, with similar vehicles, time of day, etc. The measurement will be recorded twice -- once before project commencement and once after completion. The difference between the two measurements will be calculated as a percent change, weighted by the road length of each sampled segment.	Once before project commence-ment and once after completion.	Project monitoring report	D-PMO and S-PMO

Intermediate Results Indicators

Indicator Name	Description (indicator definition etc.)	Frequency	Data Source / Methodology	Responsibility for Data Collection
Roads rehabilitated, Rural	Kilometers of all rural roads reopened to motorized traffic, rehabilitated, or upgraded under the project. Rural roads are roads functionally classified in various countries below Trunk or Primary, Secondary or Link roads, or sometimes Tertiary roads. Such roads are often described as rural access, feeder, market, agricultural, irrigation, forestry or community roads. Typically, rural roads connect small urban centers/towns/settlements of less than 2,000 to 5,000 inhabitants to each other or to higher classes of road, market towns and urban centers.	Annually	Project monitoring report	D-PMO and S-PMO

Number of Bridges Improved / Constructed	Number of rural bridges upgraded, improved and/or constructed through the project.	Annually	Project monitoring report	D-PMO and S-PMO
Number of Villages with New Road Safety Measures	Cumulative number of villages with new road safety features through the project. Road safety features, defined in the Feasibility Study Report, may include speed bumps, street lighting, pedestrian crosswalks, etc.	Annually	Project monitoring reports	D-PMO and S-PMO
Number of Trainees who Attended Training and Study Tours	Cumulative number of trainees who participated in training and study tours, measured by the number of persons who participated in each activity ("person-time").	Annually	Project monitoring report	Tongren PMO
Technical Assistance: Studies and Plans	Binary indicator for completion of maintenance, planning, and safety studies under the project.	Annually	Project monitoring report	Tongren PMO
Direct Project Consultations with Beneficiaries Undertaken	Binary indicator to monitor whether direct project consultations with beneficiaries are being undertaken during each year of implementation.	Annually	Social safeguards monitoring report	D-PMO and S-PMO

Annex 2: Detailed Project Description

China: Guizhou Tongren Rural Transport Project

1. The project development objective is to improve rural transport connectivity in Dejiang and Sinan counties. This objective will be achieved through implementation of the following three project components.

2. **Component A: Dejiang Rural Transport (Cost: USD 150.02 million, IBRD Loan: USD 104.50 million)**. This component includes upgrading 59 existing rural roads to the national Class IV standard, as well as building 18 bridges in Dejiang County. The project roads are currently in poor condition, without adequate drainage and traffic safety facilities, and many feature dangerous sharp curves and steep longitudinal slopes. Some roads have temporary bridges, and others none at all, making them impassable during much of the rainy season. The total length of project roads is 415.7 km and the total length of bridges is 539.5 meters.

3. **Component B: Sinan Rural Transport (Cost: USD 80.77 million, IBRD Loan: USD 44.50 million)**. This component includes upgrading 27 roads to the national Class IV standard, as well as building 12 bridges in Sinan County. Similar to the roads and bridges in Dejiang County, project roads in Sinan are currently in poor condition, without adequate drainage and traffic safety facilities, and many feature dangerous sharp curves and steep longitudinal slopes. Some roads have temporary bridges, and others none at all, making them impassable during much of the rainy season The total length of project roads is 230.7 km and the total length of bridges is 298 meters.

4. **Component C: Technical Assistance (Cost: USD 1.00 million, IBRD Loan: USD 1.00 million)**. This component includes technical assistance activities to support capacity building and training on rural road planning, maintenance, and road safety.

Project Road and Bridge Selection Criteria

5. Project roads and bridges were selected according to a three-step process: first, all planned rural roads and bridges listed in the 12th Five-Year Plans of Dejiang and Sinan counties were listed; these roads and bridges were evaluated based on pre-determined criteria (described below) and ranked; and from these rankings, roads and bridges to be included in the project were selected.

6. The main selection criteria applied to project roads were: (a) inclusion in the 12th Five-Year Plan; (b) surface and subgrade condition; (c) number of beneficiaries; (d) land acquisition requirements and potential environmental impacts; (e) current and projected traffic volume; and (f) strategic importance in improving overall network connectivity and local economic development. The main criteria for bridges were: (a) inclusion in the 12th Five-Year Plan; (b) existing condition; (c) number of beneficiaries; and (d) strategic importance in improving overall network connectivity.

7. The Feasibility Study Report includes further details on these criteria and presents the scores assigned to the final list of project roads.

Project Justification

8. Table A2-1 shows the expected contribution of the project in improving paved connectivity in the project counties.

Table A2-1: Percent Paved Township and Village Roads in Dejiang and Sinan Counties, With and Without Project (2013)

County	Road	Total km	Paved km	% Paved	Project km	With Project % Paved
Dejiang	Township	257	87	34	170	100
Dejiang	Village	2,050	699	34	246	46
Sinan	Township	234	123	53	22	62
Sinan	Village	3,039	746	25	208	31

9. The current network poses an obstacle to the counties' economic development goals and to the quality of life of rural residents. Most project roads exhibit: (a) substantially damaged pavement and sub-grades, which lower traffic capacity and increase safety risks; (b) poor or non-existent drainage facilities, preventing predictable, all-weather use; (c) generally insufficient maintenance, resulting in damaged sub-grade and collapsed slopes that worsen travel conditions; (d) temporary bridges or no bridges along roads, making them impassable in the rainy season; and (e) sharp curves and longitudinal slopes.

10. The following direct or indirect benefits are expected from the project: (a) improved access for rural residents to urban services, including medical, educational, government, and commercial facilities and opportunities; (b) lower transportation costs for agricultural products and therefore higher incomes for rural farmers; (c) by connecting villages to the larger transport network, opportunities to develop new industries related to exploitation of local resources and tourism, thereby creating new avenues for rural income generation; and (d) reduced rural road accident rate.

Component A: Dejiang Rural Transport

11. Roads and related bridges selected for the Dejiang component have been derived from the 12th Five-Year Plan for Dejiang Rural Road Development. Table A2-2 provides a summary of Component 1 activities by type (finance charges are included in the total cost). Details of individual roads and bridges are available in the Project Files.

Table A2-2: Dejiang Component Breakdown by Activity Type

Type	Length of roads (km) & bridges (m)	Cost (USD million)	% of Total Component Cost	Average Unit Cost (USD million)
Rural Road Upgrade	415.71	145.95	62.97	0.35
Rural Bridges	539.50	4.07	1.76	0.01
Total		**150.02**	**64.72**	

Component B: Sinan Rural Transport

12. Roads and related bridges selected for the Sinan component were derived from the 12th Five-Year Plan for Sinan Rural Road Development. Table A2-3 provides a summary of Component 2 activities by type (finance charges are included in the total cost). Details of individual roads and bridges are available in the Project Files.

Table A2-3: Sinan Component Breakdown by Activity Type

Type	Length of roads (km) & bridges (m)	Cost (USD million)	% of Total Component Cost	Average Unit Cost (USD million)
Rural Road Upgrade	230.72	78.51	33.87	0.34
Rural Bridges	298	2.26	0.98	0.01
Total		**80.77**	**34.85**	

Component C: Technical Assistance and Project Management

13. This component has been designed to sustain benefits achieved under the project and covers road maintenance and planning, as well as project management support.

14. **Rural Road Network Planning**. This activity will support the update of the counties' rural road network and transit plans to accommodate the upgraded project roads. The Bank loan will be used to support data collection activities and technical expertise required to prepare the plan. The development of these plans will be monitored as a Project Results Indicator.

15. **Rural Road Maintenance Capacity Building**. There are two primary issues associated with rural road maintenance in Dejiang and Sinan counties: insufficient funding to cover maintenance needs, and inefficient use of existing funding.

16. Funding for routine and for medium/major maintenance is allocated annually based on a "standard" or formula. In 2013, because not all Provincial and Municipal government agencies were able to contribute the minimum funding requirements, the burden of meeting the funding gap was disproportionately placed at the county level (see Table A2-4, below). Even with this additional support, current maintenance funding may be insufficient to ensure the sustainability of the roads to be upgraded under the project. For example, funding for routine maintenance for a typical village road is USD145/km/year; however, during project preparation it was determined that at least USD403/km/year (from city/county and province) would be necessary to sustain the village roads. Funding for medium and major maintenance stems primarily from provincial subsidies, which have not increased since 2005, despite the cost of inputs tripling since then.

Table A2-4: Tongren Standard Rural Road Maintenance Funding Standard vs. Funding Receipts (USD million, 2013)

	Dejiang			Sinan			Tongren		
Source	**Standard**	**Received**	**%**	**Standard**	**Received**	**%**	**Standard**	**Received**	**%**
Province (med./major)	0.45	0.65	142	0.65	0.42	64	4.33	3.97	92
Province (routine)	0.17	0.13	80	0.24	0.20	80	1.40	1.40	100
City	0.09	0.05	53	0.13	0.07	55	0.85	0.75	89
County	0.35	0.58	165	0.54	0.81	151	3.40	4.82	142
Total	1.06	1.40	**132**	1.57	1.50	**95**	9.99	10.95	**110**

17. Maintenance management is generally well organized at both township and village levels. However, maintenance quality could be improved and use of scarce funds could be optimized through an improved performance assessment system for maintenance crews and technological support to facilitate more timely and accurate reporting, inspection, and monitoring.

18. The project will provide technical assistance for: (a) Preparation of a report on funding needs for consideration by the province; (b) Introduction of information technology systems to improve the efficiency of road maintenance management; (c) Improving the quality of supervision; and (d) Developing an incentive system that supports best maintenance practices.

19. Completion of this activity, in the form of new maintenance strategies for Dejiang and Sinan, will be monitored as a Project Results Indicator.

20. **Capacity Building for Rural Road Safety**. The project will support the design of a rural road safety campaign to increase road safety awareness, which may be integrated into the social safeguards monitoring and public consultation process.

21. **Training and Study Tours**. The project will support the following: additional training in rural road and rural transit planning; rural road maintenance management; procurement and contract management for rural roads and bridges; and project supervision quality.

Technical Standards

22. Technical standards applied to each project road mostly follow national codes for highways and bridges. For extreme terrains, Guizhou provincial standards will be adopted to avoid large scale cutting and filling and to reduce costs and environmental impacts. Guizhou standards are tailored for the local heavily mountainous terrain – that is, where a national standard may mandate a specific width, the Guizhou standard may be more flexible in cases where to achieve the national standard, substantial mountain cutting is necessary.

Project Readiness and Land Acquisition Status

23. **Status of Land Acquisition**. Public consultations were conducted and estimates of land acquisition and structure demolition weredetermined. These are documented in the Social Assessment report (SA) and the Resettlement Action Plan (RAP). A compensation policy has been agreed to between the two county governments and all townships affected by land acquisition and resettlement. A decree confirming land acquisition procedures for the proposed retroactively financed activities of the project was issued in April 2015.

24. **Status of Preliminary and Detailed Designs**. Preliminary and detailed designs for the first batch of contracts were submitted for Bank review in May 2015.

Project Cost

25. The following tables summarize the average unit cost estimates for project roads and bridges.

Table A2-5: Average Unit Cost of Project Roads

Average unit cost of project roads	Cost (USD million)	Unit Cost (USD million/km)	Cost Share
I. Civil Works	152.46	0.24	70.52%
II. Equipment	0.24	0.00	0.11%
III. Other Construction Cost	45.71	0.07	21.14%
IV. Contingency Fee	17.80	0.03	8.23%
Total	**216.21**	**0.33**	**100.00%**

Table A2-6: Average Unit Cost of Project Bridges

Average unit cost of project roads	Cost (USD million)	Unit Cost (USD '000/meter)	Cost Share
I. Civil Works	4.05	4.83	63.95%
II. Other Construction Cost	1.76	2.10	27.79%
III. Contingency Fee	0.52	0.62	8.26%
Total	**6.33**	**7.56**	**100.00%**

26. The following table summarizes the expected costs and cost sharing arrangements for the Dejiang component.

Table A2-7: Proposed Project Cost Breakdown (Component A: Dejiang Rural Transport)

Cost Items	Total Cost		Financing Plan (USD million)		
	RMB million	USD million	IBRD	Counterpart	% IBRD
Rural Road Upgrade					
(1) Rural roads civil works	617.36	99.57	94.76	4.81	95.17%
(2) Temporary engineering	1.33	0.21	-	0.21	0.00%
(3) Equipment procurement	0.96	0.16	-	0.16	0.00%
(4) Land acquisition and resettlement	89.00	14.35	-	14.35	0.00%
(5) Construction company management	17.81	2.87	1.44	1.44	50.00%
(6) Construction monitoring and supervision	18.52	2.99	-	2.99	0.00%
(7) Project design and preparation	46.81	7.55	-	7.55	0.00%
(8) Social and environmental external monitoring	1.00	0.16	-	0.16	0.00%
(9) Other costs regarding construction	4.73	0.76	-	0.76	0.00%
(10) Contingencies	71.57	11.54	-	11.54	0.00%
(11) Financial charges	35.81	5.78	5.78	0.00	100%
Bridges					
(1) Bridges civil works	16.19	2.61	2.48	0.13	95.17%
(2) Temporary engineering	3.28	0.53	-	0.53	0.00%
(3) Land acquisition and resettlement	0.31	0.05	-	0.05	0.00%
(4) Construction company management	0.52	0.08	0.04	0.04	50.00%
(5) Construction monitoring and supervision	0.58	0.09	-	0.09	0.00%
(6) Project design and preparation	1.84	0.30	-	0.30	0.00%
(7) Other costs regarding construction	0.45	0.07	-	0.07	0.00%
(8) Contingencies	2.08	0.34	-	0.34	0.00%
Total	**930.13**	**150.02**	**104.50**	**45.52**	**69.66%**

27. The following table summarizes the expected costs and cost sharing arrangements for the Sinan component.

Table A2-8: Proposed Project Cost Breakdown (Component B: Sinan Rural Transport)

Cost Items	Total Cost		Financing Plan (USD million)		
	RMB million	USD million	IBRD	Counterpart	% IBRD
Rural Road Upgrade					
(1) Rural roads civil works	327.90	52.89	40.15	12.74	75.91%
(2) Temporary engineering	0.82	0.13	-	0.13	0.00%
(3) Equipment procurement	0.54	0.09	-	0.09	0.00%
(4) Land acquisition and resettlement	55.41	8.94	-	8.94	0.00%
(5) Construction company management	9.44	1.52	0.76	0.76	50.00%
(6) Construction monitoring and supervision	9.84	1.59	-	1.59	0.00%
(7) Project design and preparation	25.14	4.05	-	4.05	0.00%
(8) Social and environmental external monitoring	1.00	0.16	-	0.16	0.00%
(9) Other costs regarding construction	2.57	0.41	-	0.41	0.00%
(10) Contingencies	38.77	6.25	-	6.25	0.00%
(11) Financial charges	15.35	2.48	2.48	0.00	100.00%
Bridges					
(1) Bridges civil works	8.92	1.44	1.09	0.35	75.91%
(2) Temporary engineering	1.68	0.27	-	0.27	0.00%
(3) Land acquisition and resettlement	0.24	0.04	-	0.04	0.00%
(4) Construction company management	0.32	0.05	0.03	0.03	50.00%
(5) Construction monitoring and supervision	0.32	0.05	-	0.05	0.00%
(6) Project design and preparation	1.09	0.18	-	0.18	0.00%
(7) Other costs regarding construction	0.29	0.05	-	0.05	0.00%
(8) Contingencies	1.16	0.19	-	0.19	0.00%
Total	**500.77**	**80.77**	**44.50**	**36.27**	**55.10%**

28. The following table summarizes the expected costs and cost sharing arrangements for the entire project.

Table A2-9: Proposed Project Cost Breakdown (Whole Project)

Cost Items	Total Cost		Financing Plan (USD million)		
	RMB million	USD million	IBRD	Counterpart	% IBRD
I. Base Costs	**1385.95**	**223.54**	**141.75**	**81.79**	**63.41%**
Comp A: Dejiang Rural Roads and Bridges	**894.32**	**144.25**	**98.73**	**45.52**	**68.44%**
(1) Rural roads civil works	633.55	102.19	97.25	4.94	95.17%
(2) Temporary engineering	4.61	0.74	0.00	0.74	0.00%
(3) Equipment procurement	0.96	0.16	0.00	0.16	0.00%
(4) Land acquisition and resettlement	89.30	14.40	0.00	14.40	0.00%
(5) Construction company management	18.33	2.96	1.48	1.48	50.00%
(6) Construction monitoring and supervision	19.11	3.08	0.00	3.08	0.00%
(7) Project design and preparation	48.65	7.85	0.00	7.85	0.00%
(8) Social and environmental external monitoring	1.00	0.16	0.00	0.16	0.00%
(9) Other costs regarding construction	5.17	0.83	0.00	0.83	0.00%
(10) Contingencies	73.65	11.88	0.00	11.88	0.00%
Comp B: Sinan Rural Roads and Bridges	**485.43**	**78.29**	**42.03**	**36.27**	**53.68%**
(1) Rural roads civil works	336.82	54.33	41.24	13.09	75.91%
(2) Temporary engineering	2.50	0.40	0.00	0.40	0.00%
(3) Equipment procurement	0.54	0.09	0.00	0.09	0.00%
(4) Land acquisition and resettlement	55.64	8.97	0.00	8.97	0.00%
(5) Construction company management	9.77	1.58	0.79	0.79	50.00%
(6) Construction monitoring and supervision	10.16	1.64	0.00	1.64	0.00%
(7) Project design and preparation	26.23	4.23	0.00	4.23	0.00%
(8) Social and environmental external monitoring	1.00	0.16	0.00	0.16	0.00%
(9) Other costs regarding construction	2.85	0.46	0.00	0.46	0.00%
(10) Contingencies	39.93	6.44	0.00	6.44	0.00%
Comp. C: Technical Assistance and Project Management	**6.20**	**1.00**	**1.00**	**0.00**	100.00%
(1) Rural road network planning	1.80	0.29	0.29	0.00	100.00%
(2) Rural road maintenance Strategy	1.00	0.16	0.16	0.00	100.00%
(3) Road safety study	0.80	0.13	0.13	0.00	100.00%
(4) Rural road management training (international)	0.60	0.10	0.10	0.00	100.00%
(5) Domestic training	2.00	0.32	0.32	0.00	100.00%
Subtotal (I)	*1385.95*	*223.54*	*141.75*	*81.79*	*63.41%*

II. Financial Charges	**51.15**	**8.25**	**8.25**	**0.00**	100.00%
Dejiang Financial Charges	**35.81**	**5.78**	**5.78**	**0.00**	100.00%
1. Commitment fee	4.88	0.79	0.79	0.00	100.00%
2. Front-end fee	1.63	0.26	0.26	0.00	100.00%
3. Interest during construction	29.30	4.73	4.73	0.00	100.00%
Sinan Financial Charges	**15.35**	**2.48**	**2.48**	**0.00**	100.00%
1. Commitment fee	2.09	0.34	0.34	0.00	100.00%
2. Front-end fee	0.70	0.11	0.11	0.00	100.00%
3. Interest during construction	12.56	2.03	2.03	0.00	100.00%
Subtotal (II)	*51.15*	*8.25*	*8.25*	*0.00*	*100.00%*
Total (I+II)	**1437.10**	**231.79**	**150.00**	**81.79**	**64.71%**

Annex 3: Implementation Arrangements

China: Guizhou Tongren Rural Transport Project

Project Institutional and Implementation Arrangements

1. The two project counties, Dejiang and Sinan, will be independently responsible for the implementation of their respective project components, under the leadership and coordination of a Project Management Office (PMO), housed under Tongren Transport Bureau.

2. **Project Leading Group**. Tongren Municipal Government has established a Project Leading Group, headed by the Vice Mayor and comprised of staff from the Municipal DRC, Finance Bureau, Supervision Bureau, Auditing Bureau, Land Resource Bureau, Planning Bureau, Environment Protection Bureau, Forestry Bureau, Justice Bureau, Broadcasting Bureau, Dejiang County Government, and Sinan County Government.

3. **Tongren Project Management Office**. A coordinating PMO has been established under the Tongren Municipal Transport Bureau to facilitate information sharing between the county-level PMOs, as well as coordinating all Bank-reporting duties, consolidating project financial statements, coordinating hiring of consultants to support project management (including external safeguards monitoring and planning overseas training), and leading the technical assistance component (including contract signing for technical assistance activities).

4. **Sub-Project Leading Groups**. Sub-PLGs have been established in Dejiang County and Sinan County, which are led by the county mayors.

5. **Sub-Project Management Offices**. Sub-PMOs have been established in the transportation bureaus of each county for project management and implementation, including procurement, contract signing, financial management reporting, and internal social safeguards monitoring.

6. **Procurement**. Sub-PMOs will be responsible for preparation of the technical inputs for bidding documents. Sub-PMOs will be supported by a Procurement Agent, hired by TPMO, who will be responsible for the preparation and updating of the procurement plan and manual, preparation of bidding documents, and tendering support. Contracts for Component A will be signed by the Dejiang Transport Bureau, contacts for Component B will be signed by the Sinan Transport Bureau, and contracts for Component C will be signed by the Tongren Transport Bureau.

7. **Safeguards**. Each sub-PMO has designated staff for internal social and environmental safeguards monitoring, implementation, and reporting. TPMO would be responsible for hiring and managing external safeguards monitors.

8. **Financial Management**. Counterpart funds contributed by county local revenue will be budgeted at the county level, with possible financial support from Tongren. The Provincial Finance Bureau will disburse the Bank loan to the municipal PMO, then to the contractors; or disburse Bank loan proceeds to the county-level PMOs through county-level finance bureaus and then to the contractors.

9. **Technical Assistance and Training**. TPMO would be responsible for the preparation of terms of reference, as well as hiring and managing TA consultants. Costs will be split between the sub-PMOs, proportional to their share of the Bank loan.

10. **Bank Reporting**. TPMO would be responsible for consolidating and preparing bi-annual reports to submit to the Bank for review during the project implementation period.

Financial Management, Disbursements and Procurement

11. The financial management capacity assessment of implementing agencies identified the principal FM risk to be the lack of knowledge of Bank FM requirements and lack of experience in managing Bank-financed projects. Mitigation measures to address this risk are: (a) preparation and distribution of a Financial Management Manual (FMM) to standardize project financial management procedures for coordination and reporting (prepared as of Appraisal); (b) provision of financial management training, including workshops for technical training and experience sharing, to be arranged by GPFB and TPMO; and (c) review of each disbursement application by GPFB to ensure proper usage of Bank loan proceeds. The overall residual financial management risk, after taking into account these mitigation measures, is assessed as Moderate.

12. Funding sources for the project include the Bank loan and counterpart funds. The World Bank loan agreement will be signed between the World Bank and MOF, and the subsidiary loan agreement will be entered into by MOF and Guizhou Provincial Government, which will further on-lend to Dejiang and Sinan county governments. Dejiang and Sinan county governments will be responsible for repayment. Counterpart funds will include national subsidies received from the Ministry of Transportation and local fiscal revenue appropriated from Dejiang and Sinan governments.

13. **Disbursement Arrangements**. Four disbursement methods -- advance, reimbursement, direct payment, and special commitment - are available for the project. The primary Bank disbursement method will be advances to the designated account (DA). Withdrawal Applications (WAs) will be prepared to request Bank disbursements and to document the use of Bank financing. WAs will include supporting documents in the form of Statement of Expenditures (SOEs) and Payments Made Against Contracts Subject to the Bank's Prior Review (which are both cash based statements) and source documents identified in the Disbursement Letter issued by the Bank.

14. The Bank loan would disburse against eligible expenditures (taxes inclusive) as in the table below:

Table A3-1: Disbursement Categories and Percentages

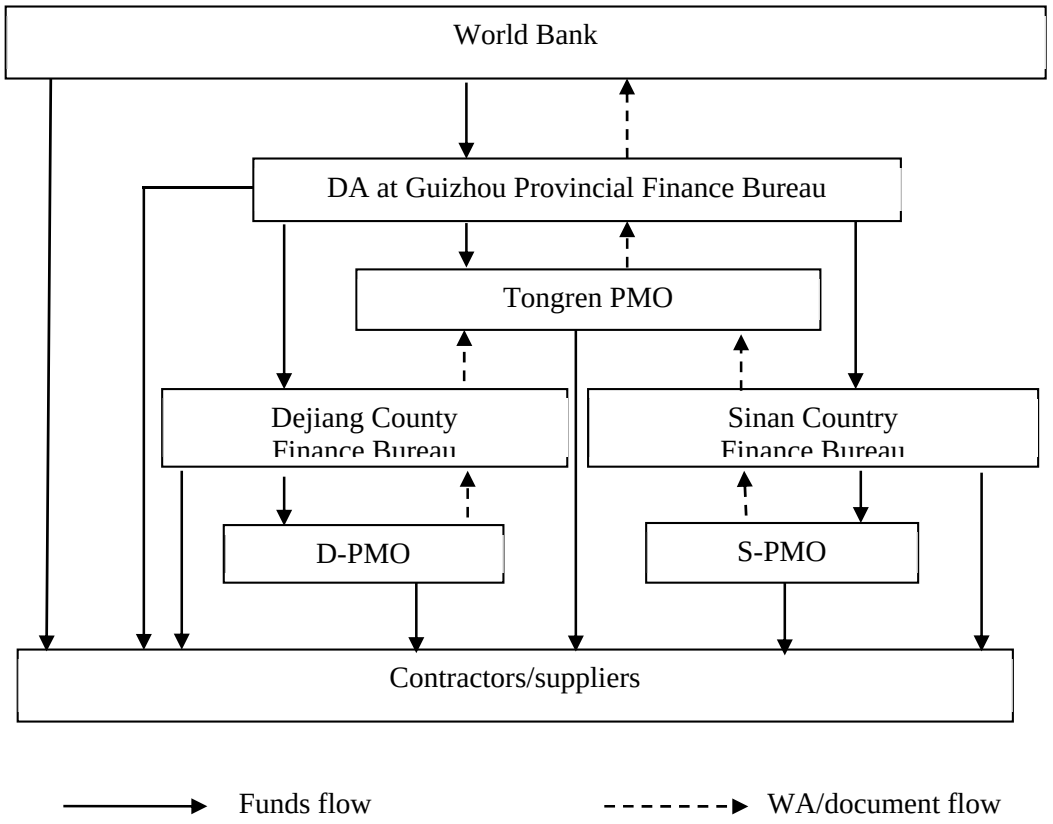
Category	Amount of the Loan Allocated (expressed in USD)	Percentage of Expenditures to be Financed (inclusive of Taxes)
(1) Works under Part A of the Project	98,725,000	100%
(2) Works under Part B of the Project	42,030,000	100%
(3) Goods, non-consulting services, consultant services, Training and Workshops, and Incremental Operating Costs	1,000,000	100%
(4) Interest and other charges on the Loan accrued on or before the last Payment Date immediately preceding the Closing Date	7,870,000	Amount payable pursuant to Sections 2.04 and 2.05 of this Agreement in accordance with Section 2.07 (c) of the General Conditions
(5) Front-end Fee	375,000	Amount payable pursuant to Section 2.03 of this Agreement in accordance with Section 2.07 (b) of the General Conditions
(6) Interest Rate Cap or Interest Rate Collar premium	0	Amount due pursuant to Section 2.08(c) of this Agreement
TOTAL AMOUNT	150,000,000	

15. Retroactive financing up to USD30 million will be available for payments made for Eligible Expenditures prior to the date of the Loan Agreement (LA) but on or after June 25, 2015.

16. **Budgeting**. Annual construction and financing plans will be prepared by D-PMO and S-PMO and will be reviewed by the respective county transport bureaus, county finance bureaus and the Tongren Municipal Transport Bureau. The Tongren Municipal Transport Bureau will provide national subsidies to the county-level transport bureaus. County finance bureaus will formulate annual government budgets for the remaining counterpart funds and appropriate funds to D-PMO and S-PMO through fiscal channels, based on the approved annual plan and construction progress. Budget variance analyses will be conducted regularly, thus facilitating timely corrective actions.

17. **Funds Flow**. The designated account (DA) for the Bank loan will be opened in a segregated USD account and managed by GPFB. For expenses incurred by TPMO, cash-basis withdrawal applications will be prepared by TPMO and reviewed by GPFB (incremental operating costs incurred by TPMO should be included in the annual work plan and submitted to the Bank after confirmation by Dejiang and Sinan Finance Bureaus, through the Tongren Finance Bureau); for

expenses paid by county-level PMOs, cash-basis withdrawal applications will be prepared by county-level PMOs and reviewed by Dejiang and Sinan Finance Bureaus, TPMO, and GPFB. Bank loan proceeds will be disbursed from the DA managed by GPFB to contractors (suppliers, consultants, etc.) through the respective finance bureaus and PMOs. Detailed disbursement application and funds flow arrangement are described in the project financial management manual (FMM).



18. **Accounting and Financial Reporting.** The administration, accounting, and reporting of the project will be set up in accordance with Circular #13: "Accounting Regulations for World Bank-financed Projects" issued in January 2000 by the MOF. The overall project financial statement will include:

a) Balance sheet of the project;
b) Statement of sources and uses of fund by project components;
c) Statement of implementation of loan agreement;
d) Statement of designated account; and
e) Notes to the financial statements (required only for annual financial statements).

19. All PMOs will add an accrual based project accounting module to complement their institutional accounting management system, "User Friend", to manage, monitor and maintain project accounting records and prepare financial reports for project activities for which they are

responsible. Such a system has been widely used in other Bank financed projects and is considered adequate. Each PMO will prepare individual financial statements for the components implemented by it. TPMO will prepare unaudited semi-annual project financial statements and furnish these to the Bank as part of the semi-annual Progress Report, no later than 60 days following each semester.

20. The Bank will monitor the accounting process, including the adequacy of the financial management system and staff training, especially during the initial stage, to ensure that complete and accurate financial information is provided in a timely manner.

21. **Internal Controls**. The project accounting policy, procedures, and regulations have been issued by MOF and will be followed by project implementing agencies. Detailed internal control procedures, including segregation of duties, review, approval, and reporting procedures, as well as the safeguard of assets, have been established and are documented in the project financial management manual. Most of these controls are institutional procedures currently used by the PMOs.

22. **Audit Arrangements.** Guizhou Provincial Audit Office (GPAO) will be assigned by the China National Audit Office (CNAO) as auditor for the project. The annual audit report of the consolidated project financial statements will be issued by GPAO and will be due to the Bank within six months after the end of each calendar year, i.e., by June 30. The audit report and audited financial statements will be made publicly available in both World Bank and GPAO's official websites.

23. **Supervision**. The supervision strategy for this project is based on its FM risk rating and the level of FM supervision provided by the TPMO, which will be evaluated on a regular basis by the Financial Management Specialist in line with the FMSB's FM Manual and in consultation with relevant task team leader. FM reviews will focus on the following areas:

a) Project financial staff members have received necessary training for managing World Bank financed operations;
b) Disbursement and funds flow arrangements function appropriately and efficiently;
c) The project's accounting system, particularly the new accrual accounting modules, can generate the required financial reporting; and
d) Counterpart funds are delivered as planned.

Procurement

24. **Capacity**. Tongren PMO (TPMO) will be responsible for overall project procurement management and supervision. Sinan and Dejiang sub-PMOs will be responsible for procurement under their respective components. A procurement capacity and risk assessment of TPMO and the sub-PMOs found that none of these PMOs have prior experience in implementing Bank-financed projects and are therefore unfamiliar with Bank procurement policies and procedures. Further, there is a risk of weak procurement coordination at the TPMO level. Bid evaluations will be carried out through the local Public Resources Center (PRC), which may follow government procedures.

25. To mitigate these risks, the following measures have been taken: (a) a project Procurement Management Manual has been prepared; (b) a qualified procurement agent with experience of Bank-financed projects has been hired; (c) a training plan has been agreed upon, which will provide continuous training on Bank procurement policies and requirements to PMO staff; and (d) coordination with local Public Resources Center to ensure that Bank procurement requirements are complied with. The overall procurement risk is rated Substantial.

26. **Applicable Guidelines**. Procurement will be carried out in accordance with "Guidelines: Procurement of Goods, Works and Non-Consulting Services under IBRD Loans and IDA Credits & Grants by World Bank Borrowers," dated January 2011, revised July 2014; "Guidelines: Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers," dated January 2011, revised July 2014; and the provisions stipulated in the Loan Agreement. National Competitive Bidding (NCB) will be carried out in accordance with the Law on Tendering and Bidding of the People's Republic of China, promulgated by Order of the President of the People's Republic of China on August 30, 1999, subject to the modifications stipulated in the Legal Agreement, in order to ensure consistency with Bank Procurement Guidelines.

27. **Procurement of Works**. Works procurement will be carried out under Components A and B for rural road upgrading and bridge construction.

28. **Procurement of Goods**. No goods procurement is envisaged in the current procurement plan.

29. **Selection of Consultants**. Consultants will be hired under the project for sector studies and strengthening institutional capacity. The Bank's Standard Request for Proposals will be used for all QCBS and QBS. Universities and research institutes may be included in shortlists as a source of consultants, provided they possess the relevant qualifications and they are not in a conflict of interest situation. In such cases, QBS or CQS (for small assignments) would be used, if the shortlist also includes consulting firms which operate as commercial entities.

30. **Training, Workshop and Study Tour Plans**. Training and workshops will be developed by TPMO and included in the project annual work plan for Bank review. For training, workshops, and study tours to be organized by third party service providers, the Bank Guidance Note on Planning, Budgeting, Implementing, Reporting and Accounting for Expenditures related to Training & Workshops in Bank-financed Projects in China & Mongolia will apply.

31. **Procurement Plan**. A Procurement Plan for the first 18 months of project implementation (dated April 2015), acceptable to the Bank, has been prepared by TPMO. In accordance with paragraph 1.18 of the Procurement Guidelines and paragraph 1.25 of the Consultant Guidelines, the Procurement Plan will be made available on the Bank's external website. The Procurement Plan will be updated annually or as required to reflect implementation needs and improvements in institutional capacity.

32. **Thresholds for Procurement**. The indicative thresholds are shown in the table below.

Table A3-2: Procurement Thresholds

Expenditure Category	Contract Value (US$ thousands)	Procurement Method	Prior Review Threshold (US$ thousands) 1/2/
1. Goods and Non-Consulting Services	⩾10,000	ICB	All
	<10,000	NCB	First one NCB contract regardless of value in each county and all contracts valued ⩾1,000
	<100	Shopping	First contract regardless of value in each county.
	<3,000	Framework	First contract regardless of value.
	--	Direct Contracting	ALL
2. Civil works	⩾40,000	ICB	ALL
	<40,000	NCB	First NCB contract regardless of value in each county and all contracts valued ⩾10,000
	<200	Shopping	First contract regardless of value in each county.
3. Consultants Services	⩾300	QCBS/QBS	First contract of each selection method in each county and TPMO and all contracts valued⩾500
	<300	CQS	First contract regardless of value in each county.
		Individual Consultant	Only in exceptional cases
		Single-Source Selection (firm)	⩾100
	-	Single-Source Selection (individual)	⩾50

1. All contracts to be financed through retroactive financing will be subject to prior review. A contract whose cost estimate was below the Bank prior review threshold is subject to prior review if the price of the lowest evaluated responsive bid (or, in the case of consulting services, the financial offer of the selected firm) exceeds such threshold at the bid/proposal evaluation stage.
2. Procurement post review may be carried out by the Bank, or by its consultant/auditors.

33. **Advance Contracting and Retroactive Financing**. The Procurement Plan sets forth all contracts that will be procured in advance, together with the relevant Bank review procedures. Retroactive financing for contracts signed prior to loan signing will be within the limits specified in the Loan Agreement.

Environmental and Social (including safeguards)

Environmental Safeguards

34. Project civil works will have potential environmental and social impacts during construction, including soil erosion, material borrow and waste spoil management, nuisance of dust and noise, wastewater to be managed, community impacts, traffic disturbances, safety issues, etc. The rehabilitation and improvement of each individual rural road is small in scale and mainly

includes improvement of pavement on existing road surfaces, with limited widening. The environmental impacts of individual rural road improvements are site-specific and temporary in nature and are unlikely to be significant and irreversible. Anticipated impacts can be readily managed with known mitigation measures and good construction management. Therefore, the project is classified as a Category B project.

35. Project roads will involve three environmentally and socially sensitive sites, including:

a) *Siyetun Nature Reserve in Sinan*. The existing Shangguanqing – Langan road (8.4 km) is within the boundary of the Siyetun Nature Reserve; however, the main habitats of the protected wildlife are over two km from the road. A number of old trees have been identified in the vicinity of the road, which will be protected during construction. The project will improve this existing road with pavement (including a medium bridge), and will not lead to degradation, conversion or additional fragmentation of the natural habitat of the reserve. Temporary impacts during construction can be managed well with good environmental practice.

b) *Bailuzhou Scenic Area in Sinan*. The proposed Qinglongzui Bridge will cross the Xiaoxi River which is located within the boundary of the Bailuzhou Scenic Area. The bridge location has the normal river bank landscape, and is far away from the three scenic spots of the Bailuzhou Scenic Area. The bridge is a one-span scheme crossing the small river and will not touch the river bed. It will be specially designed to become a scenic spot to enhance the aesthetic view in the project section of the river and will not have adverse impacts on the scenic area. Temporary impacts during construction will be managed well with good environmental practice.

c) *Stone Horse in Dejiang*. There is a horse-shaped stone about 20 meters from the Hetou-Dayuan Road in Dejiang, which is considered by the local community as a natural heritage site. With good construction management (e.g., no blasting, no widening, behavior education for workers, etc.), potential adverse impacts from the renovation of the existing road can be adequately avoided and mitigated.

36. Other main potential environmental and social impacts of the project include:

a) *Potential impacts on rivers*. The project includes construction of 30 medium and small bridges on existing rural roads, where currently pedestrians and vehicles cross the small creeks/rivers over the shallow river beds or simple bridges. Construction activities have the potential to increase soil erosion and sediments into rivers. Given the small flow rate and lack of nutrient sources, these small creeks/rivers are not habitats to support complex aquatic ecosystems. There are no protected aquatic species, migratory fish or major spawning sites in these small rivers. Project bridges are either small or medium bridges that will have a minimal impact on the rivers during construction. With adequate protection and erosion control measures, the temporary impacts of construction can be properly managed.

b) *Material borrow and excess spoil disposal*. The project will purchase cement, sand, and aggregate from commercial suppliers and no material borrow sites are needed. Excess material will be disposed of at 82 spoil disposal sites identified in the project area based on environmental criteria and will avoid environmentally sensitive areas. Disposal measures and post-reclamation have been developed in the EMP to ensure proper management of excess materials.

c) *Social impacts*. Construction activities will have potential adverse impacts on traffic, disturbance of daily life of local communities, impacts on utility lines, land acquisition and resettlement.

d) Nuisance of noise and dust to the local communities.

37. To address potential environmental safeguards issues, an EIA and a stand-alone EMP have been prepared for the project in accordance with the requirements of relevant national laws/regulations and guidelines, as well as Bank safeguards policies and EHS General Guidelines. The EMP specifies the institutional arrangements for environmental management and supervision, mitigation measures, capacity building plan, monitoring plan, and budget estimates for EMP implementation. Besides project-specific mitigation measures for specific sensitive sites/receptors, the EMP also includes a set of generic Environmental Code of Practices (ECOPs) for contractors, which will be incorporated in the bidding documents and contracts. ECOPs provide a set of generic mitigation measures for each type of typical road construction/rehabilitation activity, i.e., site construction, site clearing, access roads, disposal sites, slope stability, backfilling, drainage, bridge and culvert construction, water pollution and soil erosion control, physical cultural resources, safety and health, public consultation and social disturbance, etc.

38. TPMO will be responsible for overall management of the EMP, including hiring an external environmental supervision consultant. The Tongren PMO will be responsible for direct management of EMP implementation, including assigning dedicated environmental staff, ensuring incorporation of EMP measures (ECOPs) in bidding documents and contracts, and engaging supervision engineers and contractors on implementation of ECOPs. Contractors and supervision engineers will be required to assign qualified environmental staff to their team to ensure effective implementation of the EMP. Besides on-site Supervision Engineers, an independent Environmental Supervision Consultant will be engaged to help the sub-PMOs conduct periodic site supervision and prepare semi-annual environmental reports to the Bank.

39. **Disclosure**. The draft EIA was locally disclosed on December 11, 2014 on the Dejiang and Sinan county government websites, and the final EIA and EMP were re-disclosed on March 27, 2015. The EIA and EMP were disclosed in the Info Shop on April 14, 2015.

Social Safeguards

40. **OP4.12 Involuntary Resettlement**. The project will bring positive social and economic benefits to local communities through the improvement of connecting roads and bridges. Limited land acquisition and structure demolition will be unavoidable for the construction of small and medium-sized bridges and widening of roads, thus OP4.12 Involuntary Resettlement is triggered. The predominant proportion of land acquisition will be vacant land on hilly slopes and will not cause negative impacts to local villagers. Donation of vacant land by local communities will be based on transparent consultation, and local communities will be informed that they will not be under pressure to donate land for project construction. The process of voluntary land donation will be documented in writing. For the acquisition of arable land and for structure demolition, compensation will be paid to affected households in accordance with the Resettlement Action Plan (RAP). A compensation policy has been formulated to provide assurance that project affected persons would be compensated for arable land and structures according to the most recent provincial and national standards. The decree on compensation for guiding the resettlement work for activities to be retroactively financed has been issued by both Sinan and Dejiang counties. Further decrees will be issued by both counties to cover future batches, as their detailed project designs are finalized.

41. **OP4.10 Indigenous People**. As required by the World Bank's OP/BP 4.10, an assessment was conducted to determine whether the Tujia Ethnic Minority may be defined as Indigenous People under OP 4.10. The assessment was carried out through consultations with local Ethnic Minority Affairs Bureaus, discussions with local Tujia ethnic minorities, site visits, and desk review of relevant documents and materials. The key findings of the assessment are:

a) Of the 530,000 people residing in Dejiang County, 432,000 are Tujia ethnic minorities, accounting for 82 percent of the population. Of the 680,000 Sinan County residents, 150,000 are Tujia, accounting for 22 percent of the population. The project will be constructed in the area where Tujia minority communities are present.

b) Tujia language is not spoken by individuals in the ethnic minority groups in the Project area, and no informants knew of any person in their communities or in the vicinity who spoke the Tujia language.

c) No distinctive styles of dress or body ornaments for men or women indicative of their specific ethnic minority group status are in use today. People could not identify the ethnic minority group status of other persons by their appearance, dress or mannerisms. There are also no distinctive house construction styles or housing locations that are associated with the Tujia ethnic minority group.

d) Tujia individuals in the project area were unaware of (or generally did not employ) the ceremonial forms reported in ethnographic literature as a distinctive part of the culture of Tujia.

e) The modes of production (agriculture, animal husbandry, and forestry) employed by Tujia people in the Project area did not differ in any measurable way from the modes of production in use among Han people who are also in the area.

f) Tujia people did not think of themselves to be distinctive or specially set apart from Han individuals, particularly with regard to access to (or use of) political, economic or social and cultural activities in their communities.

42. Based on this assessment, the Tujia ethnic minority communities in the Project areas are, for all intents and purposes, indistinguishable from their Han neighbors. The Tujia ethnic minority therefore does not fall under the Bank definition of indigenous peoples. The Social Assessment also extensively analyzed the remaining 17 ethnic groups in the project area and concluded that these groups are assimilated into the wider society through generations of inter-marriage. Therefore, Bank OP4.10 is not triggered. However, awareness programs will be conducted for workers to respect local communities' traditions during construction.

43. **Disclosure**. The draft RAP was disclosed in the Sinan and Dejiang daily newspapers on March 4 and 9, 2015 respectively. The RAP and SA were disclosed in the Info Shop on May 6, 2015.

Monitoring & Evaluation

44. Achievement of the PDO will be monitored by the following key indicators:

a) Number of beneficiaries, defined as persons who live within 2 km of a project road (#, core);
b) Percent of beneficiaries who are women (%, core); and
c) Travel time savings on upgraded roads (%).

45. Achievement of the PDO will be monitored through indicators listed in Annex 1. These indicators are supplemented by intermediate indicators, which measure outputs, e.g., km of road upgraded and number of villages with new traffic safety facilities. These indicators will be monitored by the Tongren PMO and the sub-PMOs, and will be reported to the Bank through the bi-annual progress monitoring reports. The methodologies for compiling data on each of these indicators are presented in **Annex 1**.

46. **Citizen Engagement**. Citizen engagement will be monitored through the "direct project consultations with beneficiaries undertaken" indicator, which will be derived from the bi-annual social safeguards monitoring reports.

47. **Baseline Values**. Baseline values for travel times have been derived from the Social Assessment. Table A3-3 presents the baseline values for travel time savings analysis, as well as the template for completing the analysis upon project completion.

Table A3-3: Travel Time Savings Baseline and Calculation Template

No	Code	Area	Project name	Length（km）	2014 Baseline Result（min）	2020 Project Completion Result（min）	%Savings	%Average Savings
1	A1-1	Dejiang	Mingxi-Dongquan	10.578	56.4			
2	A1-4	Dejiang	Qinjiawan-Chaodi	10.205	46.2			
3	A1-5	Dejiang	Changba-Wangpai	8.965	52.5			
4	A1-6	Dejiang	Pingyuan-Nangan	21.324	83.9			
5	A1-7	Dejiang	Datu-Huangba	9.156	38.6			
6	A1-8	Dejiang	Jiancha-Dahe	4.654	16.2			
7	A1-9	Dejiang	Changfeng-Duoping	15.598	61.4			
8	A1-11	Dejiang	Qiaotou-Yanjing	8.353	37.8			
9	A1-13	Dejiang	Baiguotuo-Qiaotou	17.143	72.2			
10	A1-14	Dejiang	Wenping-Yinsi	10.08	45.6			
11	A1-20	Dejiang	Xiaba-Yalaoshan	6.073	21.1			
12	A1-23	Dejiang	Changba-Xintan	5.943	26.9			
13	A1-31	Dejiang	Laoshuixi-Guanzhuang	2.781	13.6			
14	A1-40	Dejiang	Xiangzhengfu-Pengjia	3.55	12.3			
15	A1-42	Dejiang	Heduimen-Xintang	2.208	6.9			
16	A1-45	Dejiang	Changtan-Yuanchang	3.743	14.7			
17	B1-1	Sinan	Wengwen-Tunshan	7.646	37.4			
18	B1-2	Sinan	Paotongshu-Dawan	13.33	60.4			
19	B1-4	Sinan	Wengshan-Lianmeng	12.352	55.9			
20	B1-5	Sinan	Zaoziping-Huangnitian	5.736	30.6			
21	B1-8	Sinan	Wengshan-Tangjiaba	4.851	23.8			
22	B1-9	Sinan	Yanmenkou-Sanxing	8.942	35.2			
23	B1-10	Sinan	Tanben-Antang	7.574	34.3			
24	B1-23	Sinan	Nixi-Chaer	9.728	47.6			
25	B1-24	Sinan	Pujiagou-Dashan	2.226	7.7			
26	B1-26	Sinan	Qinlongzui-Zhuguaxi	6.845	28.8			

48. Conditions during the baseline measurements are recorded in Table A3-4. Measurements at completion will be carried out under similar conditions.

Table A3-4: Travel Time Savings Baseline Conditions

	Dejiang	**Sinan**
Time	01-04-2015	08-04-2015
Weather	sunny	sunny
Driver	Wang Fei	Zhang Hong
Vehicle Type	Sedan	Sedan

Annex 4. Operational Risk Assessment Framework (ORAF)

China: Guizhou Tongren Rural Transport Project

<table>
<tr><td>Stakeholder Risk</td><td>Rating</td><td colspan="5">Moderate</td></tr>
<tr><td rowspan="3">Risk Description:

Project stakeholders include rural road users, residents, and businesses in the project area. A Social Assessment and stakeholder consultations were undertaken to identify potentially impacted stakeholders, and a compensation policy has been designed and incorporated into the RAP.</td><td colspan="6">Risk Management:

The PMOs will be responsible for overseeing implementation of the RAP. Project beneficiaries and affected persons will be consulted on a regular basis during implementation. Such consultations will be monitored through a specific indicator in the Results Framework.</td></tr>
<tr><td>Resp:</td><td>Status:</td><td>Stage:</td><td>Recurrent:</td><td>Due Date:</td><td>Frequency:</td></tr>
<tr><td>Both</td><td>Not Yet Due</td><td>Both</td><td>☑</td><td></td><td>Continuous</td></tr>
<tr><td colspan="7">Implementing Agency (IA) Risks (including Fiduciary Risks)</td></tr>
<tr><td>Capacity</td><td>Rating</td><td colspan="5">Substantial</td></tr>
<tr><td rowspan="6">Risk Description:

(a) Tongren PMO is not familiar with Bank project procedures and does not have prior experience working on foreign-financed projects, which could result in non-compliance with Bank requirements and implementation delays.

(b) The general capacity of the Tongren PMO and sub-PMOs are relatively limited in terms of quality control over engineering design and bidding documents, particularly in road safety and drainage design, which could result in implementation delays.</td><td colspan="6">Risk Management:

(a) A Project Leading Group (PLG) has been established in Tongren, headed by influential government officials. Training on Bank guidelines and procedures has been provided to related local agencies, and members of the Guiyang PMO have been invited by the provincial DRC to serve as advisers to the Tongren PMO.</td></tr>
<tr><td>Resp:</td><td>Status:</td><td>Stage:</td><td>Recurrent:</td><td>Due Date:</td><td>Frequency:</td></tr>
<tr><td>Client</td><td>Completed</td><td>Preparation</td><td>☐</td><td>28-Feb-2015</td><td></td></tr>
<tr><td colspan="6">Risk Management:

(b) The sub-PMOs have designated staff to attend component-related technical training, engage experienced consultants, and to visit other Bank projects for on-site training. The technical assistance component includes project management training.</td></tr>
<tr><td>Resp:</td><td>Status:</td><td>Stage:</td><td>Recurrent:</td><td>Due Date:</td><td>Frequency:</td></tr>
<tr><td>Both</td><td>Not Yet Due</td><td>Both</td><td>☑</td><td></td><td>Continuous</td></tr>
<tr><td>Governance</td><td>Rating</td><td colspan="5">Moderate</td></tr>
</table>

Risk Description: The project involves new reporting relationships between the Tongren Municipal Government and the Dejiang and Sinan Transport Bureaus. A TPMO and county levels sub-PMOs have been established with clear roles and responsibilities.	**Risk Management:** The Bank will work closely with the PLG and the PMOs to ensure that the implementing agencies proceed with project implementation effectively in a high quality and timely manner.					
	Resp:	**Status:**	**Stage:**	**Recurrent:**	**Due Date:**	**Frequency:**
	Both	Not Yet Due	Both	☑		Continuous
	Risk Management: The Bank will closely monitor practices that may lead to the perception of potential fraud and corruption. Contract bidding will be publicly disclosed and monitored to ensure that there are no instances of collusion, bribes, or favorable treatment. Compliance with the Bank's fiduciary requirements will be routinely supervised during project implementation.					
	Resp:	**Status:**	**Stage:**	**Recurrent:**	**Due Date:**	**Frequency:**
	Both	Not Yet Due	Both	☑		Continuous
Project Risks						
Design	**Rating**	**Moderate**				
Risk Description: (a) The project includes a very large number of individual road segments to be improved, which may cause difficulties in terms of construction supervision and monitoring. (b) The longer term sustainability of the investment will depend, in part, on how well the investment is maintained. Current maintenance funding levels and practices may be insufficient to support adequate maintenance.	**Risk Management:** (a) As part of the technical assistance component, assistance training will be provided to the sub-PMOs on construction management and supervision. During preparation, the Bank helped the PMO prepare its first construction supervision plan.					
	Resp:	**Status:**	**Stage:**	**Recurrent:**	**Due Date:**	**Frequency:**
	Both	Completed	Preparation	☐	28-Feb-2015	
	Risk Management: (b) As part of the technical assistance component, support would be provided for the development of a maintenance strategy to optimize the use of scarce resources for more efficient and effective maintenance.					
	Resp:	**Status:**	**Stage:**	**Recurrent:**	**Due Date:**	**Frequency:**
	Both	Not Yet Due	Implementation	☑		Continuous

<table>
<tr><td>Social and Environmental</td><td>Rating</td><td colspan="5">Substantial</td></tr>
<tr><td rowspan="3">Risk Description:

The project is not expected to have significant environmental impacts, beyond construction impacts, such as dust and noise. An Environmental Assessment (EA) and an Environmental Management Plan (EMP), as well as a Resettlement Action Plan (RAP) have been prepared for the project. Lack of prior experience with Bank safeguards policies and the piloting of a new compensation policy are risks during project implementation.</td><td colspan="6">Risk Management:

Dedicated social management staff have been assigned in the municipal and county PMOs. Relevant training programs have been provided to staff and programs will be conducted on an on-going basis to strengthen their capacity on social safeguards. The Bank will review internal and external reports on safeguards implementation and compliance with Bank policies, and will also carry out site visits during implementation support missions. Appropriate remedial actions will be agreed with TPMO/Tongren Municipality/Guizhou Province, as appropriate, and their implementation will be monitored by the Bank.</td></tr>
<tr><td>Resp:</td><td>Status:</td><td>Stage:</td><td>Recurrent:</td><td>Due Date:</td><td>Frequency:</td></tr>
<tr><td>Both</td><td>Not Yet Due</td><td>Both</td><td>☑</td><td></td><td>Continuous</td></tr>
<tr><td>Program and Donor</td><td>Rating</td><td colspan="5">Low</td></tr>
<tr><td rowspan="3">Risk Description:

There are no other projects/activities or other development partners involved with this project.</td><td colspan="6">Risk Management:</td></tr>
<tr><td>Resp:</td><td>Status:</td><td>Stage:</td><td>Recurrent:</td><td>Due Date:</td><td>Frequency:</td></tr>
<tr><td></td><td></td><td></td><td>☐</td><td></td><td></td></tr>
<tr><td>Delivery Monitoring and Sustainability</td><td>Rating</td><td colspan="5">Substantial</td></tr>
<tr><td rowspan="3">Risk Description:

(a) The two sub-PMOs may have different preparation and implementation schedules, due to different capacity in project management, which may cause preparation and implementation delays.</td><td colspan="6">Risk Management:

(a) During Implementation Support, the Bank will work closely with the sub-PMOs to monitor implementation and help the counterparts with corrective action, as needed. As further support, the technical assistance component includes training on project management.</td></tr>
<tr><td>Resp:</td><td>Status:</td><td>Stage:</td><td>Recurrent:</td><td>Due Date:</td><td>Frequency:</td></tr>
<tr><td>Both</td><td>Not Yet Due</td><td>Both</td><td>☑</td><td></td><td>Continuous</td></tr>
<tr><td>(b) The investment size is substantial compared to the two counties' annual fiscal revenues. Insufficient counterpart funding may cause implementation delays.</td><td colspan="6">Risk Management:

(b) The Bank has determined that with the support of a confirmed national rural roads subsidy, project local governments will be able to provide the required counterpart funding during the construction period. The Bank will monitor the timely availability of counterpart funds on an on-</td></tr>
</table>

	going basis throughout implementation.					
	Resp:	**Status:**	**Stage:**	**Recurrent:**	**Due Date:**	**Frequency:**
	Both	Not Yet Due	Implementation	☐	30-Sep-2019	
(c) Improvements in current maintenance practices may be needed to ensure the sustainability of project investments.	**Risk Management:** (c) A technical assistance component on rural road maintenance has been included in the project.					
	Resp:	**Status:**	**Stage:**	**Recurrent:**	**Due Date:**	**Frequency:**
	Both	Not Yet Due	Both	☑		Continuous

Overall Risk		
Overall Implementation Risk:	**Rating**	**Substantial**

Risk Description:

The overall implementation risk rating is substantial because of: the large size of the project relative to the county governments' local fiscal revenues; the proposed implementation of a new compensation policy for affected peoples; uncertain technical capacity of the county-level PMOs to manage a project of this magnitude; and untested role of the Tongren PMO to coordinate the sub-PMO activities. Appropriate risk management measures have been included in the project area and the Bank will monitor the satisfactory implementation of these measures and provide on-going implementation support.

Annex 5: Implementation Support Plan

China: Tongren Rural Transport Project

Strategy and Approach for Implementation Support

1. The strategy for implementation support has been developed based on the risk assessment in the ORAF. Implementation of the risk mitigation measures for the following risk categories, which have been rated as "Substantial", will be closely monitored: (a) Environmental and Social; (b) Capacity; and (c) Delivery Monitoring and Sustainability.

2. **Capacity**. During the initial implementation stage, strong Bank support and training on Bank reporting requirements and safeguards monitoring will be provided, and the Bank will leverage its convening power to ensure that all relevant government stakeholders are involved and contributing. Counterpart funding availability would be regularly monitored by the Bank throughout implementation, and the Bank will address issues as they arise.

3. **Social Safeguards**. Additional advisory will be sought from Bank social development specialists on risk factors associated with implementing the new compensation policy.

4. **Financial Management.** The FM supervision strategy for this project is based on its FM risk rating and the level of FM supervision provided by the TPMO, which will be evaluated on regular basis by the FMS, in line with the FMSB's FM Manual and in consultation with relevant task team leader. FM reviews will focus on the following areas: (a) Project financial staff members have received necessary training for managing World Bank financed operations; (b) Disbursement and funds flow arrangements function appropriately and efficiently; (c) The project's accounting system, particularly the new accrual accounting modules, can generate the required financial reporting; and (d) Counterpart funds are delivered as planned.

5. **Procurement.** The TPMO has secured a qualified procurement management consultant with prior experience managing World Bank project procurement programs.

6. **Delivery Monitoring and Sustainability**. As part of the Technical Assistance component, each PMO will be provided project management and monitoring training and support. The Bank will monitor contract management, in particular construction quality and adherence to time schedules. The Bank will also monitor progress of technical assistance on maintenance funding needs and on the introduction of information technology systems to improve road maintenance management, and will follow-up with senior provincial and local government officials on the review of, decisions on, and implementation of, the main recommendations.

7. **Midterm Review**. A draft midterm review report shall be submitted by the TPMO to the Bank on September 1, 2018. After submittal, a midterm review mission will be organized, which is considered an enhanced implementation support visit, during which representatives of the Bank and the counterparts reassess the Project's original development objectives, their relevance in light of new circumstances, and the likelihood of achieving them.

Implementation Support Plan

Primary Focus of Implementation Support

Time	Focus	Skills Needed	Resource Estimate	Partner Role
First twelve months	• TOR preparation • Detailed design • Procurement • Safeguards	• Technical (road and bridge design, road safety) • Safeguards • Financial management • Procurement	5-6 staff, 2 trips per staff; 1-2 road and bridge design consultants, 2 trips per consultant	TPMO provides support on financial management and procurement to sub-PMOs as needed
12-60 months	• Procurement • Project implementation • Monitoring and supervision	• Technical (road and bridge design, road safety, road maintenance) • Transport planning • Safeguards • Financial management • Procurement	5-6 staff, 2 trips per staff per year; 1 road implementation consultant, 2 trips per consultant per year	TPMO provides support on financial management and procurement to sub-PMOs as needed

Skills Mix Required

Skills Needed	Number of Staff Weeks	Number of Trips	Comments
Road and bridge design	1 staff member: 10 weeks	4 trips	2 trips +4 weeks per first-two project years + 2 extra week Review road and bridge designs to make sure they are not over designed
Transport planning	1 staff member: 4 weeks	2 trips	1 trip + 2 weeks per the last-two project years Review the TA outputs on rural-urban public transport planning
Road maintenance	1 staff member: 4 weeks	2 trips	1 trip + 2 weeks per the last-two project years Review on the pilot community-based maintenance contracting and evaluate the impacts
Road safety	1 staff member: 5 weeks	5 trips	1 trip + 1 week per project year Review on the design and implementation on road safety
Safeguards	2 staff members: 10 weeks	10 trips	1 trip + 1 week per project year for each staff
Financial management	1 staff member: 5 weeks	5 trips	1 trip + 1 week per project year
Procurement	1 staff member: 5 weeks	5 trips	1 trip + 1 week per project year
Training	1 staff member: 5 weeks	5 trips	1 trip + 1 week per project year

8. **Location of Staff Expertise**. The Task Team Leader will be based in Washington, with local support from the country office. External specialists will be invited mainly for road and bridge design reviews and road safety reviews/visits.

Annex 6: Economic and Financial Analysis

China: Tongren Rural Transport Project

ECONOMIC ANALYSIS

1. The project will upgrade 647 km of rural roads in Dejiang and Sinan County from unclassified to Class IV and will upgrade and construct ancillary small and medium-sized bridges. The primary economic benefit of the project will be improved connectivity between rural populations and urban social and economic services. Project economic costs include: capital investment costs (including associated resettlement and environmental mitigation costs of the investments) during the construction period and operations and maintenance costs following completion of construction. The project's direct quantifiable economic benefits are reduction in passenger travel time and in accident and fatality rates. Potential economic benefits from the project, such as expanded access to market, education, healthcare and other resources for the rural population were also considered for the economic analysis, but were not quantified.

2. The economic analysis inputs are derived from the project FSR, which includes traffic volume survey results, current economic indicators, etc. The Bank evaluated the project's quantifiable economic benefits, comparing "with-project" and "without-project" scenarios.

Economic Development in the Project Areas

3. Guizhou Province is a relatively underdeveloped province in China, with a GDP per capita of RMB22,922 (USD3,700) in 2013, ranking the lowest of all provinces in the country. The proposed project is located in Dejiang County and Sinan County, administrated under Tongren Municipality in Guizhou Province. The total population of the two counties was 1.2 million in 2013, and the project roads will cover an area with a population of 333,600, which counts for 35.1 percent of the total rural population in Tongren.

4. Dejiang County and Sinan County are key national poverty counties and are relatively poor compared to the rest of the province. The average 2013 GDP per capita in Dejiang and Sinan was RMB16,341 and RMB14,778 respectively, while the average GDP in Guizhou Province and in China was RMB22,922 and RMB41,908. In the 12th Five-Year Socioeconomic Development Plans for Guizhou Province and Tongren Municipality, Dejiang and Sinan are listed as priorities for economic development, with GDP growth rates of 17 to 19 percent.

5. Since poverty in the two counties may be partially attributed to Tongren's geography, where more than 96 percent of its 18,000 square-km area comprises hilly and mountainous terrain, the national and provincial economic development plans prioritize the development of transport infrastructure. Table A6-1 presents the general socioeconomic development status in Dejiang, Sinan, Tongren, Guizhou and China from 2000 to 2013.

Table A6-1: 2000-2013 GDP and GDP per capita in Dejiang, Sinan, Tongren, Guizhou and China

Year	Gross Domestic Product (RMB million)					GDP Per Capita (RMB)				
	Dejiang	Sinan	Tongren	Guizhou	China	Dejiang	Sinan	Tongren	Guizhou	China
2000	889	1,050	6,364	102,992	9,921,455	2,045	1,709	1,709	2,759	7,858
2001	894	1,093	6,730	113,327	10,965,517	2,030	1,758	1,786	3,000	8,622
2002	980	1,172	7,353	124,343	12,033,269	2,202	1,866	1,930	3,257	9,398
2003	998	1,177	8,598	142,634	13,582,276	2,221	1,857	2,236	3,701	10,542
2004	1,132	1,430	10,107	167,780	15,987,834	2,495	2,236	2,603	4,317	12,336
2005	1,421	1,788	12,805	197,906	18,493,737	3,104	2,774	2,849	5,052	14,185
2006	1,625	2,112	14,747	227,089	21,631,443	3,526	3,254	3,741	5,759	16,500
2007	1,983	2,616	17,917	274,190	26,581,031	3,505	3,238	4,519	6,915	20,170
2008	2,332	2,913	21,642	333,340	31,404,543	5,283	4,630	5,842	9,855	23,708
2009	2,734	3,369	25,174	391,268	34,090,281	6,156	5,339	6,748	10,971	25,608
2010	3,232	4,024	29,362	460,216	40,151,280	8,604	7,857	9,304	13,119	30,015
2011	3,978	4,931	35,796	570,184	47,310,405	10,831	9,889	11,622	16,413	35,198
2012	5,052	6,240	45,791	685,220	51,947,010	13,779	12,541	14,833	19,710	38,420
2013	6,006	7,366	53,522	800,679	56,884,521	16,341	14,778	17,243	22,922	41,908

Source: Project Feasibility Study Report

Traffic Forecast

6. A field traffic volume survey was carried out on each of the project roads during July 8-27, 2014. The forecast traffic volume for the without-project scenario has been projected as a natural traffic increase with expected regional economic development (base traffic volume increase). In the with-project scenario, traffic volume that is newly generated because of the upgraded project road (induced traffic volume) has been predicted in addition to the base traffic volume. Details of the predicted traffic volume increase by type of vehicle for each five-year period from 2015 – 2020 to 2036 - 2039 in the “with project” and “without project” scenarios are available in the Project Files.

Economic Costs

7. The project capital investment of about RMB1,300 million in 2015 constant prices was converted to economic costs by excluding taxes and duties, contingencies, capacity building costs, and financial charges. Construction phasing over the five-year construction period of 2015-2019 was assumed to be 25 percent, 25 percent, 20 percent, 15 percent and 15 percent each year.

8. The economic cost of operations and maintenance was estimated based on the following assumptions:[2,3]

a) *Routine Maintenance.* RMB 1000 per kilometer, with a six percent annual increase.
b) *Medium Maintenance.* Five times the cost of routine maintenance, at five-year intervals.
c) *Rehabilitation.* Ten times the cost of routine maintenance, at ten-year intervals.

Economic Benefits

9. The major economic benefits include passenger travel time savings and accident cost reductions. In addition, reductions in vehicle operating costs (VOC) are also direct economic benefits from the project. However, due to the relatively low average annual daily traffic volume of less than 1000 passenger car units on the project roads, VOC reduction was not quantified in the economic analysis.

10. **Passenger Travel Time Savings.** The average speed on project roads during 2020-2039 was estimated at 24 kph with-project and 12 kph without-project. Travel time on each road was calculated based on the road length and the estimated speed. The value of time for passengers was estimated as RMB9.77 per hour in Dejiang and RMB8.83 per hour in Sinan, based on the GDP per capita in 2014, with an annual growth rate of 20 percent. Travel time savings are subject to two assumptions: (a) business trip ratio of 40 percent, where travel time savings will be 50 percent higher than for a non-business trip; and (b) opportunity cost ratio for passengers is 30 percent.

11. **Accident Rate Changes**. The number of accidents on each road in 2020-2039 was projected based on traffic volume, road length, and width, under the width and without the project scenarios. The average economic loss from road accidents on Class IV and unclassified roads in the project area, based on statistics of the past few years, was about RMB6,000. It was forecast that during 2020-2039, despite the overall increase in traffic volume, the net annual number of accidents on project roads would be still be reduced, on average, by five accidents.

12. In addition to the quantified analysis of economic benefits, surveys will be carried out before and after the project in six villages (three in Dejiang - Hepeng, Dongyuan, Luqing; and three in Sinan - Tunshan, Antang, Lianmeng;) to evaluate improvements in education, income level, etc. The survey form is included in the Project Implementation Manual and will be used in conjunction with the monitoring survey forms included in the RAP.

Economic Internal Rate of Return and Sensitivity Analysis

13. The economic internal rate of return (EIRR) of the project was calculated by comparing the economic costs and benefits over a period of 25 years, including five years of construction and 20 years of operations. The EIRR for the entire project is 16.49 percent, and is 16.80 percent and

[2] Guizhou “Beautiful Village” - Commonwealth Road Engineering Technical Guideline, 贵州省“四在农家_美丽乡村”—小康路工程技术导则
[3] National Urban Infrastructure Maintenance Estimation Indicator, 全国市政工程设施养护维修估算指标

16 percent respectively for the Dejiang component and the Sinan component. These EIRRs are higher than the World Bank recommended economic opportunity cost of capital (12 percent). Details of the economic benefit flows and economic cost flows are in the Project Files.

14. Sensitivity analyses were carried out under scenarios of increased/decreased construction costs and operation/maintenance costs, as well as increased/decreased economic benefits and for combinations thereof. The analyses show that under all scenarios the project EIRR is above 12 percent. The results of the sensitivity analysis are shown in the table, below.

Table A6-2: Project Economic Analysis Summary

Case	Test	EIRR	ENPV@12% (RMB million)
Base Case		**16.49%**	**526.82**
Investment Cost	+10%	15.53%	440.78
	+20%	14.69%	354.73
	-10%	17.60%	612.87
O&M Costs Maintenance Costs Cost	+10%	16.48%	525.20
	+20%	16.47%	523.58
	-10%	16.51%	528.45
Benefits	+10%	17.50%	667.16
	-10%	15.42%	386.49
	-20%	14.27%	246.15
Combinations			
Increased Costs & Reduced Benefits	10%, -10%	14.50%	300.44
Increased Costs & Reduced Benefits	20%, -20%	12.60%	74.06

Source: Bank analysis

FINANCIAL ANALYSIS

15. The governments of Dejiang and Sinan counties will be responsible for counterpart funding and debt service. Upon completion, all project roads will be provided as public goods, without any toll revenues. The financial analysis focused on the fiscal sustainability of the borrowers, examining: (a) government fiscal revenue and expenditure; (b) transport infrastructure development and financing; (c) government debt status; (d) counterpart funding requirements and availability; and (e) measures to ensure counterpart funding availability and fiscal sustainability.

Government Fiscal Status

16. Table A6-3 summarizes government fiscal revenues and expenditures in Dejiang county and Sinan county during 2008 – 2012.4 Local fiscal revenue increased steadily during 2008-2012

[4] In the PRC, the total fiscal revenue in an area is split by different levels of government. Most of the fiscal revenue at district/county level is submitted to upper level governments. Fiscal revenue retained by the local government

at an average rate of 52 percent and 65 percent respectively in Dejiang and Sinan. Upper level government subsidies also increased at an average of 23 percent in both counties. Total fiscal expenditures also increased steadily during 2008-2012, at an average rate of 27 percent in Dejiang and 24 percent in Sinan.

Table A6-3: Government Fiscal Revenue and Expenditure in Dejiang and Sinan

Dejiang Fiscal Revenue (RMB 10,000)					
	2008	**2009**	**2010**	**2011**	**2012**
Total Fiscal Revenue	**85,422**	**97,642**	**135,965**	**190,321**	**233,975**
Local Fiscal Revenue	14,313	17,961	31,223	51,253	73,680
Local Fiscal Revenue % Change		25%	74%	64%	44%
Upper Government Subsidy	71,109	79,681	104,742	139,068	160,295
Upper Government Subsidy % Change		12%	31%	33%	15%
Total Fiscal Expenditure	**80,298**	**91,528**	**119,738**	**159,250**	**205,688**
Total Expenditure % Change		14%	31%	33%	29%
Urban and Rural Development	8,103	5,382	13,404	22,547	25,229
Transportation Infrastructure	3,596	3,816	7,122	9,731	42,692
Sinan Fiscal Revenue (RMB 10,000)					
	2008	**2009**	**2010**	**2011**	**2012**
Total Fiscal Revenue	**104,235**	**115,123**	**182,786**	**224,333**	**288,139**
Local Fiscal Revenue	13,360	16,515	38,809	50,896	85,936
Local Fiscal Revenue % Change		24%	135%	31%	69%
Upper Government Subsidy	90,875	98,608	143,977	173,437	202,203
Upper Government Subsidy % Change		9%	46%	20%	17%
Total Fiscal Expenditure	**100,238**	**114,609**	**159,721**	**196,002**	**237,526**
Total Expenditure % Change		14%	39%	23%	21%
Urban and Rural Development	433	4,959	11,350	12,742	23,213
Transportation Infrastructure	842	7,594	3,665	3,640	3,974

Source: Financial Bureaus of Dejiang and Sinan County

is called local government fiscal revenue, which can be budgeted by the local government. Upper level governments provide fiscal subsidies to the local government through annual budgetary allocations. In general, such subsidies are allocated to local governments for earmarked purposes and projects, and are not allowed to be used for other purposes.

Transport Infrastructure Development and Financing

17. For supporting rapid development of urban infrastructure and rural roads in the project areas, the governments have mobilized a variety of funding sources to supplement the limited government fiscal capacity. As shown in Table A6-3, government expenditures on urban and rural development as well as transportation infrastructure had fluctuated during 2008-2012. Both counties experienced sharp and intense urban and rural development around year 2009, and then a relatively steady increase thereafter. Total expenditures on these two categories from 2008 through 2012 were three times and 11 times in Dejiang, 53 times and five times in Sinan.

18. Although expenditures project related sectors were increasing significantly in the two counties in past years, the total project size (RMB1.4 billion) is still relatively large compared to the counties' local annual fiscal revenues (local fiscal revenue in in 2012 was RMB736 million in Dejiang, and RMB 859 million in Sinan.

19. To meet counterpart funding requirements, the two counties will leverage a dedicated national rural road subsidy program, "Allocate Automobile Sales Tax to Village Rural Roads Upgrading Subsidy", which will provide RMB500,000 per km for upgrading rural roads with asphalt pavement. This subsidy is provided by the national level government and the province has confirmed that the Sinan and Dejiang roads have already been confirmed for inclusion in the subsidy list. In addition, Dejiang and Sinan have been receiving the subsidy each year in the recent past. As such, there is a relatively low risk that the subsidy will not be realized. TPMO has provided additional information on this subsidy shown in Table A6-4.

Table A6-4: Allocation of Automobile Sales Tax to Village Rural Roads Upgrading Subsidy

Official name (English and Chinese)	Allocate Automobile Sales Tax to Village Rural Roads Upgrading Subsidy
Application criteria	New construction and upgrading of county roads and rural village roads in extreme low-income areas in 21 provinces in China are eligible for the subsidy. To apply, each provincial transport bureau will submit a construction plan for 2013-2015 for inclusion in the national database. The project roads are already in the national subsidy database.
Application deadline	Each year, around September – October, the Ministry of Transport (MoT) confirms the annual subsidy allocation for each applicant. By January 10 each year, the provincial Transport Bureau will submit details of the previous year's road construction that are eligible for the subsidy.
Disbursement rules and ceilings	One-time subsidy based on each year's construction size. Subsidy rates are RMB500,000/km for rural village roads, RMB800,000/km for county roads.
Prior Tongren / Dejiang / Sinan subsidy receipts	Sinan and Dejiang are among the extreme low-income counties in Guizhou province.
Expected total subsidy receipt during construction for the project (2015-2019)	Dejiang: RMB210 million; Sinan: RMB115 million

20. The national rural road subsidy will substantially ease the funding burden on the county-level governments.

Project Counterpart Requirements and Analysis

21. Projections of the fiscal revenue and counterpart funding requirements were analyzed for the proposed project implementation period (2015-2019) under the following assumptions:

a) Annual increase in fiscal revenue at 20 percent in both Dejiang and Sinan.
b) Construction expenditures are disbursed over five years at 25 percent, 25 percent, 20 percent, 15 percent and 15 percent.

22. The analysis indicates that counterpart funding as a share of fiscal revenues in Dejiang and Sinan over the construction period are 0.85 percent and 1.07 percent respectively. Details of the counterpart funding analysis for Dejiang and Sinan counties are available in the project files.

Table A6-5: Cash Flow for Dejiang Component

RMB 10,000	**Totals**	**2015**	**2016**	**2017**	**2018**	**2019**
Dejiang County*						
Forecast Local Fiscal Revenue	**875,590**	127,319	147,690	171,320	198,732	230,529
Project Construction Cost	**89,432**	2,109	18,462	36,184	23,120	9,557
National Subsidy Contribution	**20,785**	322	8,941	6,263	5,260	-
WB Loan Contribution	**61,209**	-	14,079	24,765	15,824	6,541
Local Revenue Contribution	**7,437**	1,786	(4,558)	5,156	2,036	3,016
Local Budget	**7,437**	1,786	(4,558)	5,156	2,036	3,016
Local Land Lease	**-**	-	-	-	-	-
Local Revenue Contribution as % Local Fiscal Revenue	**0.85%**	1.40%	-3.09%[5]	3.01%	1.02%	1.31%
% Counterpart Funding from National Subsidy	**73.65%**	15.29%	203.99%	54.84%	72.09%	0.00%
Local Revenue Contribution as % Project Cost	**8.32%**	84.71%	-24.69%	14.25%	8.81%	31.56%
National Subsidy Contribution as % Project Cost	**23.24%**	15.29%	48.43%	17.31%	22.75%	0.00%
WB Loan Contribution as % Project Cost	**68.44%**	0.00%	76.26%	68.44%	68.44%	68.44%

* Project cost from the FSR, local fiscal revenue from Dejiang Government
Source: Bank analysis

[5] As Dejiang is applying retroactive financing for year 2015, the project implemented in 2015 using World Bank loan will be disbursed in 2016 after the loan is effective, which results in the cash flow in 2016 for the local contribution to be negative.

Table A6-6: Cash Flow for Sinan Component

RMB 10,000	**Totals**	**2015**	**2016**	**2017**	**2018**	**2019**
Sinan County*						
Forecast Local Fiscal Revenue	1,021,237	148,497	172,257	199,818	231,789	268,875
Project Construction Cost	48,543	1,609	10,524	18,238	12,706	5,467
National Subsidy Contribution	11,536	343	5,189	2,987	3,017	-
WB Loan Contribution	26,055	-	6,512	9,789	6,820	2,935
Total Local Contribution	10,951	1,266	(1,177)	5,461	2,869	2,533
Local Budget	10,951	1,266	(1,177)	5,461	2,869	2,533
Local Land Lease	-	-	-	-	-	-
Local Contribution as % Local Fiscal Revenue	**1.07%**	**0.85%**	**-0.68%**	**2.73%**	**1.24%**	**0.94%**
% Counterpart Funding from National Subsidy	51.30%	21.32%	129.35%	35.36%	51.26%	0.00%
Local Revenue Contribution as % Project Cost	22.56%	78.68%	-11.19%[6]	29.94%	22.58%	46.32%
National Subsidy Contribution as % Project Cost	23.77%	21.32%	49.31%	16.38%	23.75%	0.00%
WB Loan Contribution as % Project Cost	53.68%	0.00%	61.88%	53.68%	53.68%	53.68%

* Project cost from the FSR, local fiscal revenue from Sinan Government Source: The Bank Task Team

23. To investigate counterpart funding requirements under adverse circumstances, several scenarios were examined:

a) *Increased cost*. Construction costs increase by 10 percent each year compared to the base scenario.
b) *Decreased subsidy*. National subsidies decrease by 10 percent each year compared to the base scenario.
c) *Faster construction*. Construction expenditure modified to 50 percent, 30 percent, 20 percent, 0 percent and 0 percent over the five year implementation period.
d) *Slower start-up*. Construction expenditure modified to 0 percent, 0 percent, 20 percent, 30 percent and 50 percent over the five year implementation period.

24. Table A6-7 summarizes the results of the sensitivity analyses. The highlights are:

a) *Dejiang.* Increased project cost and slower start-up would significantly increase the maximum annual local funding contribution to 6.12 percent of local fiscal revenue.

[6] As Sinan is applying retroactive financing for 2015, and the World Bank loan portion will only be disbursed in 2016 after the loan is effective, the cash flow in 2016 for the local contribution is negative.

Expedited construction in the first three years would dramatically increase the maximum local funding contribution to 34.87 percent of local fiscal revenue.

b) *Sinan.* Increased project cost and slower start-up would significantly increase the maximum annual local funding contribution to 4.18 percent. Expedited construction in the first three years would dramatically increase the maximum local funding contribution to 16.11 percent of local fiscal revenue.

Table A6-7: Sensitivity Analysis on the Impact of Counterpart funding on Local Fiscal Revenue

Maximum Annual Contribution as % Local Fiscal Revenue	Base	Increased Cost	Reduced Subsidy	Expedited Construction	Slower Start-up
Dejiang County	3.01%	5.12%	3.38%	34.87%	6.12%
Sinan County	2.73%	3.65%	2.88%	16.11%	4.18%

Source: The Bank Task Team

25. The maximum annual counterpart fund contribution during the implementation period, as a percent of local fiscal revenue, could be very high for both Dejiang and Sinan counties, especially with the funding requirements for other on-going urban and rural development projects. To avoid potential counterpart funding shortfalls, the following actions will be taken:

a) Annual counterpart funds will normally be included in full in the government fiscal budgetary plans of the project counties. However, the project counties may not be able to allocate the required counterpart funds in full in their annual fiscal expenditure plans in some years.

b) Project counties would seek special financial assistance from municipal governments, especially during the peak years of project expenditures. A guarantee letter to this effect has been provided by the Tongren Financial Bureau in July 2014.

Government Debt Status

26. In 2012, accumulated debts in Dejiang and Sinan were USD87 million and USD16 million respectively and represented about 73 percent and 11 percent of 2012 annual local fiscal revenue. During 2015 – 2018, the counties' projected annual repayments are about 12 percent and five percent of Dejiang and Sinan's forecast annual fiscal revenue each year.

27. The accumulated debt level in future years have been forecast based on the following assumptions: (a) annual debt repayment will continue to equal 12 percent and five percent of Dejiang and Sinan's forecast annual fiscal revenue, respectively; (b) annual interest rate of the domestic commercial loans is six percent; (c) debt service period for domestic commercial loans is five years, on average; (d) average annual debt repayment is the debt service payment in the third year of the five year period; (e) annual local fiscal revenue growth rate is 20 percent in 2015, 16 percent from 2016-2020, 13 percent from 2021-2025, 10 percent from 2026-2030, seven percent from 2031-2035, four percent from 2036-2040, and two percent from 2041-2047. Forecast debts in Dejiang and Sinan are presented in Tables A6-8 and A6-9.

Table A6-8: Dejiang Accumulated Debt Forecast (2015-2019)

RMB 10,000	2015	2016	2017	2018	2019
Forecast Local Fiscal Income	127,319.04	152,782.85	177,228.10	205,584.60	238,478.14
Forecast Debt Repayment	15,315.82	18,378.98	21,319.62	24,730.76	28,687.68
Forecasted Accrued Liability Balance	68,374.19	82,049.02	95,176.87	110,405.17	128,069.99
World Bank Loan Balance		15,834.02	25,527.51	16,212.36	7,658.25
Total Forecasted Accrued Liability Balance (WB Loan + Other Loan)	68,374.19	97,883.04	120,704.38	126,617.53	35,728.25
Forecasted Accrued Liability Balance as % of Local Fiscal Revenue	53.70%	53.70%	53.70%	53.70%	53.70%
Total Forecasted Accrued Liability Balance as % of Local Fiscal Revenue (WB Loan + Other Loan)	53.70%	64.07%	68.11%	61.59%	56.91%

Table A6-9: Sinan Accumulated Debt Forecast (2015-2019)

RMB 10,000	2015	2016	2017	2018	2019
Forecast Local fiscal Income	148,497.41	178,196.89	206,708.39	239,781.73	278,146.81
Forecast Debt Repayment	7,424.06	8,908.88	10,334.30	11,987.78	13,905.83
Forecasted Accrued Liability Balance	33,143.14	39,771.77	46,135.25	53,516.89	62,079.60
World Bank Loan Balance		6,740.18	10,866.49	6,901.24	3,259.95
Total Forecasted Accrued Liability Balance (WB Loan + Other Loan)	33,143.14	46,511.95	57,001.74	60,418.13	65,339.54
Forecasted Accrued Liability Balance as % of Local Fiscal Revenue	22.32%	22.32%	22.32%	22.32%	22.32%
Total Forecasted Accrued Liability Balance as % of Local Fiscal Revenue (WB Loan + Other Loan)	22.32%	26.10%	27.58%	25.20%	23.49%

28. The two counties will be responsible for repayment of the loan in 32 years, starting from year 2023, in uniform principle balance, with an eight year grace period. Repayment of the loan as a percentage of the two counties' forecast local fiscal revenue is at a reasonable level, from 0.10 percent to 0.38 percent. If the 2012 debt repayment levels of 12 percent and five percent of annual fiscal revenue are considered a ceiling for Dejiang and Sinan, then the Bank loan does not place an unreasonable burden on either county in terms of liabilities.

29. While future accumulated debt burdens during the Bank loan repayment period are not known, the Bank estimated the maximum additional debt that can be accumulated each year, while

ensuring that annual payments do not exceed current levels, i.e., 12 percent and five percent of forecast annual fiscal revenue. For example, in addition to the Bank loan, accumulated debt in 2020 should not exceed USD228 million in Dejiang and USD95 million in Sinan. These thresholds are above the expected 2019 accumulated debt of USD207 million in Dejiang and USD100 million in Sinan.

Table A6-10: Forecasted Debt Threshold of Dejiang and Sinan (USD)

Year	Forecasted Local Fiscal Revenue (Dejiang and Sinan)	Other Loan Threshold Forecast (Dejiang and Sinan)	Other Loan Threshold Forecast (Dejiang)	Other Loan Threshold Forecast (Sinan)
2020	966,588,613	323,417,315	228,163,504	95,253,811
2021	1,121,242,791	374,890,067	264,477,463	110,412,604
2022	1,267,004,354	429,607,810	300,611,379	128,996,432
2023	1,431,714,920	487,954,393	341,442,704	146,511,689
2024	1,617,837,860	526,184,370	368,151,575	158,032,795
2025	1,828,156,782	601,487,625	420,850,585	180,637,040
2026	2,065,817,164	685,104,721	479,365,461	205,739,260
2027	2,272,398,880	765,737,523	531,182,257	234,555,266
2028	2,499,638,768	847,756,900	588,120,157	259,636,742
2029	2,749,602,645	937,891,862	650,691,279	287,200,583
2030	3,024,562,909	1,036,953,961	719,458,938	317,495,022
2031	3,327,019,200	1,144,779,694	794,301,937	350,477,757
2032	3,559,910,544	1,239,783,764	852,685,053	387,098,711
2033	3,809,104,282	1,330,469,965	915,109,486	415,360,479
2034	4,075,741,582	1,427,439,341	981,858,137	445,581,204
2035	4,361,043,493	1,531,131,706	1,053,233,694	477,898,013
2036	4,666,316,537	1,641,927,518	1,129,496,806	512,430,712
2037	4,852,969,199	1,725,815,283	1,176,422,853	549,392,429
2038	5,047,087,966	1,797,300,001	1,225,199,727	572,100,274
2039	5,248,971,485	1,871,606,736	1,275,901,462	595,705,274
2040	5,458,930,345	1,948,848,369	1,328,605,053	620,243,316
2041	5,677,287,558	2,029,090,505	1,383,354,247	645,736,258
2042	5,790,833,309	2,084,418,793	1,412,162,660	672,256,132
2043	5,906,649,976	2,127,715,494	1,441,534,027	686,181,468
2044	6,024,782,975	2,171,859,291	1,471,479,607	700,379,684
2045	6,145,278,635	2,216,867,124	1,502,010,884	714,856,240
2046	6,268,184,207	2,262,756,274	1,533,139,572	729,616,702
2047	6,393,547,892	2,309,544,369	1,564,877,620	744,666,749

Operations and Maintenance

30. In 2013, funding from provincial and city levels for routine maintenance was lower than standards in both Dejiang and Sinan (see table below), requiring the counties to make up the shortfall to the extent possible. Funding for routine maintenance far exceeded the standards. Provincial funding for medium and major maintenance is not allocated according to the length of the road network in each county; instead it is allocated according to need (plans are prepared by Tongren Municipal Transport Bureau and approved by the Guizhou Provincial Department of Transport).

Table A6-11: Standards and Allocations for Maintenance Funding in 2013 (RMB million)

	Dejiang			Sinan			Tongren		
Source	**Standard**	**Funding**	**%**	**Standard**	**Funding**	**%**	**Standard**	**Funding**	**%**
Province (medium/major)	2.82	4.00	142	4.05	2.60	64	26.87	24.64	92
Province (routine)	1.03	0.82	80	1.51	1.21	80	8.67	8.66	100
City	0.55	0.29	53	0.83	0.46	55	5.28	4.68	89
County	2.18	3.60	165	3.32	5.00	151	21.11	29.91	142
Total	**6.57**	**8.71**	**133**	**9.71**	**9.27**	**95**	**61.92**	**67.89**	**110**

Source: Tongren Transport Bureau

31. Table A6-12 indicates maintenance funding standards by type of road. Standards for routine maintenance funding are low and are not sufficient to cover non-pavement maintenance and pavement repairs, especially in light of the poor condition of many local roads. Funding for medium and major maintenance is mainly provided through provincial subsidies, which have not increased since their introduction in 2005 (despite the costs of inputs having tripled). As a result, road conditions cannot be sustained, and the lifespan of the roads has been reduced, leading to an increased need for rehabilitation and reconstruction. This situation is aggravated by the fact that funding from the provincial and city levels do not appear to comply with the standards. Funding from the county level, however, exceeds the standards, thus alleviating the situation to some degree.

Table A6-12: Maintenance Funding Standards (RMB/km/year)

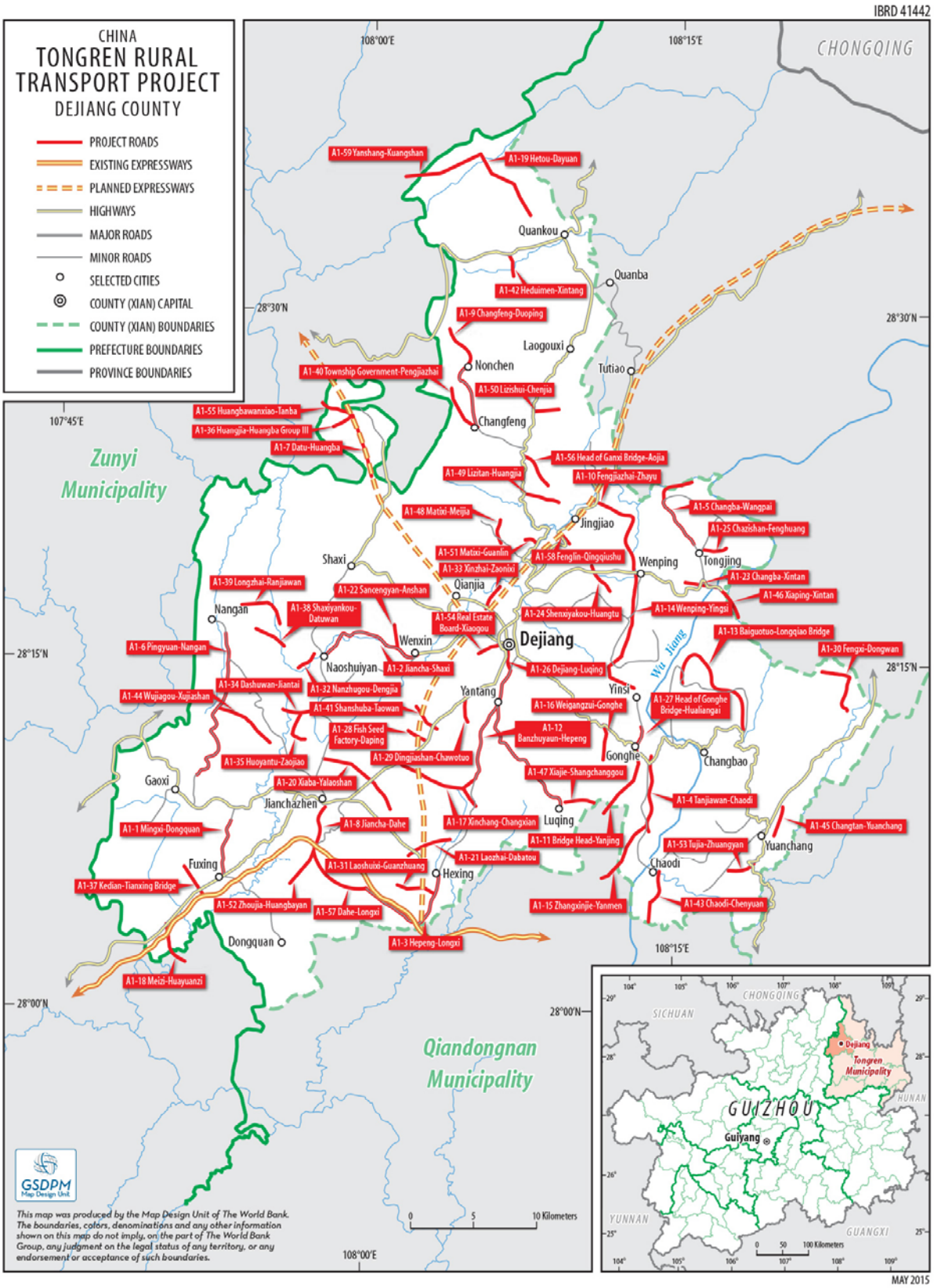
Road Type	Major/Medium Province	Routine			
		Province	**City**	**County**	**Total**
County roads (paved)	7,000	-	1,200	4,800	6,000
County roads (unpaved)	7,000	-	400	1,600	2,000
Township roads (paved)	3,500	-	600	2,400	3,000
Township roads (unpaved)	3,500	-	200	800	1,000
Village roads (paved)*	500	500	600	2,400	3,500
Village roads (unpaved)	500	500	80	320	900

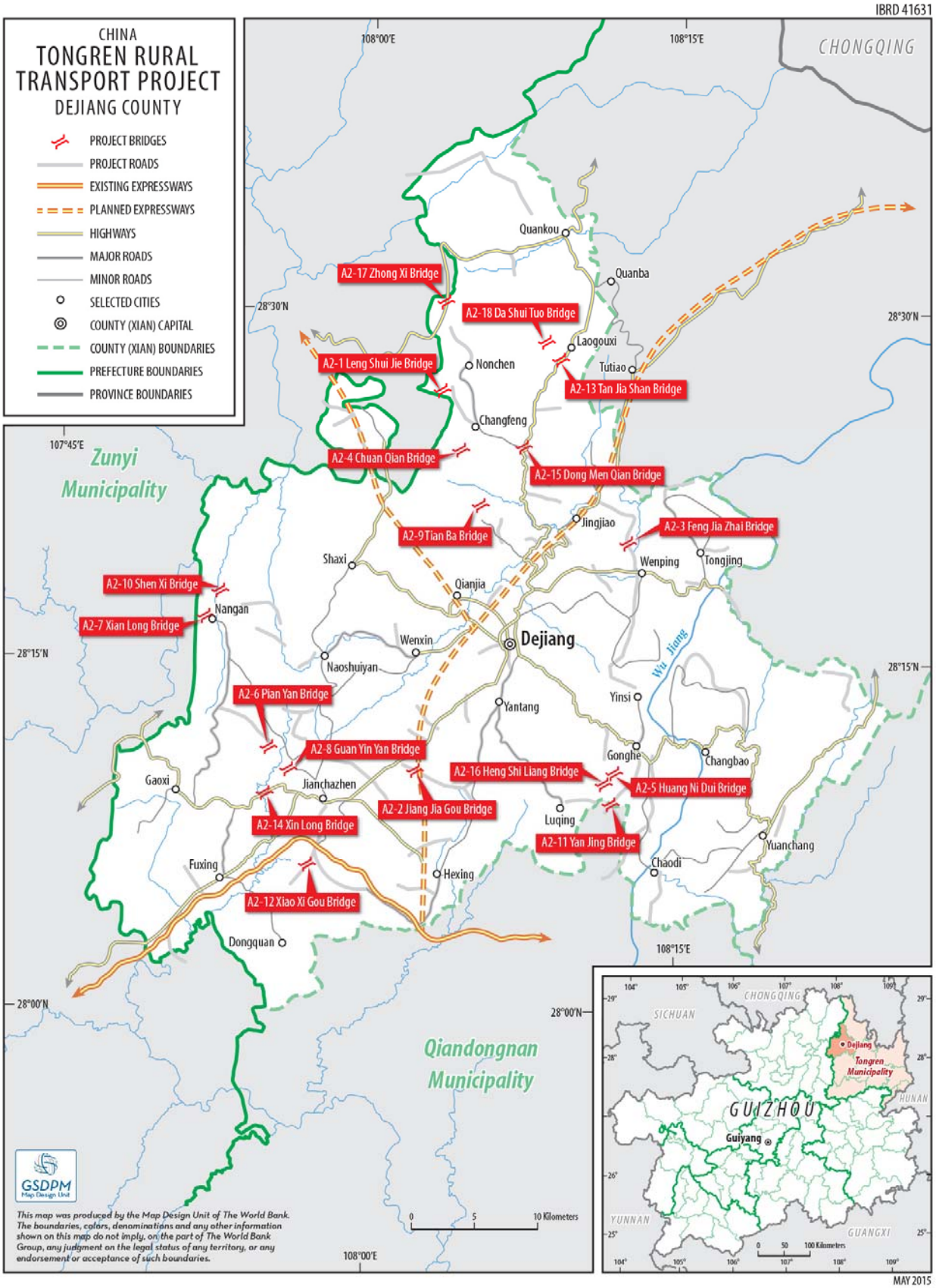
Source: Tongren Transport Bureau

32. As shown in Table A6-12 above, maintenance funding for village roads is very limited, and the additional funding from city and county level for paved village roads is therefore considered an appropriate move to protect the investments in upgrading these roads. However, the proposed project involves the upgrading of 647 km of village roads to class IV standard, some with cement concrete pavement, for which there are no plans to provide the elevated subsidy (cement concrete is perceived to require less maintenance and therefore does not receive the additional subsidy). The normal village road funding level for routine maintenance of RMB 900/km/year is unlikely to be sufficient to ensure the sustainability of these roads (by ensuring proper clearing and repair of the drainage system, filling of joints, etc., to decrease damage and avoid accelerated deterioration). To ensure sustainability, at least RMB2,500/km/year (from city/county and province) should be allocated for the maintenance of project upgraded roads.

33. The project will support the preparation of a proposal to the province for increasing the subsidy for village roads upgraded by the project. To help Dejiang and Sinan optimize the length of roads that can be maintained given limited budgets, the project also includes technical assistance to develop strategies for improving maintenance efficiency and efficacy, given local conditions.

Annex 7: Project Maps

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PROJECT BRIDGES
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PLANNED EXPRESSWAYS
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MAJOR ROADS
MINOR ROADS
SELECTED CITIES
COUNTY (XIAN) CAPITAL
COUNTY (XIAN) BOUNDARIES
PREFECTURE BOUNDARIES
PROVINCE BOUNDARIES
CHONGQING
Zunyi Municipality
Qiandongnan Municipality
Dejiang
Quankou
Quanba
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Tutiao
Nonchen
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Gaoxi
Jianchazhen
Luqing
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Chaodi
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Dongquan
Wu Jiang
A2-17 Zhong Xi Bridge
A2-18 Da Shui Tuo Bridge
A2-1 Leng Shui Jie Bridge
A2-13 Tan Jia Shan Bridge
A2-4 Chuan Qian Bridge
A2-15 Dong Men Qian Bridge
A2-9 Tian Ba Bridge
A2-3 Feng Jia Zhai Bridge
A2-10 Shen Xi Bridge
A2-7 Xian Long Bridge
A2-6 Pian Yan Bridge
A2-8 Guan Yin Yan Bridge
A2-16 Heng Shi Liang Bridge
A2-5 Huang Ni Dui Bridge
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A2-11 Yan Jing Bridge
A2-12 Xiao Xi Gou Bridge
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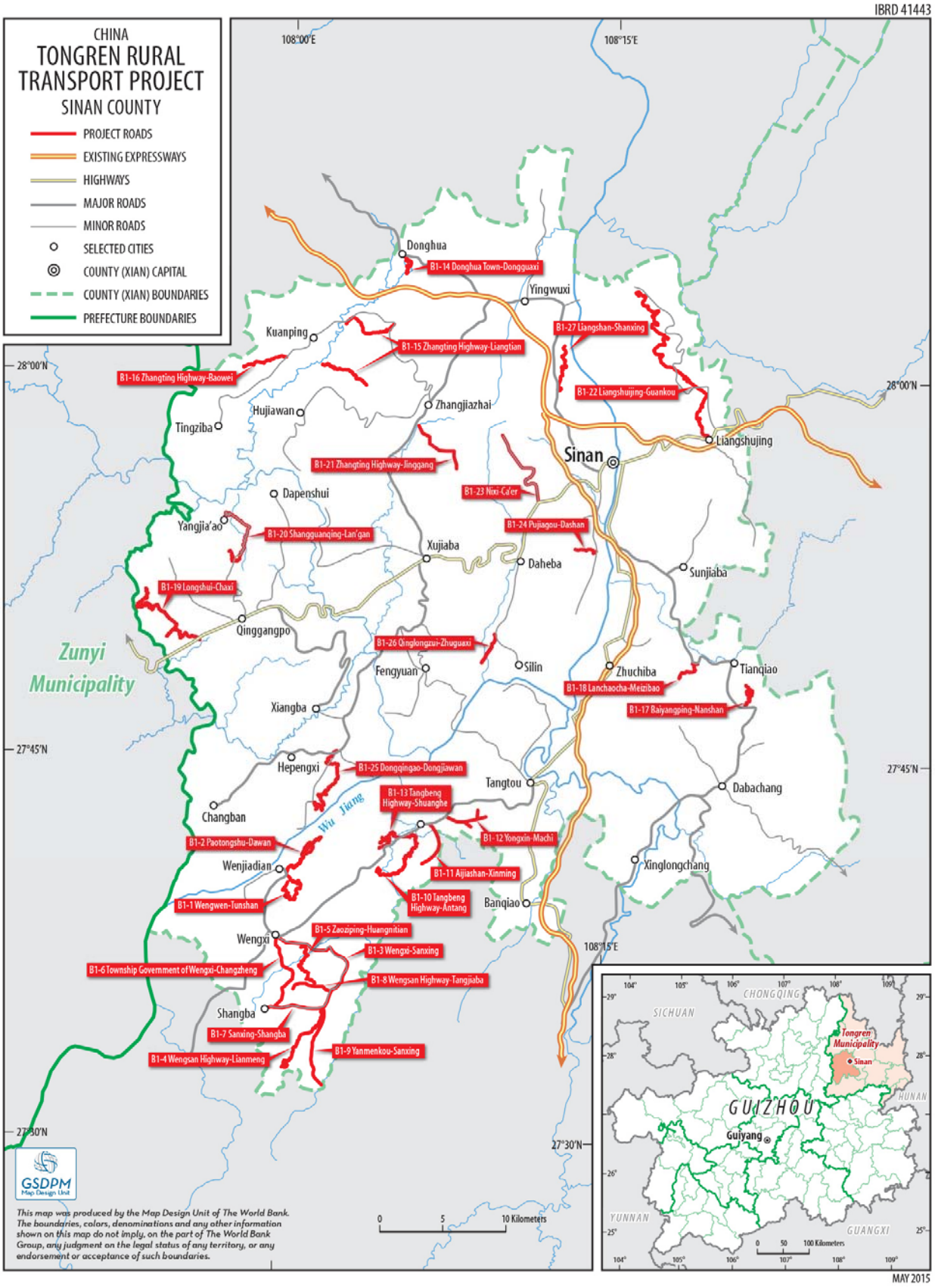
IBRD 41443
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SINAN COUNTY
PROJECT ROADS
EXISTING EXPRESSWAYS
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Yingwuxi
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Hujiawan
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Sinan
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Wenjiadian
Xinglongchang
B1-11 Aijiashan-Xinming
B1-10 Tangbeng Highway-Antang
B1-1 Wengwen-Tunshan
Banqiao
B1-5 Zaoziping-Huangnitian
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Shangba
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CHONGQING
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Guiyang
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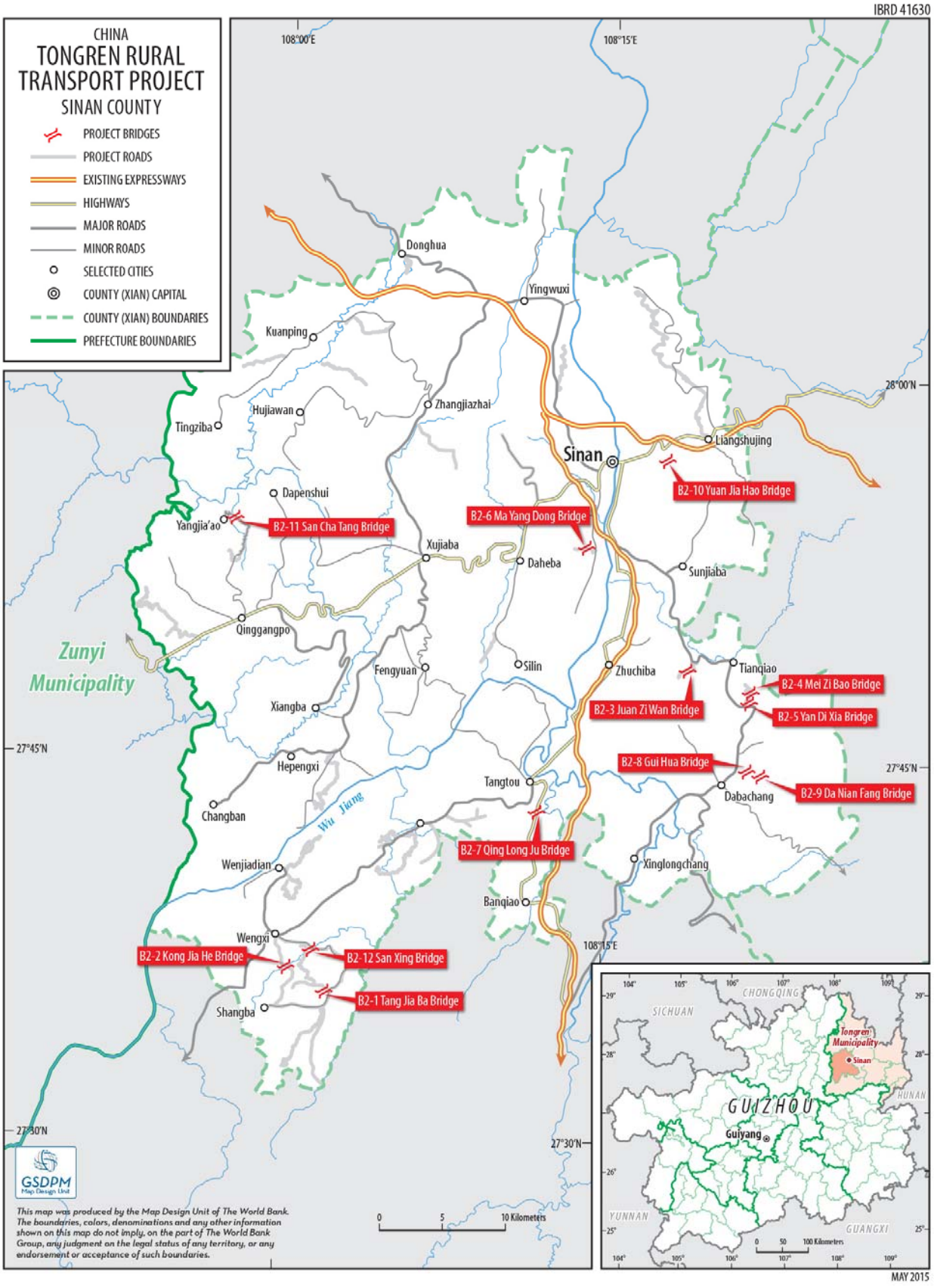
MAY 2015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Xinglongchang
Wenjiadian
Banqiao
Wengxi
B2-2 Kong Jia He Bridge
B2-12 San Xing Bridge
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