



Concept Paper

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August 2013

Proposed Loan PRC: Shaanxi Trunk Roads Improvement Project

CURRENCY EQUIVALENTS

(as of 25 July 2013)

Currency unit	–	yuan (CNY)
CNY1.00	=	\$0.16295
\$1.00	=	CNY6.1367

ABBREVIATIONS

ADB	–	Asian Development Bank
EA	–	executing agency
EIA	–	environmental impact assessment
EMP	–	environmental management plan
iRAP	–	International Road Assessment Program
km	–	kilometer
PPTA	–	project preparatory technical assistance
PRC	–	People's Republic of China
RIOH	–	Research Institute of Highway
SPDOT	–	Shaanxi Provincial Department of Transportation

NOTE

In this report, "\$" refers to US dollars.

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I. THE PROJECT

A. Rationale

1. **Background.** The Government of the People's Republic of China (PRC) has requested Asian Development Bank (ADB) financing for a project to rehabilitate and upgrade provincial and rural roads and to improve road safety. Shaanxi Province is one of the least developed provinces in the PRC in terms of per capita gross domestic product, per capita urban income and per capita rural income at about 90%, 82%, and 69% of the national averages in 2010. The project is in the Qinba Mountains¹ area in southeast Shaanxi Province, one of the 11 poorest regions targeted for concentrated interventions under the 2011–2020 poverty reduction strategy of the PRC Government. The project area had an overall poverty incidence of over 35% in 2011.²

2. The project investments will be located in Ankang and Shangluo, two prefecture-level cities³ in the Qinba Mountains area that have populations of 2.95 million and 2.41 million, respectively. Together, these municipalities account for almost 15% of Shaanxi Province's population. Both Ankang and Shangluo have strong potential for expansion of agriculture and related processing, mineral and hydropower industries, and the development of tourism. Lack of adequate transport accessibility and highly unsafe road conditions are major constraints on the social and economic development of the region.

3. **Trunk Roads.** The existing highways in the project area are narrow, have tight curves and low axle load limits. Vehicle ownership has grown rapidly in the area and ongoing major construction projects have led to increased heavy truck traffic and degraded road conditions. Traffic on provincial highways in the project area has been growing at almost 10% per year and the existing trunk roads are expected to reach capacity within 5 years. Rehabilitating and upgrading area roads will ensure that adequate road capacity is available to facilitate economic development and improve accessibility for the large local population.

4. **Rural Roads.** The local economy and people's livelihoods remain largely dependent on agriculture. Local farmers often travel along unpaved rural roads to towns along the provincial highways to sell their produce. In remote areas, buyers travel to villages to purchase agricultural production but poor roads and high transport costs reduce the prices received by farmers. During rainy periods, unpaved roads become impassable and perishable crops cannot reach the market. Paving these roads would provide many poor farmers with improved access to economic opportunities, education, health and other services.

5. **Road Safety.** Lack of transport access is compounded by severe road safety problems. The project area contains many high-risk roads with significant traffic volume and a mix of heavy vehicles, automobiles, motorcycles, non-motorized vehicles and pedestrians. An initial assessment of road crashes in the Qinba Mountains area indicates a crash rate about 4 times the national average for roads of similar class in the PRC. Fatality rates are also exceptionally high at over 12 times the average rate reported for national highways of the same class.⁴ There is an urgent need to improve road safety throughout the Qinba Mountains area.

¹ Qinba Mountains Area refers to the areas of the Qinling and Bashan mountain ranges.

² Based on the latest poverty line of CNY2,300. The poverty incidences for 2011 are Xunyang County (32.6%), Hanbin District (41.8%) and Shangnan County (41.9%).

³ In the PRC, prefectural level cities are not usually large continuous urban settlements, but are an administrative unit below the provincial level and above counties. They comprise, typically, a main central urban area and its much larger surrounding rural area containing many smaller cities, towns and villages.

⁴ Data and calculations provided by Research Institute of Highway, Ministry of Transport, PRC.

6. Road deaths have large economic and social costs that fall disproportionately on the poor.⁵ For a 1,000 kilometers (km) sample of roads in the project area, there were over 500 road fatalities between 2007 and 2012 with an estimated economic cost of CNY1.4 billion (\$228 million equivalent).⁶ The PRC Government reports that only 28% of road deaths are car or truck drivers.⁷ The rest are pedestrians (26%), bicycle riders (17%), and motorcycle riders (28%), and others (1%) which are the travel modes most often used by the poor. Reducing road crashes and related impacts will contribute to inclusive economic growth and poverty alleviation in the region.

7. The government recognizes that urgent action is needed to reduce traffic deaths and injuries in the PRC. It is a signatory of the United Nations “Decade of Action for Road Safety, 2011-2020”. In 2011, the State Council of the PRC issued the “Safety Plan in the 12th Five-Year Plan” which establishes quantitative planning objectives for road safety at the national level. Provincial and local governments, however, need help to achieve major reductions in road crashes and the resulting injuries and fatalities. They must learn and apply international best practices to accelerate progress towards safer roads. ADB participation in the project will mobilize resources and international expertise to demonstrate innovative solutions that improve road safety in an area where it is badly needed. The project is also aligned with the ADB’s Country Partnership Strategy, 2011–2015 for the PRC in the areas of safety and social sustainability.

8. In 2010, ADB established the Sustainable Transport Initiative to align its transport operations with ADB’s long-term strategic framework, Strategy 2020. As part of the Sustainable Transport Initiative, ADB is committed to scaling up road safety operations. ADB’s Road Safety Action Plan states that ADB will proactively identify opportunities for improving and scaling up road safety, mainstream and strengthen road safety components in ADB financed projects, and eventually introduce stand-alone road safety interventions. This project is a major opportunity to put these plans into action.

B. Impact, Outcome, and Outputs

9. The expected impact of the project is that safe and efficient all-weather accessibility is provided in southeast Shaanxi Province.

10. The expected outcome of the project is an improved transport network in southeast Shaanxi Province.

11. The project is proposed to have three main outputs, which will be further developed and finalized during the project preparatory technical assistance (PPTA). The proposed project outputs include the following three components.

12. **Trunk roads.** Approximately 193 km of provincial highways will be upgraded from Class III/IV⁸ to Class II/III standards including major safety design enhancements. The preliminary cost estimate for this component is about CNY1,840 million.

⁵ ADB. 2012. *Road Safety Action Plan*. Manila. (see Appendix 2)

⁶ Calculated by Research Institute of Highway, Ministry of Transport, PRC. Costs include medical expenses, loss of economic output, property damage, traffic delays, environmental impacts, and other costs.

⁷ Ministry of Public Security. 2008. *Annual Statistical Report on Road Traffic Accidents*. Traffic Management Bureau. Beijing.

⁸ In the PRC, Class IV roads are small paved two-lane roads with a total width of 7 meters, Class III roads are higher standard two-lane roads with a width of 8.5 meters, and Class II roads are usually two lane highways with substantial shoulders and a width of 12 meters. Some variation is allowed within the published standards.

13. **Rural roads.** Approximately 148 km of rural roads in poor agricultural areas will be upgraded from earthen roads to paved Class IV standards including improved safety design enhancements. The preliminary cost estimate for this component is CNY150 million.

14. **Comprehensive road safety program.** The project will include (i) road safety investments on an additional 660 km of roads in southeast Shaanxi, (ii) improved capacity of road safety unit in Shaanxi Provincial Department of Transport (SPDOT) and local traffic bureaus, and (iii) a road safety education campaign. The project will introduce the International Road Assessment Program (iRAP)⁹ assessment methodology¹⁰ to guide the road safety design and monitoring processes. The project will demonstrate the impact of rigorous and data driven road safety assessment and design practices to reduce crash rates and provide a model that can be replicated in other provinces as well as in other developing countries. An initial assessment of roads in the project area indicates that most of these roads require improved delineation and signage, intersection improvements, installation of well-designed roadside barriers, traffic calming, pedestrian crossing upgrades, and footpaths to protect pedestrians in towns and villages along the roads.

15. A capacity development and training component will establish the data collection and analysis capability within SPDOT and local governments to track road crashes, analyze the causes, and design and implement appropriate solutions. The iRAP software and assessment capabilities will be transferred to the SPDOT safety unit and serve as the basis of a project impact assessment. Enhanced road safety education is needed to achieve better safety awareness for the population residing in the project area. Targeted awareness campaigns for specific risk factors (improper licensing, non-use of helmet, non-use of seat belts, excessive speed, drinking and driving) will be implemented in local communities. The preliminary budget for road safety upgrades, capacity building and safety education is CNY300 million.

C. Investment and Financing Plans

16. The project cost is estimated at \$373.2 million equivalent out of which ADB will finance \$200 million (about CNY1,227 million) from its ordinary capital resources. The remaining balance would be financed by the Shaanxi Provincial Government.

Table 1: Tentative Financing Plan

Source	Amount (\$ million)	Share of Total (%)
Asian Development Bank	200.0	53.6
Shaanxi Provincial Government	173.2	46.4
Total	373.2	100.0

Source: ADB and government estimates.

D. Indicative Implementation Arrangements

17. The executing agency (EA) is the SPDOT, which will coordinate and supervise project development, TA activities, and establish and oversee the project management office during implementation. The EA agreed to provide office accommodation, local transport, and counterpart staff to support the PPTA consultant team. Details of the PPTA are presented in Appendix 4. Procurement of civil works and consultants under the project will adhere to ADB Procurement

⁹ iRAP is an international charity dedicated to creating “a world free of high-risk roads.” In 2010, ADB and iRAP signed a memorandum of understanding establishing a non-exclusive framework of cooperation to promote programs and projects that improve road safety in ADB’s member countries.

¹⁰ Details on the iRAP methodology are available at <http://www.irap.net/about-irap-3/methodology>.

Guidelines (2013, as amended from time to time) and ADB's Guidelines on the Use of Consultants (2013, as amended from time to time).

II. TECHNICAL ASSISTANCE

18. The PPTA in the amount of \$700,000 will be provided to assist the EA during project preparation. The PPTA is needed to (i) ensure that the EA has access to high level international expertise on road safety in order to develop an effective safety program; (ii) collect and analyze information on road users, local residents, and project beneficiaries to estimate the benefits of the project, clarify the rationale for ADB's intervention, and ensure economic viability; (iii) ensure that the EA has the capacity to successfully implement the project and conduct training and/or capacity development required to ensure such capacity; and (iv) ensure that the EA adheres to ADB's Safeguard Policy Statement (2009).

III. DUE DILIGENCE REQUIRED

19. The following due diligence will be carried out under the PPTA:

- (i) **Technical.** Review the technical viability, design, cost estimates, safety, and maintenance requirements of all project components. Particular attention will be given to safe road designs, safety upgrades, slope protection, and ensuring asset sustainability.
- (ii) **Economic and financial.** Review alternatives and least-cost options, clarify the economic rationale, and evaluate the economic viability¹¹ and financial sustainability of the project. The project has no revenue-generating components. The financial assessment will examine the financial capacity of the provincial government to provide counterpart funds and assess the financial strength and debt burden of the EA.
- (iii) **Governance.** Assess the financial management, procurement, anticorruption, policy and legal capacity, and other institutional issues and mechanisms. It will also assess the management and procurement capacity of the EA and identify weaknesses that will be addressed through targeted capacity building during the PPTA and under the ensuing loan.
- (iv) **Poverty and social.** Assess the social and poverty impacts of the project components and help to ensure that benefits flow to rural residents, livelihoods are maintained, and the designs are inclusive with respect to the poor, the elderly, the disabled, and women. A Gender Action Plan will be prepared and gender indicators established with the goal of achieving effective gender mainstreaming.
- (v) **Safeguards.** The project has been categorized "A" for environment, involuntary resettlement¹², and "C" for indigenous peoples¹³. The PPTA will assist the EA to prepare all safeguards documents in compliance with ADB's Safeguard Policy Statement (2009).

¹¹ Economic viability will be assessed through the analysis of travel demand, comparison of costs and benefits, and calculation of the economic internal rate of return (EIRR).

¹² The EA estimates that the trunk road improvements could require about 19 hectares of land acquisition affecting 135 households.

¹³ The ethnic minority population is less than 1% in the project counties and is geographically scattered and integrated with the majority Han population.

IV. PROCESSING PLAN

A. Risk Categorization

20. The proposed project will be classified as complex because it is categorized "A" for environment and involuntary resettlement.

B. Resource Requirements

21. It is estimated that the project will require about 30 months of staff time (including staff consultant resources) from 2013 to 2015 to prepare the project up to loan approval. The PPTA, in the amount of \$700,000 from ADB's Technical Assistance Special Fund – other sources, will be conducted over 10 months from December 2013 to October 2014.

C. Processing Schedule

22. Major milestones include the following expected dates:

Table 2: Proposed Processing Schedule

Milestones	Expected Completion Date
Concept clearance	September 2013
PPTA inception	December 2013
Review of safeguard documents	May 2014
Posting of draft EIA	July 2014
Loan fact finding	August 2014
MRM	October 2014
Loan negotiations	January 2015
Board consideration	February 2015
Loan effectiveness	August 2015

EIA = environmental impact assessment, MRM = management review meeting, PPTA = project preparatory technical assistance.

Source: Asian Development Bank.

V. KEY ISSUES

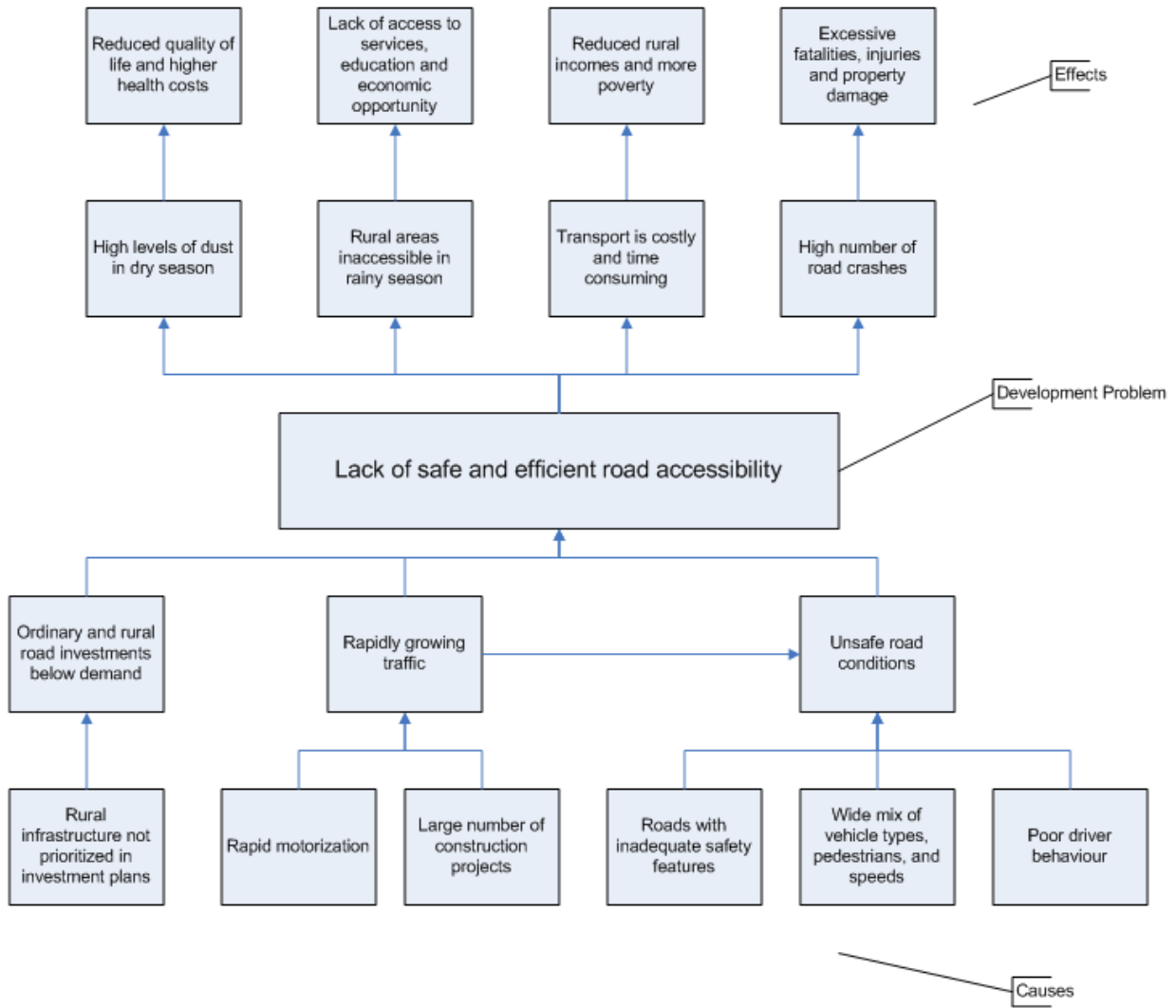
23. The initial economic assessments provided by the EA depend heavily on rapid traffic growth, which may not be realistic. The project roads must be carefully analyzed for economic viability during the PPTA. The success of the comprehensive road safety component will depend on the contribution of a substantial proportion of the ADB financing to road safety investments.

BASIC PROJECT INFORMATION

Aspects	Arrangements
Modality	Project Loan
Financing	The financing plan includes a proposed ADB loan of \$200 million from OCR with the remaining \$173.2 million (preliminary estimate) funded by the Shaanxi Provincial Government.
COBP/RCOBP	The proposed project is included in the PRC COBP 2013–2015
Classification	Sector (subsectors): Transport and ICT (road transport) Themes (subthemes): Economic growth (promoting economic efficiency and enabling business environment), capacity development (institutional development) Targeting classification: General Intervention Gender mainstreaming category: EGM Location impact: rural (high) Safeguards: Environment (A), Involuntary Resettlement (A), Indigenous Peoples (C)
Risk categorization	Complex
Partnership(s)	None anticipated.
Use of a PBA	A programmatic-based approach will not be used.
Parallel PIU	A parallel PIU is unlikely to be used for this project
Department and division	East Asia Department/Transport Division
Mission leader and members	Steve Lewis-Workman, Mission Leader/Senior Transport Economist David Fay, Transport Specialist Genevieve O'Farrell, Environment Specialist Tulsi Bisht, Safeguards Specialist Katherine Guy, Young Professional Nana Soetantri, Transport Specialist (Safety) Guangrui Xiao, Senior Project Officer (Transport) Ma. Concepcion Jea Macrohon, Sr. Operations Assistant

ADB = Asian Development Bank, COBP = country operations business plan, OCR = ordinary capital resources, PBA = programmatic based approach, PIU = project implementation unit.

PROBLEM TREE



DESIGN AND MONITORING FRAMEWORK

Design Summary	Performance Targets and Indicators	Data Sources and Reporting Mechanisms	Assumptions and Risks
<p>Impact</p> <p>Safe, efficient, all-weather road access is provided in southeast Shaanxi Province.</p>	<p>Crashes and fatalities per 1,000 trips reduced from XX in 2015 to YY on project roads by 2020</p> <p>Average daily trips for rural households increases from XX in 2015 to YY by 2023</p>	<p>Traffic police data</p> <p>Survey</p>	<p>Assumptions</p> <p>Traffic police continue to cooperate</p> <p>Local residents change behavior in vehicles and near roads</p> <p>Risk</p> <p>Expected economic growth fails to materialize</p>
<p>Outcome</p> <p>The transport network in southeast Shaanxi is improved</p>	<p>Number of days rural roads are impassible reduced from XX in 2015 to 0 by 2020</p> <p>Average travel speed on trunk roads increased from 40 km/hr to 60 km/hr by 2020</p> <p>Vehicle operating costs/km on project roads reduced by 20% by 2020 compared to 2015</p>	<p>EA project monitoring reports</p> <p>Before and after survey</p> <p>Before and after survey</p>	<p>Assumption</p> <p>Roads are maintained</p>
<p>Outputs</p> <p>1. Trunk roads upgraded from Class III/IV to Class II/III</p> <p>2. Rural roads upgraded from earthen roads to paved Class IV</p> <p>3. Comprehensive road safety improvement and capacity development</p>	<p>193 km of roads upgraded with safety enhancements by 2019</p> <p>148 km of roads upgraded with safety enhancements by 2019</p> <p>Road safety designs prepared and implemented on 660 km of local roads, iRAP systems established, safety awareness campaign implemented</p> <p>XX staff in SPDOT and local traffic bureaus trained</p>	<p>ADB review missions and progress reports</p> <p>ADB review missions and progress reports</p> <p>ADB review missions and progress reports</p>	<p>Assumptions</p> <p>Counterpart funding sufficient and available in a timely manner</p> <p>Procurement Agent and Project Implementation Consultant hired in a timely manner</p> <p>Good coordination between EA and local police</p> <p>Risk</p> <p>Difficulties in complying with ADB procurement procedures</p>

Design Summary	Performance Targets and Indicators	Data Sources and Reporting Mechanisms		Assumptions and Risks	
Activities with Milestones		Start	Complete	Inputs	
Output 1: Shaanxi Trunk Roads				Loan ADB: \$200 million (OCR)	
1.1. Conduct detailed design, safety audit		Apr 2015	Jul 2015		Item Amount (\$ million)
1.2. Land acquisition, advance recruitment and resettlement activities		Jul 2015	Dec 2015		
1.3. Construct civil works		Dec 2015	Dec 2019		To be determined
1.4. Monitor/implement environmental management and resettlement plans		Dec 2015	Dec 2019		
Output 2: Shaanxi Rural Roads				Government: \$173.2 million equivalent	
2.1. Conduct detailed design, safety audit		Apr 2015	Jul 2015		Item Amount (\$ million)
2.2. Construct civil works		Dec 2015	Dec 2019		
2.3. Monitor/implement environmental management and resettlement plans (if needed)		Dec 2015	Dec 2019	To be determined	
Output 3: Comprehensive Road Safety Improvement					
3.1. Project design, consultant selection, safety program engineering design		Apr 2015	Dec 2015	PPTA ADB: \$700,000	
3.2. Safety program implementation, equipment installation		Dec 2015	Dec 2019		Item Amount (\$ million)
3.3. Conduct capacity building/iRAP training		Dec 2016	Dec 2019	Consultants 558	
3.4. Implement road safety education campaign		Dec 2017	Dec 2019		Equipment 10
				Workshops, training, seminars 25	
				Surveys 30	
				Contingencies 77	
				The government will provide in-kind contributions in the form of counterpart staff time, office space and equipment and local transportation	

ADB = Asian Development Bank, EA = executing agency, iRAP = International Road Assessment Program, km = kilometer, OCR = ordinary capital resources, PPTA = project preparatory technical assistance, SPDOT = Shaanxi Provincial Department of Transport, SPG = Shaanxi Provincial Government, TASF = technical assistance special fund.
Source: ADB staff estimates.

PROJECT PREPARATORY TECHNICAL ASSISTANCE

A. Justification

1. Project preparatory technical assistance (PPTA) is required in order produce a mutually agreeable project suitable for Asian Development Bank (ADB) financing. The PPTA will (i) review the project component plans and designs and suggest ways to enhance the quality of the project; (ii) help to define the value added and innovative features of the project; (iii) ensure that the executing agency (EA) has the capacity to successfully implement the project and conduct any training or capacity development required to ensure such capacity; (iv) validate the feasibility studies; (v) conduct the economic and financial analyses; and (vi) ensure that the EA adheres to ADB's Safeguard Policy Statement (2009) covering resettlement and environment, and addresses social and gender issues during project planning and preparation.

B. Major Outputs and Activities

2. The major outputs and activities are summarized in Table A4.1.

Table A4.1: Summary of Major Outputs and Activities

Major Activities	Major Outputs	Expected Completion Date
Transport sector assessment and technical review of agreed project components	Agreed project design and scope	Q1 2014
	Sector and design reviews	
Due diligence on project feasibility studies including design, engineering, and cost estimates	Completed feasibility study Report(s)	Q1 2014
	Validated project scope and costs	Q1 2014
	Draft procurement plan	
Due diligence on EA capacity and conduct needed capacity development	Procurement and financial management capacity assessments	Q2 2014
	Capacity development training	Q2 2014
Economic analysis of proposed project	Economic analysis report	Q3 2014
Financial analysis and management assessment	Financial analysis report	Q3 2014
	Financial management/ procurement assessment	Q3 2014
	Capacity development	Q3 2014
Assist EA to complete EIA and EMP	Draft EIA (for public disclosure)	Q2 2014
	Final EIA and EMP	Q3 2014
Assist EA to complete RP(s)	RP(s)	Q3 2014
Assist EA to complete SDAP and GAP	SDAP and GAP	Q3 2014

EA = executing agency, EIA = environmental impact assessment, EMP = environmental management plan, RP = resettlement plan, SDAP = social development action plan, GAP = gender action plan, Q = quarter.

Source: ADB staff estimates.

C. Cost Estimate and Proposed Financing Arrangement

3. The TA is estimated to cost \$700,000 equivalent, which will be financed on a grant basis through ADB's Technical Assistance Special Fund (TASF-other sources). The government will provide in-kind contributions in the form of counterpart staff time, office space and equipment

and local transportation. The government was advised that approval of the TA does not commit ADB to financing any ensuing project. The detailed cost estimate is presented in Table A4.2.

Table A4.2: Cost Estimates and Financing Plan
(\$'000)

Item	Total Cost
A. ADB Financing^a	
1. Consultants	
a. Remuneration and per diem	
i. International consultants (12 person-months)	300.0
ii. National consultants (21 person-months)	126.0
iii. National road safety consultants (12 person-months)	72.0
b. International and local travel	30.0
c. Reports, translation, and communications	30.0
2. Equipment (computer, printer, etc.) ^b	10.0
3. Workshops, training, seminars ^c	25.0
4. Surveys	30.0
5. Contingencies	77.0
Total (A)	700.0

^a Financed by the Asian Development Bank's Technical Assistance Special Fund (TASF -other sources).

^b Equipment

Type	Quantity	Cost
TBD	TBD	\$TBD

This equipment will be turned-over to the executing agency upon physical completion of the TA. The equipment will be procured according to ADB's *Procurement Guidelines* (March 2013, as amended from time to time) using the shopping method.

^c Workshops, training, seminars, and conferences

Purpose	Venue
TBD	TBD

Source: ADB staff estimates.

D. Consulting Services

4. The PPTA will be implemented using a combination of individual consultants, a national firm and an international consulting firm. Individual consultants will be engaged for up to 2 person months for an international road safety specialist. The national firm (Research Institute of Highway [RIOH], Beijing) will provide 12 person months of national road safety experts and is proposed to be recruited using single-source selection. Single source selection is justified because (i) RIOH has been dedicating a substantial amount of their own resources to implement the International Road Assessment Program (iRAP) evaluation in the project area and to duplicate this effort with a new firm would be inefficient and excessively costly, and (ii) the contract is expected to be under \$100,000. An international firm will be engaged to prepare the due diligence and overall PPTA coordination and include up to 10 person months of international consultants and 21 person months of national consultant inputs. The international firm will be hired using quality- and cost-based selection with a quality to cost ratio of 80:20.

Table A4.3: Summary of Consulting Services Requirement

International		National	
Name of Positions	Person-months	Name of Positions	Person-months
Team leader/ transport engineer	5	Deputy team leader/transport specialist (engineer)	6
Road safety specialist (individual)	2	Road safety specialists (national firm - SSS)	12
Economic analyst	1.5	Financial analysis and management specialist	4
Environmental specialist	1.5	Economic analyst	2
Social development specialist	2	Environmental specialist	4
		Resettlement/social development specialist (2 experts)	5
Total	12		33

Source: ADB staff estimates.

5. The outline terms of reference for the project preparatory TA consultants are described in paras. 6 to 12.

1. Individual Consultant (ICS)

6. **Road safety specialist** (international, 2 person-months). The consultant will provide high level expertise and guidance to the national firm in the development and application of the iRAP assessment, assist in the specification and development of road safety enhancements, guide the road safety audit process, assist in the analysis of the benefits and costs of road safety improvements, support policy dialogue on the road safety component with various levels of the People's Republic of China (PRC) government and stakeholders, assist in the development of the road safety awareness campaign, and develop assessment tools for evaluating the effectiveness of the proposed safety improvements. The international road safety specialist will have extensive road safety analysis, safety design, and road safety audit experience, preferably using iRAP. Relevant experience in developed countries is required; relevant experience in developing countries will be an advantage.

2. National Consulting Firm (SSS to RIOH)

7. **Road safety specialists** (national, 12 person months). The consultants will continue to refine the iRAP assessment, develop the road safety enhancement program in consultation with ADB and the EA, conduct the road safety audits, work with the feasibility study design team to revise the project designs, run the iRAP evaluation tools to support economic analysis, support policy dialogue on the road safety component with various levels of the PRC government and stakeholders, and train the local government on iRAP methodology and systems. RIOH will help to design the road safety awareness campaign which is expected to be implemented under the ensuing project.

3. International Consulting Firm (QCBS)

8. **Team leader/deputy team leader (Transport Specialist)** (international team leader, 5.0 person-months; national deputy team leader, 6.0 person-months). The team leader(s) will coordinate the PPTA activities and coordinate all activities with the consultant team, the EA and ADB. The team leader(s) will: conduct due diligence on all project component designs, scope, and cost estimates, design an impact evaluation project component, according to ADB guidelines, that can be implemented as part of the project; work with the financial management specialist to prepare project implementation plan, draft project administration manual, schedule, procurement plan and procurement capacity assessment, and management plan; conduct technical and management due diligence; prepare the sector assessment; provide overall TA

coordination; and prepare and edit the PPTA final report. The team leader will be an engineer with a minimum of 10 years international experience planning, designing and implementing transport projects in rural areas. The deputy team leader will be a road engineer with a minimum of 8 years national experience with road projects including demonstrated expertise in slope protection, road engineering, cost estimation, contract packaging and procurement under Fédération Internationale des Ingénieurs-Conseils (FIDIC).

9. **Economic Analysts** (international, 1.5 person-months, national 2 person-months). The consultant's will conduct due diligence on and revise the travel demand forecasts and project benefit estimates; coordinate with the iRAP team to include a detailed assessment of the safety benefit of the project; and prepare the economic analysis of the proposed project investments in accordance with ADB's Guidelines for the Economic Analysis of Projects and other relevant publications. The international economic analysis specialist will have more than 10 years experience conducting economic evaluations of transport projects and devising economic and community development projects in rural areas. The national economic analyst will have more than 5 years experience in the economic analysis of transport projects for ADB-financed projects.

10. **Financial Analysis and Management Specialists** (National, 4.0 person-months). The consultant will conduct a financial assessment of the EA in accordance with ADB's Financial Management and Analysis of Projects (2005); assess the budgetary implications of the financing requirements of the proposed project to the EA; conduct the procurement and financial management capacity assessments using the ADB templates; and prepare and revise as needed the detailed cost tables with unit costs, physical quantities, and phasing of the project. The national financial analysis and management specialist will have a recognized accountancy qualification and more than 8 years experience in financial analysis and management for transport projects and documented experience conducting financial management and procurement capacity assessments for ADB-financed projects.

11. **Environmental specialists** (international, 1.5 person-months; national, 4.0 person-months). The consultants will assist the EA and its environmental assessment consultants to carry out investigations and analysis, as required, and to develop the environmental impact assessment (EIA) and environmental management plan (EMP) in accordance with ADB's Safeguard Policy Statement (2009). The Consultants will assist the EA to incorporate mitigation measures into the project design, to develop an environmental monitoring and reporting framework, public consultation and involvement strategy, grievance redress mechanism and a budget for implementation of the EMP. The consultants will develop draft and final versions of EIA and EMP in accordance with the format and content as described in the ADB Safeguard Policy Statement, Appendix 1, and develop presentation for delivery to Environment Community of Practice peer review at ADB Headquarters. Following the presentation, work with the ADB Environment Specialist to develop a draft final EIA and EMP incorporating comments for disclosure on ADB's website. The consultant team will include an international and a national environmental specialist who are experienced with preparing environmental impact assessments for foreign-financed transport projects. The international environmental specialist will have more than 15 years experience and the national environmental specialist more than 8 years experience in environmental management for transport projects.

12. **Social Development and Resettlement Specialists** (international, 2.0 person-months, national resettlement specialist, 3 person-months, national social development specialist, 2 person-months). The international specialist will provide overall supervision and guidance in all areas of social development and resettlement; prepare summary poverty reduction and social strategy and social development action plan; identify potential social risks associated with the project and help develop appropriate mitigation measures and include these in the social

development action plan; assist the EA to prepare the resettlement documents and to finalize the resettlement plan so that it complies with ADB's Safeguard Policy Statement (2009); and assist the EA to prepare a gender action plan with the goal of achieving effective gender mainstreaming. The national social development specialist will conduct a poverty and social analysis, including surveys; recommend interventions to make the project more pro-poor, socially inclusive and sustainable; recommend measures to deal with issues related to participation, gender, vulnerable groups, affordability, safety, accessibility, and other social risks; undertake series of community consultations, rapid appraisals and prioritization of development needs of the communities in the project area; identify potential social risks associated with the project, assist the EA to prepare a GAP with the goal of achieving effective gender mainstreaming. The national resettlement specialist will conduct a social impact assessment of the resettlement impacts including identification of permanent and temporary socio-economic impacts as a result of land acquisition and demolition of residential structures and enterprises; assist the EA in conducting a census of affected households, preparing inventory of land and other assets, identifying resettlement impacts and mitigation options; and assist the EA to prepare the resettlement documents and to finalize the resettlement plan; ensure that the resettlement plan complies with ADB's Safeguard Policy Statement (2009); assist the EA in defining categories for impact and compensation eligibility of affected people, and prepare an entitlements matrix covering compensation and other assistance for all types of impacts to achieve full rehabilitation for lost assets, income and livelihoods. The international consultant will have at least 10 years of experience with resettlement planning and social, poverty and gender analyses for multi-lateral development bank financed transport or development projects. The national consultants will have at least 10 years of experience preparing social development and resettlement plans for multilateral development bank financed transport projects.

E. Implementation Arrangements

13. The EA is the SPDOT, which will be responsible for completing the draft feasibility studies. The SPDOT has appointed counterpart staff, led by the Director General, to coordinate and supervise TA activities. The EA will support the proposed TA through in-kind contributions of office facilities, counterpart staff and related expenses. The national consulting firm will be responsible for coordinating and administering workshops, training, seminars, and surveys. Disbursements under the TA will be done in accordance with ADB's Technical Assistance Disbursement Handbook (May 2010, as amended from time to time).

14. The proposed TA processing and implementing schedule is listed in Table A4.4.

Table A4.4: Proposed Processing Schedule

Major Milestones	Expected Completion Date
Project Concept (and PPTA) Approval	<i>Sep 2013</i>
Consultants' Mobilization	<i>Dec 2014</i>
PPTA Inception Mission	<i>Dec 2014</i>
PPTA Inception Report	<i>Jan 2014</i>
PPTA Interim Report	<i>May 2014</i>
PPTA Draft Final Report	<i>Jul 2014</i>
Loan Fact-Finding and PPTA Tripartite Review Mission	<i>Aug 2014</i>
PPTA Final Report	<i>Sep 2014</i>
PPTA Completion	<i>Dec 2014</i>

PPTA = project preparatory technical assistance.

Source: Asian Development Bank estimates.

INITIAL POVERTY AND SOCIAL ANALYSIS

Country:	People's Republic of China (PRC)	Project Title:	Shaanxi Trunk Roads Improvement
Lending/Financing Modality:	Project loan	Department/Division:	East Asia Department (EARD)/ Transport Division (EATC)

I. POVERTY IMPACT AND SOCIAL DIMENSIONS

A. Links to the National Poverty Reduction Strategy and Country Partnership Strategy

The project is directly linked to the poverty reduction strategy of the People's Republic of China (PRC). It will be implemented in the Qinba Mountains Area¹ in Shaanxi Province, one of the 11 poorest regions targeted for concentrated interventions under the 2011–2020 poverty reduction strategy of PRC Government. The project area, Xunyang County, Hanbin District and Shangnan County, had an overall poverty incidence of over 35% in 2011.² Poor road access is one of the main causes of poverty in the project area, as well as in the whole Qinba Mountains Area. The proposed project is in line with ADB's PRC country partnership strategy (CPS) 2011–2015 which identifies improving the road network and rural roads as key areas of support.

B. Targeting Classification

General Intervention Individual or Household (TI-H) Geographic (TI-G) Non-Income MDGs (TI-M1, M2, etc.)

The proposed project will support the improvement of the road networks in the project area and thereby improve access and road safety. The project will directly contribute to poverty reduction through (i) improved road safety through improved delineation and signage, replacement or installation of well-designed roadside barriers, traffic calming, pedestrian crossing upgrades, and footpaths to protect pedestrians in towns and villages along the roads, among other needed improvements, (ii) improved access to regional central markets so as to add value to specialized local products including tea, mushrooms, walnuts, chestnuts, kiwi fruits and medicinal herbs; (iii) employment of the poor as unskilled labors for project construction and follow up road maintenance; and (iv) implementation of the gender action plan (GAP) and social development action plan (SDAP) that will target and benefit the poor. The project will indirectly contribute to poverty reduction by facilitating (i) timely delivery and distribution of relief materials in case of severe natural disasters of flooding and snowing, (ii) better access to tourist attractions, (iii) improved access to credit and other social services, (iv) the implementation of various on-going and forthcoming poverty reduction interventions, and (v) external investments (increased economic development) for processing facilities that could generate employment opportunities and add value to local agro-products.

C. Poverty and Social Analysis

1. Key issues and potential beneficiaries.

Poverty is widespread in the project area. The causes of poverty include (i) low profit from local products due to lack of market access and local processing;³ (ii) lack of local non-farm employment opportunities due to the lack of investments in processing of the local products and undeveloped tourism resources;⁴ (iii) health care expenses e.g., from vulnerability to illness and traffic crashes (on the 3 project trunk roads there 1,000 crashes per year over the past 5 years); (iv) vulnerability to natural disasters of floods and snow storms; (v) lack of access to credit and other social services; and (vi) lack of high quality farmland.⁵

Ongoing poverty reduction interventions include: (i) concentrated (targeted) poverty intervention by providing CNY1.0–1.2 million of poverty funds for each poor village for infrastructure establishments and improvements, (ii) industrial development through subsidized loans and some forms of self-help cooperative approach, (iii) the "Rain-Dew Plan" (technical and employment skills training) that targets poor farmers of 16–35 years of age, (iv) piloting village micro-credit schemes; and (v) partnerships between government agencies and poverty villages.

During the 11th five-year plan period (2006–2010), as a result of implementing the above programs, local governments had made significant progress in fostering the development of specialized production for tea, chestnuts, walnuts, kiwi fruits, mushrooms and medicinal herbs; however, production is still in its early stages. Road improvement under the project will help to reduce transport barriers and improve access to central markets (Xi'an in Shaanxi, Shiyang and Wuhan in Hubei, Chengdu in Sichuan, and Chongqing), thereby increasing profit margins and raising rural incomes.

¹ Qinba Mountains Area refers to the areas of the Qinling and Bashan mountain ranges.

² Latest poverty standard of CNY2,300. The poverty rates are Xunyang County (32.6%), Hanbin District (41.8%) and Shangnan County (41.9%).

³ For example, top quality tea in the project area sells for only CNY 3,000/kg compared to over CNY10,000/kg in Anhui and Zhejiang.

⁴ Development of mineral resources is highly restricted in the region for the sake of protecting the environment and the region is the source of drinking water for downstream area of the Han River and for Beijing.

⁵ Only 10% of the land is flat and suitable for cropping. Cropping on sloping land can be not common; the central government started implementing a sloping land conversion program in the late 1990s.

The project will directly benefit 1.7 million people from the 3 project counties. Among the 1.7 million beneficiaries, rural and urban residents account for 78% and 22% respectively. The project area is mountainous with harsh natural and transport conditions. Arable land is scarce (9.8% of total land area) and of poor quality for grain (50% sloping land). The area has widespread of poverty incidence (39.1%) with low rural income. In 2010, the per capita rural income ranged from CNY3,681–4,020, only 62–68% of the national average of CNY5,919.

2. Impact channels and expected systemic changes.

The project has the potential to benefit people in the project area through: (i) employment during project construction; (ii) integration of project construction with complementary local development programs; (iii) improved public transport services; (iv) reduced impacts from traffic crashes and other related road safety issues, and (v) inclusion of additional project components, not necessarily road or transport development activities, to directly target local villages for capacity building and income generation. Local people may encounter difficulties in accessing the proposed benefits and services if rural roads are not improved. To address these difficulties, the project will include: (i) the improvements of a 148km of rural roads; and (ii) work with local governments and their line agencies (i.e., the transport bureau, poverty reduction bureau, women's federation, agricultural bureau, tourism promotion bureau) to implement the pro-poor SDAP and GAP, and to integrate other local development activities with project constructions.

3. Focus of (and resources allocated in) the PPTA or due diligence.

There are opportunities for pro-poor design including (i) preferential employment during construction and operational maintenance, (ii) resettlement planning and implementation, and (iii) developing pro-poor activities such as combining government driven small town and new village construction programs with project construction, to be integrated in the SDAP and GAP and implemented along with the road improvements.

II. GENDER AND DEVELOPMENT

1. What are the key gender issues in the sector/subsector that are likely to be relevant to this project or program?

Women account for 47% of the project beneficiaries in the three project counties and they play important roles in agricultural production and home-based income generating activities. Women contribute about 35% of household income. Women are represented by the All China Women's Federation that is well rooted to every rural village and every urban community. However, the role of women's federations is constrained by a lack of financial resources and there is still a long way to go for gender equality. The key gender issues in the sector/subsector that are relevant to this project include: (i) consultation of local women for project designs like pedestrian crossing, traffic calming, traffic lights, street/road lightening, etc.; (ii) participation and employment of women during project construction; and (iii) capacity building and empowerment of women to enable them to have better access to project benefits and services. Women's development and transport needs will be further assessed during the project preparatory technical assistance (PPTA) to incorporate gender effective design features in the project design.

2. Does the proposed project or program have the potential to make a contribution to the promotion of gender equity and/or empowerment of women by providing women's access to and use of opportunities, services, resources, assets, and participation in decision making? Yes No

Access will improve greatly, especially for rural people. Currently, the roads have poor drainage resulting in flooding during the rainy season causing the roads to be washed out or impassable for days at a time and high levels of dust during the dry season where the culverts were undermined. The project will improve women's mobility and access to markets and social and health services.

3. Could the proposed project have an adverse impact on women and/or girls or widen gender inequality?

Yes No

4. Indicate the intended gender mainstreaming category.

GEN (gender equity theme) EGM (effective gender mainstreaming)
 SGE (some gender elements) NGE (no gender elements)

III. PARTICIPATION AND EMPOWERMENT

1. Who are the main stakeholders of the project, including beneficiaries and negatively affected people? Identify how they will participate in the project design.

The main stakeholders include (i) local governments and their line agencies (i.e. the transport bureau, poverty reduction bureau, women's federation, agricultural bureau, traffic police, education bureau for road safety awareness, tourism promotion bureau), (ii) rural people in townships and villages along the proposed roads; (iii) land acquisition and resettlement affected people; (iv) enterprises and small businesses; (v) transport service companies; (vi) Shaanxi Provincial Department of Transport; and (vii) ADB.

2. How can the project contribute (in a systemic way) to engaging and empowering stakeholders and beneficiaries, particularly, the poor, vulnerable and excluded groups? What issues in the project design require participation of the poor and excluded?

The rural road design will incorporate the views of the local people, including women, many of whom are poor and have been excluded due to poor mobility. Also, other collaborating agencies that are engaged in various development activities will be consulted.

3. What are the key, active, and relevant civil society organizations in the project area? What is the level of civil society organization participation in the project design?

Information generation and sharing (H) Consultation (H) Collaboration Partnership

Key organizations include the Women's Federation, and self-help cooperatives.

4. Are there issues during project design for which participation of the poor and excluded is important? What are they and how shall they be addressed? Yes No

Project design will take into account the needs of the poor and excluded when designing road safety features, education/awareness programs, road maintenance, and (public) transport service improvements.

IV. SOCIAL SAFEGUARDS

A. Involuntary Resettlement Category A B C FI

1. Does the project have the potential to involve involuntary land acquisition resulting in physical and economic displacement? Yes No

Significant, all three trunk roads will have significant land acquisition and resettlement impacts according to findings of preliminary feasibility studies and proposals. It is estimated that at least 135 households will be affected by 292 mu of permanent land acquisition. In addition, 260 mu of land will be temporarily occupied during the project implementation. Rehabilitation of the rural roads may not have any permanent land acquisition because the alignment of the roads is not expected to change; temporary occupation may be required during construction. Due diligence will be conducted for all roads to ensure compliance with SPS.

2. What action plan is required to address involuntary resettlement as part of the PPTA or due diligence process?

Resettlement plan Resettlement framework Social impact matrix

Environmental and social management system arrangement None

B. Indigenous Peoples Category A B C FI

1. Does the proposed project have the potential to directly or indirectly affect the dignity, human rights, livelihood systems, or culture of indigenous peoples? Yes No

There is no distinct ethnic minority village/community in the project area with ethnic minorities accounting for only 0.95% of the population. If required, it will be further verified during the PPTA.

2. Does it affect the territories or natural and cultural resources indigenous peoples own, use, occupy, or claim, as their ancestral domain? Yes No

3. Will the project require broad community support of affected indigenous communities? Yes No

4. What action plan is required to address risks to indigenous peoples as part of the PPTA or due diligence process?

Indigenous peoples plan Indigenous peoples planning framework Social Impact matrix

Environmental and social management system arrangement None

V. OTHER SOCIAL ISSUES AND RISKS

1. What other social issues and risks should be considered in the project design?

Creating decent jobs and employment (M) Adhering to core labor standards (M) Labor retrenchment
 Spread of communicable diseases, including HIV/AIDS (L) Increase in human trafficking (L) Affordability
 Increase in unplanned migration Increase in vulnerability to natural disasters Creating political instability
 Creating internal social conflicts Others, please specify road safety

2. How are these additional social issues and risks going to be addressed in the project design?

The additional social issues and risks will be addressed through the SDAP and GAP. There is a specific component for road safety. These roads will improve timely delivery of relief after natural disasters.

VI. PPTA OR DUE DILIGENCE RESOURCE REQUIREMENT

1. Do the terms of reference for the PPTA (or other due diligence) contain key information needed to be gathered during PPTA or due diligence process to better analyze (i) poverty and social impact, (ii) gender impact, (iii) participation dimensions, (iv) social safeguards, and (v) other social risks. Are the relevant specialists identified?
 Yes No

2. What resources (e.g., consultants, survey budget, and workshop) are allocated for conducting poverty, social and/or gender analysis, and participation plan during the PPTA or due diligence? The PPTA will engage an international expert for 2 pm and a national consultant for 2 pm to undertake poverty and social analysis, prepare the gender action plan and another national consultant for 3 pm to conduct the resettlement assessment and assist the EA to prepare RP(s). The preliminary survey budget is \$30,000 but can be adjusted if needed.