Operational Manual for
Trunk Road Rehabilitation Component

Yunnan Sustainable Road Maintenance Project

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List of Annexes and Volumes

[1] Available from the list of linked documents to the Report and Recommendations to the President.
[2] Included in the PPTA consultant's final report, volume 5.

Revision Sheet

Release	Date	Revision Description
Rev. 0	April 2012	Proposed Operational Manual Template – Inception Mission
Rev. 1	June 2012	Discussed during Interim Mission
Rev. 2	Aug 2012	Pre-Mission Review
Rev. 3	Sep 2012	Post Tripartite Mission
Rev. 4	Jun 2013	Pre-Negotiations

Project Administration Manual Purpose and Process

This operational manual (OM) describes the essential processes and standards to select, design and implement the road rehabilitation works under the Output 1: Trunk Road Rehabilitation of the Yunnan Sustainable Road Maintenance Project. The OM includes in its appendixes templates and guidelines to be followed during project implementation, in accordance with Government and ADB's policies and procedures.

The Yunnan Provincial Department of Transport (Executing Agency [EA]) and Yunnan Highway Administration Bureau (YHAB, implementing agency) are wholly responsible for the implementation of ADB-financed projects, as agreed jointly between the borrower and ADB, and in accordance with Government and ADB's policies and procedures. ADB staff is responsible to support implementation including compliance by the EA and YHAB of their obligations and responsibilities for project implementation in accordance with ADB's policies and procedures.

The OM is an operational guide for YHAB and its agencies, designed as a step-by-step guide to road maintenance planning, programming and implementation, specifically for the preparation of Phase II, III and IV of the Yunnan Sustainable Road Management (YSRM) project. As it is used, appropriate updates should be made to the document as omissions, errors or improvements are noted. The OM should be a practical and responsive how-to manual for all planning activities. It will necessarily need to change as the environment in which it is used evolves.

After ADB Board approval of the project's report and recommendations of the President (RRP), any significant change to the Operational Manual is subject to agreement and approval pursuant to relevant Government and ADB administrative procedures and upon such approval they will be subsequently incorporated in the OM (and in the PAM).

ABBREVIATIONS

ADB	-	Asian Development Bank
CPMS	-	China Pavement Management System
DSC	-	Design and Supervision Consultant
EA	-	Executing Agency
EARF	-	Environmental Assessment Review Framework
EIA	-	Environmental Impact Assessment
EIRR	-	Economic Internal Rate of Return
EMDP	-	Ethnic Minorities Development Plan
EMP	-	Environmental Management Plan
EMoP	-	Environmental Monitoring Plan
ESSU	-	Environmental, Social and Safety Unit
GIS	-	Geographical Information System
HDM-4	-	Highway Design and Maintenance 4 Software
IEE	-	Initial Environmental Examination
IRI	-	International roughness index (IRI m/km)
IRR	-	Internal Rate of Return
km	-	kilometer
LA	-	Land Acquisition
LAR	-	Land Acquisition and Resettlement Plan
MOT		Ministry of Transport
NGO	-	Non Government Organization
NPV	-	Net Present Value
NPV/C	-	Net Present Value/Cost, or Benefit/Cost
OM	-	Operational Manual for Trunk Road Rehabilitation
PMC	-	Project Monitoring Consultant
PMO	-	Project Management Office
PPTA	-	Project Preparation Technical Assistance
PRC	-	Peoples Republic of China
RAMS	-	Road Asset Management System
ROW	-	Right of Way
RP	-	Resettlement Plan
RSA	-	Road Safety Audit
RSAP	-	Road Safety Action Plan
SC	-	Steering Committee
SDAP	-	Social Development Action Plan
SPRSS	-	Summary Poverty Reduction and Social Strategy
Datasheet	-	Sub-project Identification Form
SVC	-	Supervision Consultant
TOR	-	Terms of Reference
YEPB	-	Yunnan Environmental Protection Bureau
YHAB	-	Yunnan Highway Administration Board
YPDOT	-	Yunnan Provincial Department of Transport
YPG	-	Yunnan Provincial Government
YSRI	-	Yunnan Science and Technology Research Institute of Highways
YSRM	-	Yunnan Sustainable Road Maintenance Project

NOTES

(i) The fiscal year (FY) of the Government and its agencies ends on 31 December.

(ii) In this report, "$" refers to US dollars.

1 OVERVIEW

1.1 Introduction

1. In addition to being a guide for preparation of civil works for each Project Phase, the Operational Manual (OM) includes standard ADB guidelines and a strategic maintenance approach, which if followed, will generate a substantial improvement in maintenance planning and implementation practices. Further, if coupled with suitable funding levels, a progressive and sustainable improvement in the road network will be achieved.

1.2 Planning Timeline

2. Figure 1-1 shows the proposed implementation schedule for all Phases of the Project. By the 4th quarter of 2012 the detailed designs should be commenced for Phase I projects. The planning preparation for Phases II, III, and IV should commence in Q2 2013, Q1 2014, and Q1 2015 respectively. The key to efficient preparation is sound sub-project selection, bypassing Category A environmental roads and roads requiring resettlement or land acquisition, early confirmation of treatments and road lengths, then finalization of any Initial Environmental Examination (IEE) and other phase proposal documents.

3. The green and red milestones (diamonds) identify ADB approval points in the process. The green milestone is confirmation that the long list and selected candidates are suitable. The red milestone is confirmation that the IEE (if required) and phase proposal are approved. Detailed designs can start before final approval by ADB, however contract award cannot be made, neither can works be commenced.

Figure 1-1 Indicative Phase Implementation Schedule

		2012		2013				2014				2015				2016				2017			
ID	Task Name	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1	**Periodic Maintenance and Rehabilitation**																						
1.1	Phase I																						
1.1.1	Procurement																						
	T1/KUN/LUQ/G108																						
	T1/KUN/JIN/G213a																						
	T1/YUX/YUX/G213b																						
	T1/DAL/XIA/G320																						
	T1/KUN/SON/S211																						
	T1/DEH/RUI/X214																						
	T1/LIN/YAN/S321																						
1.2	Phase II																						
1.2.1	Program Preparation																						
1.2.2	Design and Safeguards Plans Preparation																						
1.2.3	Procurement																						
1.2.4	Implementation																						
1.3	Phase III																						
1.3.1	Program Preparation																						
1.3.2	Design and Safeguards Plans Preparation																						
1.3.3	Procurement																						
1.3.4	Implementation																						
1.4	Phase IV																						
1.4.1	Program Preparation																						
1.4.2	Design and Safeguards Plans Preparation																						
1.4.3	Procurement																						
1.4.4	Implementation																						

Source: Asian Development Bank

Preparation Implement Maintenance Design/Bid Period

1.3 Major Steps

4. The life cycle of each Phase's sub-projects should follow three major steps:

   - Annual Program Preparation
   - Sub-project Preparation and Design
   - Sub-project Implementation

5. These steps are detailed in the Sections 2 through 4 following.

6. Table 1-1 shows the length of maintenance work expected to be implemented under the four phases of Output 1 (Civil Works). Final numbers depend on cost of civil works. The initial candidate list for a Phase should be at least 50% longer than the Phase target to allow for the dropping out of unsuitable sub-projects.

Table 1-1 Target Phase Lengths

	Year	Length (km)		
		Overlays	**Rehabilitation**	**Total**
Phase I	2013	36	156	192
Phase II	2014	60	230	290
Phase III	2015	60	230	290
Phase IV	2016	30	95	120
Total		**181**	**711**	**892**

Source: Asian Development Bank

1.4 Responsibilities

1.4.1 Overall Responsibilities

7. YPDOT as the Implementing Agency and specifically its Steering Committee (SC) will oversee Phase preparation and monitoring and will coordinate the implementation of all maintenance programs. The Executing Agency is YHAB who is responsible for the day-to-day management of Project activities.

1.4.2 Environmental Responsibilities

8. The Environmental, Social and Safety Unit (ESSU) of YHAB will be responsible for all environmental activities of sub-project screening, Initial Environmental Examination (IEE) and Environmental Management Plan (EMP) preparation and monitoring. The YHAB project coordinators designated in each Prefecture, will report to the Deputy Director of Planning, and will be responsible for the completion of and follow up for all environmental issues identified for a sub-project road.

9. The Environmental Assessment Review Framework (EARF) describes the requirements of the PRC and the ADB for environmental assessment. The EARF leads the ESSU staff through the different stages of office review, survey program preparation and implementation, and preparation and review of subproject IEEs and the EMPs.

1.4.3 Road Safety Responsibilities

10. The Road Safety staff member of the ESSU will be responsible for all road safety related activities introduced by the YSRM project. The ESSU will ensure that road safety is systematically incorporated into all stages of the project (see summary in Table 1-2). Annex C of the OM provides full road safety audit procedures to be conducted and Volume B of the OM provides road safety design guidelines for design engineers.

Table 1-2 Road Safety Responsibility

	Tasks	Responsible Party	Participating Party
1	Preparation of Phase II, III, IV Proposals	YHAB, YSRI	Supervision Party
2	Road Safety Inspection/Studies*	Design Party	Supervision Party
3	Design	Design Party	Supervision Party
4	Road Safety Audit*	YHAB or Consultant	Supervision Party

* The need for these activities is specified in the Phase Proposal.

Source: Asian Development Bank

1.4.4 Social Safeguards Responsibilities

11. The Social safeguards staff within the ESSU will ensure that the social safeguards objectives are implemented, namely: social and poverty analysis, and review and assessment of social and gender dimensions in terms of positive and negative impacts on the local population resulting from road maintenance, both during the construction and after its completion. The ESSU will be responsible for performing the analysis, preparing due diligence, resettlement and land acquisition documentation and monitoring all social actions, implementation of mitigation measures, payments to affected people, following up on reinstatement of transport services and similar after works completion, and facilitating safety awareness programs.

12. The Project Organization structure is shown Figure 1-2.

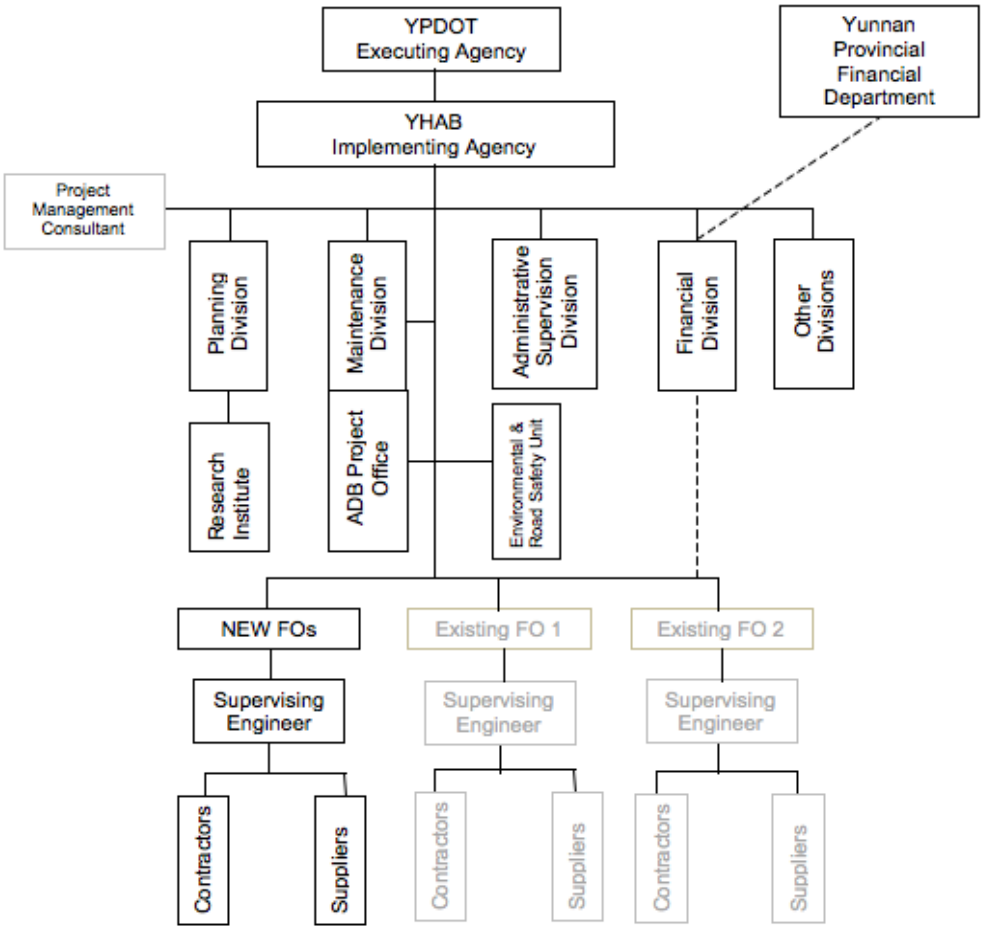


Figure 1-2 Project Organization Structure

13. These responsibilities are more fully documented in Table 1-3 following.

Table 1-3 Phase Preparation Action Plan

	Task	Tools	Inputs	Actions	Outputs	Comments
1	**Project Selection**	• CPMS or HDM-4 • YSRI database	• YHAB and Prefecture plans • Annual Road Condition and Traffic Surveys • Maintenance Strategy	• Assemble and prioritize program candidates using HDM-IV or CPMS	• Candidate long list	• Use agreed criteria: length, traffic, condition, importance • Prioritize those within HDM-4 maintenance strategy
2	**Project Review**	• CPMS • Local knowledge	• Environmental and social reviews • Secondary data	• Check length, policy needs etc. • Avoid obvious Cat A • Confirm start and ends	• Candidate Short List • Proposed treatments and locations	• Choose long sections of Cat. C or B • Note General Section boundaries • Complete Datasheet (A, H)
3	**Surveys**	• OM and Annexes				
	Technical	• Datasheet • GPS, Video	• Short List, • Datasheet Treatments	• Assess road condition, treatments and traffic • Confirm treatments with Prefecture	• Datasheet (C1, C2, C3, C4)	• Complete the technical assessment • Finalize treatments • Advise other surveys of treatment changes
	Environmental Assessment	• EARF Templates	• Short List • Treatments	• Assemble environmental data	• Categorization • Datasheet (D)	• Advise other surveys of CAT A road
	Social Safeguards	• HH Questionnaire • Consultations	• Short List	• Survey households and community groups	• SDAP, RF, Poverty assessment • Datasheet (B, F, G)	• Advise other surveys of CAT A road
	Road Safety	• Road Safety Template	• Short List • GPS and Video	• Recommend road safety improvements	• Templates, and recommendations • Datasheet (E, C4)	• Estimate safety measure costs
4	**Phase Proposal Reporting**	• PPTA Phase Proposal as template • HDM-4	• Individual survey outputs • Final budget • All mitigation costs	• Complete Datasheet • Assemble all assessments • Perform Economic Analysis • Make final recommendation	• Phase Proposal	• Finalize treatments, locations, mitigation measures • Finalize costs and procurement plan • Modify TOR for design, construction and supervision
5	**ADB Approval**		• Completed survey and assessments (Phase Proposal)	• Send Phase Proposal to ADB with overall recommendations		
6	**Design and Procure**		• Phase Proposal, ADB Approval	• Obtain detailed designs • Initiate procurement process • Evaluate bids • Complete IEE, RP, IP	• Detailed Bid Documents • Approved IEE etc.	• Ensure designer has all Technical, Environmental, Social and Road Safety recommendations
7	**Construction and Implementation**	• Bid Documents • Bids • Modified TOR	• IEE, RP Approval	• Appoint Contractor • Appoint Supervisor • Monitor and report progress	• Monthly and quarterly reports	• Ensure contractor following all mitigation requirements

Source: Asian Development Bank *Datasheet section codes are shown in* Figure 2-3 *and* Figure 2-4

2 STEP 1 - ANNUAL PROGRAM PREPARATION

14. Prior to each new planning Phase, road data surveys should be performed and databases updated. This will provide the best possible baseline for maintenance selection and preliminary design analysis.

2.1 Overview

Item	Task	Major Activities	Responsible	Timing
1	Project Selection	Select projects according to Table 2-1 and Maintenance Strategy (Section 2.3). The target program length should be within Project Administration Manual (PAM) guidelines (Table 1-1)	YHAB, Prefectures	Q3/2013, Q1/2014, Q1/2015
2	Review	Review proposed road sections in the office using all available data. Eliminate roads likely to have environmental or social issues, too short, low traffic, future upgrades etc.	YHAB, YSRI, ESSU	Plus 1 month
3	Surveys	Prepare and implement survey programs. Where possible perform environmental, technical, social and road safety surveys together, which provides opportunity to agree treatments and impacts. Scope of works to be within OM guidelines (Table 2-1)	ESSU, Prefecture, YSRI	Q4/2013, Q2/2014, Q2/2015
4	Reporting	After confirming program (roads, lengths and maintenance type), prepare due diligence. YHAB to review and confirm that the program is suitable.	ESSU, YSRI	Within 3 month of surveys
5	ADB Approval	Submit phase proposal documentation for ADB approval. Indicate if an IEE, RP or IP are necessary	ADB	Start + 6 months

2.2 Selection Criteria and Scope of works

15.

16. Table 2-1 documents the allowable scope of works and the initial maintenance works selection criteria for sub-project inclusion in a Phase. Confirmation of the selection details will be copied into the Datasheet (Section H).

Table 2-1 Scope and Selection Criteria

Scope of Works Permitted	Broad Selection Criteria	Action
☐ • Only intermediate and heavy road maintenance ☐ • No intermediate/heavy bridge construction, widening or rehabilitation (above 30 meters) • No tunnel rehabilitation, ☐ • No significant widening (nothing outside of existing right of way, and ☐ length of sections with widening of more than 1 m should not represent more than 5% of total section length), • No upgrading to a higher road class, ☐ • No paving of gravel/earth road, ☐ • No significant realignment (only limited improvement of junctions, curves widening or laybys), ☐ • No slope protection with cost of more than 25% of total sub-project costs ☐	☐ • Sub-projects need to be high priority, i.e. part of first 1,000 km priority needs identified by an HDM-4/CPMS analysis based on an annual survey of the entire network (Section 2.3, and Annex A) ☐ • Type of proposed maintenance (intermediate or heavy) must follow the maintenance strategy outline (Section 2.3, Annex A) ☐ • Minimum 10 km continuous length, except otherwise approved by ADB ☐ • Only category B or C environment sub-projects, particularly no natural reserves. If Cat. B, then ☐ • Projects with very limited or no land acquisition or resettlement impact (overall under the project no more than a cumulative 200 people lose houses or more than 10% of their productive assets e.g. shop, farmland, business premises). If Cat. B, then ☐ • Indigenous Category must be C ☐ • Economic Rate of Return above 12%	Rejection if not Rejection Exceptionally, justify if less than 10km IEE (Cat. B) RP (Cat. B)
All sub-projects need to meet the above		

17. The target Phase length will be according to the PAM guidelines (Table 1-1). During preparation of the Phase the initial target should be at least 50% longer to allow for dropping of unsuitable sub-projects. Intermediate maintenance sections should comprise at least 20% by length of each Phase.

2.3 Selection according to Maintenance Strategy (Annex A)

The maintenance strategy analysis should be performed each year on the latest survey data. Ensure that the latest road and traffic data surveys have been performed and are available to HDM-4 or the Chinese Pavement Management System (CPMS). This analysis will recreate

18. Table 2-2 and Table 2-3, and should reflect the current maintenance strategies, budget levels and projected annual budget increases. Annex A describes the process for preparing an annual HDM-4 strategy analysis.

19. The selection of optimal maintenance type and timing for a given road section can be guided by the information in the following two tables. Three levels of priorities have been defined after a network-level analysis carried out on HDM-4 on data covering a representative subset of 12,000 km of YHAB's network (about 24,000 km). A candidate list of maintenance sections has been generated using this and can be found in Appendix B.

(i) Priority 1 (P1): works to be prioritized during the first five years plan (2012-2016);
(ii) Priority 2 (P2): works to be prioritized during the second five years plan (2017-2021), and which can be considered in the first plan when their improvement creates long continuous sections of roads in good condition;
(iii) Priority 3 (P3): works which may only become priority after 2021;

Table 2-2 Strategy to be applied on Asphalt Pavement

ADT Range	Pavement Condition in 2012			
	3.5 =< IRI	3.5 < IRI =< 5	5 < IRI =< 7.5	7.5 < IRI
<= 1000	Heavy when IRI reaches 11	Heavy when IRI reaches 11	Heavy when IRI reaches 11	Heavy when IRI reaches 11
1000<ADT<= 2000	Intermediate when IRI reaches 5	Intermediate when IRI reaches 5	Heavy when IRI reaches 11	Heavy when IRI reaches 11
2000 < ADT<= 4000	Intermediate when IRI reaches 5	Intermediate when IRI reaches 5	Heavy when IRI reaches 7.5	Heavy when IRI reaches 9
> 4000	Intermediate when IRI reaches 5	Intermediate when IRI reaches 5	Heavy when IRI reaches 7.5	Heavy when IRI reaches 9

Table 2-3 Strategy to be applied on Surface Treatment (Simple Pavement)

ADT Range	Pavement Condition in 2012			
	3.5 =< IRI	3.5 < IRI =< 5	5 < IRI =< 7.5	7.5 < IRI
<= 1000	Intermediate when IRI reaches 5	Intermediate when IRI reaches 5	Routine	Routine
1000<ADT<= 2000	Intermediate when IRI reaches 5	Intermediate when IRI reaches 5	Routine	Routine
2000 < ADT<= 4000	Intermediate when IRI reaches 5	Intermediate when IRI reaches 5	Heavy when IRI reaches 7.5	Heavy when IRI reaches 9
> 4000	Intermediate when IRI reaches 5	Intermediate when IRI reaches 5	Heavy when IRI reaches 7.5	Heavy when IRI reaches 9

P1 2013-2016 P2 2017-2021 P3 2022-2026

2.4 Office Review

20. An office review should be performed to eliminate any obviously inappropriate road maintenance selections. The review will:

- Screen out highways planned for road class upgrade within the next four years
- Screen out category A environmental projects (nature reserves), or works with significant resettlement needs and negative impacts on ethnic minorities. (This is not always possible in the office – however all available resources and local knowledge should be accessed)
- Screen out road sections contravening previously mentioned technical criteria
- Request Maintenance Sections to review sections and nominate maintenance works

Output

A long list of sub-project candidates that is around 50% longer than the Phase Target km. These roads will be surveyed and analyzed.

2.5 Survey and Analysis

2.5.1 Preliminary recommendations

21. The full set of field surveys will be conducted for each road candidate, including: technical, environmental, road safety, and social development. Typically the first three can be made simultaneously. The social survey is done separately due to different requirements for travel time, frequency of stopping, interviews etc.

22. When intermittent segments of a road have been proposed, the survey should start at the first chainage and end at the final chainage. Collect all data in between, including the short sections for which no treatment was nominated. This avoids having gaps in the data and avoids the need for resurveying should changes be made at a later stage.

23. A complete GPS track and associated waypoints should be recorded together with a full video of each road. The date and time on the GPS and video camera should be synchronized so that video editing with GPS information can be done later. At the start of a road section survey, the car trip odometer should be reset.

2.5.2 Field Survey and Analysis

24. The field surveys will use OM checklists and procedures to review each sub-project candidate for issues and potential concerns relating to technical, environmental, safety, resettlement, ethnic minorities and social. Key data from each discipline survey will be input into the Datasheet.

25. **Technical**: This analysis will finalize preliminary design based on survey results and local knowledge and requirements, and using the technical solutions matrix of the strategy. All scope of work criteria (

26. Table 2-1) must be met. Roads should be dropped at this stage if the criteria are not met. The economic viability of the sub-project can be evaluated using HDM-4 (or similar). Complete Section A and C of the Datasheet.

27. The survey steps for Environmental, road safety and social are presented in Table 2-5 following.

28. The first activity for Road Safety (second column of Table 2-5) identifies a safety risk factor for each sub-project. The assessed risk factor can be used to determine (see Table 2-4) ensuing studies, design and audit requirements, and estimated budget needs per km. The budget costs in the right hand column are estimates the costs of implementing the safety features only. They do not include design costs, audit costs or other review costs.

Table 2-4 Road Safety Risk Assessment

Overall Safety Risk	Road Safety Study	Road Safety Design	Road Safety Audit	Budgets per km
Very High	Collision Investigation Road Safety Inspection Risk Analysis	Enhanced treatments extensively applied	Full procedure for Design, Construction, Post-opening	CNY 140,000 USD 22,082
High	Fast track Collision Investigation Road Safety Inspection Risk Analysis	Mix of basic and enhanced treatments	Full procedure for Design, Post-opening	CNY 115,000 USD 18,139
IMedium	Road Safety Inspection Risk Analysis	Mostly basic treatment	Fast-track procedure for Design, Post-opening	CNY 90,000 USD 14,196
Low	Check on whether critical safety features are maintained in order	Limited basic and essential measures	Basic check only	CNY 65,000 USD 10,252

29. Step 3 of the road safety assessment (Table 2-5) requires safety measures to be proposed. The checklist for road safety measures is shown below (Section E of the Datasheet). When the overall Risk (V, H, M and L) is entered, the Studies, Audits and budget are selected.

30. Based on the visual assessment the particular assessments of Alignments and Cross-sections, Bends and Steep Grades etc. can be made and entered. For each of these categories the appropriate measures should be selected which are specific for the road.

E		Road Safety Assessment							
Road Safety Risk	Overall ➡	**V - Very High**	Recommended design features ⬇	Study Reqs. ➡	Crash Investigation, Road Safety Inspection, Risk Analysis	Safety Audits:	I	Full procedure for Design, Construction, Post-opening	
Alignment and Cross-sections		H - High	☑ Provide Shoulders ☑ Provide Laybys on steep grades ☐ Reassign Lane Widths			Risk	Tentative Budget[a]	CNY/km	USD/km
Bends and Steep Grades		V - Very High	Improve signing on: ☑ Sharp bends ☑ Steep grades ☐ Isolated Sharp Bends ☐ Provide laybys			V	1	140,000	22,000
Overtaking Management		H - High	☑ Provide basic and enhanced solid centreline markings			H	2	115,000	18,000
Junctions		H - High	☑ Give-way signs at major side roads ☐ Improve directional signing ☑ Turning lanes at busy junctions ☑ Ensure visibility			M	3	90,000	14,000
Traffic Calming		H - High	☑ Provide basic measures e.g. rumble strip + village sign + speed limit ☐ Provide footpaths around villages wherever possible			L	4	65,000	10,000
Roadside Safety		H - High	☑ Eliminate edge-drop if possible ☑ Delineate hazards Provide more safety barriers at: ☑ high slopes ☐ risky sections			V=Very High; H=High; M=Moderate; L=Low		(a) Includes basic line markings (CNY 35,000/km) and signage	

Figure 2-1 Road Safety Assessment

Table 2-5 Classification and Categorization

Environmental	Road Safety	Social Safeguards

Step 1: Determine Category based on proposed works
• Determine all maintenance activities to be performed
• Use Table 5, EARF (Volume C)[3] to assign a Category to each of the above maintenance activities
• [This can be done initially from knowledge of proposed activities but will be refined from field observations at maintenance sites]
• The work triggering the highest category defines the type of assessment needed for all maintenance tasks for that road
	Step 1: Rate safety risk
	• Assess the safety risk (V, H, M, L) of the overall road, and the following components: (Annex C)
	  • Alignment and cross-sections
	  • Bends and Steep Grades
	  • Overtaking Management
	  • Junctions
	  • Traffic Calming
	  • Roadside Safety
	• [V (very high), H (high), M (moderate) and L (low)]
		Step 1: Prepare Socio-economic baseline
		• From secondary data for each road, prefecture and county, determine and enter (Section B Datasheet):
		• Total Population
		• GDP/capita
		• Income/capita
		• Rural population
		• Rural GDP/capita
		• Rural Income/capita
		• Poverty counties, villages, and % of poor

Step 2: Complete Environmental Checklist
• Complete a screening checklist for each road[4]
• [This checklist focuses on identifying any sensitive environmental, cultural and historical features/conditions within the road corridor and to what extent the proposed work impacted these features/conditions. This must be done during or after the field reconnaissance survey]
• Depending on which impacts, and the total number of significant negative impacts predicted, the road work is given one of three (A-C) categories
	Step 2: Identify potential budget needs
	• Use the Overall Risk assessment (Step 1) to assign an indicative budget for road safety cost measures.
	  • V – CNY 140,000 / km
	  • H – CNY 115,000 / km
	  • M – CNY 90,000 / km
	  • L – CNY 65,000 / km
	• Include km on intervening sections where intermittent treatments have been proposed
		Step 2: Prepare Social Assessment
		• Through interviews and consultations (using checklist of Section F Datasheet), determine
		  • Concerns/issues due to road condition
		  • Concerns related to after improvement
		• Prepare action plan for addressing concerns and issues
		• Make recommendations regarding post-improvement requirements e.g. transportation, bus shelters
		• Complete Section F of Datasheet

Step 3: Assign Category
• The highest Category from Steps 1 and 2 becomes the assessment level for the road.
• Category A are dropped from the Project
	Step 3: Identify appropriate measures
	• For each component in Step 1 list appropriate measures than could be considered in design e.g.
	  • Provide shoulders
	  • Provide laybys on steep grades
	  • Improve signing of sharp bends and steep grades
		Step 3: Prepare RP and IP[5]
		• Determine land acquisition, resettlement and IP requirements, if any [ensure they are still within Project limits]
		• Recommend whether RP and IP plans are necessary. IP must be Cat C.
		• If Cat A then sub-project must be dropped

[3] Each maintenance activity likely to be implemented by YHAB has been assigned an assessment category (based on cumulative experience with each maintenance type)
[4] Use EARF recommendations and complete Section D of the Datasheet
[5] LA Land Acquisition, RP Resettlement Framework, IP Indigenous People

	• Etc.	
Complete Section D of Datasheet	Complete Section C3, E of Datasheet	Complete Section B, F, G of Datasheet

31. The environmental checklist is shown below (Section D, Datasheet). These items will be reviewed during the field surveys.

Environment Categorization Checklist		Env. Cat.	Next steps
☐ A-1.1 Potential loss or damage to Cultural heritage site	Category A Triggers	C	IEE
☐ A-1.2 Encroachment into buffer or core of protected natural area			
☐ A-1.3 Encroachment onto significant wetland providing important habitat			
☐ A-1.4 Damage to Old-growth forest			
☐ A-1.5 Permanent loss of important biodiversity			
☐ A-2.6 Works in densely populated district e.g. urban zone, village, town or city	Category B Triggers		EMP
☐ Establishment of a new quarry or placement of new asphalt plant			
☐ Slope stabilization works > 50m			
☐ Replacement of more than 5 irrigation canals			
☐ B-1.28 Bridge replacement, river bed training >30m or more than 2 in-water pier reinforcement			
☐ B-1.21 Resettlement of >= 50 vulnerable people, >= 100 ethnic minority people, or >= 200 unclassified people			
☐ A-3.12 Temporary bypass at maintenance site > 50 m, road closure of more than 24 hours			Contract Clauses
☐ Other specific impact: ☐ IEE Annex C 'Impacts and Mitigative measures' has this impact as a likely Cat B.			

Figure 2-2 Environmental Checklist

2.6 Appraisal and preparation of phase proposal report

Table 2-6 Appraisal and Phase Proposal Preparation

Item	Budget	Outputs	Comments
1 Civil Works	• Civil works • Contingency • Supervision	• Maintenance • Design • Other features e.g. bridge, culverts, retaining walls	• Any change to maintenance type or locations or features may impact Social and Environmental assessment
2 Social	• Mitigation • Social safeguards • Land Acquisition • Resettlement	• Classification: Cat A, B, C • Social Action Plans • Indicate if RP, IP is necessary	• Use Volume C guidelines to prepare appropriate plans and recommendations • Ensure Action plan addresses concerns and issues of residents
3 Environmental (based on Step 3 rating from Table 2-5)	• EMP	• Individual assessments of Cat. B roads and EMP • EMP as necessary for Cat. C	• One IEE covering all Cat B sub-projects (EARF - Section IV) after ADB approval • Go to Table 2-7 below
4 Road Safety	• Safety Measures	• Identification of appropriate safety measures • Road safety risk • Budget allocation and technical requirements • Terms of Reference (TOR) for the Design Party	• List recommended features that should be considered during design
5 Finalize Selection	**Total Budget**	• Final Program within budget • Phase Proposal • Implementation Plan	•

32. If the proposed maintenance indicates a Resettlement Category B rating then a Resettlement Plan will be prepared. (Refer Volume C). If Category C is assigned then no RP is necessary. If an IP Category B or A is determined, the sub-project must be dropped.

33. The following figure indicates the steps to be taken for Environmental action. The Rating (A, B, C) is taken from Step 3 in Table 2-5. For Category B sub-projects only one IEE is required.

Table 2-7 Environmental Action

Rating	Phase Proposal Requirements	Contract Requirements
A	• Include documentation in Phase Proposal • Drop from Phase	
B	• Proceed with individual assessments as per EARF, Section IV, Step 1	• Full EMP • Set of Environmental Clauses (EARF Annex 5)
C	• Justification Statement • Screening Checklist • List of maintenance classifications • Reference to EMP application	• EMP • Set of Environmental Clauses (EARF Annex 5), if needed

2.6.1 Economic Analysis

34. The economic viability of each subproject should be evaluated, preferably based on updated: (i) traffic counts, (ii) road condition data, and (iii) preliminary design technical solutions and budgets. HDM-4 will be applied to each subsection, and results grouped to produce for each road subproject a net present value (NPV), an economic internal rate of return (EIRR) and a net present value to cost ratio (NPV/C). All subprojects should have an EIRR of more than 12 to be eligible for the program.

35. The evaluation will be based on the HDM-4 parameters in Table 2-8 and Table 2-9, unless these parameters are updated through specific surveys.

Table 2-8 Economic Parameters - Vehicle Fleet Characteristics (2011)

Vehicle	Cars	Bus	Pickup	Light Truck	Medium Truck	Heavy Truck	Articulated Truck
Vehicle Cost (CNY)	100,000	400,000	150,000	68,000	155,000	360,000	600,000
Tire Cost (CNY)	500	2,000	1,400	1,400	2,000	2,000	2,000
Fuel Cost (CNY/l)	7.0	6.6	6.6	6.6	6.6	6.6	6.6
Lubricant Cost (CNY/l)	25	25	25	25	25	25	25
Labor Cost (CNY/h)	10.92	10.92	10.92	10.92	10.92	10.92	10.92
Crew Cost (CNY/h)	9.12	10.68	7.8	11.16	12.96	15.96	15.96
Overhead (CNY/year)	5,800	128,900	28,400	27,200	66,800	104,200	140,800
Interest Rate (%)	6	6	6	6	6	6	6
Time value of money of users (CNY/h)	13.5	7.5					
Passenger Car Space Equivalent	1	1.5	1	1.4	1.6	1.8	2
Annual km	23,000	70,000	60,000	60,000	86,000	96,000	96,000
Working Hours	550	1,400	1,970	1,970	2,450	2,800	2,800
Average Life years	10	7	8	12	14	14	14
Private Use	100%	0%	0%	0%	0%	0%	0%
Passengers	2	30	0	0	0	0	0
% work time	50%	50%	0%	0%	0%	0%	0%
Equivalent Standard Axle Load	0	0.47	0.96	3.7	3.4	4.3	8.2

Table 2-9 Study Parameters

Parameter	Value
Period of Evaluation	12 years, no residual value
Base Case Scenario	Full routine maintenance and patching. Reconstruction if IRI above 8.5 for class II highway, IRI above 9.5 for class III highway, and IRI11 above class IV highway, after a minimum of five years (no rehabilitation/reconstruction considered before five years).
Project Case Scenario	Same as base case except reconstruction.
Vehicle Life Model Parameters	Constant (cars), optimal (all others).
Traffic growth	+3% per year unless specific study indicates higher rate

36. The description of each project in HDM-4 includes the points below. The HDM-4 model created during the PPTA should be used as a basis. The key change each year is bullet point 1 below. The process will be performed for the first two Phases by the PMC at which time training of YHAB staff will be performed. YHAB staff are expected to be able to prepare this plan for Phase IV.

- Creation of each sub section in a special HDM-4 “network”;
- Creation of special vehicles (if load is different from standard on the sub section) and growth (if different from standard) in HDM-4 “vehicle fleet” (Table 2-8);
- Creation of maintenance standard in HDM-4 “Standard”;
- Creation of one project for each section including all the sub sections in HDM-4 “Project”

2.6.2 Preparing procurement plan

37. Package the proposed road candidates into appropriate contracts, considering: a) contract value, b) length of maintenance and capability of General Section, c) distribution of maintenance work (along the road), d) previous experience of Prefecture with ADB procedures and e) budget contributions. The contracts will be allocated between ADB-YHAB joint funding and pure YHAB funding. The current ADB funding level is 62%. Contract allocation should use this percentage and the target phase budget to meet the ADB contribution amount for a Phase. Determine likely implementation dates for i) approval, ii) design, iii) procurement, iv) bid process and v) contract commencement.

2.7 Preparation of Phase Proposal

38. The outputs and recommendations of the above procedures form the content of the Phase Proposal. The report will be submitted to ADB for endorsement. The Phase Proposal will contain the following components.

- Description of the process followed
- Confirmation that all roads comply with criteria
- Completed sub-project datasheets
- Budget and implementation timeframe
- Procurement plan showing packages, lengths, costs and allocation to ADB or YHAB
- Environment and social: filled assessment checklists. Indication of IEE requirement
- Indication of need for RP and IP for land acquisition and resettlement
- Include Prioritization list coming out of HDM-4 (first 1,000 km)
- Include sub-project maps showing location and maintenance type

Output

The output for ADB approval is a Phase Proposal with indications of need for IEE, RP and IP. All criteria must be satisfied.

39. The sub-project datasheet template is shown in the following two figures.

A **Sub-Project Datasheet - Page 1**

Phase No	Route	Subproject / Contract Package Code	Route Name	KM	Length (km)	Road Class (km)				
						Under	1	2	3	4
					0.0					

B **Socio-Economic Baseline**

Data Year		Name	Total Pop. (million)	GDP/ capita (CNY)	Income/ capita (CNY)	Rural Pop. (million)	Rural GDP/ capita (CNY)	Rural Income/ capita	Poverty Counties	Poverty Villages	Poverty Villages Crossed	% of rural poor	No. of rural poor (Million)
Prefecture													
County 1													
County 2													
County 3													

C1 **Road Condition / Proposed Maintenance Works**

Pavement Works

Location	Old Width	New Width	Traffic	% trucks	Deflection	IRI	Reference	Type	Pavement Design				
									km	AC cm	CTG cm	G cm	ST m2

C2 **Schedule**

Procurement advertising		Works implementation		Likely Road Closure Period	

C3 **Other Specific Major Works**

	Number	<30 m	>30m		Number		Number		Length (m)
Bridge strengthening or replacement		0	0	Culvert replacement		Curve realignments	0	Widenings <1m	0
River training		0	0	Large retaining wall or slope work > 50m	0	Junction improvements		Widenings >1m	0

Technical Rationale for Selection / Specific Issues

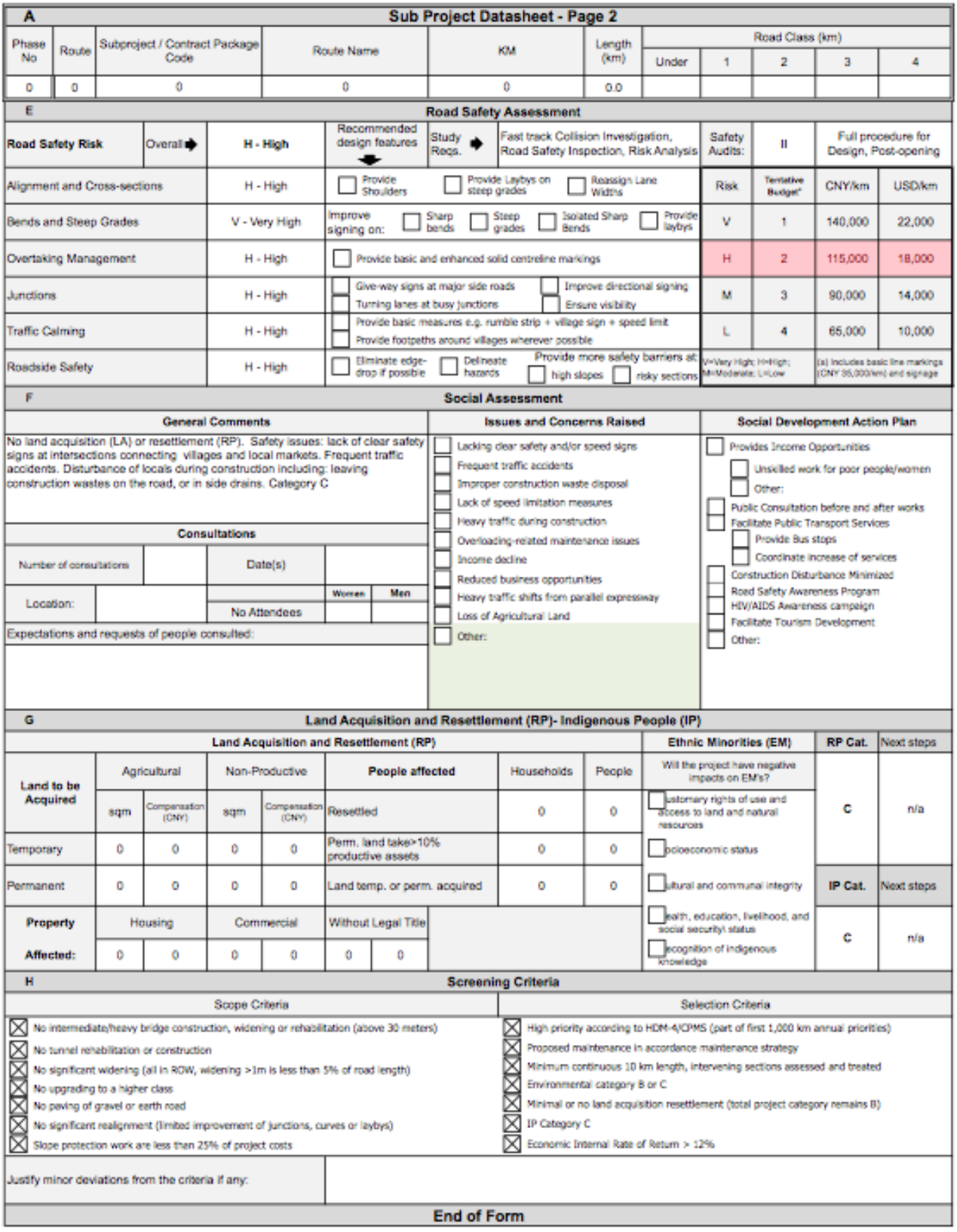
C4 **Cost Estimates and Economic Analysis**

Costs	Road Works	Safety	Consulting and Contingencies	Total	Total/km	Economic Analysis			
CNY				0	#DIV/0!	NPV ($m)		NPV/Cost	0.0
US$				0	#DIV/0!	EIRR (%)		Exchange rate:	6.34

D **Environmental Assessment**

General Comments	Environment Categorization Checklist	Env. Cat.	Next steps
	☐ Potential loss or damage to Cultural heritage site ☐ Encroachment into buffer or core of protected natural area ☐ Encroachment onto significant wetland providing important habitat ☐ Damage to Old-growth forest ☐ Permanent loss of important biodiversity — Category A Triggers	C	IEE
	☐ Works in densely populated district e.g. urban zone, village, town or city ☐ Establishment of a new quarry or placement of new asphalt plant ☐ Slope stabilization works > 50m ☐ Replacement of more than 5 irrigation canals ☐ Bridge replacement, river bed training >30m or more than 2 in-water pier reinforcement ☐ Resettlement of >= 50 vulnerable people, >= 100 ethnic minority people, or >= 200 unclassified people ☐ Temporary bypass at maintenance site > 50 m, road closure of more than 24 hours ☐ Continuous pavement works > 15 km — Category B Triggers		EMP
	☐ Other specific impact: ☐ Check Table 8, IEE Annex C to confirm Category		Contract Clauses

Figure 2-3 Datasheet Template - Page 1



A — Sub Project Datasheet - Page 2

Phase No	Route	Subproject / Contract Package Code	Route Name	KM	Length (km)	Road Class (km)				
						Under	1	2	3	4
0	0	0	0	0	0.0					

E — Road Safety Assessment

Road Safety Risk	Overall ➡	H - High	Recommended design features ⬇	Study Reqs. ➡	Fast track Collision Investigation, Road Safety Inspection, Risk Analysis	Safety Audits:	II	Full procedure for Design, Post-opening

Alignment and Cross-sections	H - High	☐ Provide Shoulders ☐ Provide Laybys on steep grades ☐ Reassign Lane Widths	Risk	Tentative Budget*	CNY/km	USD/km
Bends and Steep Grades	V - Very High	Improve signing on: ☐ Sharp bends ☐ Steep grades ☐ Isolated Sharp Bends ☐ Provide laybys	V	1	140,000	22,000
Overtaking Management	H - High	☐ Provide basic and enhanced solid centreline markings	H	2	115,000	18,000
Junctions	H - High	☐ Give-way signs at major side roads ☐ Improve directional signing ☐ Turning lanes at busy junctions ☐ Ensure visibility	M	3	90,000	14,000
Traffic Calming	H - High	☐ Provide basic measures e.g. rumble strip + village sign + speed limit ☐ Provide footpaths around villages wherever possible	L	4	65,000	10,000
Roadside Safety	H - High	☐ Eliminate edge-drop if possible ☐ Delineate hazards Provide more safety barriers at: ☐ high slopes ☐ risky sections	(V=Very High; H=High; M=Moderate; L=Low		(a) Includes basic line markings (CNY 35,000/km) and signage	

F — Social Assessment

General Comments

No land acquisition (LA) or resettlement (RP). Safety issues: lack of clear safety signs at intersections connecting villages and local markets. Frequent traffic accidents. Disturbance of locals during construction including: leaving construction wastes on the road, or in side drains. Category C

Consultations

Number of consultations		Date(s)		
Location:			Women	Men
		No Attendees		

Expectations and requests of people consulted:

Issues and Concerns Raised

- ☐ Lacking clear safety and/or speed signs
- ☐ Frequent traffic accidents
- ☐ Improper construction waste disposal
- ☐ Lack of speed limitation measures
- ☐ Heavy traffic during construction
- ☐ Overloading-related maintenance issues
- ☐ Income decline
- ☐ Reduced business opportunities
- ☐ Heavy traffic shifts from parallel expressway
- ☐ Loss of Agricultural Land
- ☐ Other:

Social Development Action Plan

- ☐ Provides Income Opportunities
  - ☐ Unskilled work for poor people/women
  - ☐ Other:
- ☐ Public Consultation before and after works
- ☐ Facilitate Public Transport Services
  - ☐ Provide Bus stops
  - ☐ Coordinate increase of services
- ☐ Construction Disturbance Minimized
- ☐ Road Safety Awareness Program
- ☐ HIV/AIDS Awareness campaign
- ☐ Facilitate Tourism Development
- ☐ Other:

G — Land Acquisition and Resettlement (RP)- Indigenous People (IP)

Land Acquisition and Resettlement (RP)

Land to be Acquired	Agricultural		Non-Productive		People affected	Households	People
	sqm	Compensation (CNY)	sqm	Compensation (CNY)			
Temporary	0	0	0	0	Resettled	0	0
Permanent	0	0	0	0	Perm. land take>10% productive assets	0	0
					Land temp. or perm. acquired	0	0

Property Affected:	Housing		Commercial		Without Legal Title	
	0	0	0	0	0	0

Ethnic Minorities (EM)

Will the project have negative impacts on EM's?

- ☐ customary rights of use and access to land and natural resources
- ☐ socioeconomic status
- ☐ cultural and communal integrity
- ☐ health, education, livelihood, and social security\ status
- ☐ recognition of indigenous knowledge

RP Cat.	Next steps
C	n/a

IP Cat.	Next steps
C	n/a

H — Screening Criteria

Scope Criteria	Selection Criteria
☒ No intermediate/heavy bridge construction, widening or rehabilitation (above 30 meters)	☒ High priority according to HDM-4/CPMS (part of first 1,000 km annual priorities)
☒ No tunnel rehabilitation or construction	☒ Proposed maintenance in accordance maintenance strategy
☒ No significant widening (all in ROW, widening >1m is less than 5% of road length)	☒ Minimum continuous 10 km length, intervening sections assessed and treated
☒ No upgrading to a higher class	☒ Environmental category B or C
☒ No paving of gravel or earth road	☒ Minimal or no land acquisition resettlement (total project category remains B)
☒ No significant realignment (limited improvement of junctions, curves or laybys)	☒ IP Category C
☒ Slope protection work are less than 25% of project costs	☒ Economic Internal Rate of Return > 12%

Justify minor deviations from the criteria if any:

End of Form

Figure 2-4 Datasheet Template - Page 2

3 STEP 2: SUB-PROJECT PREPARATION AND DESIGN

40. The activities of Step 2 can commence before approval is received from ADB, especially if all criteria have been satisfied and guidelines followed.

3.1 Overview

Item	Task	Major Activities	Responsible	Timing
1	IEE and RP	If any Category B projects were proposed, an IEE and RP must be prepared following EARF, Section IV Steps 2 through 9. Works cannot start before these are approved.	YHAB, ESSU	Start + 6 months
2	Design	Confirm scope of works within OM guidelines. Prepare detailed designs. Design agent provided with MBD, road safety requirements, EMP and all mitigation measures. Design can start before ADB approval but contract cannot be awarded prior to Approval	YHAB, ESSU, Prefectures	Q1/2014, Q4/2014, Q4/2015
3	Design Review	Road Safety division to audit the designs and ensure compliance with road safety requests. PHASE PROPOSAL includes a safety assessment	YHAB, ESSU	Within 2 months
4	ADB Review	Submit design and safeguards plans to ADB	ADB	Within 1 month

3.2 ADB reporting and Approval Requirements

41. **Environmental Safeguards:** During the preparation of environmental documents, the ADB's function is to advise on environmental categorization and compliance issues and review documentation to ensure it is line with ADB requirements.

Category B and C documents (screening checklists, categorizations, IEE/EMP and other supporting environmental documentation) will be submitted to ADB for approval (normally 30 days)

For Category C, only a statement that environmental issues have been reviewed the completed screening checklist and the list of the assessment categories for each of the maintenance activities proposed for the road will be provided.

3.3 Preparing an IEE

42. The procedure for preparing an IEE is fully documented in the EARF, Section IV. Initial design may start prior to completing the IEE, however the final design must include each mitigative and monitoring measure proposed in the IEE's Environmental Monitoring Plan.

43. Once approved and signed by the ADB and YHAB the IEE becomes a legally binding document of the Government of Yunnan. Until this signing is complete, the bidding cannot proceed, unless special provisions are made for construction contract amendments and cost variations. For all Category C projects the work can proceed as soon as the screening checklist and list of maintenance activities and their categorization have been submitted and approved by ADB.

44. The IEE will be prepared according to the EARF Section IV steps 2-9 (summarized below in Table 3-1), and will include a consultation session with local people who will be affected by the maintenance work. Conduct consultations according to the EARF procedures. Document findings, including a list of attendees, summary of comments made and concerns raised, and include YHAB's actions for addressing all concerns. Specific consultations will be completed for each Category B project. For Category C works, the consultation will take place as part of the reconnaissance field visit.

Table 3-1 EARF Section IV Steps 2 - 9

Step	Activity Description	Actions
2	Scoping (Office)	☑ Define the geographic limit and time scale to be used to define impacts, mitigation measures, monitoring tasks and the overall duration of an assessment. ☑ Define the project's 'corridor of impact', usually the RoW plus additional land in either side of the carriageway/alignment, plus any temporary storage areas.
3	Baseline Conditions and Impacts (Field)	☑ Establish the baseline conditions for the components of the environment likely affected by the project e.g. ☑ Terrain/topography, soils, geology, forest cover, protected areas, land-use, adjacent physical cultural resources, and all ambient air, noise and water quality conditions in the project corridor.
4	Prediction of likely change in Step 3 baseline	☑ Predict likely changes in baseline (above) resulting from construction activities ☑ Predict likely changes in road operating changes resulting from rehabilitation. ☑ Examples: Construction period effects on air quality, noise, surface water quality, safety and health impacts, as well as impacts due to added traffic volume need to be assessed. ☑ The locations where baseline data are collected or where monitoring takes place and the timing of these activities should remain uniform for both mitigation and monitoring actions
5	Public Consultations and Information Distribution (Cat. B)	☑ Objective: engage the affected general public as well as government officials (at several levels) in a dialogue leading to better mitigative measures and helping to identify oversights regarding impacts. ☑ Precede consultation with the provision of information on the project to the affected communities; often via a written short booklet accompanied by an invitation to attend a workshop/information session. ☑ ESSU to prepare an information sheet defining details of the project work, location, timing and specific map showing the project site in relation to surrounding land-uses.

6	Preparation of EMP	☑ EMP must be practical, specific and systematic, easily converted to mitigation and monitoring actions which: • design team and contractors can undertake; • people assigned monitoring tasks can easily complete; and, • can be translated into, or simply referenced as, environmental clauses in contract specifications. ☑ Each mitigative measure needs to be matched with a monitoring activity. (See Annex 2 for example)
7	Review capacity for Environmental Management	☑ Identify agencies and units that will be involved in the environmental assessment, management and supervision of the mitigation and monitoring actions from preconstruction through the operating period. ☑ Use interviews to identify needs based on obvious gaps, lack of experience in undertaking international-level assessments or lack of experience with preparation and implementation of EMPs. ☑ Provide training as necessary to monitors and contractors
8	Estimate Mitigation, Monitoring and Training Costs	☑ Cost each of the mitigation and monitoring actions as well as the institutional capacity building requirements ☑ Refer Annex 7 of EARF for example
9	Reporting and Documentation	☑ Prepare documentation (actually starts in Step 1) ☑ Follow EARF and ADB guidelines

45. YHAB and its ESSU should closely follow the EARF guidelines and apply the safeguard items in the EMP for all Category C projects.

Work cannot start on any roads included in the IEE, before the IEE has been approved!

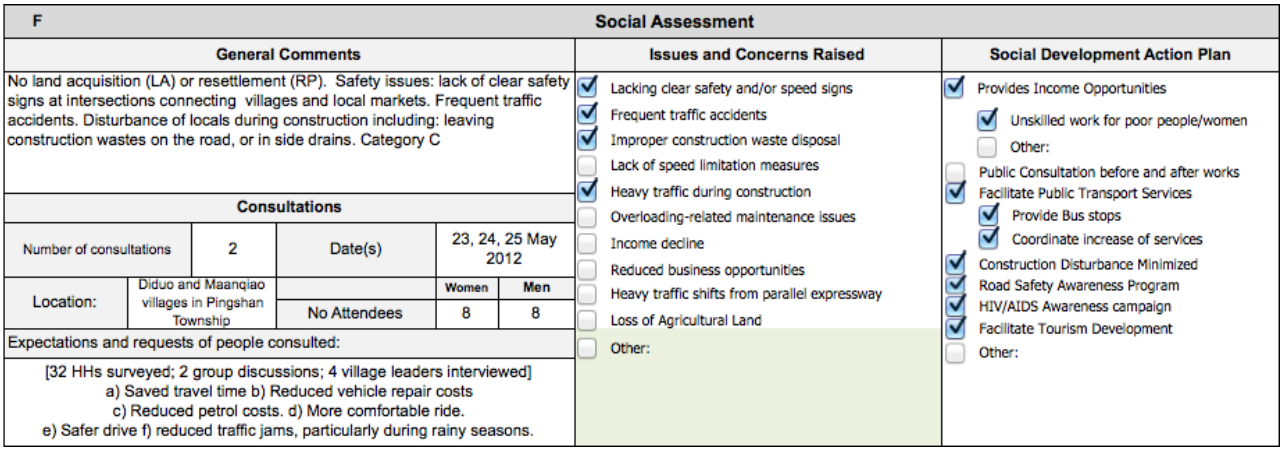
3.4 Preparing the Resettlement Plan

Through consultation and interviews the details as shown in

46. Figure 3-1 and Figure 3-2 have been collected in Step 1. (Refer Datasheet Section F). Preparing the resettlement plan involves:

- Surveying areas to identify people who will be affected and assess the impact on them
- Confirm compensation rates that apply
- Inform people affected of the resettlement plan
- Finalize the resettlement plan and send to ADB for approval

Figure 3-1 Social Assessment Checklist



F	Social Assessment	
General Comments	**Issues and Concerns Raised**	**Social Development Action Plan**
No land acquisition (LA) or resettlement (RP). Safety issues: lack of clear safety signs at intersections connecting villages and local markets. Frequent traffic accidents. Disturbance of locals during construction including: leaving construction wastes on the road, or in side drains. Category C	☑ Lacking clear safety and/or speed signs ☑ Frequent traffic accidents ☑ Improper construction waste disposal ☐ Lack of speed limitation measures ☑ Heavy traffic during construction ☐ Overloading-related maintenance issues ☐ Income decline ☐ Reduced business opportunities ☐ Heavy traffic shifts from parallel expressway ☐ Loss of Agricultural Land ☐ Other:	☑ Provides Income Opportunities ☑ Unskilled work for poor people/women ☐ Other: ☐ Public Consultation before and after works ☑ Facilitate Public Transport Services ☑ Provide Bus stops ☑ Coordinate increase of services ☑ Construction Disturbance Minimized ☑ Road Safety Awareness Program ☑ HIV/AIDS Awareness campaign ☑ Facilitate Tourism Development ☐ Other:

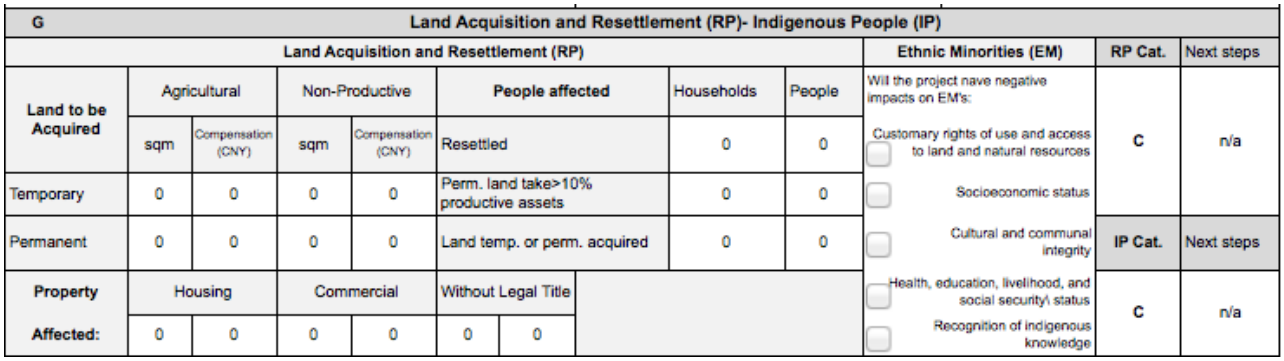
Consultations

Number of consultations	2	Date(s)	23, 24, 25 May 2012	
Location:	Diduo and Maanqiao villages in Pingshan Township		Women	Men
		No Attendees	8	8

Expectations and requests of people consulted:

[32 HHs surveyed; 2 group discussions; 4 village leaders interviewed]
a) Saved travel time b) Reduced vehicle repair costs
c) Reduced petrol costs. d) More comfortable ride.
e) Safer drive f) reduced traffic jams, particularly during rainy seasons.

Figure 3-2 RP and IP Base Data



G	Land Acquisition and Resettlement (RP)- Indigenous People (IP)								
	Land Acquisition and Resettlement (RP)							Ethnic Minorities (EM)	RP Cat.	Next steps
Land to be Acquired	Agricultural		Non-Productive		**People affected**	Households	People	Will the project nave negative impacts on EM's:		
	sqm	Compensation (CNY)	sqm	Compensation (CNY)	Resettled	0	0	☐ Customary rights of use and access to land and natural resources	C	n/a
Temporary	0	0	0	0	Perm. land take>10% productive assets	0	0	☐ Socioeconomic status		
Permanent	0	0	0	0	Land temp. or perm. acquired	0	0	☐ Cultural and communal integrity	IP Cat.	Next steps
Property	Housing		Commercial		Without Legal Title			☐ Health, education, livelihood, and social security\ status	C	n/a
Affected:	0	0	0	0	0	0		☐ Recognition of indigenous knowledge		

Work cannot start on any roads included in the RP, before the RP has been approved!

3.5 Preparing the Detailed Design

47. The Procurement agent will assemble and provide the design party with the following documents:

Technical	Environmental	Road Safety	Social
• Standard Bidding Document (Volume D) • Location details • Design requirements • Specific design requests	• IEE (if any) • EMP • Environmental clauses • EARF	• Preliminary Safety Risk Summary and Recommendations • Budget Allocation and Technical Requirements • Terms of Reference (TOR)	• Social Action Plan • RP (if any)

48. The detailed design process will include the following:

Activity	Actions to be performed	Method/Requirements/Surveys

Define Scope of Works	• Determine
	  • Maintenance needs e.g. overlay, seal
	  • Special geotechnical issues
	  • Basic safety provisions including lane markings and signage
	  • Enhanced safety provisions related to overtaking, bends, steep grades, junctions, traffic calming, roadside safety
	  • Bridge maintenance requirements
	  • Culvert repair and replacement needs
	  • Examine relevant environmental clauses and/or EMP provided by ESSU and make any design changes that help to prevent negative impacts
	  • Special Slope Protection works e.g. existing or potential landslide areas
	  • Junction improvements
	  • Realignment options (must be minimal) local widening (minimal), laybys
	  • Need for temporary land for batching etc.
	  • Prepare traffic management plan
		• Perform Desktop studies and Field surveys to determine:
		  • Roughness and condition surveys (200 m)
		  • Distress surveys e.g. cracks, potholes
		  • One day classified traffic counts
		  • Road safety risk – head-on, junctions, steep grade, bends, rear-front, pedestrians/non-motorized users, rollover/fallover, collision with objects, overall assessment (Figure 2-1)
		  • Speed surveys on representative free-flowing sections
		  • Collision investigation using 3-year collision data (if specified and data is available)
		  • Environmental conditions (Figure 2-2). Note sensitive areas, slope conditions, waterways.
		  • Environmental Clauses from contract defining design-related changes for use by design team—provided by ESSU
		  • Overloading assessment (for design loading)
		  • Deflection surveys at 200m intervals
		  • GPS horizontal and vertical alignment
		  • Location of structures, schools, villages, junctions
		  • Bridge and culvert surveys
		  • Discuss such traffic diversion with authorities and communities, then post details.

Technical Solutions[6]	• Determine appropriate solutions according to:
	  • Maintenance strategy solutions
	  • Special environment conditions
	  • Special traffic conditions e.g. heavy haul trucks
	  • Design life (>10 years)
		• General adherence to PRC standards as footnoted.
		• Be mindful of traffic volume and composition and requirement for longer than standard design life

Safety Measures	• Ensure that no design elements will generate new safety problems nor aggravate existing ones to an unacceptable extent. • Measures considered should be in keeping with the review and recommendations as listed in Figure 2-1 • Determine appropriate measures and schemes according to safety risks and budget • Ensure compliance with safety measures based on Phase Proposal and ESSU recommendations • Follow Phase Proposal ToR for safety design	• The Design Party shall encompass road safety in all aspects of design and undertake specific road safety tasks in accordance with the Phase Proposal ToR. (See Annex C and Volume B for guidelines) • The Design Party will produce a Concept Paper in the early stage to demonstrate their understanding of issues with an outline of possible measures. • The Design Party will submit a Road Safety Study Report upon completion of desktop study and field survey with proposed schemes and preliminary designs. • The Design party will proceed to prepare detailed drawings upon agreement of the ESSU. • If the Design Party has inadequate experience in

[6] Design to be based on national standards and specifications e.g. Specifications for Design of Highway Asphalt Pavement (JTG D50-2006). Designs must meet Project requirements regarding traffic, design life and maintenance strategy, road safety, etc.

	• Depending on the safety risk assessment road safety audits may need to be carried out pre, during and post construction.	road safety design, a specialist will be appointed to the team and so noted in the PMT form for that contract.
Environment	• Issue Design Party with EMP from IEE for Cat. B roads. • Issue Design Party with EMP (For Cat. C, EARF Annex 4), and • Environmental clauses (EARF, Annex 5)	• Ensure EMP requirements are incorporated in design • Ensure EMP (and environmental clauses) are included in Bid documents (for Cat. B) • Ensure EMP (and environmental clauses) are included in Bid documents (for Cat. C)

49. The ESSU will work with the design and contract preparation specialists to insure that environmental considerations and road safety measures are properly addressed in the contract documents and that any design-related suggestions coming from the community consulted during any public consultation are appropriately considered.

3.6 Design Review

50. Detailed designs do not need to be submitted to ADB for approval. All designs should be reviewed by YHAB, the ESSU, or an independent reviewer, to ensure:

- ☑ Required EMP mitigation and monitoring measures were received, have been understood and were implemented
- ☑ Required social safeguards were received, have been understood and were implemented
- ☑ Recommended road safety features have been adequately adopted into the design e.g. barriers, road and lane markings, junction improvements, rumble strips, etc.
- ☑ The design does not add additional safety risks, the methodology is within approved technical solutions and does not cause infringements to the selection criteria e.g. activity or construction outside the RoW, bridge widening or reinstatement, etc.
- ☑ Road safety audit is performed for roads with High and Very High Risk assessments. Indicate in the Project Monitoring Tool (PMT) Form when audits are required and monitor them. (Refer Annex C)

3.7 Road Safety Audit

51. Road Safety Audit (RSA) is the evaluation at various stages of a highway project to identify potential road safety problems that may affect any users of the highway and to suggest measures to eliminate or mitigate those problems. The RSA report prepared by an independent RSA team shall contain a summary for each identified problem describing the location, nature of problem and likely types of collision. Each problem shall then be followed by a recommendation, which should be proportionate and viable for the elimination or mitigation of the identified problems. The risk before and after adoption of the recommendations should also be stated. The YSRM Project Director shall review the RSA Report and a response has to be expressly made on each comment. Where a comment is not accepted, this should be highlighted with reasons and alternative proposals presented in an Exception Report.

52. Road safety audits may be required at three stages a) post-design, b) during construction and c) post construction depending on its risk assessment.

Output

IEE, RP and IP (if necessary) completed and sent to ADB for approval. EMP and safety aspects incorporated into Design. Design completed and safety audit review done (if necessary).

4 STEP 3: SUB-PROJECT IMPLEMENTATION

53. Approved designs are now ready for the procurement and implementation phase.

Item	Task	Major Activities	Responsible	Timing
1	Procurement	Appoint the procurement agent (PA). Assemble bid documentation and include, road safety requirements, EMP and all mitigation measures	PA, YHAB, ESSU	As designs available
2	Bidding	Publish bid documents. Evaluate and confirm contractor selection. Appoint supervision contractor and agree monitoring process.	YHAB, YSRI, ESSU	
3	Supervision Consultant	Define supervision structure at site. Provide monitoring tools. Ensure Contractor is following all mitigation measures.	Supervision Consultant (SC), PMO	
4	Contract Award	Provide contractor and supervisor training on mitigation and safety measures, and reporting	YHAB, PMO	Award
5	PMO Monitoring, Implementation support	Use Tools to monitor design, construction and supervision progress and milestones. Monitor costs, disbursement needs and payments. Complete quarterly reporting and submit to ADB.	YHAB, PMO, ESSU, SC	During construction
6	PMO sign off	Road Safety Audit completed works. Sign off at contract completion. Ensure all mitigation measures implemented. Hold all documentation until review at Project completion.	YHAB, PMO, ESSU	At contract completion

4.1 Bidding Document and Contracts

54. A procurement agent may be assigned to prepare bidding documentation, execute the tender process, evaluate and award contract. The ESSU will examine the pre-construction period mitigation and monitoring measures identified in the EMP and lead their implementation. The key steps are:

- Use template model bidding documents (Volume D)
- The ESSU will provide the key specifications to be included (for all projects, whether ADB or YHAB funded):
- EMP for environment, health and safety (including HIV),
- Environmental clauses
- Social Safeguards plans
- Traffic Management Plans

55. After the contractor has been selected, the ESSU and the General and Maintenance Sections will aid the contractors to implement an EMP, by:

- Preparing a Construction Environmental Work Plan based on the template in the EARF (Annex 8), and then
- Implementing each action.

56. The contractor will use this plan to implement all measures defined in the EARF and report on progress to the ESSU.

4.2 Contractor Requirements

57. The Contractors for all ADB-funded contracts be required to implement the following plans in addition to the Works execution plans. The Contractor's personnel must comply with all plans at all times. All plans to be developed with thirty (30) days of the Start Date.

Table 4-1 Contractor Requirements

Health Safety Management Plan (HSMP)	Emergency Procedures and Contingency Plan (EPCP)	Traffic Management Plan (TMP)
Purpose: Because of the nature of the Works and Services, the Contractor may occasionally be exposed to hazardous situations, which could involve risk of various degrees of harm, to the contracting staff and/or the public. Situations will arise when it is not practical to eliminate or isolate significant hazards. In these situations the hazards must be minimized by ensuring that planned protection systems (e.g. equipment, clothing) are actually used.	**Purpose**: To establish the roles, practices and procedures during specific types of emergency events identified in the plans and the contingency plans associated with the closure of road.	**Purpose**: Clearly define and document the responsibilities and chain of command for the development, implementation and management of traffic control measures and systems which will provide minimum requirements for temporary traffic control, minimum geometric, cross section and surfacing standards for temporary works, enable safe and efficient traffic flow into, through and out of work sites, protect the Contractor's personnel, assets and resources at all times, and meet the operational requirements for the road.
HSMP Components: • Ensure the systematic identification of existing and new hazards on the work site(s); • Ensure the minimization of significant hazards, where elimination and isolation are both impractical; • Ensure the provision and use of appropriate protective measures; • Include emergency procedures for dealing with accidental spillage, pollution or imminent danger; • Ensure regular review and assessment of each hazard identified and monitor employees exposure to these hazards; • Ensure reporting and recording of work site safety incidents so health and safety problems can be addressed quickly and regularly. It is a requirement of this Contract that any such incident be advised promptly to the Contract Manager.	**EPCP Components:** • An effective communication and event recording system; • The name, contact number and specific duties of the contractor's personnel nominated to respond to an emergency event; • The contact number of other parties who need to be notified in cases of emergency events, e.g. police; • Detailed response procedures for all emergency events; • Possible detour routes in the event of road closure.	**TMP Components:** • Documented process for preparation, review and approval of the Traffic Management Plan; • Document tracking and control system to ensure that only the latest operative copy of the Traffic Management Plan is in circulation; • Contact details for Contractor, Employer, emergency services and other stakeholders; • Layout diagrams, method statements etc. for implementation of traffic control while undertaking each aspect of the Services (including site specific layout diagrams and method statements if the Services require traffic control measures not covered by standard codes of practice).

58. The environmental requirements for the Contractor are listed below:

Area	Environmental Activities and Responsibilities
Training	

	Contractor will receive a two-day session immediately after their mobilization. Training will include:
	• Understanding and applying international style EMPs, from the viewpoint of:
	  • The executing and implementing agencies
	  • The contractor □
	  • Others
	• Compliance monitoring methods, needed equipment and its use
	• Compliance monitoring information analysis
	• Enforcement of environmental safeguards
	• Reporting

Construction Period	
	The contractor will **prepare and have approved the plans listed in** • Table 4-1 • prepare a Construction Environmental Work Plan based on the template in the EARF (Annex 8), • adhere to all mitigative measures identified in the EMP, and will report compliance to the Maintenance Section and the ESSU (through the CEWP) • properly maintain all construction vehicles according to manufacturer specifications. • apply sound engineering, and refers to the good environmental practices outlined in the EMP • keep all equipment properly maintained, thereby minimizing machine noise. • apply the EMP's mitigative measures associated with any Category B or C project • be subject to regular inspection to confirm compliance with the prescribed measures. • apply the grievance redress section from the IEE, add contact telephone numbers and addresses, and then distribute this to roadside residents. This action will permit residents to file a complaint if the contractor does not comply with the agreed schedule.
Social Interaction	
	• Cooperation between the contractors and local people will be required to minimize access restriction issues. • Contractors will be required to provide a method statement for minimizing access restrictions and dealing with access issues raised by local communities. • The contractor will be encouraged to hire at least 50% of their unskilled labour locally, and also purchase food locally whenever possible.
Reporting by Contractor	
	• The CEWP will be filled in monthly to record progress on the implementation of the EMP. • Ensure reporting and recording of work site safety incidents as needed under the HSMP.

4.3 Supervision requirements

59. YHAB will appoint an independent supervision consultant (SVC) and prepare supervision structure (see Figure 1.2) in which the SVC will work and report. The SVC will be given:

- Full Contract documentation and the OM
- Specific requirements, template reports and reporting for control of EMP, safety, and traffic management plans

- Specific reporting templates, forms or spreadsheets that will be used for reporting, compliance reporting, and progress reporting

60. Different agencies perform supervision at different levels. The following table shows the supervision roles and responsibilities of each agency.

SVC	YHAB/General Section (GS)	ESSU (Environment/Social)	ESSU (Road Safety)
Roles: • Operating from the Field Project Office the SVC will monitor the construction process • Ensure quality of the works • Report compliance with all CEWP and social safeguards to GS • Sign off on monthly progress and payment requests	Roles: • Employer of the contractor • Appoint SVC to act as their onsite manager • Appoint GS contact for SVC • Ensure roles and responsibilities are understood by each party • GS to report compliance status to ESSU on quarterly basis • Coordinate all follow-up work associated with environmental safeguards	Roles: • Oversee compliance with EMP and preparation of CEWP by contractor • Confirm safeguards were implemented and assess their success though consultation for two Cat. B road and one Cat C. (EARF Table 5) • Ensure compliance with RP and IP (if any)	Roles: • Oversee compliance of road safety study, formulation of measures and design • Road Safety Auditor (or appoint independent auditor)
Responsibilities: • Monitor works quality • Monitor general safety, traffic and health plans • Monitor compliance to social safeguards • Monitor and enforce contractor's compliance with CEWP on monthly basis	Responsibilities: • Undertake compliance monitoring during construction and once during the project's operating period • Ensure payments are made appropriately •	Responsibilities: • Develop with the contractor a CEWP for monitoring EMP implementation (Annex 3 EARF) • Ensure contractor adheres to EMP • Conduct periodic audits based on CEWP • Conduct end of work audit using the EMP • Monitor resettlement and land acquisition (if needed) has happened according to the respective Plans • Ensure LAR payments are made, restoration of temporary land and facilities is completed	Responsibilities: • Review and comment on submissions including the Concept Paper and Road Safety Study Report • Audit design (if required) prior to bid • Audit project during construction (if required) • Audit project after completion (if required)

4.4 Monitoring and Implementation support

61. Contract and progress monitoring will occur at a number of levels and by various staff and organizations.

- The PMT tool will be used by YHAB to monitor progress of each sub-project for each related discipline (Refer Appendix A)
- Quarterly Report to the ADB (Annex D) includes PMT monitoring sheets, environmental, safety and other reports

- ESSU will lead the larger team (including the General Maintenance Sections), following annual training to:
- During the pre-construction period, to address issues regarding document translation, distribution and inclusion of environmental clauses in contract documentation.
- During the construction period to monitor the contractor monthly, updating on their progress with the implementation of the EMP) by preparing and filling in a compliance-monitoring checklist based on the EMP (EARF Annex 3) and the Construction Environmental Work Plan prepared by the contractor (see template in EARF Annex 3).
    - Conduct effects monitoring on three roads six months into the post-construction period to determine value of mitigation measures (see IEE Sect VII (C) Follow Up)
- Summarize these reports/tables for the quarterly reports to ADB.
- For Category C sub-projects insure that EMP and environmental clauses (in Contracts) are being implemented. Contractor to monitor and ESSU to audit compliance.
- Management and coordination social aspects (e.g. coordination with transport bureau for traffic management and resumption of public transport)
- Ensure any community road safety programs are done
- ESSU will perform road safety audit during construction if required for the sub-project

62. The progress and status of all monitoring activities will be documented in the Quarterly Report. The report will be submitted to ADB on a quarterly basis. The report will contain the following components.

- Executive Summary
- Completed monitoring forms (PMT)
- Budget and implementation progress
- Environment and social: A section in the main text of the report will summarize all environmental and social issues, progress, compliance which will have been noted in the monitoring forms for each sub-project
- RP and IP for land acquisition and resettlement progress, payments and issues (if any)
- Include sub-project maps showing location and maintenance type

4.5 Completion tasks

63. A final checklist at sub-project completion is shown below.

Completion Checklist		
☐	Technical Acceptance	• CSV to confirm that sub-project has been completed to all required standards • All mitigation measures have been approved • All reinstatement has been performed as necessary • Final IRI (roughness) as per design • Complete the PMT form and Datasheet for the sub-project
☐	Road Safety Audit	• For high risk assessed sub-projects, perform the road safety audit • Record outstanding issues (if any) to be addressed
☐	Local Consultation	• Consult local people post-completion to ensure all issues and concerns have been addressed • Recommend any further action if necessary
☐	Indicators Collation	• Compile and record all agreed indicators for environment, social and safety

		• Traffic count (completion + 1 year) • Final land acquisition volumes • Ensure compensations have been paid • Ensure all social actions have been taken • Record any outstanding issues or concerns
☐	Category B sub-projects	• Prepare final CEWP as at Contract demobilization date • Prepare completed environmental monitoring checklist • ESSU to complete performance indicator table (EARF Table 5)
☐	Category C sub-projects	• Contractor submits a EMP checklist, showing timing and extent of compliance to each of 22 specified measures • Include compliance to any other contract specified environmental clauses
☐	Safeguards	• ESSU prepare a short safeguards completion section for Completion Report to ADB • Follow up agreed requirements for reinstatement of transport services, installation of bus shelters, road safety awareness programs, etc.

Appendix A Quarterly Reporting and Management

Quarterly reporting and Management Tools

Project Monitoring Tool (PMT)

64. An Excel-based Project monitoring Tool (PMT) was developed by the PPTA. The PMT tracks detailed information at sub-project level as well as automatically summarizing key data to the Phase/Contract level. The Project Management Office (PMO) will use the PMT and submit the Excel Workbook to the ADB as part of the PMO's quarterly reporting. The PMT tracks contract and project progress, project status and details of each road section, disbursement data, physical and financial progress, and safeguard measures. It can be linked to the project Datasheet.

Software operation

65. Each contract will have its own sheet (which is created by copying the *Blank* sheet). The name of the sheet will be the contract name (without any slashes (/\)). Each sheet comprises sections summarizing different aspects of the sub-project.

66. **Technical Section:** Before contract commencement, the focus will be on the Technical section. All nonshaded fields need to be changed as the candidate project progress through the various preparation stages. Survey dates of each should be entered as surveys are conducted. Enter the total km of heavy maintenance and the km of individual types of intermediate maintenance as per the technical recommendation (pre-detailed design). If the standard Datasheet has been prepared and copied into the PMT, the basic information can be imported into the Monitoring sheet.

Contract Identification:

Contract ID:		**Start KM:**		**Contractor Name:**	Name of contractor	
Road No:		**End KM:**		**Contract Value:**	-	**CNY**
Road Name:		**Contract (km):**	0.0	**USD**	-	
Prefecture:		**Heavy (km):**		**Procurement:**		(NCB or GPP)
Road Class:		**Intermediate (km):**		**ADB Portion:**	62%	

67. **Implementation Status:** This section reflects the progress of design, bidding, contract award, construction supervision appointment etc. On Contract Award, complete the contract amount and confirm the split between ADB and YHAB. Upon Contract completion indicate Y/N and enter the date.

Implementation Status: (Enter date when completed)

Design Docs:	Not started	**Cons. Sup.(CS) Docs Prep:**	Not started	**Road Safety:**	**US $**	**Risk:**	
Design Approved:	Not started	**CS Requested:**	Not started	**Audits Req'd**	☐ **Design**	☐ **Construction**	☐ **Post**
☐ Design Team includes RSE ?	Design includes Road Safety (Yes/No)			**Audit Dates:**			
Bid Docs Prep:	Not started	**CS Assessed:**	Not started	**Contractor:**	**Name of contractor**		6.34
Bids Requested:	Not started	**CS Contract Signed:**	Not started	**Award/Mob. Dates**	**Contract Value: CNY**		
Bids Assessed:	Not started	**CS Consultant:**		Award:	**ADB Portion: CNY**		0
Contract Duration (mth)	30	**Estimated Completion Date:**		Mobilized:	**YHAB Portion: CNY**		0
				Contract Complete (Y/N):		**Date:**	

68. **Contract Identification:** Some of this section can be completed at the Technical preparation stage e.g. contract ID, road number, name, prefecture and road class, start and end km. At contract award complete the Contract ID, contractor, contract value, procurement method and

contracted km of intermediate and heavy maintenance. The Contract km may differ to the technical stage km.

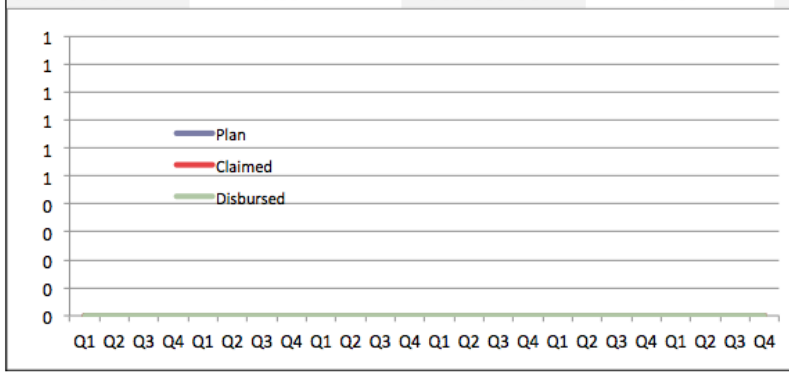
69. **Financial Information:** A sub-project's contract document will present an expected disbursement plan. This quarterly allocation should be entered in column A (in the figure below). As contractor's claims are submitted, column E should be updated. As payments are disbursed, update column G. Based on contract progress certificates, enter physical progress in column C.

		Implementation USD	Implementation Cumulative (IC)	IC %	Physical %	Financial (F/E %)	Claimed USD	Claimed Cumulative	Disbursed USD	Disbursed Cumulative
		A	B		C	D	E	F	G	H
	Total	0					0			
2012	Q1	0	0	#DIV/0!						
	Q2	0	0	#DIV/0!						
	Q3	0	0	#DIV/0!						
	Q4	0	0	#DIV/0!						
2013	Q1	0	0	#DIV/0!						
	Q2	0	0	#DIV/0!						
	Q3	0	0	#DIV/0!						
	Q4	0	0	#DIV/0!						
2014	Q1	0	0	#DIV/0!						
	Q2	0	0	#DIV/0!						
	Q3	0	0	#DIV/0!						
	Q4	0	0	#DIV/0!						

70. As the claims and payment information is entered the S-Curve is automatically updated: Planned disbursement (Column B), amounts claimed (column F), and amounts disbursed (column H). All contract variations should be noted in the right hand columns with date, amount and exchange rate of the day.

Construction Progress:

Claimed USD:	0.00	Disbursed USD:	0.00	Physical Progress:	0%	Financial:	0%



Contract Variations		
Date:	CNY	Exch Rate
TOTAL	CNY 0	
Contract Variations: US $		$0

71. **Environmental Monitoring:** Various environmental monitoring aspects will be updated as the project progresses.

Environmental Monitoring *To use in all cases*

Contractor											
Are specific environmental clauses included in contractor's contract?	Y	Number	7	Was road-specific EMP given to contractor and supervision engineer?	Y	Did contractor submit CWEP?	Y	Date Submitted		Date Endorsed by Engineer	
Supervision Engineer						**Field Office and ESSU**					
Is Supervision Engineer monitoring EMP?	Y	Number of reports submitted to ESSU		Date Latest Report:		Is there a trained environmental focal point in Field Office?	N	Has ESSU performed audits?	N	Dates:	
EMP Progress											
EMP Progress (Description)						Number of EMP activities listed in plan	0	Number implemented		0	
							Level I	Level II	Level III	Received	Resolved
						Number of EMP compliance issues notified to contractor				Complaints	
EMP Issues and Complaints received (Description and measures taken)						Resolution of issues raised in previous reports (Description)					

72. Social Development indicators should be set as per the social development surveys and tracked as per the indicators on the right hand side.

Social Development Indicators *To use in all cases (only inform indicators if corresponding social development action is ticked)*

	Social Activities Planned		Standard Results Indicators		Value
1	☐ Provides Income Opportunities				
	☐ Unskilled work for poor people/women	1	No and % of local women, ethnic or poor people employed		
	☐ Other:	2	Value and % of use of local sand/stone and other materials		
2	☐ Public Consultation before and after works	3	Number of communities covered by consultation		
		4	Number of consultations held		
		5	Number of attendees	Women / Men	
3	☐ Facilitate Public Transport Services				
	☐ Provide Bus stops	6	Number of bus stops constructed or repaired		
	☐ Coordinate increase of services	7	No of bus services restored or No of bus frequencies increased		
4	☐ Construction Disturbance Minimized	8	No of local residents complain re. construction-related disturbance		
5	☐ Road Safety Awareness Program	9	Number of roads safety signs installed		
		10	Number of measures taken for speed limitation.		
		11	Number of local communities covered by training		
		12	Number of schools covered by road safety training.		
		13	Number of local communities involved in road safety monitoring		
6	☐ Facilitate Tourism Development	14	Number of signs put along the project roads		
		15	Promotional material produced and disseminated		
7	☐ HIV/AIDS Awareness campaign	16	No of construction workers trained.		
		17	No of communities next to project roads covered by training.		
8	☐ Other:		*Dates of consultations:*		

73. Resettlement and land acquisition needs should be entered into the following section of each sub-project. If no resettlement is required for the project, then this section may remain empty.

Resettlement, Land Acquisition and Indigenous People (IP): (Costs in CNY million) *Only to use in case of resettlement*

Land Acquisition				People Affected and Resettled				
Was monitoring status of LAR included in engineer's tasks?	Y	Number	7	Was LAR plan given to supervision engineer?	Y	Did supervision engineer submit monitoring reports of LAR?	Y	Date Submitted

Standards				People Affected and Resettled				
Land Acquisition	Agricultural	Non-Productive	**Source of Funds**		Planned		Implemented	
Temporary					Households	People	Households	People
Permanent					(Number)	(Number)	(Number)	(Number)
Property	Commercial	Residential	Without Legal Title	Affected by land acquisition				

Land Acquisition											
	Planned				Implemented				Losing more than 10% of their productive assets		
	Agricultural		Non-Productive		Agricultural		Non-Productive				
	sqm	Compensation	sqm	Compensation	sqm	Paid (CNY)	sqm	Paid (CNY)			
Temporary											
Permanent									Resettled		

Property Acquired/Demolished												Comments *(if any)*
	Planned						Implemented					
	Commercial		Residential		Without Legal Title		Commercial		Residential		Without Legal Title	
	sqm	Compensation	sqm	Compensation	sqm	Compensation	sqm	Paid (CNY)	sqm	Paid (CNY)	sqm	Compensation
Acquired												

74. The main sheet (*Project-EN*) in the Excel monitoring tool summarizes each contract of each Phase on a single page. As each contract is added to the Excel tool, the contract number (actually the sheet name of the contract) is entered into column AH of the main sheet. To update the summary sheet with changes made on each contract sheet, press the 'Recalculate' button. The summary page is shown in the following figure. The only values changed on the front sheet are the contract or sheet name in Column AH.

All Costs are US $ '000s

Contract	Prefecture	Road	Proj. km	Total Contract US $ '000s	Contract Award US $ '000s ADB	Contract Award US $ '000s YHAB	Total Variations US $ '000s	Env. Cat.	LAR Cat.	IP Cat.	RP App'd	IEE App'd	Road Safety (US $) Risk	Road Safety (US $) Budget	Road Safety (US $) Desgn	EIRR %	ADB App'd	Design Approved	Bid Issue Date	Contract Date	Completion Date	Consultants Contractor	Consultants Supervision	Progress % Phys.	Progress % Fin.	Disbursed US $ 000s
Phase 1																										
T1/KUN/LUQ/G108	Kunming	G108	46	10,160		10,160		C	C	C	NA	NA	V	1,435,331		229%		Not started	Not started			Name of contractor	Name of SVC			
T1/KUN/JIN/G213a	Kunming	G213a	46	6,646	26,124	2,525		C	C	C	NA	NA	V	888,801		190%		Not started	Not started			Name of contractor	Name of SVC			
T1/YUX/YUX/G213b	Yuxi	G213b	15	3,049	11,985	1,159		C	C	C	NA	NA	V	311,577		190%		Not started	Not started			Name of contractor	Name of SVC			
T1/DAL/XIA/G320	Dali	G320a	17	3,371	13,249	1,281		C	C	C	NA	NA	M	241,325		150%		Not started	Not started			Name of contractor	Name of SVC			
T1/KUN/SON/S211	Kunming	S211	31	8,481	33,336	3,223		B	C	C	NA	NA	H	562,303		210%		Not started	Not started			Name of contractor	Name of SVC			
T1/DEH/RUI/X214	Dehong	X214	16	2,733	10,742	1,038		B	C	C	NA	NA	V	355,521		141%		Not started	Not started			Name of contractor	Name of SVC			
T1/LIN/YAN/S321	Lincang	S321	22	4,764		4,764		C	C	C	NA	NA	M	198,738		121%		Not started	Not started			Name of contractor	Name of SVC			
Phase 1 Total			**193**	**39,203**	**95,436**	**24,150**		**Heavy**				**58**		**3,993,596**	**Int. Maint:**			**135**								
Phase 2																										
Phase 2 Total								**Heavy**							**Int. Maint:**											
Phase 3																										
Phase 3 Total								**Heavy**							**Int. Maint:**											
Phase 4																										
Phase 4 Total								**Heavy**							**Int. Maint:**											
All Phases																										
Project Total			**193**	**39,203**	**95,436**	**24,150**		**Heavy**				**58**		**3,993,596**	**Int. Maint:**			**135**								

Source: PMC Consultant Updated: 25-Sep-12

Quarterly Report

75. A standard progress report will be completed and submitted each quarter. (Annex D). This should be completed by YHAB with the assistance of the PMC. It will include the PMT data sheets.

OUTLINE OF QUARTERLY PROGRESS MONITORING REPORT

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Appendix B Rolling Rehabilitation Plan

76. Based on 2012 data, the HDM-4 analysis provided a prioritized road section list. This list may change slightly in ranking order each year as data is updated and projects are implemented; however the overall ranking should be similar and could be used as a rolling rehabilitation plan.

Road	Start KM	End KM	Length	Width	Heavy	Intermediate	Total	Total Cumulative	Cumulative Length	Program Year	Length of Heavy Maint. as % of Total Maint.
			km	m	CNY Millions				km	Year	
S321	72	123	52	6.5	44	4	48	48	52	2013	
G320	2917	2970	54	7	46	6	53	100	106	2013	
S209	214	248	35	6	23	5	28	128	141	2013	
S103	61	99	39	8	43	2	45	174	180	2013	
S211	98	132	35	9	30	11	40	214	215	2013	
G320	3104	3168	65	7.5	55	11	66	280	280	2013	84%
G214	2216	2314	99	6	72	10	82	362	379	2013	
G320	2983	3029	47	7.5	47	3	51	413	426	2013	
S209	61	101	41	6	21	10	30	443	467	2013	
G320	3255	3290	36	9	26	14	39	483	503	2013	
S208	94	205	98	6	60	17	77	560	601	2014	
S218	389	466	54	6.9	32	14	46	606	655	2014	
G320	2631	2708	78	10.2	72	28	100	706	733	2014	
S210	136	235	100	9	101	20	122	828	833	2014	72%
G320	2733	2819	67	8.5	38	28	67	894	900	2014	
S210	334	400	67	6.5	57	5	62	956	967	2014	
G213	2208	2261	54	22.5	84	59	143	1099	1021	2014	
S219	404	497	94	8.5	52	41	93	1192	1115	2015	
G323	2193	2604	138	6.7	52	52	104	1296	1253	2015	
G213	2025	2142	42	7	16	17	33	1329	1295	2015	
S214	298	394	97	10	68	47	114	1443	1392	2015	
G320	3190	3225	36	6	18	9	27	1470	1428	2015	60%
G320	2829	2884	56	8.5	40	19	59	1529	1484	2015	
S222	57	91	35	6	16	9	25	1554	1519	2015	
G326	1403	1451	49	4.5	17	10	27	1581	1568	2015	
S319	16	61	46	20	78	36	114	1695	1614	2015	
G323	1836	2033	198	6.9	48	94	142	1837	1812	2016	
S322	129	170	42	6	12	16	27	1864	1854	2016	
G326	1274	1339	36	11	18	25	43	1907	1890	2016	
G108	3289	3363	75	9	59	25	85	1991	1965	2016	
G108	3124	3221	98	0	0	0	0	1991	2063	2016	53%
G320	2574	2619	46	6.5	9	22	30	2022	2109	2016	
S310	0	77	78	7.7	61	17	79	2100	2187	2016	
G213	2556	2615	60	7.5	41	16	57	2157	2247	2016	