



Project Administration Memorandum

Project Number: 33470
Loan Number: 2125
November 2005

PRC: Gansu Roads Development Project

The project administration memorandum is an active document, progressively updated and revised as necessary, particularly following any changes in project or program costs, scope, or implementation arrangements. This document, however, may not reflect the latest project or program changes.

Asian Development Bank

CURRENCY EQUIVALENTS

(as of 1 July 2004)

Currency Unit	–	yuan (CNY)
CNY1.00	=	\$0.1208
\$1.00	=	CNY8.2766

The exchange rate of the yuan is determined under a floating exchange rate system. In this report, a rate of \$1.00 = CNY8.277, the rate prevailing at the time of TA final review of the Project, was used.

ABBREVIATIONS

AAOV	–	average annual output value
ADB	–	Asian Development Bank
EIA	–	environmental impact assessment
EIRR	–	economic internal rate of return
FIRR	–	financial internal rate of return
FYP	–	five-year plan
GDP	–	gross domestic product
GLEC	–	Gansu Luoding Expressway Company
GPCD	–	Gansu Provincial Communications Department
GPG	–	Gansu Provincial Government
ha	–	hectare
JBIC	–	Japan Bank for International Cooperation
km	–	kilometer
LIBOR	–	London interbank offered rate
LCB	–	local competitive bidding
m ²	–	square meter
MOC	–	Ministry of Communications
MTE	–	medium-truck equivalent
O&M	–	operation and maintenance
PCR	–	project completion report
pcu	–	passenger car unit
PRC	–	People's Republic of China
RRP	–	report and recommendation of the president
TA	–	technical assistance
VOC	–	vehicle operating cost

NOTES

- (i) The fiscal year (FY) of the Government ends on 31 December.
- (ii) In this report, "\$" refers to US dollars.

CONTENTS

Loan Processing History	ii
I. PROJECT DESCRIPTION	1
A. Project Area and Location	1
B. Objectives and Scope	1
C. Project Components	1
D. Special Features	1
II. COST ESTIMATES AND FINANCING PLAN	2
A. Detailed Cost Estimates	2
B. Financing Plan	3
C. Allocation of Loan Proceeds	4
III. IMPLEMENTATION ARRANGEMENTS	4
A. Executing and Implementing Agencies	4
IV. IMPLEMENTATION SCHEDULE	5
V. CONSULTANT RECRUITMENT	5
VI. PROCUREMENT	5
VII. DISBURSEMENT PROCEDURES	6
VIII. PROJECT MONITORING AND EVALUATION	6
IX. SAFEGUARD COMPLIANCE	7
X. REPORTING REQUIREMENTS	8
XI. AUDITING REQUIREMENTS	8
XII. MAJOR LOAN COVENANTS	8
XIII. KEY PERSONS INVOLVED IN THE PROJECT	11
XIV. ANTICORRUPTION	11

LOAN PROCESSING HISTORY

	Date(s)
a. Approval of project or program preparatory technical assistance, if any	5 November 2003
b. Feasibility study	May 2003
c. Fact-finding	21 June–2 July 2004
d. Management review meeting (MRM)	13 August 2004
e. Appraisal mission	N/R
f. Staff review committee (SRC)	24 September 2004
g. Loan negotiations	8-10 November 2004
h. Board circulation	22 November w004
i. Board consideration and approval	13 December 2004
j. Loan agreement signing	24 March 2005
k. Cofinancing arrangement finalized and agreements signed, if any	none
l. Loan effectiveness, including conditions	30 June 2005

PROJECT FRAMEWORK

Design Summary	Performance Indicators/Targets	Monitoring Mechanism	Assumptions and Risks
Goal 1. Promotion of economic growth in Gansu and the project area. 2. Reduced poverty in the project area.	<p>Gross domestic product (GDP) is forecast to increase during 2009–2020 at 4.5% to 5.4% per annum for Gansu province and 6.6% to 7.4% for the project area.</p> <p>Per capita rural income will increase from CNY1, 673 in 2003 to CNY3, 000 in 2013.</p> <p>The poverty incidence in the project area will be reduced from 36% in 2003 to 15% in 2013.</p> <p>Social indicators, including school enrollment and infant mortality rates, will improve.</p>	<p>GDP and other related data through periodic reporting by the statistics office at the provincial and county levels.</p> <p>Project performance management system (PPMS) at inception, completion, and 3 years thereafter with emphasis on socioeconomic improvement impacts.</p> <p>A social development action plan.</p>	
Purpose Improved transport efficiency and safety in the project area for the expressway and local roads.	<p>Traffic volume for the expressway increased from 7,600 passenger car units (pcu) in 2010 to 15,100 pcu in 2020 and 25,600 pcu in 2029.</p> <p>Travel time for the expressway reduced from 6.5 hours before project to 3 hours after project.</p> <p>Reduced bus fares and freight rates by 10% by 2015.</p> <p>By 2015, the number of road accidents and fatalities in Gansu province will be reduced by 20% from 13,403 and 1,837, respectively, in 2003. The corresponding figures for the existing national road are 227 and 67, which will also be reduced by 20% by 2015.</p> <p>Reliability and frequency of bus services and introduction of new bus services.</p>	<p>Traffic counts by the Gansu Provincial Communications Department (GPCD) and PPMS.</p> <p>Traffic counts and travel time survey for the expressway by GPCD.</p> <p>Monitoring of fares and rates by GPCD.</p> <p>Accident statistics from Public Security Bureau and hospitals.</p> <p>Bus-related data will be monitored by GPCD.</p>	<p>Assumption. Assumed economic growth rates materialize. Transport operators and drivers realize the benefit of using expressways.</p> <p>Assumption. Demonstrated implementation capacity of GPCD.</p> <p>Assumption. High transport cost is the constraint to economic activities and availability of social services.</p> <p>Assumption. Better traffic enforcement and effective public awareness campaign to promote road safety. Risk. The nationwide road safety program may not be implemented effectively.</p> <p>Assumption. Reduced vehicle operating costs will improve bus service quality.</p>

PROJECT FRAMEWORK—Continued

Design Summary	Performance Indicators/Targets	Monitoring Mechanism	Assumptions and Risks
Outputs 1. Road infrastructure and associated equipment and facilities improved along the expressway between Luohandong and Dingxi.	Road capacity increased to 55,000 pcu per day at opening in 2010 by building a 231 km expressway.	PPMS and project completion report (PCR).	Risk. The Ningxia section, linking the two parts of the project expressway, may not be completed on time.
2. Road infrastructure and associated facilities improved for the five local roads in the project area.	Vehicle operating costs for a car reduced from CNY1.48 per vehicle-km to CNY1.01 per vehicle-km in 2015.	Direct measures of vehicle operating costs for trucks, buses, and cars by GPCD.	Assumption. Vehicle operating cost savings passed onto road users through a competitive environment among road transport providers.
	Safety audits implemented during design and construction.	Progress reports (PRs) and PCR.	Risk. Recommendations of the safety audits may not be implemented by GPCD.
	Equipment procured and installed for road safety, toll collection, communications, traffic management, and vehicle weigh bridges.	Project administration missions (PAMs), PRs, and PCR.	Assumption. Completion of equipment procurement and installation at Project opening.
	Implementation of land acquisition and resettlement plan. About 1,150 hectares (ha) of land acquired, adversely affecting about 13,150 persons, including resettlement of about 2,350 persons.	Resettlement monitoring by an independent institute engaged by GPCD.	Assumption. Adequate land for new house sites is available within villages for resettlement. Risk. Compensation may not be paid according to the Resettlement Plan.
	Welfare of those resettled re-established to at least the same level as before land acquisition. Implementation of income restoration strategies, and compensation awards.	Monitoring by an independent institute engaged by GPCD during resettlement, at completion, and 2 years after.	Assumption. Ability of affected persons to restore their living standards Risk. Income level may not be restored to pre-project levels.
	Implementation and monitoring plan based on the environmental impact assessment (EIA) and summary EIA as agreed by GPCD and Asian Development Bank (ADB). Mitigation measures included in civil works' contracts.	Environmental monitoring reports, PAMs, and PCR.	Assumption. Mitigation measures are adequate to address environmental impacts. Assumption. Commitment of GPCD and contractors to implementation of mitigation measures.
	470 km of local roads upgraded in the project area.	PPMS and PCR.	Assumption. GPCD's capacity to plan and coordinate with local governments the timely implementation of local roads.
	Four roadside stations developed along the local roads.		
	Road capacity increased to 4,000 pcu per day at opening for the local roads.	PPMS and PCR.	Assumption. Timely completion of quality facilities.

PROJECT FRAMEWORK—Continued

Design Summary	Performance Indicators/Targets	Monitoring Mechanism	Assumptions and Risks
	Implementation of monitoring and evaluation for the local road component.	PPMS report, PAMs, and PCR.	Risk. Adequate transport services may not be available in the rural areas.
3. Corporate governance promoted in expressway operations in Gansu province.	Expressway operations separated from the provincial government functions by establishing Gansu Luoding Expressway Company (GLEC) by 31 December 2007. Concession framework agreement signed by 30 June 2008. Corporate development plan implemented by 31 December 2008. A debt-to-equity ratio of not more than 65:35, a working ratio of not more than 15%, a debt service coverage ratio of not less than 1.2, and a financial internal rate of return of 6.1%.	Midterm review missions and PCRs. Midterm review missions and PCR. Financial statements of GLEC. Midterm review and PCR.	Assumption. Provincial government approval will be given in a timely manner Risk. GPCD may interfere in the expressway operations Assumption. Revenue forecast materializes as originally envisaged and Project implemented without cost overrun or implementation delays, including approval of project toll rates.
4. GPCD and domestic consultant capacity strengthened in project management, quality control, road safety, monitoring and evaluation.	34 person months of international training will be provided for GPCD staff. On-the-job training of domestic consultants will be provided by the international consultants.	A report by international consultants on the capacity building component, including participants, subject areas, and feedback from participants.	Assumption. Timely consultant recruitment and good performance of the consultants in providing training to GPCD Assumption. Results of training applied by trainees in the daily work.
Inputs			
1. Expressway civil works	Civil works contracts awarded by July 2005 and completed by December 2009: \$534.8 million	Progress reports. Annual audited and project accounts. PAMs. Project completion review mission.	Assumption. Implementation capacity of contractors, and strict construction supervision and quality control.
2. Equipment	Equipment procured by December 2009: \$48.0 million		Assumption. Counterpart funds provided in a timely manner.
3. Resettlement	Resettlement completed by December 2006: \$34.2 million		Assumption. Corruption does not result in higher than necessary costs.
4. Consulting and training services	Consultants recruited by July 2005 and their work completed by December 2009: \$30.9 million		Risk. Increase in inflation more than originally envisaged may result in cost overrun.
5. Local roads	Civil works contracts awarded by December 2004, and completed by December 2009: \$53.1 million		

I. PROJECT DESCRIPTION

A. Objectives and Scope

1. The principal objectives of the Project are to promote economic growth and reduce poverty in eastern Gansu Province by lowering the cost of transport, relieving traffic congestion, and improving access in the project area. The Project will (i) reduce traffic accidents and vehicle operating costs; (ii) improve access between Lanzhou and Xi'an, two major growth centers in northwestern PRC; (iii) provide additional transport capacity to accommodate traffic growth due to economic growth and the shift to more flexible road based transportation; and (iv) provide improved access for the poor rural population. The Project will also support reforms relating to poverty reduction, corporate governance, private sector development, and road safety and vehicle emissions.

2. The Project will support the Government's strategy by building an important section of the national trunk highway system connecting the two growth centers of Lanzhou, the capital of Gansu province, and Xi'an, the capital of Shaanxi province by (i) constructing an expressway across hilly to mountainous terrain (where the poverty incidence is high); (ii) improving local roads servicing poor counties and townships; and (iii) providing consulting services and training to enhance construction quality, road safety, and project monitoring and evaluation.

B. Key Features and Project Components

3. The Project comprises the following: (i) construction of a 231 km, four-lane access-controlled toll expressway from Luohandong to Dingxi,¹ including access roads, interchanges with toll stations, tunnels, bridges, administrative stations, and service areas; (ii) upgrading of 470 km of local roads to improve access to poor remote areas, and roadside stations; (iii) procurement of equipment for road maintenance, toll collection, surveillance, bus stops, and communications, tunnel operation facilities, vehicle weigh stations, road safety, and office administration; (iv) land acquisition and resettlement; (v) four roadside stations; and (vi) consulting services for construction supervision, road safety audit, monitoring and evaluation, and capacity building. Key features of the Project expressway and the local roads are summarized in Tables 1 and 2. The location of the Project is shown in **Map 1**.

4. **Roadside Stations.** The Project will introduce roadside stations to facilitate community development along the Project local roads by linking roads with community activities and to provide a conducive environment for driving safe for road users. Roadside stations normally provide parking areas and ancillary facilities, such as bus terminals, gasoline stations, information center about roads, road safety, tourism, and HIV/AIDS, local specialty markets, restaurants, and agro-processing facilities. Roadside stations function not only as a rest space for road users, but also as a service-oriented place for interaction between road users and local communities. The Project will develop four roadside stations along the Project local roads. Details of facilities will be firmed-up during project implementation. The planning of roadside station is call for some arrangements with local communities. Thus GPCD should assign one section to deal with the related tasks of planning and coordination with other government departments particularly local government. **Appendix 1** provides these arrangements.

¹ The Project expressway is divided into two parts by the section in Ningxia Hui Autonomous Region, which is not part of the Project due to administrative jurisdiction. The eastern part of this section (37 km) is being implemented by an ADB-financed Ningxia Roads Development Project, approved in 2003, while the western part (30 km) will be constructed in accordance with the same technical standards as those of the Project expressway by the Ningxia Communications Department during 2007-2009.

5. **Bus Stops.** The MOC's new highway design standards, effective 1 March 2004, provide for installing bus stops either on the main lanes or service areas. GPCD will review the possibility of providing bus stops on the Project expressway in consultations with bus operators during project implementation, keeping in view of the need to address safety aspects. When the plan is established, implementation will be conducted during the construction of expressway.

Table 1: Key Features of the Expressway Component^a

Item	Quantity	Item	Quantity
Total Length (km)	257.4	Permanent Land Occupied (ha)	1,148.1
Design Speed (km/h)	80 and 100	Temporary Land Occupied (ha)	102.3
Road Surface width (m)	24.5 and 25.5	House Demolition (m ²)	55,611.5
Auxiliary Road (km)	94	Total Earth Work (10 million m ³)	36.0
No. of Interchanges	13	Total Stone Work (10 million m ³)	4.1
No. of Grade-Separated Crossings	16	Cut (10 million m ³)	22.3
No. of Culverts	652	Fill (10 million m ³)	31.1
No. of Bridges	143	Borrow (10 million m ³)	17.8
No. of Crossings	260	Spoil (10 million m ³)	8.9
No. of Tunnels	6	Total Workforce (10 million person days)	3.6
No. of Services Areas	5	No. of Crossings per km	1.4
Costs (CNY billion)	7,245	Construction Time (year)	5.0

^a Including 26 km connecting road from Changqingqiao to Luohandong that will use domestic fund.

ha=hectare, km=kilometer, km/h=kilometer per hour, m=meter, m²=square meter, m³=cubic meter.

Source: Feasibility study report, environmental impact assessment, soil erosion prevention plan, and resettlement plan, 2004.

Table 2: Key Features of the Local Road Component

No.	Start–Finish	Length (km)	Improvement		Costs (CNY million)	Costs/km (CNY '000)
			From	To		
1.	Pingliang–Gaozhai	40.0	III	III	24.0	600.0
2.	Jiingyuan–Chankou	118.0	III	III	70.0	593.2
3.	Jingyuan–Huining	115.0		II	400.0	3,478.3
4.	Xindian–Hongsi	60.0		IV	24.0	403.0
5.	Zhiping–Shenggou	33.3		IV	13.3	100.0
6.	Weirong–Longda	10.0		III	3.3	330.0
7.	Dingxi–Longxi	80.0	III	III	46.99	587.4
Total		449.0		(pavement only)	581.59	

km=kilometer.

Source: Gansu Provincial Communications Department.

II. COST ESTIMATES AND FINANCING PLAN

A. Detailed Cost Estimates

6. The total cost of the Project is estimated at \$882 million, with a foreign exchange cost of \$394 million (45%) and a local currency cost of \$488 million (55%) (**Appendix 2**). The total costs include physical contingencies, price contingencies, and interest and commitment charges during construction.

Table 3: Cost Estimates
(\$ million)

Items	Foreign Exchange	Local Currency	Total Cost
A. Base Costs			
1. Expressway Civil Works	254.7	280.1	534.8
2. Equipment	45.5	2.5	48.0
3. Resettlement	0.0	34.2	34.2
4. Consulting and Training Services	1.5	29.4	30.9
5. Local Roads	21.3	31.8	53.1
Subtotal(A)	323.0	378.0	701.0
B. Contingencies			
1. Physical Contingencies	26.3	30.2	56.5
2. Price Contingencies	11.7	29.9	41.6
Subtotal(B)	38.0	60.1	98.1
C. Interest and Other Charges During Construction	33.0	49.9	82.9
Total	394.0	488.0	882.0

Source: Asian Development Bank estimates.

C. Financing Plan

7. The loan of \$300 million from ADB's ordinary capital resources carries a 25-year term including a grace period of 5 years, an interest rate determined in accordance with ADB's LIBOR-based lending facility, and a commitment charge of 0.75% per annum, and such other terms and conditions set forth in the Loan and Project Agreements. The Government has provided ADB with (i) the reasons for its decision to borrow under ADB's LIBOR-based lending facility on the basis of these terms and conditions, and (ii) an undertaking that these choices were its own independent decision and not made in reliance on any communication or advice from ADB. A financing plan for the Project is in Table 4.

Table 4: Financing Plan
(\$ million)

	Foreign Exchange	Local Currency	Total Cost	Percent
Asian Development Bank	300.0		300.0	34
Ministry of Communications		195.3	195.3	22
Gansu Provincial Government		123.3	123.3	14
China Development Bank	94.0	169.4	263.4	30
Total	394.0	488.0	882.0	100

Source: Asian Development Bank estimates.

8. The loan will finance about 76% of the foreign exchange cost of the Project and 34% of the total project cost. The remaining foreign exchange cost will be financed by the China Development Bank. The local currency cost will be financed by the Ministry of Communications, the Gansu Provincial Government and cofinancing through a loan from the China Development Bank (CDB). The CDB has appraised the Project and its loan is repayable over 25 years, including a grace period of 5 years, and at a variable lending rate, currently at 5.76% per annum. The ADB loan proceeds will be made available to Gansu Province on the same financial terms and conditions as those of the ADB loan.

C. Allocation of Loan Proceeds

9. The allocation of loan proceeds and the basis for withdrawal from the loan account are in Table 5. This can also be found in the Attachment to Schedule 3 of the Loan Agreement.

Table 5: Allocation of Loan Proceeds

No	Description	Category	Subcategory	Percentage of ADB Financing Basis for Withdrawal from the Loan Account
1	Civil Works	281,200,000		
1A	Expressway		251,200,000	48 percent of total expenditure (48% for foreign and 0% for local)
1B	Local Roads		10,000,000	40 percent of total expenditure (40% for foreign and 0% for local)
2	Equipment	7,500,000		100 percent of foreign expenditure
3	Training	300,000		100 percent of foreign expenditure
4	Consulting Services	1,200,000		100 percent of foreign expenditure
5	Interest and Commitment Charge	19,800,000		100 Percent of foreign expenditure
6	Unallocated	10,000,000		
	Total	300,000,000		

III. IMPLEMENTATION ARRANGEMENTS

A. Executing and Implementing Agencies

10. The Project will be carried out by Gansu Provincial Government (GPG) through Gansu Communications Department (GPCD). GPCD is the Executing Agency (EA) responsible overall implementation of the Project. A Project Implementation Unit (PIU) responsible for the construction, operation and maintenance of the expressway component was transferred to the Changda Highway Co. Ltd (GCHC) based on the agreement dated 23 November 2004. The current organization chart is in **Appendix 3**.

11. GPG will implement the local road component through local governments. Planning and implementation arrangement of roadside station will be conducted by GPG. Implementation arrangement and planning of bus stop on expressway will be conducted by GPG.

B. Project Management Organization

12. The project director will be responsible for overall project management, including approval of contracts, and payments. Gansu Changda Highway Limited Company (GCHC) is responsible for physical implementation activities on a day-to-day basis and the preparation of progress reports including local roads and roadside stations. GPCD and GCHC have sufficient technical capability to handle the Project as their engineers have experience in implementing internationally financed road projects.

IV. IMPLEMENTATION SCHEDULE

13. The Project will be implemented over about 5 years starting with pre-construction activities in early 2005 and completion in December 2009 (**Appendix 4**).

V. CONSULTANT RECRUITMENT

14. The Project will provide 61 person-months of international consulting services to (i) help with project management during the construction period; (ii) provide expertise in tunnel and bridge construction; (iii) conduct a safety audit of the project design, and make safety recommendations on the completed construction works; (iv) help set up and implement quality control procedures; (v) monitor environmental impact of the project and provide guidance on environmental mitigation measures as well as help develop capacity in vehicle emissions; (vi) help implement the corporate development plan; (vii) assist in formulating a human resource development and training program; and (viii) help establish and implement a project performance management system. The team leader will be in the field during the construction period and will act as assistant chief supervision engineer: helping the chief supervision engineer certify variation orders, contractor payments, and subcontracting documents, and establishing a contracts management system. All consultants to be financed under the ADB loan will be selected and engaged based on the quality- and cost-based selection method in accordance with ADB's *Guidelines on the Use of Consultants*. Outline terms of reference for international consultants and domestic consultants are in **Appendix 5** and **Appendix 6**, respectively.

15. Construction supervision activities, involving 6,352 person-months of consulting services, will be undertaken by domestic consulting teams under government financing, headed by a chief supervision engineer. Each contract package will be supervised by a site resident engineer assisted by a deputy resident engineer and supported by technical and administrative personnel. The chief supervision engineer will report to the project manager of GCHC. Besides construction supervision, domestic consultants of 12 person months for social monitoring with project performance management system (PPMS) including assessing the impact on poverty reduction and 6 person months pm for the SDAP monitoring will be separately recruited.

VI. PROCUREMENT

16. All ADB-financed procurement will be carried out in accordance with the ADB *Guidelines for Procurement*. The civil works for the expressway will be divided into 16 packages to be procured under international competitive bidding (ICB) procedures. XX pavement packages will be procured under ICB. Four equipment packages will be procured under ICB. Under Government financing, the traffic engineering facilities and the telecommunication, monitoring and toll collection facilities will be procured by government procedures acceptable to ADB. Ancillary buildings and facilities will be procured with domestic financing in 4 packages under local government procedures. For the local road component, 10 ADB financed packages will be procured by the government procedures acceptable to ADB. (**Appendix 7** lists the procurement plans for the Project). International bidding will be handled by a tendering company, to be selected on a competitive basis, which will be well qualified to perform these tasks and has previous experience in other externally funded projects. Prequalified contractors with adequate technical and financial capacities will be allowed to bid for several packages and, if successful, may be awarded more than one contract based on least-cost combination of contract. Contract awards projection and disbursement projection are in **Appendix 8** and **Appendix 9**, respectively.

VII. DISBURSEMENT PROCEDURES

17. All disbursements under the ADB loan will be carried out in accordance with the ADB's *Loan Disbursement Handbook*. Since most of payments will be made for large contracts well

above \$100,000, direct payment and commitment procedures will be used to withdraw the loan funds. If the government funds are used first for eligible expenditures, ADB's reimbursement procedure will be used. Statement of expenditures will be applied to reimburse eligible expenditures for any individual payment not exceeding \$200,000 to expedite fund flows. After sign a contract, any variation of contract with value of more than US\$100,000 require ADB's approval. Data related to loan and the application forms are available on the web site.²

18. Disbursement procedures to be used for each loan category are as follows:

Table 6: Disbursement Procedures

Loan Category	Disbursement Procedure
Civil works for expressway	Reimbursement
Civil works for local roads	Reimbursement
Equipment	Commitment Procedures
Traffic engineering and facility	Direct Payment
Consulting services and training	Direct Payment
Roadside station	Reimbursement

VIII. PROJECT MONITORING AND EVALUATION

19. **Monitoring System.** To demonstrate the development effectiveness of its operation and be accountable for its performance to stakeholders, ADB uses the PPMS³ that is a coherent and results-based approach to monitoring and evaluating implementation performance and development impact at various stages of the project cycle. It comprises five components: project framework, project performance report, government monitoring and evaluation, project completion report, and project performance audit report. This system will be effectively used to ensure that the Project performs well. For this purpose, a set of indicators for evaluating project performance in relation to its goals, purposes, outputs, and conditions has been agreed with GPCD.

20. **Monitoring Indicators.** The indicators were selected based on the findings of an ADB-financed TA for Socioeconomic Impact of Road Projects, which confirmed the contribution of road investments to economic growth and poverty reduction in the PRC as well as the validity of the geographic focus of the road portfolio on the poorer western province.⁴ The results also showed that complimentary investments in local roads strengthen the impact of expressway investments. These indicators will be refined at the start of project implementation and may include (i) economic development and poverty indicators for the project area, (ii) industrial and agricultural outputs, (iii) transport costs and time for specific types of vehicles and trips, (iv) transport services and transport charges, (v) accident rates, (vi) financial sustainability, (vii) county and township incomes, (viii) level of social services, including school enrollment and

² <http://lfs.adb/home.asp>

³ A comprehensive review of the project performance management system was undertaken by the Operation Evaluation Department in 2003 and its findings and recommendations are available in ADB. 2003. *Special Evaluation Study on Project Performance Management in the Asian Development Bank and its Projects in Development Member Countries*. Manila. Based on the findings of this report, a Project Performance Management System Action Plan was issued for implementation during 2004–2005.

⁴ The poverty reduction impact of road investment varies from region to region. The effect of an additional km of road investment on rural poverty appears largest in less-developed western regions (southwest and northwest), regardless of the class of roads. For urban poverty, the effect appears the largest in the northeast, southwest, and northwest regions.

infant mortality, and (ix) jobs created in construction and maintenance. Employment impact indicators will include information about unskilled laborers, poor laborers, and women laborers, and will be monitored through an annual report. At the beginning of project implementation, the EA will establish baseline and target values for the indicators. (During the Loan Inception Mission it will be discussed and will be established.) The indicators will be measured at project completion and 3 years later, and compared with the baseline. A report summarizing the key findings of monitoring at inception, completion, and 3 years later will be submitted to ADB. A full time staff of GCHC will be designated to undertake monitoring and evaluation with the consultants. **Detailed baseline data is in Appendix 10.**

21. In 2007, ADB and GPCD will carry out a midterm review of the Project, focusing on policy, institutional, administrative organizational, technical, environmental, social, economic, financial, and other relevant aspects that may have an impact on the performance of the Project and its continuing viability. The review will examine the progress in implementing sector reform, policy development, resettlement, and compliance with assurances in the Loan Agreement.

IX. SAFEGUARD COMPLIANCE

22. **Resettlement.** The resettlement related activities should be conducted in accordance with the Resettlement Plan established GPCD in September 2004 (**Appendix 11**). The project expressway (including connecting roads) will affect 23 townships, 93 administrative villages and 374 village groups in 5 counties. Effort to minimize resettlement have been made after consultations with local officials during the setting the alignment. Almost all affected persons will lose agricultural land.

23. The GPCD will ensure that the resettlement entitlements are provided to the people affected prior to the ground leveling and demolition commencement. Land compensations and resettlement subsidy will be paid to the affected village groups or individuals. Expressway contractors also will be required by GPCD to give priority to resettlement affected households in the allocation of unskilled jobs during construction. All affected minority population will be resettled within the same villages and village groups. For economically vulnerable people, including elderly living alone, disable, households headed by women, and extremely poor households with income below Y625, the Project will provide additional financial and physical support. For this purpose, GPCD agreed to set a special fund with 1 percent of total resettlement cost, which will be used to provide direct and needed help for those vulnerable people. GPCD will engage a qualified monitoring agency to carry out independent monitoring and evaluation. A quarterly reporting system is being established in the PRO in GPCD. GPCD will report to ADB on the progress of land acquisition and resettlement progress reports. The GPCD also provide ADB with copies of the independent monitoring and evaluation reports to be prepared twice a year during the resettlement implementation and once a year after resettlement completion. **Appendix 12** shows organizations related to resettlement.

24. **Environment.** The Project should be implemented in accordance with the Environmental Impacts Assessment (EIA), Summary Environmental Impacts Assessment (SEIA), Soil Erosion Prevention Plan, Environmental Management Action Plan (**Appendix 13**), relevant Laws and regulations, and ADB's Policy and Environmental Assessment Guidelines. The environmental responsibilities of agencies at various stages of the Project are defined in **Appendix 14**.

25. There will be environmental staff in the project construction office of GCHC for environmental management during construction, and their duties will be transferred to the expressway company to be established at the operation stage. Environmental monitoring will be

carried out by Gansu environmental monitoring stations during construction and operation. Technical staff as well as some management staff will be trained for environmental monitoring, interpreting monitoring results, planning mitigation, environmental policy making, and other environmental management techniques, to enhance environmental management and assist with capacity building. **Appendix 15** shows the Environmental Monitoring Plan.

26. Environmental monitoring results during both construction and operational stages will be submitted first to the responsible organisations: the project management office (PMO) during construction, and GPCD and the expressway company during operation. The PMO and the Expressway Company will review the monitoring results and, if necessary, decide on further mitigation actions during the construction and operational stages. All results, including additional mitigation actions taken and action results, will also be copied to the EPBs of each county or city involved, as well as Gansu EPB and ADB. These agencies may also request that appropriate actions for environmental mitigation be taken that they consider necessary. **Appendix 16** shows organizations related to environmental protection.

X. REPORTING REQUIREMENTS

27. During project implementation, GCHC will submit quarterly progress reports. To facilitate project post evaluation, GCHC will furnish ADB a completion report within 3 months of the end of the Project. All reports to be submitted should be furnished with in both electronic and hard copies. In accordance with Public Communications Policy of ADB,⁵ all reports to be submitted will be disclosed on the web site. ADB should be informed if reports contain sensitive information for disclosure so that appropriate action should be taken. **Appendix 17** describes the format for the preparation of the Project Progress Report.

XI. AUDITING REQUIREMENTS

28. GPCD and GCHC will maintain separate accounts for the Project and related financial statements and have them audited annually in accordance with appropriate auditing standards consistently applied by external auditors, whose qualifications, experience, and terms of reference are acceptable to ADB. GPCD will submit to ADB within six months of the end of each related fiscal year, certified copies of audited project accounts and financial statements and an auditor's report on the Project,⁶ all in the English language. A separate audit opinion on the use of the statement of expenditures, if any, will be included as part of the auditor's report. A sample audit letter is in **Appendix 18**.

XII. MAJOR LOAN COVENANTS

29. In addition to the standard assurances, the Government, GPG, and GPCD have given the following assurances, which are incorporated in the legal documents: Please refer to **Appendix 19** for the major loan covenants.

30. **Construction Quality.** GPCD will ensure that the Project is constructed in accordance with 2004 technical standards of the MOC for highway engineering. The international consultant designated as the team leader and assistant chief supervision engineer will review and certify variation orders and contractors' monthly payments, before submission to the chief supervision engineer.

⁵ <http://www.adb.org/PHCO\pcp.asp>

⁶ Refer PAI 5.09 provides a sample audit letter.

31. **Road Safety.** Prior to project construction and operations, GPCD will carry out road safety audits, the recommendations of which will be implemented prior to project construction and operations. For the project expressway, GPCD will implement road safety signage, communication, hazard barriers, traffic monitoring, and vehicle weighing in accordance with MOC regulations and other regulations and standards; and will cooperate closely with the Gansu Public Security Bureau to implement necessary road safety measures. Before opening the expressway, GPCD in consultation with the Public Security Bureau will submit a report on the emergency response plan to ADB for review.

32. **Roadside Stations and Transport Services.** Prior to completion of the local roads under the Project, GPCD will establish four roadside stations to facilitate community development by linking such roads with community activities. Facilities to be provided at the roadside stations may include parking areas; bus terminals; gasoline stations; information centers about roads, road safety, tourism and HIV/AIDS; local specialty markets; restaurants; and agro-processing facilities. These will be reviewed by GPCD by the time of the midterm review. GPCD will also review by the time of the midterm review. GPCD will also review by then the possibility of providing bus stops along the project expressway in consultation with bus operators, with due regard for safety.

33. **Corporatization.** By 31 December 2007, GPCD will establish a company, tentatively called Gansu Luoding Expressway Company (GLEC) to operate and manage the proposed Project expressway. At least 1 year before start of operations, the project expressway will be transferred to GLEC. Details on the creation of GLEC and transfer of assets and debt service obligations from GPCD to GLEC, including GLEC's financial statements for the Project, will be submitted for ADB approval 6 months prior to establishment of GLEC. GLEC will implement a corporate development plan by 31 December 2008 to assure high standards of corporate governance, management practices, and financial reporting. The concept of an interprovincial expressway corporation will be reviewed by GPCD prior to project completion. **Appendix 20** provides the outline of the concession framework agreement.

34. **Private Sector Development.** By 30 June 2008, GPCD will enter into a concession framework agreement with GLEC to ensure autonomy of operations, encourage the establishment of road performance indicators, and facilitate future refinancing of road sector assets. Six months before the opening of the project facilities, GPCD will analyze the feasibility of attracting private sector investment funds for future road sector investment, including private sector participation in O&M of the project expressway, and report its conclusions to ADB.

35. **Tolls.** In determining toll level, GPG will take into consideration levels sufficient to satisfy the GLEC's debt service coverage ratio of a minimum 1.2 times. Six months before the expressway is opened, GPCD will seek ADB's concurrence on the proposed toll structure and levels prior to GPG's approval. For the first 5 years of operation, GPCD will review the toll structure and levels annually, and submit a report to ADB. GPCD will seek ADB's concurrence on toll levels adjustment before seeking GPG approval.

36. **Financial Ratios.** To ensure financial sustainability, GPCD will cause GLEC maintain (i) a debt-to-equity ratio of not more than 65:35 from the third year of operation; (ii) a working ratio (annual O&M cost, but excluding periodic maintenance cost, to revenue) of not more than 15%; and; (iii) a debt service coverage ratio of not less than 1.2 from the third year of operation.

37. **Human Resource Development and Training.** GPCD will prepare a human resource development plan. Before undertaking international training, GPCD will prepare, among others

for ADB's concurrence, a training plan, a program of workshops to be delivered at GPCD by those trained internationally, and a list of training equipment and aids to strengthen GPCD's domestic training programs.

38. **Environment.** GPCD will ensure that the Project is designed, constructed and operated in accordance with government rules and regulations and ADB's Environmental Policies (2002). GPCD will implement the EMP set out in the EIA and summary EIA to mitigate any adverse environmental impacts arising from the Project; mitigation measures will be incorporated in the bidding documents and civil works contracts. GPG will re-demarcate the boundary of nature reserve appropriately in accordance with the government regulations and procedures.

39. **Vehicle Emissions.** GPG will (i) provide to ADB the national emission standards and the penalties for infringement of such standards, and (ii) ensure that Gansu Environment Protection Bureau (GEPB), Gansu Public Security Bureau and other relevant agencies enforce the national vehicle emission standards, and fulfill requirements of the government strategies, at least 6 months prior to the opening of the expressway.

40. **Land Acquisition and Resettlement.** GPG and GPCD will ensure that land acquisition and resettlement are carried out promptly and efficiently following the resettlement plan agreed with ADB, in line with the Land Administration Law and ADB's Policies on Involuntary Resettlement (1995) and Indigenous Peoples (1998). GPG and GPCD will ensure that implementation of the resettlement plan is monitored and evaluated and reported to ADB as required in the plan.

41. **Ethnic Minorities.** GPCD will implement the SDAP to ensure that ethnic minorities benefit from the Project in at least an equitable manner and in accordance with ADB's Policy on Indigenous Peoples (1998), and that implementation of the SDAP will be monitored and evaluated by an independent agency.

42. **Poverty Reduction.** The Government will cause GPG to implement the SDAP in a timely manner. GPCD will cause the contractors to maximize the employment of local poor people who meet the job and efficiency requirements for construction of the project roads. Such workers will be provided with on-the-job training. The Government will cause GPG to extend the coverage and quality of public utilities, basic health, and basic education in the project area to enhance the Project's poverty reduction impacts. The Poverty Alleviation Office, in consultation with GPCD, will monitor the impacts on poverty with the assistance of a designated local institute based on a set of indicators as outlined in the SDAP and will submit annual monitoring reports to ADB.

43. **Labor Standards.** GPCD will ensure that civil works contractors comply with all applicable labor legislation. Bidding documents will include a clause on the prohibition of child labor for construction and maintenance activities, as well as a clause ensuring equal pay for men and women for work of equal value.

44. **Gender and Development.** GPCD will follow ADB's Policy on Gender and Development (1998) during project implementation, and will take all necessary actions to encourage women to participate in planning and implementing the Project. GPCD will monitor the effects on women during project implementation through gender-disaggregated data where relevant in the resettlement plan and the monitoring and evaluation system.

45. **Health Risks.** The Department of Health and GPCD, together with the appropriate

authorities, will ensure that contractors disseminate information on the risks of HIV/AIDS to those employed during project implementation. The Department of Health and GPCD will also ensure that similar information is disseminated to transport operators and local communities living in the project area during project operation, at roadside stations and other suitable facilities.

46. **Axle Loads.** GPCD will install vehicle axle-weighing equipment at selected entry points. Before opening, the project expressway, GPCD will submit to ADB the plan for operation of the vehicle weigh stations, including the prescribed axle-load limits and penalties for infringement.

47. **Change in Ownership.** If (i) any change in ownership of the project facilities, or (ii) any sale, transfer, or assignment of GPCD's interest in the project expressway is anticipated, the Government, GPG, and GPCD will consult ADB at least 6 months before the change.

48. **Coordination Arrangement.** The Government will ensure that (i) prior to the opening of the project expressway, Ningxia government construct the section of the expressway in the region, linking the two parts of the project expressway in Gansu, to maximize the benefits of the project expressway, and (ii) such section is constructed in accordance with the same technical standards as those of the project expressway.

XIII. KEY PERSONS INVOLVED IN THE PROJECT

49. The list of key personnel involved in the Project is in **Appendix 21**.

XIV. ANTICORRUPTION

50. The Government has made significant efforts to address corruption in the road sector. To date, 15 government officials from 10 provincial communications departments⁷ have been found to be involved in corruption. Information related to these corruption cases is in the public domain. There is no evidence that any of the reported corruption was related to ADB-financed road projects⁸ according to the China National Audit Office. During project processing, ADB's anticorruption policy⁹ was explained to central and local government officials. Attention was drawn to the section on fraud and corruption that was added to ADB's *Guidelines for Procurement* and *Guidelines on the Use of Consultants*, particularly the need for bidders, suppliers, contractors, and consultants to observe the highest standards of ethics in the procurement and execution of ADB-financed contracts, and the sanctions if fraud and corruption are discovered. ADB's program for the PRC includes assistance to the Government that will improve governance and provide incentives to reduce the incidence of corruption in the longer term. Based on the recommendations of the July 2004 PRC Country Performance Portfolio Mission, a seminar on how to detect fraud and corruption during procurement will be organized by ADB in 2005.

51. Based on SPCD's experience in fighting corruption, the following actions will be taken to prevent corruption for the Project: (i) officials from the Discipline and Inspection Bureau will be resident in project offices for bidding, construction, and operations; (ii) an internal audit unit will be established in the Project Company; (iii) a two-contract system will be adopted where the winner of a civil works contract must also sign an anticorruption contract with the employer;

⁷ Namely, Anhui, Guangdong, Guangxi, Guizhou, Henan, Hunan, Jiangsu, Sichuan, Xinjiang, and Yunnan.

⁸ Road projects in Hebei province and Ningxia region were investigated by ADB to detect and prevent corruption. The investigation found no conclusive evidence that these projects had involved any fraud or corruption.

⁹ <http://adb.org/Documents/Policies/Anticorruption/default.asp?p=antipubs#contents>

(iv) liaison meetings between SPCD and the Prosecutor's Office are held on a regular basis where warnings about or information on corrupt practices can be discussed; and (v) periodic inspections of contractors will be undertaken to ensure procedures related to fund withdrawals and settlements are being followed.

LIST OF APPENDIXES

- 1 Implementation of Roadside Station
- 2 Detailed Cost Estimates, Financing Plan, and Allocation
- 3 Project Organization Chart
- 4 Implementation Schedule
- 5 TOR for international consultants
- 6 TOR for domestic consultants
- 7 Procurement Plans
- 8 Contract Awards Projections by Year
- 9 Disbursement Projection by Year
- 10 PPMS baseline data
- 11 Summary of Resettlement Plan
- 12 Organization Chart for Resettlement
- 13 Environmental Management Action Plan
- 14 Environmental Protection Responsibilities
- 15 Environmental Monitoring Plan
- 16 Organization Chart for Environmental Protection
- 17 Format for Project Progress Report
- 18 Sample Audit Letter
- 19 Status of Compliance with Loan Covenants
- 20 Outline of Concession Framework Agreement
- 21 Key Personnel for the Project

IMPLEMENTATION OF ROADSIDE STATIONS

A. Overview

1. This memo is provided for an Appendix of Project Administration Memorandum of Gansu Roads Development Project, to explain the concept and implementation requirements of Roadside Stations. For the Project includes four Roadside Stations as a key feature. During the Loan Inception Mission this memo will be finalized to cope with actual situation of Gansu Province. (Therefore, this version can be applied for other projects as general guide for Roadside Station.)

2. The concept of Roadside Stations was developed in Japan in early 1990s to link the road users and communities thereby facilitating local economic development. They are different from ordinary services provided along the roads because (i) they are designed by involving local communities, (ii) they provide links between road users and local communities, (iii) they provide business opportunities for local people, and (iv) they can possibly provide public services, including health care, education, and cultural activities in addition to the normal restaurant and commercial services. This experience was adopted in Thailand with assistance from JBIC and is being pilot tested in the PRC (Anhui Province, Gansu Province, and Hunan Province) and Kenya with assistance from the World Bank and JBIC. Guidelines for Roadside Stations have been prepared by the World Bank, and will be used by the EA to design this component. Successful Roadside Stations are attracting many road users.

3. For planning of the Roadside Stations, the demands should be researched from two points of view. One is for the community and the other is for the road users. Some towns have market periodically on the road or some towns have markets that emerge spontaneously along highways contribute to the local economy, but they also present many problems. Because they are unplanned, they sometimes offer a low level of rest area services. Drivers tend to stop their vehicles haphazardly near the markets and commercial facilities, creating safety problems and impeding the flow of traffic. These situations can be addressed by Roadside Stations. The most important thing is needs of local community and an organization to operate Roadside Station. Without the capacity to operate no Roadside Station can success. It is crucial that Roadside Station be operated by an organization which the local people operate. Another point is to attract the customer outside the community, i.e. road users. The customer outside of the community provides fuel for the operation of Roadside Stations.

4. For the Roadside Station, the organization to operate the station should be established. The task of the organization will include maintenance of parking lot, market place, information center, and toilets. Roadside station usually requires a few stationed managers and its cost for them. The organization can be village government with community participation or independent organization by the community people. In latter case, the local government may be needed to provide assistance.

5. Once the organization to represent community's needs and to operate the station, construction arrangement will be made between the organization and the GPCD. Then physical construction will be commenced as agreed with the organization. To coordinate above task, GPCD should assign one section in charge for this matter.

B. Components of Roadside Station

6. Roadside Stations differ from the private roadside facilities, highway rest areas, and service areas found along the highways of many countries in three important ways for the community. (See Figure 1)

7. First, local residents participate in community development through Roadside Stations. Local residents have opportunities to increase their income and opportunities for entrepreneurship, thus empowering themselves. Second, in addition to providing economic services through market functions, Roadside Stations are also venues for the provision of public services for the local community, such as public sanitation; health care, including HIV/AIDS care; education and training; and cultural activities. Third, while a service area targets road users, focusing on rest services, Roadside Stations target the local community as well. Local residents become Roadside Stations users when they use the economic services of market functions as well as public services. Roadside Stations services are not available only to people arriving in vehicles, but to people arriving on foot or bicycle as well. Roadside Stations can help meet the multiple needs of both local residents and travelers.

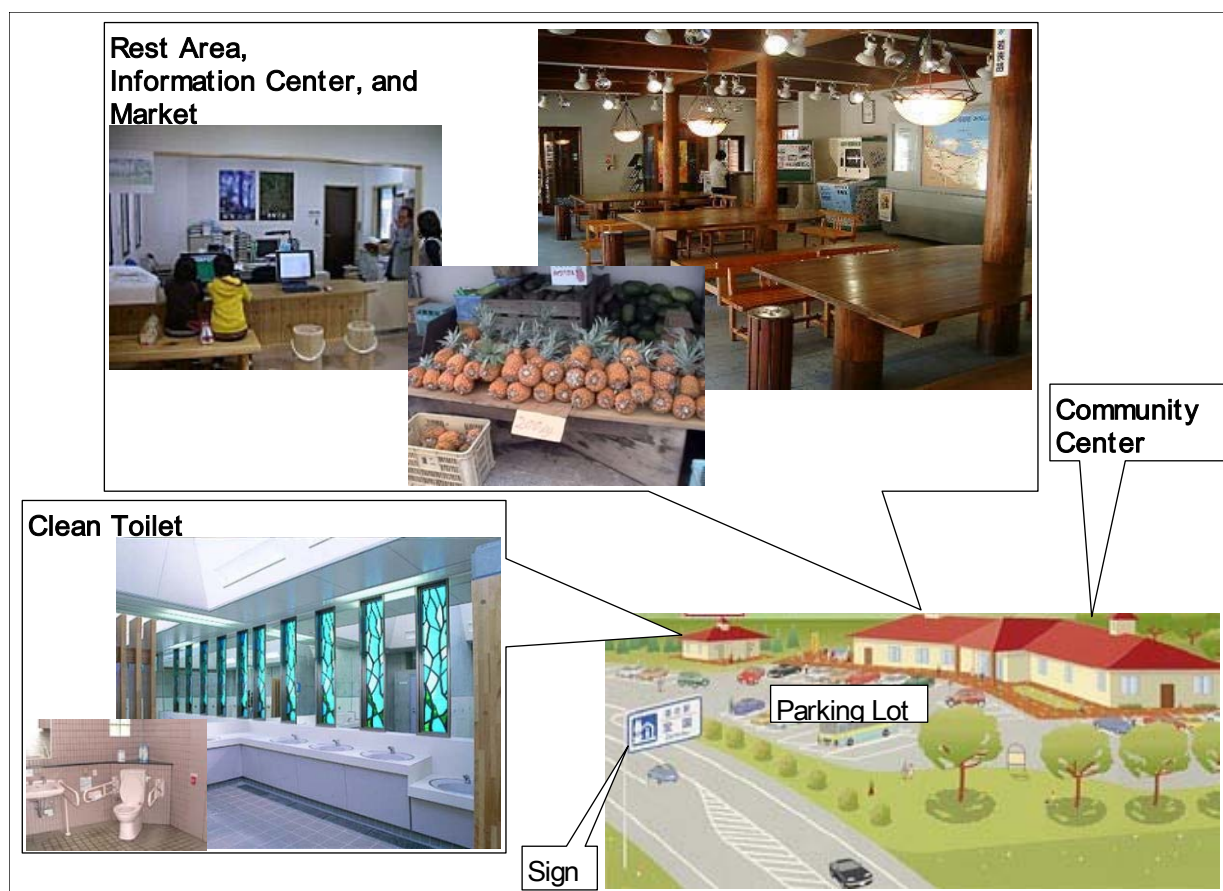


Figure 1: Images of a Roadside Station

8. Although Roadside Stations are for the community, without customers outside the community, the positive impacts for the community are limited and the operation of Roadside Station will face financial difficulty. Road users provide the profits and opportunity for business in the community. The key features to attract road users are: (i) reliable safe rest place for road users, (ii) information for road users, and (iii) regional products. Facilities serving for the community also serve and attract road users.

9. A Roadside Station serves for road safety as well. When there are too few rest facilities along a highway, drivers tend to stop and park in a disorderly manner on the roadside. Roadside stations can eliminate this problem and promote traffic safety. Additionally, severe winter season, road users sometimes desperately need shelters in isolated area when they encounter harsh weather condition and malfunction of vehicle.

C. Administration of Roadside Station

10. Local community will administrate facilities. The administration system should vary depending on the local situation. The general requirements of the administration are as follows.

11. First, to maintain the facilities, daily maintenance and operation staff are required. The most important attraction of Roadside Station is clean toilets, which should be always cleaned up. Information center requires staff who advise road users. Shops for local products need shopkeeper. For this purpose the facility needs full-time staff and their wages. It may be efficient that several tasks may be allocated to the same staff with proper arrangement. These operations can be contract out to private company with proper agreement with the community. Second, the facility should open to the people in the community and be operated by peoples' voice. Local farmers should be allowed to sell their products with no or nominal charge. Operation of the facilities for community should be fair to all community members. In this regard, the administrative body of Roadside Station should be controlled by the community. Third, the administration should be free to red tape of higher level governments; idea and voluntary participation of the people are imperative for operation of a Roadside Station. Cooperation with private company within or outside of community sometimes provides positive impacts for its operation.

12. To implement the Roadside Station, to establish the administration body stated above is the first task. Provincial Government can arrange to establish this kind of organization through local government cooperation. Without this arrangement no Roadside Station will be implemented.

D. Location

13. After the administration arrangements, location should be selected considering two factors; one is access to local people, and the other is needs of road users. These two sometimes contradict. For local people's access, the location will be adjacent to the community. However, road users need the station in the middle of nowhere for near the community some facility such as gas station and local markets are available. A Roadside Station near the existing facility is redundant for road users and may be harmful for the existing small businesses.

14. Less flexible factor is the demands for road users. The other factors of location setting can be flexible; if the place is remote to the community, transportation services can be arranged; and if the place is too close to the existing business, joint facility development can be considered. All arrangements should be conducted with close consultation of the community.

15. To attract the road users, highways with long trip passengers are the location for the Roadside Station. If proper advance notice is given to long trip road users, significant percentage users will stop by to fulfill their biological needs. In this regard, demands of long trip bus service operators should be studied. They require reliable rest place for the passenger. If a Roadside Station is programmed into the long trip bus operation schedule, the almost fixed amount of regular customer will be guaranteed. The demands of long trip bus operators usually are the demands of personal long distance road users as well. Another possibility for the road user attraction is tourist spots. If there is a scenic place where people want to stop and take photo, such place is ideal for the Roadside Stations.

16. The land availability is also one factor. It is desirable to have enough parking lot space for the users. However, the facility arrangement can be very flexible. Thus, the need for the community and road users should be prioritized for the location setting.



Figure 2: Roadside Station in Limited Space

E. Facilities

17. An example layout is shown in Figure 3. A typical Roadside Station provides parking lots for passenger vehicle, parking lots for busses, toilets, shops, information center for road users, community center, and sometimes recreation center for the community. When design facility, arrangement of roadside signs in advance place on the roadside can not be forgotten. The Provincial Communications Department can help to set the roadside signs.



Figure 3: Typical Layout

18. After the community organizes an organization for the administration. The Provincial Communications Department, or road administrator, can help from planning of location to the construction. The cost allocation of the construction depends on administrative arrangement and government regulations. Though there is no general rule, the construction cost of parking lots and drainage for them will be able to be paid by the road administrators. For the construction cost of parking lots and the drainage for them will be much less than the construction cost of the road.

F. Conclusion

19. Roadside station will have positive impacts for the community. To implement a Roadside Station, the administrative arrangement is the first and the most important step. For this arrangement, Provincial Government is called for the initiative to lead local community. Planning of Roadside Station should be flexible to cope with local situation and road users' demand. The road users' demand will be a key for successful Roadside Station. Thus, proper attention should be paid to attract road user during the organization arrangement, planning, and design for prosperity of the community.

COST ESTIMATES AND FINANCING PLAN

Item	CNY million			\$ million			ADB Financing	
	Foreign Exchange	Local Currency	Total	Foreign Exchange	Local Currency	Total	Amount	%
A. Base Cost^a								
1. Expressway Civil Works								
Earthwork	611.4	662.3	1,273.7	73.8	80.0	153.8		
Pavement	370.4	401.3	771.7	44.7	48.5	93.2		
Bridges and Culverts	505.0	547.2	1,052.2	61.0	66.1	127.1		
Tunnel	394.7	427.4	822.1	47.7	51.6	99.3		
Interchanges	198.4	214.8	413.2	24.0	25.9	49.9		
Subtotal	2,079.9	2,253.0	4,332.9	251.2	272.1	523.3	251.2	48%
2. Communication and Safety Facilities	186.3	20.7	207.0	22.5	2.5	25.0		
3. Building and Ancillary Facilities	29.0	31.5	60.5	3.5	3.8	7.3		
4. Land and Resettlement	0.0	283.2	283.2	0.0	34.2	34.2		
5. Environment Protection	0.0	34.7	34.7	0.0	4.2	4.2		
6. Toll, Communication, and Surveillance	128.5	0.0	128.5	15.5	0.0	15.5		
7. Equipment for Maintenance	61.7	0.0	61.7	7.5	0.0	7.5	7.5	100%
8. Consulting Services	10.1	0.0	10.1	1.2	0.0	1.2	1.2	100%
9. Training	2.3	0.0	2.3	0.3	0.0	0.3	0.3	100%
10. Design and Investigation	0.0	153.5	153.5	0.0	18.5	18.5		
11. Project Management	0.0	15.2	15.2	0.0	1.8	1.8		
12. Supervision and Monitoring	0.0	75.4	75.4	0.0	9.1	9.1		
13. Government-Financed Local Roads	92.7	138.2	230.9	11.3	16.7	28.0		
14. ADB-Financed Local Roads	83.6	125.0	208.6	10.0	15.1	25.1	10.0	40%
Subtotal of A	2,674.1	3,130.4	5,804.5	323.0	378.0	701.0	270.2	
B. Contingencies								
1. Physical Contingency ^b	217.6	250.4	468.0	26.3	30.2	56.5	10.0	
2. Price Contingency ^c	96.7	247.5	344.2	11.7	29.9	41.6		
Subtotal of B	314.3	497.9	812.2	38.0	60.1	98.1	10.0	
Interest and Other Charges during Construction	272.6	410.7	683.3	33.0	49.9	82.9	19.8	
Total	3,261.0	4,039.0	7,300.0	394.0	488.0	882.0	300.0	34%

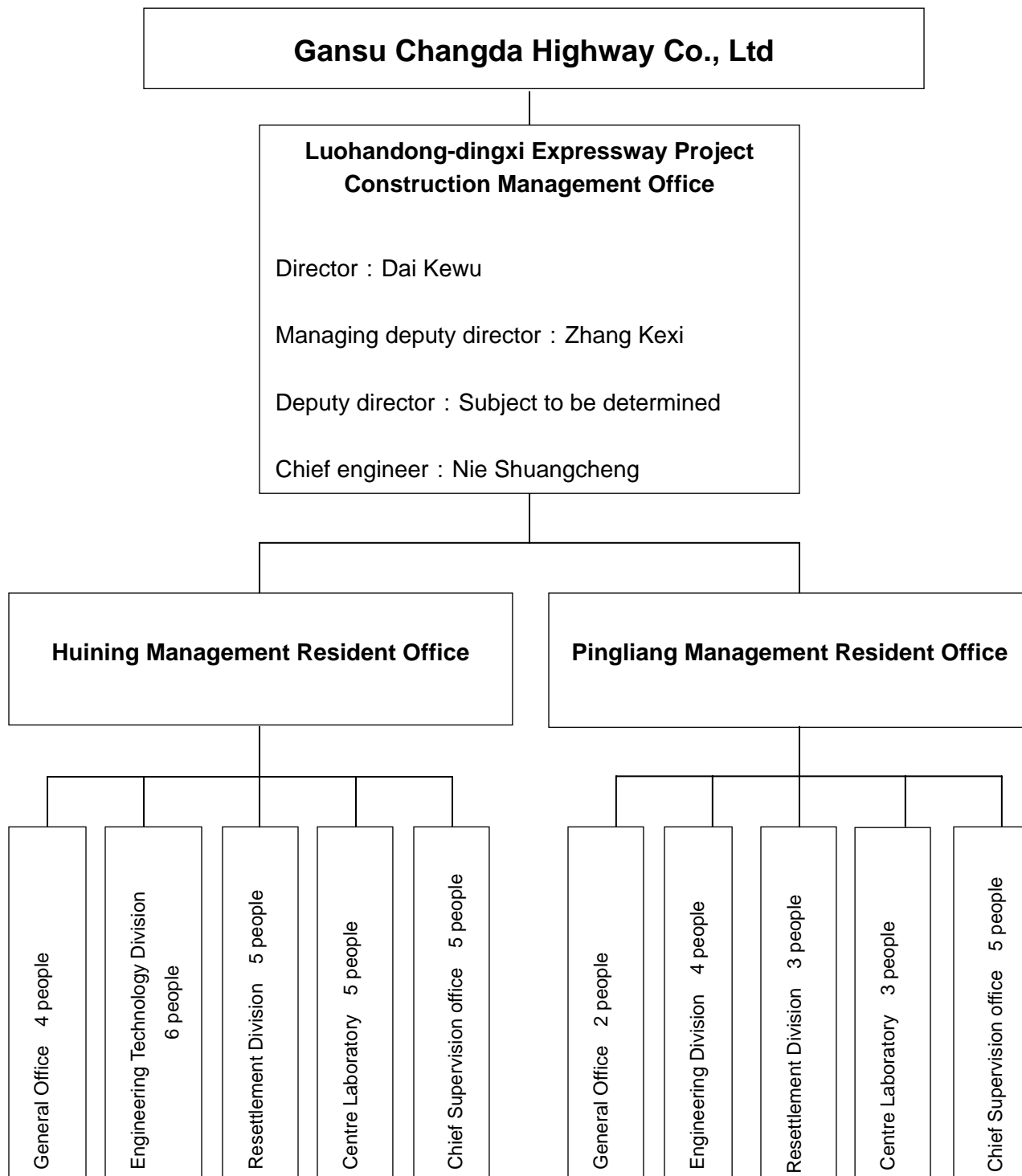
^a At 2004 prices.

^b At 8% of base cost.

^c At 1.5% in 2005, 0.9% in 2006 and 2007, 1.0% in 2008, and 1.5% in 2009 for the foreign exchange cost; for the local currency cost, 2.7% in 2005 and 3.0% in 2006 onward.

Source: Asian Development Bank estimates.

Project Organization Chart



IMPLEMENTATION SCHEDULE

Item	2004					2005					2006					2007					2008					2009																				
	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	
A. Loan Processing																																														
1. TA Final Review		•																																												
2. Appraisal (waived)																																														
3. Board Consideration							•																																							
4. Loan Effectiveness													•																																	
B. Land Acquisition and Resettlement																																														
1. Land Acquisition and Resettlement																																														
C. Civil Works																																														
1. Earthworks, Bridges, and Pavement																																														
a. Prequalification																																														
b. Bidding																																														
c. Mobilization																																														
d. Construction																																														
(i) Earthworks																																														
(ii) Bridge Work																																														
(iii) Tunneling																																														
(iv) Pavement																																														
2. Traffic Installation Facilities																																														
3. Buildings and Ancillary Facilities																																														
4. Local Roads																																														
D. Equipment and Supply Contracts																																														
1. Bidding																																														
2. Delivery and Installation																																														
E. Consulting Services and Training																																														
1. Shortlisting																																														
2. Selection																																														
3. Services and Training																																														

Source: Asian Development Bank estimates.

TERMS OF REFERENCE FOR CONSULTING SERVICES FOR CONSTRUCTION SUPERVISION AND RELATED SERVICES

A. Objectives

1. International and domestic consultants will assist the Executing Agency (EA) in ensuring that (i) designs are carried out to the appropriate engineering standards; (ii) all work associated with the project are carried out in full compliance with the designs and specifications; (iii) the EA's engineers and domestic consultants receive in-country and international training in selected areas of expressway engineering and management; (iv) resettlement, social, environmental, road safety and monitoring are implemented in accordance with the recommendations of various studies, plans, analysis of the project; and (v) a corporate development plan be reviewed and implemented. A total of 55 person months are required for international consultants and an estimated 6,370 person months for domestic consultants including construction supervision, social and resettlement monitoring. The international consultants will be engaged under ADB financing. This consulting service contract employs only international consultants and the domestic consultants will be recruited under other contracts.

B. Scope of Services and Staffing Requirements

a. International Consultant

2. The international consultants will act as adviser to the EA, and support and assist staff and domestic consultants in the performance of their duties. 55 person-months of international consulting services will be provided in (i) construction supervision (40 person-months); (ii) bridge construction (3 person-months); (iii) tunnel construction (3 person-months); (iv) road safety (3 person-months); (v) monitoring and evaluation using criteria of the ADB's project performance management system (PPMS) (2 person-months); (vi) environmental monitoring (2 person-months); and (vii) corporate development plan (2 person-months). Under each service, the consultants will provide on-the-job training to their local counterpart staff and domestic consultants. The international consultants will be recruited in accordance with the Bank's *Guidelines on the Use of Consultants*. The international consultants will report the Bank monthly on the quality and progress of project implementation covering the activities of domestic consultants stated Para 11.

3. **The team leader**, acting as the deputy chief supervision engineer, will be appointed over the construction period. While being responsible for coordinating the inputs and the activities of the international short-term specialists, the team leader will assist the EA in:

- (i) developing and implementing a computer-aided contract management system for monitoring the civil works contracts and overall project implementation, and generating monthly and quarterly progress reports;
- (ii) organizing, coordinating, and monitoring the construction supervision activities in accordance with the conditions of contract of Federation International des Ingenieurs-conseils (FIDIC);
- (iii) settling contractors' claims;
- (iv) assist in reviewing and certifying engineering variation orders, contractor's applications for subcontracting parts of the works, and monthly payments to the contractors for submission to the engineer for approval and signature. Assist EA in settling disputes with contractors;
- (v) preparing documents and progress reports to be submitted to ADB;
- (vi) monitor performance, deadlines, project progress, as well as conduct seminars, assess training impacts and assist in the development of risk management plan to avoid any unexpected incidence which may have negative impact on the project development.
- (vii) Monitor performance and recommendations of the short-term consultants, to
- (viii) Monitor development and implementation of the proposed road safety and

vehicle emission programs, performance of the short-term consultants, relevant domestic consultants, and coordinate with the interdepartmental representatives. Also include activities and development in the progress reports and provide advice regarding the effectiveness of the programs.

- (ix) Preparing the four roadside stations along the Project local roads, and reviewing the possibility of stalling bus stops on the expressway (main lanes, service areas, or interchanges) with due consideration to safety aspects.

4. Considering the severe winter climate condition in Gansu Province, the team leader and other experts do not have work assignment in winter for three months each year. According to the schedule, the construction of the Project starts in Nov. 2005, account 2 months in 2005 and 9 months for each year in 2006–2009 as construction period, there are totally 38 months, and adding additional 2 months in 2010 as some residual works such as signature of team leader required for payment etc. the working period for international consultants totaled 40 months. According to the actual schedule of the Project and climate condition stated above, the contract amount of the team leader will be adjusted during the contract negotiation.

5. **The tunnel expert** will be fielded intermittently for total three months each over the construction period to help the construction supervision consultants implement quality control procedures and improved construction methods, and to:

- (i) Assist the Chief Supervision Engineer in implementing quality control and in solving technical problems including tunneling in loess environment, tunnel ventilation design, safety management, and monitoring the system during construction;
- (ii) Provide training to the EA staff and other relevant agencies in tunnel monitoring and tunnel emergency operation;
- (iii) Assist the Chief Supervision Engineer in supervising installation of tunnel traffic engineering equipment and system test runs; and
- (iv) Train the site engineers on material testing, tunneling methods and procedures, and tunnel inspection and maintenance.

6. **The bridge expert** will be fielded intermittently for total three months each over the construction period to help the construction supervision consultants implement quality control procedures and improved construction methods, and to:

- (i) Assist the Chief Supervision engineer in implementing quality control of bridge construction, particularly in foundation treatment and construction, tall pile casting, and other related engineering technical aspects;
- (ii) Provide training to the site engineers on material testing and erection of structures such as beam laying and concrete rigid beam casting; and
- (iii) train the site engineers on material testing, erection of structures, and bridge inspection and maintenance.

7. **The road safety specialist** will be recruited for total 3 person months: (i) upon completion of the detailed design and before the start of the works, to conduct a road safety audit including a review of the expressway design's road safety components and the traffic management system, and advise on road safety issues of the expressway operations, and (ii) before the facilities are opened and where appropriate, to provide a second input to inspect the completed works, recommend additional traffic engineering improvements, particularly for lighting, hazard barriers, signage, and marking.

8. **The social development cum PPMS specialist** will be recruited for 2 person months to (i) design a methodology for monitoring and evaluating the resettlement plan, and (ii) assist with the development and implementation of the social dimension component of the PPMS along with the domestic consultants. Assistance will be provided in:

- (i) Identifying performance indicators and monitoring parameters;
- (ii) Establishing the baseline data;
- (iii) Analyzing secondary data and statistics at provincial, municipality, and county levels;
- (iv) Assessing the socioeconomic impacts, particularly poverty reduction, on potential beneficiaries through selective household surveys and participatory research methods;
- (v) Assessing environmental sustainability of the Project and its socioeconomic impact;
- (vi) Coordinating with the provincial government to institutionalize the PPMS in GPCD; and
- (vii) Conducting training in operational social research methods and building capacity in GPCD on performance management and impact assessment.

9. **The environment specialist** will be recruited for two (2) person-months: (i) upon completion of the detailed design and before the start of the works, to review environmental mitigation measures are properly taken into account for short-term, i.e. during construction, and long-term, i.e. after expressway opening, and advise GPCD, if required, additional or revision of measures to be taken to satisfy sound environmental condition in the project area as indicated in the EIA, and (ii) middle of construction period to examine if all the mitigation measures are properly taken, and advise GPCD to take proper action, if required. Findings by the environment specialist would be reported in periodic report to ADB. In addition, the expert will monitor the interdepartmental component of the project in relation to vehicle emission and advise on the development of implementation action plans/regulations.

10. **Corporate development specialist** will be recruited for two (2) person-months to review the draft corporate development plan for the development of an independent corporate entity to manage and operate the Project Expressway. The international consultant will cooperate closely with GPCD in reviewing and implementing the plan in line with the following tasks:

- (i) Review the corporate development plan with the primary aim of corporatizing the management and operation of the Project Expressway. This will include an assessment of the alternatives, government policy, legal framework, corporate examples in other provinces in China and southeast Asia, etc.;
- (ii) Assist in implementing the action plan for the recommended solution, including: (a) time based implementation plan; (b) define corporate objectives and mission statement; (c) outline of legal framework; (d) organization charts; (e) outline structure for board of directors and senior management; (f) manpower and training requirements; (g) outline financial and accounting requirements; (h) etc.; Consult closely with GPCD and relevant provincial agencies on all matters relating to the corporatization process, including seminar and workshop presentations on all key issues;
- (iii) Review the possibility of expanding the scope of business to operate the Ningxia section of the expressway in consultation with GPCD and Ningxia Communications Department; and
- (iv) Prepare a report in English and Chinese for submission to ADB and the EA.

b. Domestic Consultants

11. Domestic consultants will be recruited under other consulting service contracts planned by the EA. The domestic consultant will supervise construction activities, and develop and implement a project performance management system (PPMS). About 6,352 person-months of domestic consultants will be required for construction supervision and the PPMS. The consultant team, headed by a chief supervision engineer, will be composed of engineers or the equivalent, with at least 5 years of practical experience in supervision and administration of

major road, bridge, and tunnel contracts. Domestic consultant will provide supervision services in regarding to the work quality, cost and progress etc. for the Project as a whole, and will undertake evaluation of project performance, domestic training program etc.

c. Training and Human Resource Development

12. The human resource development plan for the PIU, OFA and the proposed corporate entity will be prepared with the assistance of the international consultants will include in –country and international training programs. Specific needs for the in-country training will be identified, and training programs will be provided during project implementation by the consultants. The formal training programs will be submitted to the ADB for review and concurrence. Details of the international training programs, including formal selection procedures for candidates, will be determined by GPCD/OFA in consultation with the international consultants, and the international consultants will assist GPCD/OFA in preparing the training programme. Candidates trained abroad will be required to submit a report to GPCD/OFA and ADB on the training received. On their return, those trained will serve as resource persons in the conduct of training seminars for dissemination of knowledge learned, in conjunction with consultant inputs where appropriate. ADB will finance about 34 person-months of international training for the staff in the areas listed in Table 1.

Table 1: International Training Program

Subjects	Person-Months
1. Bridge Construction and Maintenance	3
2. Tunnel Construction and Management	3
3. Pavement Management System	4
4. Quality Control and Contract Management	5
5. Expressway Operations and Management	5
6. Road Safety and Traffic Engineering	6
7. Corporatization and Management	4
8. Management Information System	2
9. Financial Management	2
Total	34

d. Records and Reports

13. The international consultants will assist GPCD to comply with their obligations under the Project Agreement with ADB. They will:

- (i) Assist GPCD to prepare quarterly progress and financial status reports, and a final project completion report;
- (ii) Prepare interim and final payment certificates;
- (iii) Provide GPCD with such technical and engineering consultation as may be required;
- (iv) Keep accurate and detailed records of all works done in the construction phase prior to beginning of the construction works;
- (v) Prepare estimated progress schedule reports for the construction phase prior to beginning of the construction works;

- (vi) Keep records of all payments approved and report such in the regular progress reports;
- (vii) Ensure that progress reports contain complete information on: (a) description of activities, (b) progress charts, and (c) expenditure records; and
- (viii) Assist GPCD in preparing reports on resettlement monitoring and environmental monitoring.

14. The progress reports of the consulting services will be compared with the work program and progress schedule as originally agreed. The progress reports and the final reports will be signed by the team leader and submitted to GPCD (15 copies in the Chinese language) and the Bank (2 copies in the English language).

C. Counterpart Assistance to the Consultants

15. The following counterpart assistance will be made available to the international consultants by GPCD, either directly or through the contractors:

- (i) Administrative assistance in obtaining visas, customs clearances, and any other administrative permits required by the international consultants in the performance of their duties;
- (ii) All relevant reports, studies and engineering drawings relating to the assignment;
- (iii) Appropriate and suitably qualified counterpart staff;
- (iv) Suitable furnished office accommodation on site and in Lanzhou;
- (v) Secretarial and clerical support, including translators and interpreters; and
- (vi) Local transportation with drivers.

16. The number of counterpart staff to be assigned and the number of vehicles to be provided will be agreed to by GPCD prior to the commencement of work.

17. The international consultants will be responsible for the purchase of equipment, office supplies, and instruments to support their services, which are not listed in the above. Laboratories with the equipment required to carry out routine testing will be furnished by GPCD. The cost of maintaining the equipment will also be borne by GPCD.

TERMS OF REFERENCE FOR DOMESTIC CONSULTANTS

I. Construction Supervision

A. Basis and Object

1. Basis

- (i) MOC *Specification of Construction Supervision for Highway Engineering* (JTJ 077-95);
- (ii) The current implemented relevant technology, economic regulations and highway Engineering standard, specifications and regulations etc. on highway construction as well as contract signed by Client and Contractors;
- (iii) Supervision service contracts which were signed by Client and Consultants;
- (iv) Regulations for the design variations (execute the definitions of variation management which were issued by provincial communications department).

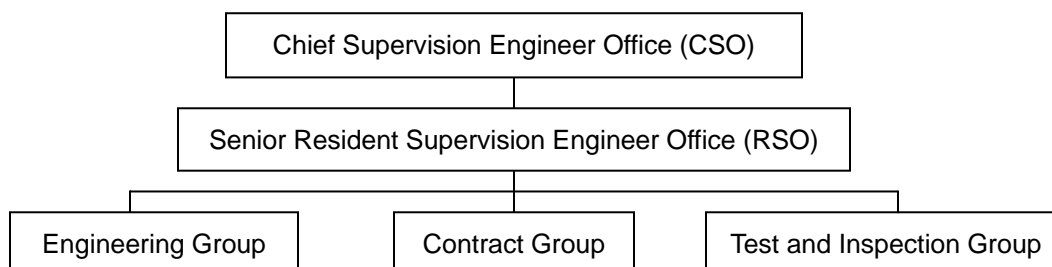
2. Object

1. This project implements the quality certification system that "the government supervises, the society manages, enterprises examine by oneself". Manage unit and supervisory personnel should according to "supervise strictly, principle on serve, handle affairs, conscientious and meticulous" is it have something to do every principles and policies, regulation managed to construct to carry out conscientiously, make the detailed work program, define the post duty, rigorously enforce the inspection system, make great efforts to do the work of supervising well.

B. Organization, Consultants and Training

2. According to the characteristic of this project, supervision organizations at two levels, i.e. Chief Supervision Engineer Office (abbreviated as CSO) and Senior Resident Supervision Engineer Office (abbreviated as RSO) are to be set.

1. Organization Chart



2. Consultants

3. Supervision consultants include: senior resident supervision engineer, assistant senior resident supervision engineer; measurement engineer, planning engineer, contract engineer, road engineer, structure engineer, tunnel engineer, test and inspection engineer, and supervisor.

3. Training

4. In order to guarantee the quality of supervision works, all consultants will be trained by CSO in quality, progress, cost control, contract management and information management

aspects. Senior supervision engineer and professional engineer will be trained by International consultants on FIDIC and contract management etc.

Training plan

No.	Subject	Trainer	Trainee	Date	Remarks
1	Quality, progress, cost control, contract management, information management etc.	CSO	All supervision consultants	end of Dec 2005	Two batches
2	FIDIC clause , contract management etc.	International consultants	Senior supervision engineer, professional engineer	beginning of Mar 2006	
3	Quality guarantee, financial management, project management , quality monitor etc.	MOC, GPCD, Gansu Provincial Quality Supervision Station	Senior supervision engineer, professional engineer	random	

C. Work Scope

1. Supervision on Works Quality

- (i) Provide data such as datum point, datum line, and datum elevation etc. in drawings to Contractors. Check and accept set out made by Contractors on site.
- (ii) Prior to start of works and in the course of construction, to check the material and equipment to be used in the project. Have rights to reject the ineligible material and equipment.
- (iii) Issue Commencement Notice for each work and approve the commencement report of each sub-work and work item. Require Contractor to suspend the construction of the whole work or any part of the works, if necessary.
- (iv) Supervise Contractor's inspection and testing operation. Have the rights to examine project quality by using Contractor's or self-provided test instrument and equipment., and supervise project quality based on the data collected.
- (v) To stand-by on site when construction activities conducted. To identify the quality control points and work items which need stand-by. To inspect and supervise in field each working procedure and work item. For the important works, follow-up inspection will be conducted. Approve the work items and whole work which can meet the requirements in contract. Order Contractor to reconstruct the work or take other remedy measures towards those defected works till it reaches the requirements stipulated in the contract.
- (vi) Review and approve Contractor's proposed construction scheme and main construction methodology; check the construction method, examine the construction scheme and methodology for trial sections. Review and approve special technical treatment measure and special construction methodology.

- (vii) Review and examine the application report for acceptance of the completed permanent works or whole works. Pass on the relevant reports to Employer. Issue interim handover certificate, handover certificate and termination of defect liability certificate. Participate in acceptance for handover and completion held by Employer or higher authorities. Cooperate Employer with the handover works.
- (viii) h. Investigate, deal with project quality defect and accident, propose measures and method for improvement together with Design Institute and contractor. When major quality and safety incident happens, urge contractor to take relevant measures to avoid loss or destroy expanding further, and supervise contractor to report to the relevant authorities according to the proper procedure.
- (ix) Urge contractor to carry out the work program strictly during defect liability period. Inspect and accept the outstanding works. Investigate the reasons and causes of those defects and problems existed in the project and identify the corresponding responsibility.

2. Supervision of the project progress

- (i) Prior to commencement of work, to review and approve the overall construction progress program, cash flow plan and general statement submitted by Contractor and all kinds of detailed plan and variation plan during construction period.
- (ii) Examine and approve the annual plan that Contractor worked out according to the overall construction plan.
- (iii) Inspect and supervise the implementation of the plan in the course of construction. When fail to complete works as scheduled, to require contractor to adjust or revise the plan, and tell the contractor to take the necessary measures to accelerate the construction progress, so that the real construction progress can catch up with the requirement in contract.

3. Supervision of the project cost

- (i) Issue mobilization advance payment certificate.
- (ii) To execute measurement and approval according to the administrative system named "measurement and payment", carry out the electronic reporting system.
- (iii) According to the regulation of the construction contract, to measure and verify in field the quantity and value of any project completed in Bill of Quantity.
- (iv) Review and issue the interim payment certificate, and any certificate which is made after the contract terminated according to the regulations of contract. Have rights to refuse paying for the works which can not meet the requirement of technical specification and contract documents, and the payment will not be made until above-mentioned works reached the contract requirement.
- (v) According to the regulations of the construction contract document, the increase or decrease of the construction cost caused by the laws or regulations etc. issued by State, Province (Autonomous Region, Municipality directly under the Central Government), and caused by the price increase or decrease of labor, material or other items during the execution of the Contract., after consulting with Employer and Contractor, to calculate and confirm the new contract price or adjust range, and sign after Employer's approval.

4. Contract Management

- (i) To hold the first site meeting and regular site meeting, sign and issue the minutes of meeting, and have the right to join in some relevant meetings which are

arranged by contractors for the contract implementation. Coordinate every contractors (including subcontractor which are appointed) with the relevant joint conference.

- (ii) According to the variation scope stipulated in the construction contract, to make the decision of variation regarding to pattern, quality, quantity and any construction procedure of the project, confirm the unit price and cost of variation items, issue variation orders after Employer's approval.
- (iii) For extension of construction period or expenses claim contractor put forward, supervision engineers have responsibility to investigate all situations, and examine the extension and claim according to the stipulations of contract, issue notice after the Employer's approval.
- (iv) Verify the qualification of authorized resident representatives of contractors, and other main technical and managerial staff; Check whether the structure, composition and quantity of main technical and managerial staff are in accordance with that stipulated in contract; Have rights to request changing of unqualified personnel.
- (v) Supervise and inspect the quantity, specification and performance of the main equipment provided by Contractor on site. Supervision engineers have the right to propose to change the equipment or stop paying if the working period and works quality was affected due to equipment's reason.
- (vi) Accept the site testing laboratory of Contractor, urge Contractor to process temporary qualification certificate from local geology supervision station and review the qualification of testing personnel.
- (vii) Urge and inspect contract to prepare as-built documents as required by Employer and project management authority.
- (viii) Manage contract affairs, carry out evaluation and treatment based on the regulations of contract. Settle the dispute based on the contract regulation and to testify in the course of arbitration.
- (ix) Urge Employer to properly fulfill each obligation and legal commitment stipulated in the contract on a timely manner.

5. Safe Supervision

- (i) Examine the security qualification of the contractor and confirm;
- (ii) b. Supervise the signing and implementation of the safety agreement;
- (iii) Verify the safe practice measure that the contractor works out, it is implemented and make sure;
- (iv) They need to supervise the contractor disposing the safety devices according to the regulation;
- (v) They need to supervise and construct the security states of the person, machine and environment in the course. And supervise the contractor to remove a hidden danger in time;
- (vi) They need to check the subsection, subproject to the safe state of a project construction. And signed the suggestion of safety evaluation;
- (vii) They need to participate in the accident investigation of injuries and deaths of project, and supervise the precautionary measures of the safe practice to be implemented and confirmed.

6. The meeting system of site

- (i) The meeting in the site should be held separately according to the contract section;

- (ii) The meeting in the site is divided into the first meeting, the meeting of site and on-the-spot coordination meeting three kinds of forms.
- (iii) The first site meeting purpose is that the supervisory engineer should inspect every preparation completely before going into operation to the project, guarantee that there is a good beginning in the project. Site meeting purpose is the supervisory engineer check the project progress, quality, implementation of expenses completely during the constructions, supply evidence for correct decision and ensure the smooth carry-out of project. The on-the-spot coordination meeting purpose is the supervisory engineer to check, coordinate and implement the daily or regular construction activity, make management and construct activity close cooperation.

7. Record and report

a. Basic demand

- (i) Do and set up the special messenger to keep the materials file of section of a contract in the guard station.
- (ii) The materials file should be classified by classification and filed to manage.
- (iii) It needs the original paper to file the materials.
- (iv) Exchanged file system: According to the stipulations of contract, all the files which coming and going among the supervisory engineer, contractor and owner, there should be tripartite specimen approved or sign.

b. The materials for the complement and the certificate for the complement

- (i) The senior engineer of guard station should plan to write the complete report of the project immediately after receiving the application that a contractor sends out the project and completes the certificate according to the contract requirement, submit to the chief supervisory engineer, for instance, if the chief supervisory engineer agrees, award the certificate of completing to the contractor within 21 days.
- (ii) The contractor should be offer and complete the drawing and materials to the senior engineer of guard station according to the contents of the form and request issued, and submit to chief supervisory engineer after handling and verifying in the guard station.

c. The accountant records of the supervision

5. In order to reflect the actual conditions of the project accurately, the supervisory engineer should collect and register all of the data from actual construction in time. And register and handle classified in the form of accountant records, and could keep the timeliness, authenticity, accuracy of information only in this way, enabling the supervisory engineer will make correct and prompt analysis and judgment to the project question, guarantee the quality of management. An accountant records of project is as follows:

- (i) Acceptances depend on different section and different project;
- (ii) Accountant records of quality situation of material;
- (iii) Laboratory accountant records;
- (iv) Accountant records of the quality problems and the situation for dealing with;
- (v) Accountant records for the payment of the project;

- (vi) Accountant records for Project change and negotiating;

d. Monthly report of supervision

6. The guard station according to the progress report of that month made by contractors, and combine the working condition done in guard station, submit the monthly report to the chief supervisory engineer and project office before the 28th of that month according to fixed form and content (enclose contractor's progress report of that month).

A. Supervision of Resettlement

7. In order to guarantee the resettlement plan smoothly, realize that resettlement's purpose properly, this project will supervise the resettlement. Gansu Provincial Communications Department through Changda Highway Co., Ltd. will trust one independent organization which will be accepted by Asian Development Bank to launch the work of controlling and assessing, and as requested refer the report to Asian Development Bank, help Gansu Provincial Communications Department through Changda Highway Co., Ltd. to deal with resettlement's problem at the same time. Consult working contents of personnel as follows in resettlement:

- (i) Set up the monitor and assess system of resettlement;
- (ii) Set up a method to set of investigations of registering one's residence;
- (iii) Coordination with Gansu Provincial Communications Department through Changda Highway Co., Ltd. about the supervision of the resettlement, and support them to solve the problem that cause because resettlement is unjust;
- (iv) Offer the suggestions in entering an investigation;
- (v) Report the land acquisition and progress for resettlement through project basis investigation, outside monitor report (every year two) and resettlement finish report.

B. Monitors Assessing about the Project Behaves

8. Gansu Provincial Communications Department through Changda Highway Co., Ltd. will trust one independent organization to collect and analyse a series of relevant norms of the display administrative system about management and implement, and evaluate the manifestation of project depend on the original intention of constructions. The project carries out and implements a foundation to investigate in initial stage, and it will launch the follow-up investigation after the project is completed and completing for three years. Then compare the data collected before the commencement of the construction, during the construction and after the completion with the standard date and the objective made by the executive organization, and reach unanimity with the suggestion of Asian Development Bank. The main norms of monitor include:

- (i) Set up immigration allocation and monitor and assess the system;
- (ii) Transportation cost and time about specific vehicle type and the trip mode;
- (iii) Transport services and charging;
- (iv) Crash rate;
- (v) Air quality;
- (vi) The financial index of the expressway running company;
- (vii) Per capita income of the villages and towns;
- (viii) Service channel of community service channel;
- (ix) The works crested by project constructs and the road maintain. But indexes related to sex and minority will be different.

9. The method for collecting data includes:
- (i) Verify the statistics that the local statistics bureau offer;
 - (ii) Launches the countryside and is participated in appraising in the places which are influenced by the expressway and local road.

Cost Estimate of Domestic Consultant

Activities	Cost Estimate (RMB yuan)
Construction Supervision	150,000,000
Resettlement Monitoring	450,000
PPMS Consultant	500,000
Total	150,950,000

CONTRACT PACKAGES

Table A7.1: Civil Works for the Expressway and Local Roads

Package Number	Description	Length (km)	Procurement Mode
A. Expressway Earthworks, Bridges, Tunnels, and Pavement			
C01	K025+200~K050+000	25.1	ICB
C02	K050+000~K081+230	31.2	ICB
C03	K092+407~K108+300	15.9	ICB
C04	K108+300~K117+000	8.7	ICB
C05	K117+000~K128+400	11.4	ICB
C06	K128+400~K135+883	7.5	ICB
C07	K202+560~K212+800	10.2	ICB
C08	K212+800~K226+500	13.7	ICB
C09	K226+500~K244+600	18.1	ICB
C10	K244+600~K249+000	4.4	ICB
C11	K249+000~K257+950	7.8	ICB
C12	K257+950~K277+000	19.1	ICB
C13	K277+000~K290+500	13.5	ICB
C14	K290+500~K315+000	25.0	ICB
C15	K315+000~K324+000	8.9	ICB
C16	K324+000~K334+730	10.7	ICB
Total K025+200~K334+730		231.2	
B. Local Roads			
L01	Pingliang-Gaozhai ^a	40.0	LCB
L02	Jilingyuan-Chankou ^a	117.0	LCB
L03	Guochengyi-Houjiachuan (7 packages)	118.0	LCB
L04	Pingfeng-Qinan ^a	115.0	LCB
L05	Dingxi-Longxi (3 packages)	80.0	LCB
Total		470.0	

ICB = international competitive bidding, km = kilometer, LCB = local competitive bidding.

^a These packages will be financed by the government.

Source: Asian Development Bank estimates.

Table A7.2: Civil Works and Equipment for the Expressway

Description	Number of Contracts	Procurement Mode
A. Traffic Engineering	6	LCB
B. Toll Collection, Telecommunications, and Surveillance System	2	LCB
C. Buildings and Ancillary Facilities	4	LCB
D. Maintenance Equipment		
Road Maintenance Equipment 1	1	ICB
Road Maintenance Equipment 2	1	ICB
Testing Survey Equipment	1	ICB
Road Safety Equipment	1	ICB

ICB = international competitive bidding, LCB = local competitive bidding under government financing.

Source: Asian Development Bank estimates.

Procurement Plan

Civil Works (excluding pavement works) by ICB procedure

Year	2004												2005											
Months	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Activities																								
Up-loaded on ADB's Business Opportunity																								
Pre-qualification Document prepared, submitted to ADB and approved, release bid Invitation on ADB's website																								
Prequalification document reviewed and approved by GPCD, issuance and submission of document																								
Evaluation for Prequalification completed, PQ evaluation report submit to MOC for approval																								
Prequalification Evaluation Report submitted to ADB and approved by ADB																								
Bid Document prepared and approved by MOC and ADB																								
Issue of Bid Document, submission of Bid Document, bid opening																								
Evaluation of bid document, bid evaluation report prepared																								
Submit Bid Evaluation Report to MOC for review																								
Bid Evaluation Report submitted to ADB and was approved																								
Issue Bid Award Notification, contract negotiation and signing contract																								

34 Appendix 7

Appendix 7

[illegible]

Procurement Plan

Pavement Works by ICB procedure

Year	2005												2006											
Months	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Activities																								
Up-loaded on ADB's Business Opportunity																								
Pre-qualification Document prepared, submitted to ADB and approved, release bid Invitation on ADB's website																								
Prequalification document reviewed and approved by GPCD, issuance and submission of document																								
Evaluation for Prequalification completed, PQ evaluation report submit to MOC for approval																								
Prequalification Evaluation Report submitted to ADB and approved by ADB																								
Bid Document prepared and approved by MOC and ADB																								
Issue of Bid Document, submission of Bid Document, bid opening																								
Evaluation of bid document, bid evaluation report prepared																								
Submit Bid Evaluation Report to MOC for review																								
Bid Evaluation Report submitted to ADB and was approved																								
Issue Bid Award Notification, contract negotiation and signing contract																								

Appendix 7

Appendix 7

[illegible]

Procurement Plan

Traffic Engineering (Safety Facilities) by NCB Procedure

Year	2006												2007											
Months	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Activities																								
Prequalification Document prepared, approved and issued																								
Submission of Prequalification Documents																								
Evaluation for Prequalification Documents, submit PQ evaluation report to GPCD for review																								
Submission of PQ evaluation report to MOC for review and approval																								
Bidding Document prepared, reviewed by GPCD																								
Bidding Document reviewed and approved by MOC																								
Issuance and submission of Bidding Documents, bid opening																								
Bid Evaluation report completed																								
Submit bid evaluation report to GPCD for review and approval																								
Submit bid evaluation report to MOC for review and approval																								
Issuance of Bid Award Notification, contract negotiation, contract signed																								

Procurement Plan

Building Works by NCB Procedure

[illegible]

Procurement Plan

Domestic Consulting Service for Building Works

Year	2005												2006											
Months	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Activities																								
Prequalification Document prepared, approved and issued																								
Submission of Prequalification Documents																								
Evaluation for Prequalification Documents, submit PQ evaluation report to GPCD for review																								
Submission of PQ evaluation report to MOC for review and approval																								
Bidding Document prepared, reviewed by GPCD and approved by MOC																								
Issuance and submission of Bidding Documents, bid opening																								
Bid Evaluation report completed																								
Submit bid evaluation report to GPCD for review and approval, to MOC for file																								
Issuance of Bid Award Notification, contract negotiation, contract signed																								

Procurement Plan

Domestic Consulting Service for Traffic Engineering (E&M)

Year	2006												2007											
Months	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Activities																								
Prequalification Document prepared, approved and issued																								
Submission of Prequalification Documents																								
Evaluation for Prequalification Documents, submit PQ evaluation report to GPCD for review																								
Submission of PQ evaluation report to MOC for review and approval																								
Bidding Document prepared, reviewed by GPCD and approved by MOC																								
Issuance and submission of Bidding Documents, bid opening																								
Bid Evaluation report completed																								
Submit bid evaluation report to GPCD for review and approval, to MOC for file																								
Issuance of Bid Award Notification, contract negotiation, contract signed																								

Procurement Plan

Greening Works by NCB Procedure

[illegible]

Procurement Plan

Equipment by ICB Procedure (Road Maintenance Equipment Contract No. 1&2)

Year	2006												2007											
Months	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Activities																								
Up-loaded on ADB's Business Opportunity																								
Pre-qualification Document prepared, submitted to ADB and approved, release bid Invitation on ADB's website																								
Prequalification document reviewed and approved by GPCD, issuance and submission of document																								
Evaluation for Prequalification completed, PQ evaluation report submit to MOC for approval																								
Prequalification Evaluation Report submitted to ADB and approved by ADB																								
Bid Document prepared and approved by MOC and ADB																								
Issue of Bid Document, submission of Bid Document, bid opening																								
Evaluation of bid document, bid evaluation report prepared																								
Submit Bid Evaluation Report to MOC for review																								
Bid Evaluation Report submitted to ADB and was approved																								
Issue Bid Award Notification, contract negotiation and signing contract																								

Procurement Plan

Equipment by ICB Procedure (Testing and Inspection Equipment Contract)

[illegible]

Contract Awards Projection

Contract Name	Contract no.	Starting point	Ending point	Length (km)	Award date	Contract Amount (RMB Yuan)	Total Amount (RMB Yuan)
Civil Works (Excluding Pavement)	LD1	K26+920.808	K42+150	15.233	Dec. 2005		4,148,950,000 RMB
	LD2	K42+150	K83+9950.851	40.611			
	LD3	K92+525	K108+940	16.420	Dec. 2005		
	LD4	K108+940	K116+897	7.957	Dec. 2005		
	LD5	K116+897	K128+700	11.803	Dec. 2005		
	LD6	K128+700	K136+298.442	7.598	Dec. 2005		
	LD7	K202+560	K211+885	9.325	Dec. 2005		
	LD8	K211+885	K227+000	15.107	Dec. 2005		
	LD9	K227+000	K243+000	15.999	Dec. 2005		
	LD10	K243+000	K250+000	7.000	Dec. 2005		
	LD11	K250+000	K256+841.021	6.841	Dec. 2005		
	LD12	K257+950	k275+200	17.250	Dec. 2005		
	LD13	K275+200	K290+740	15.540	Dec. 2005		
	LD14	K290+740	K314+000	23.260	Dec. 2005		
	LD15	K314+000	K325+340	11.340	Dec. 2005		
	LD16	K325+340	K335+400	10.023	Dec. 2005		

Contract Name	Contract no.	Starting point	Ending point	Length (km)	Award date	Contract Amount (RMB Yuan)	Total Amount (RMB Yuan)
Domestic Consultant Service for Civil Works (Excluding Pavement)	LDJL1	K26+920.808	K42+150	15.233	Dec. 2005	4,551,204	80,552,508
	LDJL2	K42+150	K83+995.085	40.611	Dec. 2005	5,615,358	
	LDJL3	K92+525	K108+940	16.420	Dec. 2005	4,871,999	
	LDJL4	K108+940	K116+897	7.957	Dec. 2005	4,266,270	
	LDJL5	K116+897	K128+700	11.803	Dec. 2005	5,164,158	
	LDJL6	K128+700	K136+298.442	7.598	Dec. 2005	4,851,966	
	LDJL7	K202+560	K211+885	9.325	Dec. 2005	5,368,952	
	LDJL8	K211+885	K227+000	15.107	Dec. 2005	4,462,259	
	LDJL9	K227+000	K243+000	15.999	Dec. 2005	5,154,677	
	LDJL10	K243+000	K250+000	7.000	Dec. 2005	5,454,687	
	LDJL11	K250+000	K256+841.021	6.841	Dec. 2005	5,329,522	
	LDJL12	K257+950	k275+200	17.250	Dec. 2005	4,970,574	
	LDJL13	K275+200	K290+740	15.540	Dec. 2005	4,366,558	
	LDJL14	K290+740	K314+000	23.260	Dec. 2005	5,569,284	
	LDJL15	K314+000	K325+340	11.340	Dec. 2005	6,074,186	
	LDJL16	K325+340	K335+400	10.023	Dec. 2005	4,480,854	
Civil Works (Pavement)	LDLM1	K26+920.808	K42+150	15.233	Nov. 2006		1,045,290,000 (estimate)
	LDLM2	K42+150	K83+9950.851	40.611	Nov. 2006		

Contract Name	Contract no.	Starting point	Ending point	Length (km)	Award date	Contract Amount (RMB Yuan)	Total Amount (RMB Yuan)
	LDLM3	K92+525	K116+897	24.377	Nov. 2006		
	LDLM4	K116+897	K136+298.442	19.401	Nov. 2006		
	LDLM5	K202+560	K227+000	24.432	Nov. 2006		
	LDLM6	K227+000	K256+841.021	29.839	Nov. 2006		
	LDLM7	K257+950	k290+740	32.790	Nov. 2006		
	LDLM8	K290+740	K335+400	44.623	Nov. 2006		
Domestic Consultant Service for Civil Works (Pavement)	LMJL1	K26+920.808	K42+150	15.233	Nov. 2006		
	LMJL2	K42+150	K83+995. 085	40.611	Nov. 2006		
	LMJL3	K92+525	K116+897	24.377	Nov. 2006		
	LMJL4	K116+897	K136+298.442	19.401	Nov. 2006		
	LMJL5	K202+560	K227+000	24.432	Nov. 2006		
	LMJL6	K227+000	K256+841.021	29.839	Nov. 2006		
	LMJL7	K257+950	k290+740	32.790	Nov. 2006		
	LMJL8	K290+740	K335+400	44.623	Nov. 2006		
Traffic Engineering (Safety Facilities)	LDJT1	K26+920.808	K42+150	15.233	Sept. 2007		203,417,194(estimate)
	LDJT2	K42+150	K83+995. 085	40.611	Sept. 2007		
	LDJT3	K92+525	K116+897	24.377	Sept. 2007		
	LDJT4	K116+897	K136+298.442	19.401	Sept. 2007		

Contract Name	Contract no.	Starting point	Ending point	Length (km)	Award date	Contract Amount (RMB Yuan)	Total Amount (RMB Yuan)
	LDJT5	K202+560	K227+000	24.432	Sept. 2007		
	LDJT6	K227+000	K256+841.021	29.839	Sept. 2007		
	LDJT7	K257+950	k290+740	32.790	Sept. 2007		
	LDJT8	K290+740	K335+400	44.623	Sept. 2007		
Building Works	LDFJ1	K26+920.808	K117+000	80.77	Nov. 2006		87,690,000 (estimate)
	LDFJ2	K117+000	K136+298.442	19.29	Nov. 2006		
	LDFJ3	K202+560	K277+000	73.22	Nov. 2006		
	LDFJ4	K277+000	K334+730	58.17	Nov. 2006		
Domestic Consultant Service for Building Works	FJL1	K26+920.808	K136+298.442	99.66	Nov. 2006		
	FJL2	K202+560	K334+730	131.40	Nov. 2006		
Traffic Engineering (E&M)	LDJD1	K26+920.808	K135+883	99.66	Oct. 2007		302,010,708 (estimate)
	LDJD2	K135+883	K335+400	131.40	Oct. 2007		
Domestic Consultant Service for Traffic Engineering (E&M)	JDJL1	K26+920.808	K135+883	99.66	Oct. 2007		
	JDJL2	K135+883	K335+400	131.40	Oct. 2007		
Greening Works	LDLH1	K26+920.808	K83+9950.851	55.84	Aug. 2007		54,455,642 (estimate)
	LDLH2	K92+525	K136+298.442	43.77	Aug. 2007		
	LDLH3	K202+560	K256+841.021	54.27	Aug. 2007		
	LDLH4	K257+950	K335+400	77.41	Aug. 2007		

Contract Name	Contract no.	Starting point	Ending point	Length (km)	Award date	Contract Amount (RMB Yuan)	Total Amount (RMB Yuan)
Design	LDSJ1	K0+000	K83+995.085	83.99	Dec. 2003	20428469	144,282,109
	LDSJ2	K92+525	K136+298.442	44.14	Dec. 2003	25659920	
	LDSJ3	K202+560	K256+850	54.29	Dec. 2003	34647219	
	LDSJ4	K256+850~	K334+000	77.15	Dec. 2003	48481173	
	LDSJ5	K26+920.808	K136+550	126.543	Dec. 2003	2227350	
	LDSJ6	K202+560	K335+400	131.44	Dec. 2003	2894078	
	Others				Dec. 2003	11943900	
International Consulting Service		K26+920.808	K335+400	231.31	Jan. 2006	9924000	
Land Acquisition and Resettlement		K26+920.808	K335+400	231.31			505600000 (estimate)

Disbursement Plan

Year	Item	Payment Amount				Remarks
		ADB Loan (USD)	ADB Loan (RMB)	Domestic (RMB)	Total (RMB)	
2005	Subgrade	20,644,637.68	170,937,600.00	185,182,400.00	356,120,000.00	Advance payment
	Consulting Service	119,855.07	992,400.00		992,400.00	
	Local Roads	971,174.40	8,041,324.00	12,061,986.00	20,103,310.00	
	Sub-total	21,735,667.15	179,971,324.00	197,244,386.00	377,215,710.00	
2006	Subgrade	72,256,231.88	598,281,600.00	648,138,400.00	1,246,420,000.00	35% disbursement
	Pavement	4,473,623.19	37,041,600.00	40,128,400.00	77,170,000.00	Advance payment
	Consulting Service	269,673.91	2,232,900.00		2,232,900.00	
	Training	75,000.00	621,000.00		621,000.00	
	Local Roads	2,250,000.00	18,630,000.00	27,945,000.00	465,750,000.00	
	Others	1,283,001.52	10,623,352.62		10,623,352.62	
	Sub-total	80,607,542.59	667,430,452.62	688,266,800.00	1,792,193,900.00	
2007	Subgrade	51,611,594.20	427,344,000.00	462,956,000.00	890,300,000.00	25% disbursement
	Pavement	22,368,115.94	185,208,000.00	200,642,000.00	385,850,000.00	50% disbursement
	Consulting Service	269,673.91	2,232,900.00		2,232,900.00	
	Equipment	3,000,000.00	24,840,000.00		24,840,000.00	40%
	Training	75,000.00	621,000.00		621,000.00	
	Local Roads	2,250,000.00	18,630,000.00	27,945,000.00	465,750,000.00	
	Others	5,464,429.63	659,955.27		659,955.27	
	Sub-total	79,654,088.80	659,535,855.27	663,598,000.00	1,303,843,900.00	
2008	Subgrade	41,289,275.36	341,875,200.00	370,364,800.00	712,240,000.00	20% disbursement
	Pavement	8,947,246.38	74,083,200.00	80,256,800.00	154,340,000.00	20% disbursement
	Consulting Service	269,673.91	2,232,900.00		2,232,900.00	
	Equipment	3,000,000.00	24,840,000.00		24,840,000.00	40%
	Training	75,000.00	621,000.00		621,000.00	
	Local Roads	2,250,000.00	18,630,000.00	27,945,000.00	465,750,000.00	
	Others	9,829,382.49	81,387,286.98		81,387,286.98	
	Sub-total	65,660,578.14	543,669,586.98	450,621,600.00	894,273,900.00	
2009	Subgrade	20,644,637.68	170,937,600.00	185,182,400.00	356,120,000.00	10% disbursement
	Pavement	8,947,246.38	74,083,200.00	80,256,800.00	154,340,000.00	20% disbursement
	Training	75,000.00	621,000.00		621,000.00	
	Consulting Service	269,673.91	2,232,900.00		2,232,900.00	
	Equipment	1,500,000.00	12,420,000.00		12,420,000.00	20%
	Local Roads	2,278,826.00	18,868,679.00	28,303,019.00	47,171,698.00	
	Others	18,626,739.39	154,229,402.15		154,229,402.15	
	Sub-total	52,342,123.33	433,392,781.15	80,256,800.00	169,613,900.00	
	Total	300,000,000.00	2,484,000,000.02	2,079,987,586.00	4,537,141,310.00	

PROJECT PERFORMANCE MANAGEMENT SYSTEM

Design Summary	Performance Indicators/Targets	Monitoring Mechanism	Frequency	Baseline
Goal				
1. Promotion of economic growth in Gansu and the project area.	<ul style="list-style-type: none"> Gross domestic product (GDP) of each county in Gansu Province and the project area Per capita rural income of each county in Gansu Province and the project area Consumer Price Indexes of each county in Gansu Province and the project area 	GDP and other related data through periodic reporting by the statistics office at the provincial and county levels	At inception, completion, and 3 years thereafter annually	
2. Reduced poverty in the project area.	<ul style="list-style-type: none"> The poverty incidence of each county in Gansu Province and the project area School enrollment of each county in Gansu Province and the project area Higher education enrollment in Gansu per county and the project area Infant mortality rates in Gansu per county and the project area Agricultural income for Gansu Province per county and the project area Non-agricultural income for Gansu Province per county and the project area Number of emigrant worker for Gansu Province per county and the project area 	A social development action plan	At inception, completion, and 3 years thereafter annually	

Design Summary	Performance Indicators/Targets	Monitoring Mechanism	Frequency	Baseline
Purpose 1. Improve transport efficiency in the project area for the expressway and local roads	<ul style="list-style-type: none"> Traffic volume for the expressway 	Traffic counts by the Gansu Provincial Communications Department (GPCD)	At completion, 3 years thereafter annually, in 2020, and 2029	
	<ul style="list-style-type: none"> Travel time for the expressway 	Traffic counts and travel time survey for the expressway by GPCD.	At completion, 3 years thereafter annually, in 2020, and 2029	
	<ul style="list-style-type: none"> Reduced bus fares and freight rates 	Monitoring of fares and rates by GPCD.	At inception, completion, and 3 years thereafter annually	
	<ul style="list-style-type: none"> Total passenger traffic for Gansu Province per county and the project area 	Traffic survey by GPCD	At inception, completion, and 3 years thereafter annually	
	<ul style="list-style-type: none"> Total freight traffic for Gansu Province per county and the project area 			
	<ul style="list-style-type: none"> Vehicle operating costs for a car 	Direct measures of vehicle operating costs for trucks, buses, and cars by GPCD.	At inception, completion, and 3 years thereafter annually	
	<ul style="list-style-type: none"> Reliability and frequency of bus services and introduction of new bus services 	Bus-related data will be monitored by GPCD.	At inception, completion, and 3 years thereafter annually	
	<ul style="list-style-type: none"> Road accidents rate in Gansu Province per county and the project area 	Accident statistics from Public Security Bureau and hospitals and traffic survey by GPCD	At inception, completion, and 3 years thereafter annually	
	<ul style="list-style-type: none"> Fatality rate of road accident in Gansu province per county and the project area 			
2. Improve transport safety in the project area for the expressway and local roads				

Design Summary	Performance Indicators/Targets	Monitoring Mechanism	Frequency	Baseline
	<ul style="list-style-type: none"> Vehicle emission per GDP in the project area 	Traffic survey by GPCD	At inception, completion, and 3 years thereafter annually	
Outputs				
1. Road infrastructure and associated equipment and facilities improved along the expressway between Luohandong and Dingxi	<ul style="list-style-type: none"> Road capacity between Luohandong and Dingxi 	The project completion report (PCR)	At inception, and completion	
2. Road infrastructure and associated facilities improved for the five local roads in the project area	<ul style="list-style-type: none"> Road capacity in the project area 	The project completion report (PCR)	At inception, and completion	

SUMMARY RESETTLEMENT PLAN

1. The resettlement plan covers the construction of an expressway between Luohandong and Dingxi, related connecting roads, and complementary local roads. The Gansu provincial government has assured the Asian Development Bank (ADB) that the affected people for the local roads will receive the same compensation and other assistance provided in the resettlement plan. The Gansu Provincial Communication Department (GPCD) is the Executing Agency. Once the detailed measurement survey is completed, the resettlement plan will be updated, distributed to affected people, and submitted to ADB for concurrence.

2. The Luoding expressway will affect 23 townships, 93 administrative villages, and 374 village groups in five counties (Jingchuan county, Kongtong district, and Jingning county in Pingliang municipality, Huining county in Baiyin municipality, and Anding district in Dingxi municipality). About 1,150 hectares (ha) of land will be acquired, 63% of which are farmland, comprising paddy (16%) and dryland (47%), and 100 ha of land will be occupied temporarily. Based on per capita farmland in the affected villages, the farmland acquisition is equivalent to 4,285 persons losing all of their farmland. Actually, most people will only lose part of their farmland. For this project, it is estimated that the average loss is one-third, which means land acquisition will directly affect about 13,150 persons. About 55,612 square meters (m²) of houses will be demolished, necessitating relocation of 520 households (2,350 persons). Most of these households will be moved a short distance to another site within their original village. All land, housing, and other assets will be compensated at replacement value. Due diligence was carried out for the Ningxia section, linking two parts of the Luoding expressway. The report on the due diligence is annexed to the resettlement plan.

3. The resettlement objective is to achieve equal or better income and living standards in line with the PRC Land Administration Law (1998) and the ADB's *Policy on Involuntary Resettlement*. GPCD will ensure that people losing land, housing, other assets, or income source will be helped to fully restore their income and living standards. The land compensation rate will be CNY12,000/mu for irrigated farmland; CNY6,000/mu for dry land and housing plots; and CNY1,900/mu for forest land. For demolished structures, the replacement value will be provided to the affected households based on compensation rates, which range from CNY350–CNY460/m² for brick-concrete structures, CNY200–CNY300/m² for brick-wood structures, and CNY200/m² for earth-wood structures. Households will be provided funds to purchase a new housing site serviced with road, electricity, and water within the current village group or administrative village. There will be no reduction in compensation for depreciation and people will be allowed to salvage materials from their old houses. Seventeen urban households will be relocated and the compensation rate is in the range of CNY630–CNY830/m². GPCD will ensure that compensation provided will be sufficient to purchase replacement housing.

4. Resettlement effects were minimized during project preparation after consultations with local officials and local residents. Since the impacts are widely dispersed and per capita land holdings are relatively high, land-loss impacts are not serious and their effects can be mitigated. The resettlement plan includes economic rehabilitation plans for seriously affected villages based on consultation with affected villagers. Affected people will be provided either with direct compensation or replacement land through village land readjustment and new farmland development. Those villages adopting land readjustment could utilize the land compensation funds collectively to improve farm conditions, develop cash crops, and finance various nonfarm activities. New employment and income generation opportunities will arise once the expressway and local roads are constructed.

5. GPCD will ensure that the resettlement entitlements are provided to the affected people prior to demolition. Land compensation will be paid to the affected village groups or individuals. Housing compensation and compensation for crops and other assets will be provided directly to people losing those assets. The resettlement plan has provisions for moving allowances. Also, expressway contractors will be requested by GPCD to give priority to resettlement-affected households in the allocation of unskilled jobs during construction.

6. A project resettlement office within GPCD will be responsible for coordinating the planning, implementation, financing, and reporting of resettlement for the expressway and local roads. Leading groups and resettlement offices will be established in each of the three cities and five affected counties. The county resettlement offices will have primary responsibility for resettlement consultation, implementation, and timely delivery of entitlements.

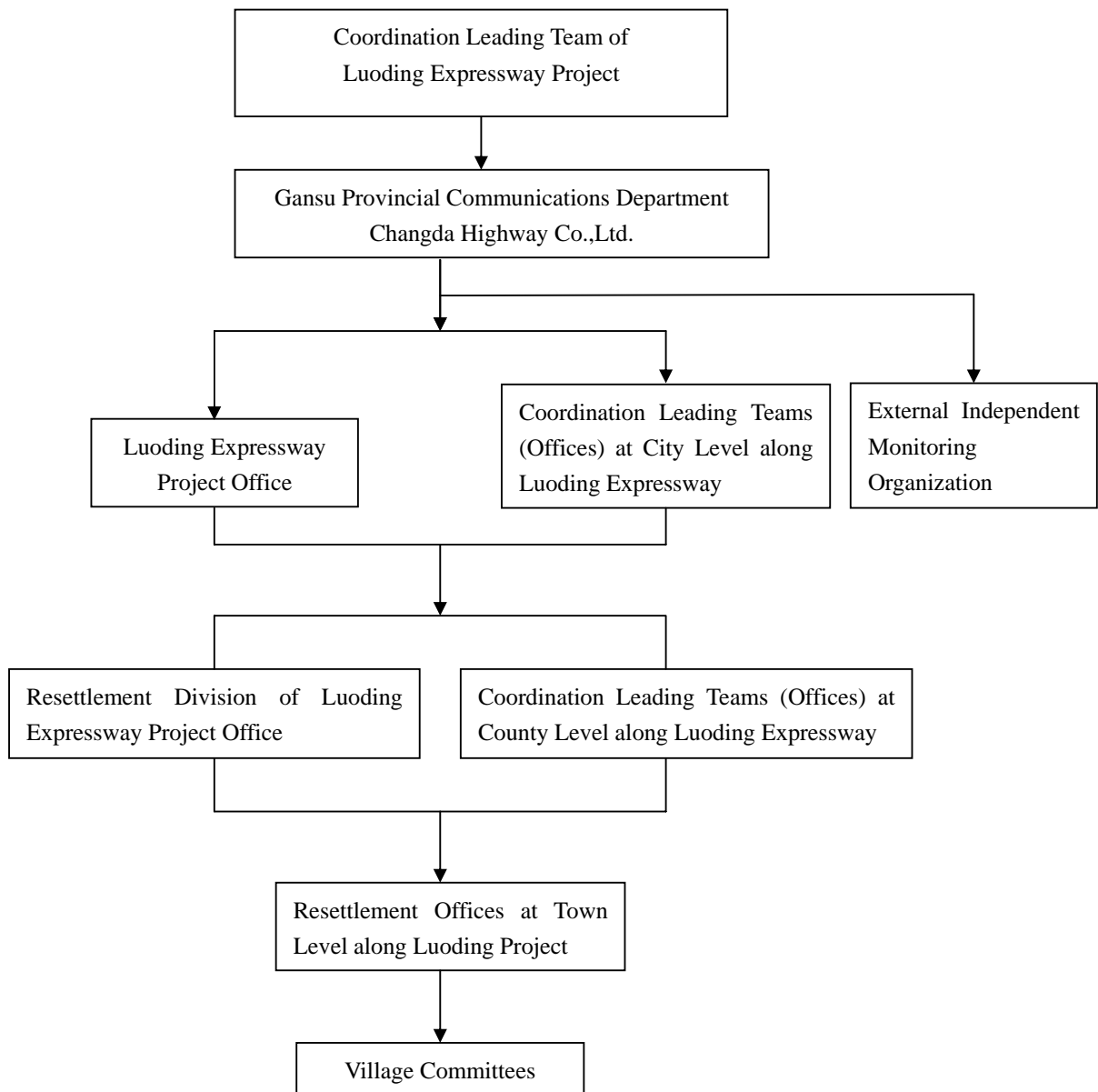
7. Of the affected people, 557 are Hui (4.2% of affected persons). Among 93 affected villages, only one village has 100% Hui population and three villages have more than 10% Hui population. Since the Hui people are closely integrated in the current social system, the compensation and rehabilitation adopted for affected Hui people will be the same as those for Han people. To respect their cultural customs and maintain their social relationships, all affected Hui people will be resettled within the same villages and village groups. For economically vulnerable people, including the elderly living alone, the disabled, households headed by women, and very poor households, the Project will provide additional financial and physical support. About 407 households and 1,893 persons belong to this economically vulnerable group and they will receive: (i) physical help in housing construction and relocation free of charge, and (ii) a special subsidy to enable them to maintain their living standards while constructing their houses. For this purpose, GPCD agreed to budget 1% of total resettlement cost.

8. The land acquisition and resettlement cost includes land compensation, resettlement subsidy, payments for housing and other assets, moving allowances, subsidy for vulnerable groups, fees for administration, and monitoring and evaluation. GPCD will guarantee to supplement the resettlement budget to meet any shortfall that may occur. Land acquisition will begin by April 2005 and will be completed by December 2006. Households will be relocated between April 2005 and October 2006.

9. The affected people have been notified about the key elements of the resettlement plan during meetings and interviews. Prior to implementation, there will be further consultations arranged by township and village officials to discuss specific impacts on each village and how they will be addressed. Villagers will have input in decisions on how to utilize the collective land compensation funds. GPCD and relevant county resettlement offices distributed resettlement information booklets to all affected townships, villages and households on 12 August 2004. There is a procedure to raise grievances and seek redress.

10. GPCD will engage a qualified agency to carry out independent resettlement monitoring and evaluation. The monitoring agency will ascertain the extent to which the affected people have (i) received their full entitlements on time, and (ii) fully restored their livelihoods, income levels, and living standards. It will also conduct a baseline survey prior to resettlement, semiannual investigations during resettlement, and annual survey updates for 2 years after the completion of resettlement. A quarterly reporting system is being established in the project resettlement office in GPCD and they will submit regular resettlement progress reports to ADB. GPCD will also provide ADB with copies of the independent monitoring and evaluation reports to be prepared twice a year during resettlement and once a year after resettlement completion. Also, GPCD will prepare a resettlement completion report and submit it to ADB.

Resettlement Organization Chart



Resettlement Supervision Milestones (as of 26 November 2005)

No.	Resettlement Tasks	Target	Responsible Agency	Deadline	Status
1.	Disclosure				
1.1	• Information booklet distribution	93 villages, 2829 AF	GPCD	15 Aug 04	Complete
1.2	• Resettlement plan circulation	5 Counties/ Districts	GPCD	25 Jun 04	Draft provided
1.3	• RP placed on ADB website		GPCD and ADB	31 Aug 04	Complete
1.4	• Public notice of compensation rates	All affected persons	GCHC	31 Jan 06	
2.	Resettlement Plan and Budget				
2.1	• Approval of RP and budget	\$34 million	GPCD	15 Jul 04	Completed
2.2	• Updated RP based on DMS		GCHC	28 Feb 06	
2.3	• Updated RP impacts for local roads		GPHB	28 Feb 06	
2.4	• Approval of land use	Expressway	Ministry of L&R	14 Oct 04	Complete
3.	Compensation Agreements				
3.1	• Provincial level agreement	1	GPCD & GL&RD	25 Sep. 05	Complete
3.2	• County/district level agreements	5	GL&RD & 5CROs	25 Oct. 05	Complete
3.3	• Village land agreements	93 villages	5 CROs	31 Jan 06	
3.4	• Household agreements	5 CROs	GCHC	31 Dec 05	
3.5	• Household land agreements	XXXX households	5 CROs	31 Jan 06	
3.6	• Household structure agreements	847 households	5 CROs	31 Jan 06	
4.	Detailed Measurement Survey (DMS)		5 CROs	30 Sep 05	Complete
5.	Detailed Resettlement Plans				
5.1	• Village rehabilitation plans	5 counties/district	5 CROs	31 Mar 06	
5.2	• Land reclamation plans	5 counties/district	5 CROs	30 Oct 05	Complete
5.3	• Plan for Vulnerable Groups Assistance	CNY1.2 million	GCHC	31 May 06	
5.4	• Technical training plan for AF	2,800 AF	GCHC	28 Feb 06	
6.	Implementation Capacity				
6.1	• 5 CROs and GCHC	50 staff	GCHC	20 May 05	Complete
6.2	• Staff 23 township offices	70 staff	5 CROs	20 May 05	Complete
6.3	• Designate village representatives	180 villagers	5 CROs	20 May 05	Complete
6.4	• Training of staff	300 people	GCHC/CROs	1 Jun 05	Complete
7.	Monitoring and Evaluation				
7.1	• Baseline survey (additional surveys)	100 households	Monitor	31 Jan 06	
7.2	• Set-up internal supervision	As per RP	GCHC/CROs	1 Jun 05	Complete
7.3	• Contract external monitor	As per RP	GCHC	15 Dec 05	
7.4	• Internal monitoring reports	Quarterly	GCHC	31 Mar 06	1 st Report due
7.5	• External monitoring reports	Semi-annual	Monitor	31 Aug 06	1 st Report due
7.6	• Annual Evaluation reports	Annual	Monitor	31 Jan 08	1 st Report due
7.7	• Resettlement Completion Report		GCHC	30 Jun 08	
8.	Documentation of Consultation	As per RP	GCHC/CROs		Ongoing
9.	Documentation of Grievances	As required	GCHC/CROs		To be recorded
10.	Flow of Funds / Compensation	As per RP			
10.1	• To GL&RD (for land)	CNY172 million (50%)	GPCD	15 Oct 05	Complete
10.2	• To CROs (for land)	CNY172 million (50%)	GL&RD	20 Nov 05	
10.3	• To affected households (land)	100% of funds	5 CROs	30 Jun 06	
10.4	• To affected households (house)	90% of funds	5 CROs	28 Feb 06	
11.	Commence Transfer Land to GCHC	19,400 mu	GCHC	Jan 06	
12.	Commence House Demolition	847 households	GCHC	April 06	
13.	Commence Civil Works		Contractors	March 06	

AF = affected families; CRO = county (District) resettlement office; GPCD = Gansu Provincial Communications Department; GCHC=Gansu Changda Highway Co.; GPHB= Gansu Provincial Highway Bureau; ML&R = Ministry of Land and Resources; RIB = resettlement information booklet; RP = resettlement plan; VC = village committee.

ENVIRONMENTAL MANAGEMENT ACTION PLAN

Environmental Impact/Issue	Mitigation Measures	References in Law and Contract Document	Location	Time Frame	Responsibility	
					Implementation	Supervision
1. Pre-Construction						
a. Soil Erosion Protection and Conservation	As required by law, a project ErPP has been prepared. Mitigation measures will be incorporated into the engineering design. No borrow site, spoil site, and construction camp is allowed in the nature reserve.	Legal requirement	Throughout the project corridor	Before construction starts	Design institutes, GPCD, and GEECH	GPCD, GEECH, and Gansu WRB KMNRM
b. Removal of Trees	Before any groundbreaking, selected contractors must prepare a vegetation replanting layout on a topographic map of the site (e.g., detailed design base map), showing replanting areas, type of planting, and maintenance program to be undertaken. Use the ErPP as a guide.	Legal requirement	ROW about 50 m	Before ground-breaking for construction	Contractors in consultation with county forestry department and local communities	GEECH and GCSO
c. Taking of Land and Property	Information dissemination and community consultation about the entitlements will be based on the Land Administration Law. All relocation and resettlement activities must be reasonably completed before construction activity on any road subsection starts. Compensation will be given as per the RP.	RP and project requirement	The ROW as defined in the RP	Before construction starts on any contract	County-level communication department	GPCD and GEECH
d. Utility Relocation	All utilities will be relocated with prior approval of the concerned agencies. Relocation will be reasonably complete before construction starts on any section of the project road.	Contract specifications	Refer to utility relocation drawings	Before construction starts	County communications department and contractors	GPCD and GEECH
e. Removal of Community Utilities	All community utilities such as community water source pipes will be replaced at appropriate and suitable locations. Replacements will be reasonably complete before construction starts.	RP requirements	Any water source within construction zone	Before construction starts	County communications department and contractors	GPCD and GEECH and local communities
f. Relocation of Irrigation Systems	The relocation of any canals will be discussed and agreed upon with village committees and county WRBs prior to commencement of the works.	Contract terms and conditions and RP	Any irrigation system within construction zone or affected by the construction	Before construction starts and before irrigation season starts	County communications department. and contractors	GPCD and GEECH and local communications and county WRB
g. Access Restriction	To avoid loss of access to farming fields, neighbors, and local villages, pedestrian underpasses need to be included in the design, with exact locations based on discussions with local village committees.	Contract specifications	Along the entire alignment	Detailed design stage	GEECH and GPCD in cooperation with contractor	GEECH
h. Environmental	(i) In case of slight deviation of alignment, mitigation	EIA law	Along the	Any time the	Environmental	GPCD,

Environmental Impact/Issue	Mitigation Measures	References in Law and Contract Document	Location	Time Frame	Responsibility	
					Implementation	Supervision
Impact due to Deviation of Alignment	<p>measures should be proposed and incorporated into the detailed design drawings by the environmental design engineer.</p> <p>(ii) In case of substantial deviation of alignment that may cause substantial environmental impacts or involve additional affected people, GPCD should form an EIA team to conduct additional environmental assessment. There should be public consultation. The revised EIA report should be submitted to MOC for review and then to SEPA for approval.</p> <p>(iii) To determine whether the deviation is slight or substantial, GPCD should consult with ADB.</p>		entire alignment	alignment deviates	design engineer; GPCD	Gansu EPB SEPA
2. Construction						
a. Soil						
i. Disposal of Earthworks (excavation) Materials	<p>(a) Cut and fill according to the detailed design.</p> <p>(b) Waste will be dumped at preselected areas and approved by the construction chief engineer (CCE). Residual spoils will be used according to the ErPP.</p> <p>(c) No spoil site is allowed in the Kongtong Mt. area (K127 to K135)</p>	Design requirement and contract specifications	Throughout the project corridor at all construction sites	During construction	Contractor	CCE GEC assisted by the WRB. KMNRM
ii. Loss of Topsoil	<p>(a) In agricultural areas, or in any other productive soil area, the topsoil from all areas to be permanently covered will be stripped to a specified depth (based on provincial agriculture bureau specifications) and stored in stockpiles not exceeding 2 m high. Maintenance of the stockpiles will be in accordance with the ErPP or according to Agriculture Bureau requirements.</p> <p>(b) Topsoil will be returned to disturbed areas and cut slopes, and any excess will be distributed to local communities, free of charge.</p> <p>(c) Topsoil to be minimally handled to prevent loss.</p>	Soil Erosion Protection Law, No.49-'91 and Reg. No. 120 of PRC	Throughout the project corridor and all borrow and spoil areas	During construction	Contractor	CSE, GEECH, with assistance of GWRB, GEPB
iii. Compaction of Soil	<p>(a) Construction vehicles, machinery, and equipment will move or be stationed in designated areas.</p> <p>(b) Ensure that the method of stockpiling materials, use of plants, and siting of temporary buildings or structures do not adversely affect the stability of excavations or fills.</p>	<p>Contract specifications</p> <p>Contract specifications</p>	Throughout project corridor and all temporarily used areas; at all cut-and-fill sites	During construction	Contractor	CCE of GEC with assistance from WRB
iv. Haphazard Borrowing of	(a) Borrowing within the ROW is prohibited under this contract.	Contract specifications	Throughout project	During Construction	Contractor	GEC with assistance

Environmental Impact/Issue	Mitigation Measures	References in Law and Contract Document	Location	Time Frame	Responsibility	
					Implementation	Supervision
Rock	(b) The contractor will facilitate inspection of all borrow areas by GEPB and WRB and satisfy GPCD's GEC compliance with ErPP and MEMP.	PRC Law: 49-'91 and Reg. No. 120	corridor and all construction sites			from GEPB and WRB
v. Degradation of Borrow Areas	(a) Borrow pits will be redeveloped as per details found in the site operations plans, the SEIA, and the ErPP. Spoils may be dumped into the abandoned borrow areas, but must be rehabilitated and returned to productive farmland. (b) No borrow pit is allowed in Kongtong Mt. area (K127 to K135)	FIDIC 13.1, 26.1 PRC Law: 49-'91 and Reg. No. 120	All borrow areas	During construction	Contractor	GEECH and GWRB, KMNRM
vi. Soil Erosion and Siltation	(a) On road embankment slopes, slopes of all cuts, etc., shrubs and grass will be planted according to the ErPP. (b) To control soil erosion and siltation stemming from earthwork operations, the following well-known measures should be applied: berms, dikes, sediment basins, fiber mats, mulches, grasses, and slope drains.	Design requirement PRC Law: 49-'91 and Reg. No. 120	Within construction corridor and all construction sites; all borrow and spoil areas; service roads and equipment storage sites, etc.	During construction	Contractor	GEC with assistance from GEPB and WRB
vii. Contamination of Soil by Fuel and Lubricants	(a) Vehicle, machinery, and equipment maintenance and refueling will be carried out so that spilled materials do not seep into the soil. (b) Fuel storage and refilling areas will be located at least 300 m from drainage structures and important water bodies. (c) Fuel storage and refueling areas, if located in agricultural land or areas supporting vegetation, will have topsoil stripped, stockpiled, and returned after completion of refueling activities. (d) Oil traps will be provided for service areas, toll station areas, parking areas, and within drainage systems for bridges.	Contract terms and conditions FIDIC: 19.1(c)	Throughout project corridors, all access roads, sites temporarily acquired, and all borrow areas	During construction	Contractor	GEC in cooperation with GEPB
b. Water Quality						
i. Loss of Water Sources	The No. 4 well of Jingchuan's water head and any other sources of water (potable or otherwise) lost will be replaced	RP requirement	Throughout project	Whenever encountered	Contractor	GEC and county WRB

Environmental Impact/Issue	Mitigation Measures	References in Law and Contract Document	Location	Time Frame	Responsibility	
					Implementation	Supervision
	immediately.		corridor, all access roads, sites temporarily acquired, and all borrow areas	during construction		
ii. Flooding	(a) PRC Technical Standard of Highway Engineering (JTG B01-2003) should be strictly followed to prevent flooding. (b) In addition to the design requirements for peak flood levels, the contractor, and as directed by GEECH, will take all steps necessary to prevent temporary or permanent flooding of the site or any adjacent area, including prevention of loss of use or access to any land or property resulting from flowing or stagnant water as direct or indirect impact of construction.	JTG B01-2003 FIDIC: 19.1(c) FIDIC: 29.1 and contract terms and conditions PRC Regulation JTG B01-2003	Project corridor, access roads, sites temporarily acquired, and borrow areas	During construction and the defects liability period	Contractor	GPCD and GEC
iii. Revegetation to Prevent Erosion and Siltation	Revegetation will be done immediately after completion of construction at a site and no tree or vegetation other than those approved for removal by the Gansu Forestry Bureau will be cut.	FIDIC: 19.1(c) PRC Law: 49-'91 and Reg. No. 120	Entire project corridor, all access roads and temporary sites	During construction	Construction contractor and local unit retained to do replanting	GEECH assisted by county forestry bureau
iv. Alteration of Drainage	(a) In sections along watercourses, and areas close to cross-drainage channels, earth, stone, or any other construction materials will be properly disposed of so as not to block the flow or drainage water. (b) All necessary measures will be taken to prevent construction activities from impeding cross-drainage at rivers, streams, water canals, and existing irrigation and drainage systems. (c) Temporary irrigation and drainage systems should be built before the permanent drainage systems are blocked or removed as part of construction.	FIDIC: 19.1(c)	Throughout project corridor, all access roads, sites temporarily acquired and all borrow areas	During construction	Contractor, working with the CSE	GEECH with assistance from GEPB, or county EPB
v. Contamination of Water from Construction Wastes	(a) All measures will be taken to prevent contamination by the wastewater produced in construction, as directed by GEC. (b) Construction work close to the streams or water bodies will be avoided during rainy periods.	FIDIC: 19.1 (c) FIDIC: 26.1 GB: 8978-1996	Throughout project corridor, access roads, sites	During construction	Contractor with monitoring assistance from GEMS	GEC with assistance from GEPB

Environmental Impact/Issue	Mitigation Measures	References in Law and Contract Document	Location	Time Frame	Responsibility	
					Implementation	Supervision
	(c) The discharge standards promulgated under PRC regulation GB: 8978-1996 will be strictly adhered to.		temporarily acquired, and cut or borrow sites			
vi. Contamination from Petrochemicals	Waste petrochemicals must be collected, stored, and taken to approved disposal sites in compliance with PRC guidelines.	FIDIC: 19.1 (c) FIDIC: 26.1	Throughout project corridor and at associated work sites	During construction	Contractor	GEC with assistance from GEPB
vii. Sanitation and Waste Disposal in Construction Camps	(a) Construction camps will be at least 200 m away from the nearest habitation and water body. (b) The sewage system for construction camps will be properly designed, built, and operated so as not to pollute ground or adjacent water bodies/watercourses. Garbage bins will be provided in the camps and regularly emptied, and the garbage disposed maintained in a hygienic manner in accordance with local norms, the CSE and GEECH. (c) Arrangements for the proper disposal of excreta must be made by the contractor and should include, where possible, pickup and disposal by local people. All such arrangements will be directed by GEECH and CSE. (d) No work camp is allowed between K127 and K135.	FIDIC: 19.1(c) FIDIC: 26.1	All construction workers camps	During establishment, operation, and dismantling of such camps	Contractor	GEECH/GP CD GPCD and GEPB, KMNRM
c. Air Quality						
i. Generation of Dust	(a) All vehicles delivering granular and/or fine materials (especially fly ash) to the site will be covered (watered down for fly ash) to avoid spillage and dust emissions. (b) Material storage sites will be 300 m from residential areas and covered with canvas or sprayed with water if possible and feasible. (c) Water or a dust suppressant material will be used to control fugitive dust at the construction sites and major feeder roads twice a day during dry season. (d) All expressways and roads used by vehicles of the contractor or any subcontractor or supplier will be kept clean and clear of all dust, mud, or other extraneous materials dropped by their vehicles. Such cleaning will be immediate and complete. (e) All earthwork will be protected to minimize dust	FIDIC 19.1(c)	Throughout project corridor, all access roads, sites temporarily acquired, and borrow areas	During construction	Contractor with monitoring assistance from GEMS	GEECH/GP CD with assistance from GEPB and county departments

Environmental Impact/Issue	Mitigation Measures	References in Law and Contract Document	Location	Time Frame	Responsibility	
					Implementation	Supervision
	generation.					
ii. Emission from Construction Vehicles, Equipment, and Machinery	(a) The discharge standards under the Environment Protection Law, 1989, will be strictly adhered to. All vehicles, equipment, and machinery used for construction will be regularly maintained and correctly operated (including the use of dust filters or hoods) to ensure that pollution emission levels comply with PRC-GB: 14761.7-93. (b) Bitumen mixing sites should be downwind of environmentally sensitive areas. (c) Bitumen smog should comply with PRC-GB:4915-85 (Class I).	PRC - GB: 14761.7-93 and FIDIC contract special conditions PRC-GB:4915-85	Throughout project corridor, all access roads, sites temporarily acquired, and borrow areas	During construction	Contractor, via GEMS and the GPCD's EPO	GEECH/GPCD with assistance from GEPB
d. Noise Pollution						
i. Noise from Vehicles, Plants, and Equipment	(a) The equipment and machinery used in construction will strictly conform to PRC and local noise standards, i.e., GB 12523-90. (b) At construction sites within 150 m of the nearest habitation, noisy construction work will be stopped between 2200 hours and 0600 hours.	FIDIC: 19.1 (c) PRC-GB: 12523-90 FIDIC: 26.1 FIDIC: 19.1 (c) FIDIC: 45.1	Throughout project corridor, access roads, sites temporarily acquired, and borrow areas	During construction	Contractor with monitoring assistance from GEMS	GEC/GPCD with assistance from GEPB
ii. Noise from Blasting Operations	(a) Blasting will be carried out only with permission of the CCE of GEC, using a preestablished schedule. All the statutory laws, regulators, rules etc. pertaining to acquisition, transport, storage, handling, and use of explosives will be strictly followed, with blasting taking place preferably during midday hours. The timing should be made known to all the people within 200–500 m of the blasting site in all directions, depending on the total charge uses. (b) Blasting mats will be used to reduce noise levels when blasting is carried out.		All blasting sites	During preparation, operation, and closure of such sites	Contractor with monitoring assistance from GEMS	GEC/GPCD with assistance from GEPB
iii. Erection of Noise Attenuation Structures	(a) Plant trees 20 m wide at sections designated in the EIA. (b) Set up noise barriers at 37 places designated in the EIA. (c) Relocate Xigou Primary School and Huacha Primary School. (d) Double-glaze windows of the 40 households designated in the EIA.	EIA, SEIA and GB3096-93	At nominated sites as designated in the EIA	Before closure of the construction sites	Contractor with monitoring assistance from GEMS	GEC/GPCD with assistance from GEPB Inspection by GEC and GEPB.
e. Impact on Flora						
i. Loss of or	(a) All works will be carried out in such a fashion that	Design	Entire project	During	Contractor.	GEC/GPCD

Environmental Impact/Issue	Mitigation Measures	References in Law and Contract Document	Location	Time Frame	Responsibility	
					Implementation	Supervision
Damage to Vegetation	<p>damage or disruption to flora is minimized.</p> <p>(b) Borrowing soil from or dumping spoil outside those sites designated in the construction design and ErPP is prohibited.</p> <p>(c) Boundaries for construction activity will be restricted to the valley floor, and will include curtailing the movement of workers. The boundaries will be marked using yellow plastic tape, markers, and signs. Marking will be entrusted to the KMNRMD staff, working closely with the GCSO. Markings will be installed before work begins.</p>	requirement, SEIA	site	construction	GEC and Forestry Department	with assistance from the Forestry Department, KMNRMD
ii. Impacts to Kongtong Mountain Nature Reserve	<p>(a) Permits will be obtained for construction in the experimental zone of the Kongtong Mountain Provincial Nature Reserve.</p> <p>(b) A written code of conduct will be given to each person when hired for work in this area. Fines, according to Chinese poaching legislation, will be explained and imposed for hunting, wild food harvesting, tree cutting for fuel, and wandering into off-limits areas without permission from the supervising engineer. All permissions and violations must be documented in writing and will be available for inspection by environmental inspectors and GEPB officials.</p> <p>(c) Clearing any vegetation in this area is prohibited. Exceptions will be made only for road safety considerations, and only if a clearing plan is approved by KMNRMD. GCD will retain documentation of rationale, justification, and approvals on file.</p>	PRC Nature Reserve Protection Regulation	Entire project site, except for (c)	During construction (permits: before construction)	Contractor, GEC, and Forestry Department	GEC/GPCD with assistance from the Forestry Department, Gansu EPB, KMNRMD
f. Impact on Fauna						
Loss of or Damage, to Fauna	<p>(a) Construction workers will be instructed to protect natural resources, fauna, and flora; no harvesting of wild food will be allowed unless a permit is obtained from the CSE of GEECH and the county EPB.</p> <p>(b) No construction activity is allowed at nighttime in the Kongtong Mountain area.</p>	FIDIC: 19.1(c)	Entire project area	During construction	Contractor	CSE of GEECH and Forestry Bureau
g. Diseases and Trafficking						
Transmittable Diseases and Human Trafficking	There will be health clinics in construction sites; HIV/STD and human trafficking prevention posters and pamphlets at construction sites and service centers; HIV/STD and human trafficking education campaign through popular media channels (radio and TV).	Social Development Action Plan	Throughout the project areas	During construction	Contractor, Epidemic Disease Control Center	GEC/GPCD, Civil Affairs Bureau

Environmental Impact/Issue	Mitigation Measures	References in Law and Contract Document	Location	Time Frame	Responsibility	
					Implementation	Supervision
h. Disruption to User						
Loss of Access	At all times, the contractor will provide safe and convenient passage for vehicles, pedestrians, and livestock to and from side roads, and property access connecting the project road. At times students go to/leave school, one person should be specially assigned for the safety of the students.	As specified in RP documents FIDIC: 29.1	Project corridor and construction sites	During construction	Contractor	GEC/GPCD Transport and Security Department
i. Inappropriate Use of Hazardous and Toxic Materials						
Use of Hazardous and Toxic Materials	Herbicide or other toxic chemicals will be used strictly in accordance with manufacturer instructions and according to PRC regulations.	PRC Regulation: JT3130-88	Entire construction corridor	During construction	Contractor	GEC/GPCD with assistance from GEPB
j. Impact on Cultural Relics						
Cultural Heritage	(a) Training of construction workers on cultural relic protection. (b) If any cultural relics sites are found, work will stop immediately until authorities have a chance to evaluate the significance and nature of such findings.	PRC cultural heritage protection regulation	Entire construction corridor	During construction	Contractor	GEC/GPCD with assistance from Gansu cultural bureau
k. Cumulative Impacts on Western Part of Ningxia						
i. EIA for Connecting Road in Ningxia	Conduct environmental impact assessment for the connecting road from Siqiao to Dongshanpo. For the EIA, closely consult the relevant Nature Reserve Management Department.	EIA Law	Ningxia	FS stage of Ningxia road	Ningxia Communication Department	SEPA, Ningxia EPB
ii. EIA for Induced Industries	Conduct EIA for induced industries near the boundary with Ningxia Province. For the EIA, closely consult the relevant Nature Reserve Management Department.	EIA Law		FS stage of the industries	EA of industries	SEPA or Gansu EPB
iii. Management on Cumulative Impact	Proper officials will exchange the EIAs of the Ningxia and Gansu expressways and keep in contact with each other to appropriately carry out environmental management during construction and operation of these expressways, as well as during the implementation of the EIA for the connecting road.	EIA Law	Gansu and Ningxia	After EIA report is finished	Gansu EPB and Ningxia EPB	SEPA
3. Operation						
i. Maintenance and Management of Storm Water	Storm water should not be drained directly into tributary rivers classified as Class II, but must pass through detention ponds or, as a minimum, grassed pervious runoff paths. All storm drains must be periodically cleared to maintain storm water flow.	PRC standard GB: 8978-1996	Project corridor, especially the urban stretches	Beginning and end of each rainy season	GHHAB Maintenance Department	GHHAB with input from county EPBs

Environmental Impact/Issue	Mitigation Measures	References in Law and Contract Document	Location	Time Frame	Responsibility	
					Implementation	Supervision
ii. Atmospheric Pollution	<p>(a) The EIA indicated dust levels (TSP) will increase above PRC standards. Frequent road maintenance and enforcement of fugitive dust restrictions will help to reduce this.</p> <p>(b) New afforestation projects adjacent to the project road and in the surrounding ROW will be encouraged.</p> <p>(c) The testing target of 5% of all vehicles on the road each year will be attempted. Tests will be for CO, NO₂, and TSP10. Vehicles failing the test will have licenses confiscated and compliance dates set.</p> <p>(d) Vehicle emission inspection program will be encouraged by GEECH and the existing vehicle certification system enhanced.</p> <p>(e) Boilers in service areas should be powered by oil or gas.</p>	EIA GB 14761.1-14761.7-93	Project corridor	Starting immediately After completion of construction	GHHAB with county forestry units GEMS and police	GHHAB, GHHAB in cooperation with police and GPCD
iii. Noise Pollution	<p>(a) Noise pollution will be monitored.</p> <p>(b) "NO HORN PERMITTED" signs will be set at road sections near schools.</p> <p>(c) At access points to the expressway, random weighing of vehicles will be done.</p> <p>(d) No new schools, hospitals and residential buildings are allowed to be built within 200 m of the expressway.</p> <p>(e) Noise attenuation measures will be carried out if the monitor results show that the noise exceeds standards by 5 dB(A).</p>	EIA- noise section, and environmental monitoring plan SEIA	Refer to noise pollution monitoring program	Throughout operational phase	GEC with monitoring by GEMS	GEC
iv. Accidents in Handling and Transport of Hazardous and Toxic Materials	<p>(a) GEC will enforce compliance with PRC regulations.</p> <p>(b) In case of an accident involving hazardous substances, the relevant emergency procedures team (as specified in the expressway operating process) will be called. A spill-management plan will be prepared.</p>	PRC Regulation: JT3130-88 Local Transportation Regulations on Hazardous Substances SEIA	Entire project corridor and surroundings			GPCD, GEPB, and police
v. Water Pollution from Road Runoff	Road runoff must not be drained into the water head (Dongxia Reservoir, Pingliang Yangzizhai, Jingchuan). It must be channeled to downstream of these water bodies after sedimentation.	Project EIA	Water source protection areas	Throughout operation	GHHAB	GPCD and GEPB
vi. Water Pollution from Sewage	(a) Domestic sewage at toll stations will be treated in septic tanks, and then used as fertilizer.	Project EIA and SEIA	All service areas and toll	Throughout operation	Rest area and toll station	GHHAB

Environmental Impact/Issue	Mitigation Measures	References in Law and Contract Document	Location	Time Frame	Responsibility	
					Implementation	Supervision
and Garbage	<p>(b) Solid waste (garbage) will be sorted using multicompartment collection bins, and recycled and reused wherever possible, via contract with the maintenance company.</p> <p>(c) Oil traps will be maintained and monitored regularly.</p> <p>(d) Sewage from the Kongtong Mountain service station and wastewater from car washing stations and gas stations must be collected and treated to meet the Class II standard (GB: 8978-1996), and then channeled downstream of the water source protection area of Jing River.</p> <p>(e) Sewage from other service areas must be treated to meet the GB 8978-1996 Class II standard and then used for greening or irrigation.</p> <p>(f) Sewage from toll gates, administration offices, and maintenance areas must be treated in septic tanks and oxidation ponds, and then used for irrigation.</p>		gates		operators	
vii. Cumulative Impacts to Nature Reserves	<p>(a) Through the implementation of the Gansu Kongtong Mountain National Key Scenery Spot Infrastructure Construction Project, environmental management of the nature reserve will be secured.</p> <p>(b) The Ningxia and Gansu EPBs should exchange the respective EIAs of the Ningxia and Gansu expressways, and keep in close contact with each other for appropriate environmental management during the construction and operation of these expressways, as well as during the implementation of the EIA for the connecting road.</p> <p>(c) The connecting road between Gansu and Ningxia expressways should avoid core and buffer zones of Liupanshan Nature Reserve.</p> <p>(d) ADB should have the opportunity to review the EIA for the connection road so that it can consider cumulative impacts of a road that connects to expressways to be financed by ADB.</p>	SEIA	Kongtong Mountain Provincial Nature Reserve, Liupanshan Mountain National Nature Reserve	Throughout operation	GEPB, Ningxia EPB	SEPA
viii. Industrial Development Induced by Project	<p>(a) Total pollution emission quantity control will be implemented.</p> <p>(b) EIAs will be prepared and approved for individual industry projects.</p>	Total Pollution Emission Control Policy, and other environmental	Entire project corridor and surroundings	Throughout operation	GEPB, proponents of individual industry projects	SEPA

Environmental Impact/Issue	Mitigation Measures	References in Law and Contract Document	Location	Time Frame	Responsibility	
					Implementation	Supervision
		laws and regulations in the PRC such as EIA law				
4. Environmental Monitoring						
Environmental Monitoring	Monitoring will be conducted based on relevant specifications or standards issued by SEPA and using the schedule set out in EIA, SEIA, SEPP, EMAP, and MEMP	Project EIA and SEIA	Monitoring stations selected as defined and verified in field	Throughout operational period as defined	GEMS, plus data technician trainees from GEC	GEC with technical input from GEPB

ADB=Asian Development Bank, CCE=chief construction engineer, CO = carbon monoxide, CSE=construction supervision engineer, dB(A)=decibels (measured in audible noise bands),EIA=environmental impact assessment, EMAP=environmental management action plan, EPB=environmental protection bureau, ErPP=soil erosion prevention plan, FIDIC=Fédération Internationale des Ingenieurs-conseils, GCSO=general contract supervision office, GEC=Gansu Expressway Company, GEECH=Gansu Expressway Engineering Construction Headquarters, GEMS=Gansu Environmental Monitoring Stations GEPB=Gansu Environmental Protection Bureau GPCD=Gansu Provincial Communications Department, GWRB=Gansu Water Resource Bureau, HIV/STD=Human Immunodeficiency Virus/Sexually Transmitted Disease, GHAB=Gansu Highgrade Highway Administration Bureau, MEMP=mitigation measures execution and monitoring plan, MOC=Ministry of Communications, NO₂=nitrogen dioxide, PRC=People's Republic of China, SEIA=summary environmental impact assessment, SEPA=State Environmental Protection Administration, SEPP=soil erosion protection plan, ROW=right-of-way, RP=resettlement plan. TSP=total suspended particulate matter, WRB=Water Resource Bureau, KMRMD=Kongtong Mountain Nature Reserve Management Department.

Environmental Protection Responsibilities

Project Stage	Responsible Agencies/ Organizations	Responsibilities
Design	Design engineers	Optimize alignment, incorporate mitigation measures into engineering design
Design	EIA/soil erosion teams, Gansu cultural relic bureau	EIA, mitigation planning, develop monitoring plan, survey cultural relics
Tendering	Contractors	Include environmental management programs in the bids
Construction	Contractors	Implement mitigation measures and environmental management plan
Construction	GPCD, EPBs, EMS, construction supervision companies	Environmental monitoring and environmental inspection and supervision
Operation	Expressway company to be established, EMS, Public security	Environmental management and environmental monitoring, implement accident prevention plan

EMS= Environmental management system, EPB= Environmental protection bureau, GPCD=Gansu Provincial Communication Department.

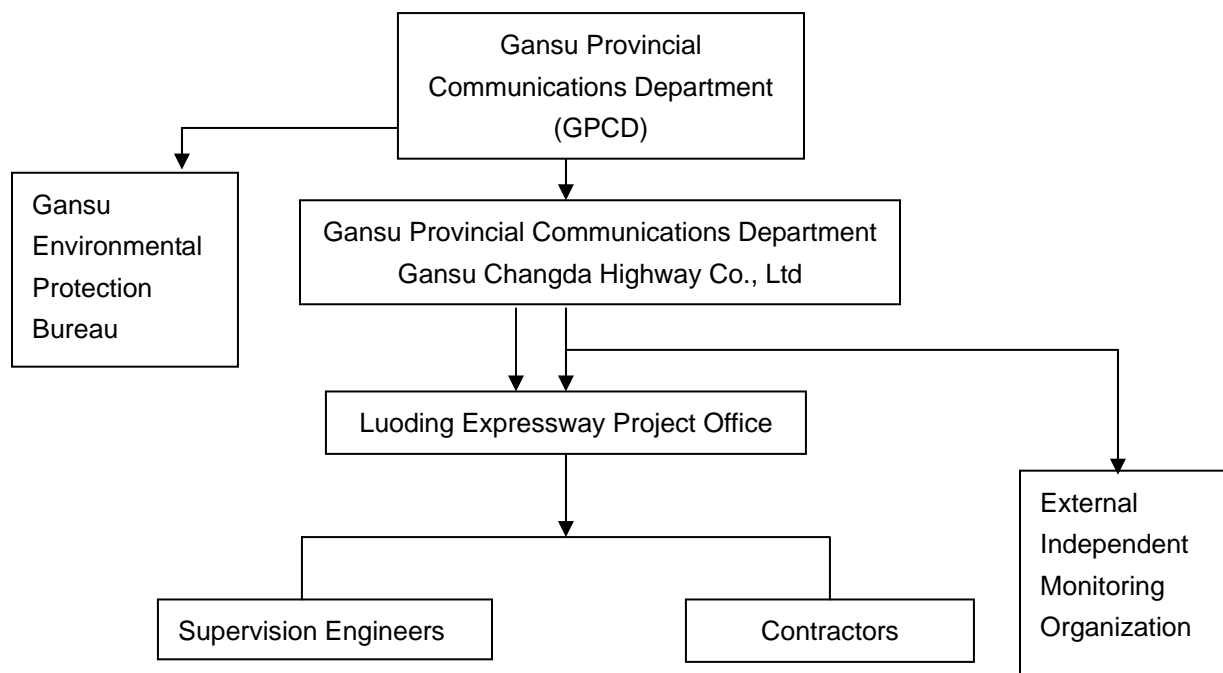
Source: Environmental impact assessment report, 2004.

Environmental Monitoring Plan

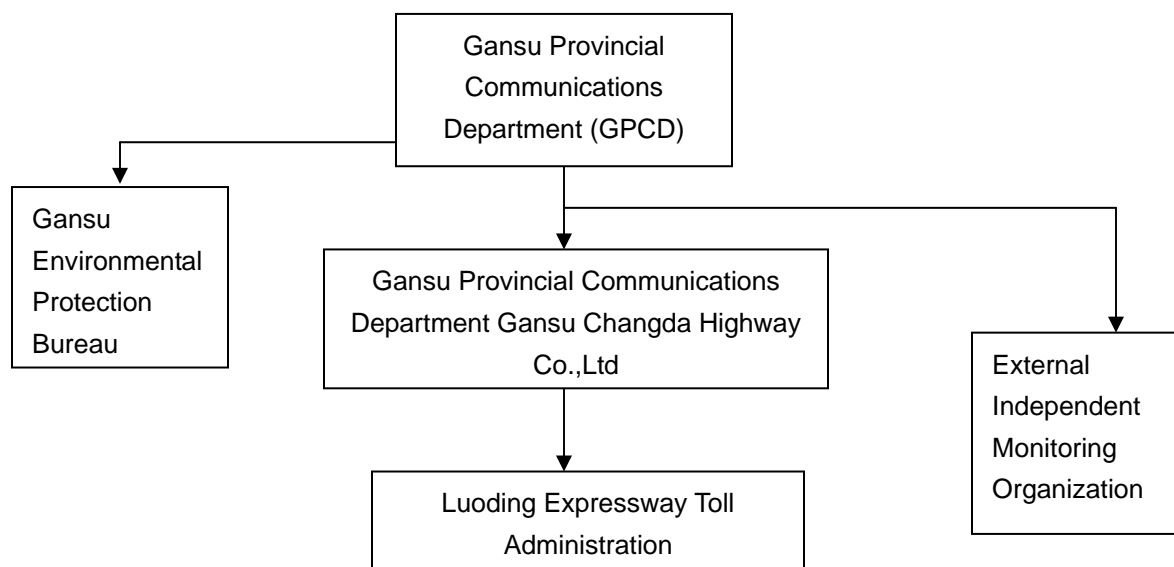
Item	Construction Stage	Operation Stage
Air Monitoring		
Locations	Pug mills, dusty roads, schools, and residential areas	Residential area near tunnel portal
Parameters	TSP	NO ₂
Frequency	Once a quarter and random sampling	Once a year in winter
Monitoring time	1 day	1-2 days (24 hour continuous or 4 times per day)
Implementing Institutions	Gansu environmental monitoring stations	Local environmental monitoring stations
Responsible Agency	Project Commanding Office	Project Commanding Office
Review Agency	Gansu EPB	Gansu EPB or Local EPBs
Location	Schools at K17+550, K52+300, K65+950, K74+950, K108+300, K250+700, K261+500, K294+950, K327+900	Wulipu primary school (K44+550), Xigou village, Dongxia reservoir
Noise Monitoring		
Locations	Residential areas and schools within 100 m of the construction sites	Residential areas and schools
Parameters	Construction noise	Traffic noise
Frequency	Once a quarter	Twice a year
Monitoring Time	Twice a day	Twice a day
Implementing Agency	Gansu monitoring station	Local monitoring station
Responsible Agency	Project Commanding Office	GPCD or the expressway company
Review Agency	Gansu EPB	Gansu EPB or local EPBs
Sites	Schools at K17+550, K29+400, K44+550, K52+300, K65+950, K74+950, K108+300, K250+700, K261+500, K294+950, K327+900 and Balipu village (K214+950)	Schools at K17+550, K29+400, K44+550, K52+300, K65+950, K74+950, K108+300, K250+700, K261+500, K294+950, K327+900 and Balipu village (K214+950)
Water Quality Monitoring		
Locations	Bridge construction sites and effluent point from construction camps	At same point where baseline data in the EIA were collected
Parameters	COD, SS, petroleum oil, pH	SS, pH, COD, BOD, petroleum oil
Frequency	Once a quarter	Twice a year (dry and rainy seasons)
Monitoring Time	1 day	2 days
Monitoring Party	Gansu monitoring station	Local monitoring stations
Responsible Agency	Project Commanding Office	GPCD or the expressway company
Review Agency	GPCD EPB	Local EPBs
Sites	Zu River: Zuli Large Bridge, Dongxia Reservoir Jing River: Kongtongxiakou, Jingchuan Shuiquansi (No. 3 pump station), Luohandong	Zu River: Zuli Large Bridge, Dongxia Reservoir Jing River: Kongtongxiakou, Jingchuan Shuiquansi (No. 3 pump station), Luohandong

BOD=biochemical oxygen demand, COD=chemical oxygen demand, EPB=environmental protection bureau, GPCD=Gansu Provincial Communications Department, m=meter, NO₂=nitrogen dioxide, TSP=total suspended particles.
Source: Environmental impact assessment report, 2004.

Organization Chart for Environmental Protection During Construction Period



Organization Chart for Environmental Protection During Operation Period



Pro Forma of the Executing Agency's Project Progress Report

A. Introduction and Basic Data

Provide the following:

ADB loan number, project title, borrower, executing agency(ies), implementing agency(ies);
 total estimated project cost and financing plan;
 status of project financing including availability of counterpart funds and cofinancing;
 dates of approval, signing, and effectiveness of ADB loan;
 original and revised (if applicable) ADB loan closing date and elapsed loan period based on original and revised (if applicable) loan closing dates; and
 date of last ADB review mission.

B. Utilization of Funds (ADB Loan, Cofinancing, and Counterpart Funds)

Provide the following:

cumulative contract awards financed by the ADB loan, cofinancing, and counterpart funds (commitment of funds to date), and comparison with time-bound projections (targets);
 cumulative disbursements from the ADB loan, cofinancing, and counterpart funds (expenditure to date), and comparison with time-bound projections (targets); and
 reestimated costs to completion, need for reallocation within ADB loan categories, and whether an overall project cost overrun is likely.

C. Project Purpose

Provide the following:

status of project scope/implementation arrangements compared with those in the report and recommendation of the President (RRP), and whether major changes have occurred or will need to be made;
 an assessment of the likelihood that the immediate development objectives (project purpose) will be met in part or in full, and whether remedial measures are required based on the current project scope and implementation arrangements;
 an assessment of changes to the key assumptions and risks that affect attainment of the development objectives; and
 other project developments, including monitoring and reporting on environmental and social requirements that might adversely affect the project's viability or accomplishment of immediate objectives.

D. Implementation Progress

Provide the following:

assessment of project implementation arrangements such as establishment, staffing, and funding of the PMO or PIU;

information relating to other aspects of the EA's internal operations that may impact on the implementation arrangements or project progress;

progress or achievements in implementation since the last progress report;

assessment of the progress of each project component, such as,

- recruitment of consultants and their performance;
- procurement of goods and works (from preparation of detailed designs and bidding documents to contract awards); and
- the performance of suppliers, manufacturers, and contractors for goods and works contracts;

assessment of progress in implementing the overall project to date in comparison with the original implementation schedule—quantifiable and monitorable target, (include simple charts such as bar or milestone to illustrate progress, a chart showing actual versus planned expenditure, S-curve graph showing the relationship between physical and financial performance, and actual progress in comparison with the original schedules and budgets, the reference framework or guidelines in calculating the project progress including examples are shown in Appendix 2); and

an assessment of the validity of key assumptions and risks in achieving the quantifiable implementation targets.

E. Compliance with Covenants

Provide the following:

the borrower's compliance with policy loan covenants such as sector reform initiatives and EA reforms, and the reasons for any noncompliance or delay in compliance;

the borrower's and EA's compliance with financial loan covenants including the EA's financial management, and the provision of audited project accounts or audited agency financial statements; and

the borrower's and EA's compliance with project-specific loan covenants associated with implementation, environment, and social dimensions.

F. Major Project Issues and Problems

Summarize the major problems and issues affecting or likely to affect implementation progress, compliance with covenants, and achievement of immediate development objectives. Recommend actions to overcome these problems and issues (e.g., changes in scope, changes in implementation arrangements, and reallocation of loan proceeds).

SAMPLE AUDIT LETTER

ASIAN DEVELOPMENT BANK East and Central Asia Department Transport and Communications Division

[Date]¹

[The Borrower]
Dear Sir or Madam:

Subject: **Loan No. 2125-PRC: Gansu Roads Development Project**
FINANCIAL REPORTING AND AUDITING REQUIREMENTS

This letter is to ensure your timely compliance with the loan covenants and the quality of financial information as required by ADB. ADB's *Financial Reporting and Auditing of Projects Financed by ADB* (the Booklet) is enclosed to guide you.

ADB, by its Charter, is required to ensure that the proceeds of any loan made, guaranteed, or participated in by ADB are used for the purposes for which the loan was approved. ADB requires accurate and timely financial information from its borrowers to be assured that expenditure was for the purposes stated in the loan agreement.

For this particular loan, the requirements are stipulated in sections _____² and _____³ of the Loan Agreement of _____ between ADB and [the Borrower] and sections _____⁴ and _____⁵ of the Project Agreement⁶ of _____ between ADB and [name of the EA].⁷ Copies of the Loan/Project Agreements are enclosed for onward transmission by your office to your EA and the auditor(s), together with a copy of this letter.

The following are the main requirements:

ADB requires the EA to maintain separate project accounts and records exclusively for the Project to ensure that the loan funds were used only for the objectives set out in the Loan or Project Agreements. The project accounts comprise the following:⁸

-
-The first set of project accounts to be submitted to ADB covers the fiscal year ending _____. As stipulated in the Loan or Project Agreements, they are to be submitted up to _____ months after the end of the fiscal year. For this loan, the deadline is by _____. A sample report format with explanatory notes, is attached as Annex A.

The accounts and records for the project are to be consistently maintained by using sound accounting principles. Please stipulate that your external auditor is to express an opinion on whether the financial report has been prepared using international or local generally accepted accounting standards and whether they have been applied consistently.

ADB prefers project accounts to use international accounting standards prescribed by the International Accounting Standards Committee. Please advise

your external auditor to comment on the impact of any deviations, by [name of the Executing Agency] from international accounting standards.

Please ensure that your external auditor specifies in the Auditor's Report the appropriate auditing standards they used, and direct them to expand the scope of the paragraph in the Auditor's Report by disclosing the key audit procedures followed. Your external auditor is also to state whether the same audit procedures were followed for all supplementary financial statements submitted.

ADB wishes that auditors conform to the international auditing standards issued by the International Federation of Accountants. In cases where other auditing standards are used, request that your external auditor to indicate in the Auditor's Report the extent of any differences and their impact on the audit.

The external auditor's opinion is also required on whether

- the proceeds of the ADB's loan have been utilized only for the project as stated in the Loan Agreement;
- the financial information contains data specifically agreed upon between [name of the Borrower or EA] and ADB to be included in the financial statements;
- the financial information complies with relevant regulations and statutory requirements; and
- compliance has been met with all the financial covenants contained in the Loan or Project Agreements.

The Auditor's Report is to clearly state the reasons for any opinions that are qualified, adverse, or disclaimers.

Actions on deficiencies disclosed by the external auditor in its report are to be resolved by [name of Borrower or Executing Agency] within a reasonable time. The external auditor is to comment in the subsequent Auditor's Report on the adequacy of the corrective measures taken by [name of Borrower or EA].

Compliance with these ADB requirements will be monitored by review missions and during normal project supervision, and followed up regularly with all concerned, including the external auditor.

Yours sincerely,

Nigel C. Rayner
Director
Transport Division

cc: (EA)
(External auditor of the Borrower or EA)

- ¹ The audit letter, with the loan and project agreements, is sent to the borrower when the auditor has been appointed or when the agreements are sent by the program department to the Ministry of Finance or other authority of the borrower.
- ² Specify section no. in the loan agreement on maintaining project accounts and records.
- ³ Specify section no. in the loan agreement on the audit requirements.
- ⁴ Specify section no. in the project agreement on maintaining project accounts and records.
- ⁵ Specify section no. in the project agreement on the audit requirements.
- ⁶ If there is a project agreement.
- ⁷ When more than one project agreement, provide similar information.
- ⁸ Listed are standard accounts required from nonrevenue-earning entities. Try to identify specific titles of financial statements expected to be submitted by the Borrower and EAs. For revenue-earning entities, the submissions consist of the entities' audited financial statements. For nonrevenue-earning entities, the submissions consist of audited project accounts.

STATUS OF COMPLIANCE WITH LOAN COVENANTS

Covenant	Reference	Status of Compliance
1. GPCD shall be the Project Executing Agency responsible for overall implementation of the Project.	LA, Schedule 6, para. 1, PA, Schedule para.1	Complied.
2. Prior to 31 December 2007, Gansu expressway company shall be established in accordance with paragraph 21 of the Schedule to the Project Agreement and shall be the Project Implementing Agency responsible for the operation and maintenance of the Project expressway in accordance with the Concession Framework Agreement.	LA, Schedule 6, para. 2, PA, Schedule para. 2	Not yet due.
3. Counterpart Funds: Without limiting the generality of Section 2.02 of this Project Agreement, Gansu shall ensure, and cause GPCD to ensure, that all necessary counterpart funds are provided on a timely basis for the successful construction and operation of the Project expressway. Gansu shall ensure, through GPCD, that the responsible local government communications units in the Project area can successfully upgrade, operate and maintain the local roads.	PA, Schedule para. 3	Being complied.
4. Construction Quality: Gansu shall cause GPCD to ensure that the Project is constructed in accordance with the 2004 technical standards of the Ministry of Communications (MOC) for highway engineering. Gansu shall ensure that review of highway design standards and construction supervision and quality control under the Project follow national standards and internationally accepted practices.	PA, Schedule para. 4	Not yet due.
5. Road Safety: Prior to construction and operation of the Project expressway and the local roads, Gansu shall cause GPCD to ensure that road safety audits are carried out and the recommendations of these audits are taken into account during Project construction and operations. With respect to the construction and operation of the Project	PA, Schedule para. 5	Not yet due.

Covenant	Reference	Status of Compliance
<p>expressway, Gansu shall also cause GPCD to (i) implement the road safety signage, communication, hazard barriers, traffic monitoring, and vehicle weighing systems in accordance with MOC regulations and other relevant regulations and standards; and (ii) cooperate closely with the Gansu Public Security Bureau to implement necessary road safety measures. Before opening of the Project expressway, Gansu shall cause GPCD, in consultation with the Gansu Public Security Bureau, to submit a report on the emergency response plan to ADB for review and comments.</p>		
<p>6. Roadside Stations and Transport Services: Prior to completion of the local roads component under the Project, Gansu shall cause GPCD to establish four roadside stations to facilitate community development by linking such roads with community activities. Facilities to be provided at such roadside stations such as parking areas; bus terminals; gasoline stations; information centers about roads, road safety, tourism and HIV/AIDS; local specialty markets; restaurants; and agro-processing facilities shall be reviewed by GPCD prior to the Midterm Review. GPCD shall also assess prior to the Midterm Review the possibility of providing bus stops along the Project expressway in consultation with bus operators.</p>	PA, Schedule para. 6	Not yet due.
<p>7. Tolls: In determining the toll rates, Gansu shall take into account rates sufficient to allow Gansu expressway company to maintain a minimum debt service coverage ratio of 1.2. Gansu shall ensure that six months before the Project expressway is opened, GPCD seeks ADB's concurrence on the proposed toll structure and levels prior to seeking Gansu's approval of such toll structure and levels. During the first five years of operation of the Project expressway, Gansu shall cause GPCD to review the toll structure and levels annually, and to submit a report to ADB for each</p>	PA, Schedule para. 7	Not yet due.

Covenant	Reference	Status of Compliance
year.		
<p>If toll rates need to be adjusted during the first five years of operation, Gansu shall ensure that GPCD seeks ADB's concurrence before submitting any application for toll adjustment to Gansu.</p>		
<p>8. Vehicle Emissions: Gansu shall cause GPCD and the Gansu Environmental Protection Bureau (GEPB) to cooperate in controlling vehicle emissions on the Project expressway and the local roads. Prior to commercial operation of the Project expressway, Gansu shall cause GPCD to provide to ADB the national emission regulation limits and the penalties for infringement of such limits. Gansu shall ensure that GEPB, GPCD, the Gansu Public Security Bureau and other relevant agencies enforce the national vehicle emission standards, and fulfill requirements of the government strategies, at least six months prior to the opening of the Project expressway.</p>	PA, Schedule para. 8	Not yet due.
<p>9. Axle Loads: Gansu shall cause GPCD to install vehicle axle-weighing equipment at selected entry points and to make suitable arrangements for operation of such equipment. Before opening of the Project expressway, Gansu shall cause GPCD to submit to ADB the plan for operation of the vehicle weigh stations, including the prescribed axle-load limits and penalties for infringement.</p>	PA, Schedule para. 9	Not yet due.
<p>10. Human Resource Development and Training: Gansu shall cause GPCD to prepare a human resource development and training plan. Before undertaking international training, GPCD shall prepare, for ADB's concurrence, (i) a training plan and a list of nominated candidates, (ii) a program of workshops to be delivered at GPCD by those trained internationally, and (iii) a list of training equipment and aids required to strengthen GPCD's domestic training</p>	PA, Schedule Para. 10	Not yet due.

Covenant	Reference	Status of Compliance
<p>programs. Upon completion of each workshop, GPCD shall submit to ADB an evaluation of the international training and the workshop.</p>		
<p>11. Health Risks: Gansu shall cause the Gansu Department of Health and GPCD, together with the appropriate authorities, to ensure that contractors disseminate information on the risks of socially transmitted diseases, including HIV/AIDS, to those employed during Project implementation. Such requirements shall be included in the bidding documents and civil works contracts. Gansu shall ensure that the Gansu Department of Health and GPCD disseminate similar information to transport operators during operation of the Project facilities</p>	<p>PA, Schedule para. 11</p>	<p>Being complied.</p>
<p>12. Environment: Gansu shall cause GPCD to ensure that the Project is designed, constructed and operated in accordance with the relevant environmental laws, regulations and rules of the Borrower and Gansu Province and ADB's <i>Environmental Policy</i> (2002). Gansu shall also ensure that GPCD (i) implements the mitigation and monitoring measures set out in the EIA and Summary EIA, including the Environmental Management Plan, to mitigate any adverse environmental impacts arising from the Project and ensures that such mitigation measures are incorporated in the bidding documents and civil works contracts; (ii) redemarcates the boundary of nature reserves in accordance with the relevant regulations and procedures of the Borrower and Gansu Province; and (iii) submits semi-annual reports to ADB on implementation of the Environmental Management Plan.</p>	<p>PA, Schedule para. 12</p>	<p>Being complied.</p>
<p>13. Land Acquisition and Resettlement: Gansu shall (i) implement the RP in accordance with its terms, (ii) ensure that all land and rights-of-way required by the Project are made available in a timely manner, (iii) ensure that the provisions of the RP, including compensation and entitlements for</p>	<p>PA, Schedule para. 13</p>	<p>.Being complied.</p>

Covenant	Reference	Status of Compliance
<p>affected persons (APs), will be implemented in accordance with all applicable government laws and regulations and ADB's Policy on Involuntary Resettlement (1995) and Policy on Indigenous Peoples (1998), (iv) ensure compensation and resettlement assistance are given to the APs prior to dispossession and displacement, (v) ensure the timely provision of counterpart funds for land acquisition and resettlement activities, (vi) meet any obligations in excess of the RP budget estimate, and (vii) ensure that the APs will be at least as well off as they would have been in the absence of the Project.</p>		
<p>14. Gansu shall also ensure that (i) adequate staff and resources are committed to supervising and monitoring the implementation of the RP and providing quarterly reports on such implementation to ADB, (ii) an independent agency acceptable to ADB is engaged by GPCD to carry out monitoring and evaluation, and forward reports to ADB as specified in the RP, (iii) data are disaggregated by gender, and monitoring focuses on gender impacts and vulnerable groups, and (iv) a summary of Gansu audits of resettlement disbursements and expenditures is provided to ADB.</p>	PA, Schedule para. 14	Being complied.
<p>15. Gansu shall ensure that GPCD updates the RP (i) upon the completion of the detailed measurement survey for both the Project expressway and local roads components, as described in the RP, and prior to the commencement of civil works, submit any such modifications to ADB for its concurrence; and (ii) as necessary to reflect any significant material changes in Project scope or other causes, and submit any such changes to ADB for its approval. With respect to any updated RP, Gansu shall ensure that GPCD discloses such updated RP to APs. Gansu shall cause GPCD to (i) ensure that civil works contractor specifications include requirements to comply with the RP and entitlements for permanent and temporary impacts to APs,</p>	PA, Schedule para. 15	.Being complied.

Covenant	Reference	Status of Compliance
and (ii) supervise the contractors to ensure compliance with requirements of the RP, applicable laws and regulations, and ADB's <i>Policy on Involuntary Resettlement</i> (1995).		
16. Gansu shall ensure that (a) any land acquisition carried out by county communications units for the local roads component of the Project will also be implemented in accordance with the RP, and (b) adequate resettlement compensation funds are available and property utilized.	PA, Schedule para. 16	Being complied.
17. Ethnic Minorities Gansu shall cause GPCD to implement the special actions set out in the SDAP and the RP to ensure that (i) ethnic minorities benefit from the Project in at least an equitable manner and in accordance with ADB's <i>Policy on Indigenous Peoples</i> (1998); (ii) ethnic minorities in the Project area are consulted and provided with full opportunity to participate in the implementation of the SDAP and RP; (iii) sufficient budget for implementation and monitoring of the special actions are made available in a timely manner; (iv) any significant changes to the SDAP are submitted to ADB for approval; (v) implementation of the SDAP is monitored and evaluated by an independent agency, in accordance with procedures acceptable to ADB, and reported annually to ADB; and (vi) ADB is informed of the progress on SDAP implementation on an annual basis.	PA, Schedule para. 17	Not yet due.
18. Poverty Reduction: Gansu shall carry out the SDAP in a timely manner. Gansu shall ensure that GPCD causes the contractors to (i) maximize the employment of local poor persons who meet the job and efficiency requirements for construction of the Project expressway or local roads, and (ii) provided on-the-job training for such persons. GPG shall extend the coverage and quality of public utilities, basic health, and basic education in the Project area to enhance the poverty reduction impacts. Gansu shall ensure that the Poverty Alleviation Office,	PA, Schedule para. 18	Being complied.

Covenant	Reference	Status of Compliance
<p>in consultation with GPCD, monitors the impacts on poverty with the assistance of a designated local institute based on a set of indicators and submits annual monitoring reports to ADB.</p>		
<p>19. Gender and Development: Gansu through GPCD shall follow ADB's <i>Policy on Gender and Development</i> (1998) during Project implementation, and take all necessary actions to encourage women to participate in planning and implementation of the Project. Gansu through GPCD shall monitor the effects on women during Project implementation through gender-disaggregated data, where relevant, in the RP and the monitoring and evaluation system.</p>	<p>PA, Schedule para. 19</p>	<p>Not yet due.</p>
<p>20. Monitoring and Evaluation: Gansu through GPCD shall monitor and evaluate impacts through a project performance management system (PPMS) to ensure that facilities are managed effectively and benefits are maximized. GPCD shall, together with ADB, finalize the baseline indicators at Project inception, and collect data agreed upon with ADB before implementation, at Project completion, and three years later. A full time staff of GPCD shall be designated to undertake monitoring and evaluation with the consultants during Project implementation, and for three years following Project completion.</p>	<p>PA, Schedule para. 20</p>	<p>Being complied.</p>
<p>21. Corporatization: By 31 December 2007, GPCD shall establish Gansu expressway company to operate and manage the Project expressway. By 30 June 2008, the legal responsibility for management, maintenance and operation of the Project expressway shall be transferred to Gansu expressway company pursuant to a Concession Framework Agreement in form and substance acceptable to ADB. Details on the creation of Gansu expressway company and transfer of assets and debt service obligations from GPCD to Gansu</p>	<p>PA, Schedule para. 21</p>	<p>Not yet due.</p>

Covenant	Reference	Status of Compliance
<p>expressway company, including Gansu expressway company's financial statements for the Project, shall be submitted for ADB's approval six months prior to establishment of Gansu expressway company. Gansu through GPCD shall ensure that Gansu expressway company implements a corporate development plan acceptable to ADB by 31 December 2008 to improve the standard of its corporate governance, management practice, and financial reporting. Gansu shall also ensure the concept of an interprovincial expressway corporation is reviewed by GPCD prior to Project completion.</p>		
<p>22. Concession Framework Agreement: Gansu shall cause GPCD to ensure that among others, the Concession Framework Agreement set forth the following provisions:</p>	<p>PA, Schedule para. 22</p>	<p>Not yet due.</p>
<ul style="list-style-type: none"> (i) Gansu expressway company shall bear the responsibilities of operation, maintenance and management of the Project expressway in accordance with the relevant engineering, technical, environmental, and highway operation and maintenance standards; (ii) the management of the Project expressway shall follow the required financial requirements, including the financial performance ratios stipulated in paragraphs 23 and 24 below; (iii) Gansu expressway company shall be obligated to meet the debt repayment obligations, particularly to satisfy the debt repayment obligations for the Loan for the Project expressway; (iv) Gansu expressway company shall perform the obligations in the Loan Agreement and this Project Agreement to the extent applicable to it; 		

Covenant	Reference	Status of Compliance
(v) Gansu and GPCD shall ensure that the autonomy of Gansu expressway company is maintained in operating, maintaining and managing the Project expressway; and		
(vi) Gansu expressway company, set up as a state-owned limited liability company under the Company Law of the Borrower, shall have the corporate governance structure as required by the Company Law and follow corporate governance practices acceptable to ADB.		
23. Financial Performance Ratios: To ensure financial sustainability, Gansu shall cause Gansu expressway company to maintain (i) a debt-to-equity ratio of not more than 65:35 commencing from the third year of Project expressway operation; (ii) a working ratio (annual O&M cost, but excluding periodic maintenance cost, to revenue) of not more than 15 percent; and (iii) a debt service coverage ratio of not less than 1.2 commencing from the third year of Project expressway operation.	PA, Schedule para. 23	Not yet due.
(a) Except as ADB shall otherwise agree, Gansu shall cause GPCD to ensure, through the Concession Framework Agreement, that Gansu expressway company shall maintain, for each fiscal year commencing from the first year of full operation of the Project expressway, a ratio of total working expenses to total working revenue not higher than 15 percent.		
(b) For the purposes of this Section:		
(i) The term “total working expenses” means the sum of all expenses relating to operations, including administration, adequate annual maintenance, and taxes on revenue, but excluding periodic maintenance cost, depreciation, interest and other charges on debt.		

Covenant	Reference	Status of Compliance
(ii) The term “total working revenues” means revenues from all sources relating to operations.		
24. (a) Except as ADB shall otherwise agree, Gansu shall cause GPCD to ensure, through the Concession Framework Agreement, that Gansu expressway company shall not incur, for each fiscal year commencing from the third year of the full operation of the Project expressway, any debt unless reasonable forecast of the revenues, and the expenditures of Gansu expressway company shows that its estimated net revenues for each fiscal year during the term of the debt to be incurred shall be at least 1.2 times its estimated maximum debt service requirements for any succeeding fiscal year on all of its debt, including the debt to be incurred	PA, Schedule, para 24.	Not yet due.
(b) For the purposes of this Section:		
(i) The term “debt” means any indebtedness of Gansu expressway company and maturing by its terms more than one year after the date on which it is originally incurred.		
(ii) Debt shall be deemed to be incurred: (a) under a loan contract or agreement or other instrument providing for such debt or for the modification of its terms of payment on the date of such contract, agreement or instrument; and (b) under a guarantee agreement, on the date the agreement providing for such guarantee has been entered into.		
(iii) The term “net revenues” means the difference between:		
(A) the sum of revenues from all		

Covenant	Reference	Status of Compliance
	sources adjusted to take account of Gansu expressway company's toll rates in effect at the time of the incurrence of debt even though they were not in effect during the twelve-month period to which such revenues related and net non-operating income; and	
	(B) the sum of all expenses, including operation administration, adequate annual maintenance, taxes and payments in lieu of taxes, but excluding provision for depreciation, other non-cash operating charges and interest and other charges on debt.	
(iv)	The term "reasonable forecast" means a forecast prepared by Gansu expressway company not earlier than twelve months prior to the incurrence of the debt in question, which both ADB and Gansu expressway company accept as reasonable and as to which ADB has notified Gansu expressway company of its acceptability, provided that no event has occurred since notification which has, or may reasonably be expected in the future to have, a material adverse effect on the financial condition or future operating results of Gansu expressway company.	
(v)	Whenever for the purposes of this paragraph it shall be necessary to value, in terms of the currency of the Borrower, debt payable in another currency, such valuation shall be made on the basis of the	

Covenant	Reference	Status of Compliance
<p>prevailing lawful rate of exchange at which such other currency is, at the time of such valuation, obtainable for the purposes of servicing such debt, or, in the absence of such rate, on the basis of a rate of exchange acceptable to ADB</p>		
<p>25. Private Sector Development: Six months prior to the opening of the Project expressway, Gansu through GPCD shall analyze the feasibility of attracting private sector investment funds for future road sector investment, including private sector participation in operation and maintenance of the Project expressway, and report its conclusions to ADB.</p>	<p>PA, Schedule, para. 25</p>	<p>Not yet due.</p>
<p>26. Change in Ownership. In the event that Gansu or Gansu expressway company plans to (a) make any change in ownership of the Project facilities, (b) carry out any sale, transfer, or assignment of Gansu's or Gansu expressway company's interest in the Project expressway, or (c) lease, contract out, or otherwise modify Gansu expressway company's responsibilities for operation and maintenance of the Project expressway, Gansu shall take the necessary actions so that the Borrower can, at least 6 months prior to implementation of such plan, consult ADB and obtain ADB's consent. Gansu shall also take the necessary measures to ensure that any such action is carried out in a legal and transparent manner</p>	<p>PA, Schedule, para. 26</p>	<p>Not yet due.</p>
<p>27. Labor Standards: Gansu through GPCD shall ensure that civil works contractors comply with all applicable labor legislation. Bidding documents shall include a clause on the prohibition of child labor, as defined in national legislation, for construction and maintenance activities, as well as a clause ensuring equal pay for men and women for work of equal value. Compliance with these provisions shall be strictly monitored during Project implementation.</p>	<p>PA, Schedule, para. 27</p>	<p>Not yet due.</p>

Covenant	Reference	Status of Compliance
<p>28 Gansu shall ensure that GPCD (i) maintains separate accounts for the Project and for its overall operations; (ii) have such accounts and related financial statements (balance sheet, statement of income and expenses, and related statements) audited annually, in accordance with appropriate auditing standards consistently applied, by independent auditors whose qualifications, experience and terms of reference are acceptable to ADB; and (iii) furnishes to ADB, promptly after their preparation but in any event not later than six months after the close of the fiscal year to which they relate, certified copies of such audited accounts and financial statements and the report of the auditors relating thereto (including the auditors' opinion on the use of the Loan proceeds and compliance with the covenants of the Loan Agreement), all in the English language. Gansu shall cause GPCD to furnish to ADB such further information concerning such accounts and financial statements and the audit thereof as ADB shall from time to time reasonably request.</p>	PA, Section 2.09(a)	Not yet due.

OUTLINE CONCESSION FRAMEWORK AGREEMENT AND CORPORATE DEVELOPMENT PLAN

A. Outline Concession Framework Agreement on Operation, Maintenance, and Management

1. To reinforce discipline over the operations of the project expressway, Gansu Provincial Communications Department (GPCD) authorizes the Gansu Luoding Expressway Company Limited (Project Company) to be responsible for operation, maintenance, and management of the project expressway. This agreement defines the responsibilities and obligations of GPCD and the Project Company; ensures the autonomous management rights of the Project Company; and ensures its management and operation in compliance with 1993 People's Republic of China (PRC) Company Law. GPCD and the Project Company will enter into this agreement by 30 June 2008. The outline of the agreement is given in Table A5 and the full agreement is available in Supplementary Appendix A.

Table A5: Outline Concession Framework Agreement

Article I.	Parties to this agreement
Article II.	Definitions
Article III.	Rights and obligations of Gansu Provincial Communications Department
Article IV.	Rights and obligations of the Project Company
Article V.	The authorization
Article VI.	Land
Article VII.	Design
Article VIII.	Testing, inspection, and completion
Article IX.	Tolls
Article X.	Operation, maintenance, and repair
Article XI.	Insurance
Article XII.	Financial management
Article XIII.	Termination
Article XIV.	Assignment
Article XV.	Common undertaking
Article XVI.	Dispute resolution
Article XVII.	Applicable law
Article XVIII.	Other matters
Article XIX.	Number of sets of this agreement

B. Outline Corporate Development Plan

2. The outline corporate development plan will be reviewed during project implementation and will be implemented by 31 December 2008.

3. **Legal Framework.** The Project Company will enter into a concession framework agreement with GPCD that gives it the right to manage and operate the project expressway, including toll collection along with debt service charges.

4. **Organizational Structure.** The structure and responsibilities of the Project Company should be addressed fully and laid out clearly in writing. The Project Company will adopt the proposed management organization discussed below.

5. **Senior Management.** It will comprise the following: (i) The supervisory board will have XX members. Members of the board of directors (BOD), managers, or chief financial officer cannot serve on the supervisory board. It will meet every 6 months, and will perform its duties according to the Project Company's articles of association. (ii) The BOD will consist of XX members as per the articles. The Project Company will appoint a minimum of 30% independent board members, who must be free from any business or other relationship with the Project Company. The BOD will meet semiannually. (iii) The chair of the Project Company will be elected by the BOD. The chair will primarily preside over shareholders' meetings, and convene and chair meetings of the directors. (iv) The general manager (GM) will be appointed or dismissed by the BOD. The Project Company will adopt these duties and responsibilities for the GM and other division heads. (v) The auditing committee, with qualifications and experience acceptable to the Asian Development Bank, will be constituted by the Project Company in compliance with international corporate governance rules. The committee will include a chair and two nonexecutive members—each appointed by the BOD. The committee's principal duties and responsibilities will be to review and supervise the financial reporting process and internal controls.

6. **Organization.** The Project Company will comprise the following divisions: (i) finance and treasury, for accounting; credit; cash management; taxation; insurance; and guidance to the BOD on project financing, investment, and initial public offerings; (ii) management information systems (MIS), for developing and maintaining the systems, computer software, and hardware; (iii) human resources and administration, for staff employment, covering terms and conditions, pensions, welfare, development, and training; (iv) public relations, for effective projection of the Company's image externally; (v) investment and projects, for exploring and monitoring other business opportunities in Gansu Province and elsewhere in the PRC; (vi) engineering and operations, for the core Company functions—construction and operation of the expressway, and where most of the GM's time will be used; (vii) legal, for legal, administrative, and compliance matters; and (viii) internal audit unit, which will have XX staff members and report to the auditing committee.

7. **Company Guidelines.** Management and operational procedures must comply with international standards. The Project Company will adopt internal auditing and procurement procedures.

8. **Management Reports and Accounts.** Accounting and reporting will be managed as follows: (i) the MIS division of the finance and corporate department will design and establish a cost-effective computerized system to implement MIS; (ii) the management reporting system will provide information to management through monthly management accounts and quarterly statements; (iii) the budget and control division will design its procedures, and annual budgets will be prepared by divisions and by category of income and expenditures; and (iv) the annual report must comply with the requirements of the China National Audit Office. The directors' responsibility is to fulfill the requirements of international standards of good practices.

KEY PERSONS INVOLVED IN THE PROJECT

	Name	Designation
GANSU PROVINCIAL COMMUNICATIONS DEPARTMENT (GPCD)		
	Yang Yongzhong	Director General
	Xin Ping	Deputy Director General
GANSU PROVINCIAL GOVERNMENT		
	Zhang Xiaoping	Deputy Director. Dept. of Finance
CHANGDA HIGHWAY COMPANY LTD (GCHC)		
1	Dai KeWu	Board Chairman / General Manager /Director of Project Office
2	Li Yan	Party Secretary
3	Zhang Kexi	Deputy Board Chairman / Vice General Manager/ Managing Deputy Director of Project Office
4	Fu Ruolin	Vice General Manager / Chief Accountant
5	Dong Hongrui	Vice General Manager
6	Guo Peiying	Chairwoman of trade union
7	Zhang Baocai	Vice General Manager / Chief engineer of project office
8	Mu Guobin	Vice General Manager
9	Ma Yufang	Chief supervision engineer of Project Office
10	Nie ShuangCheng	Chief engineer of Project Office
11	Luo Henghua	Manager of Planning & Financial Division
12	Zhong Xing	Vice Manager of Engineering Construction Division
13	Bao Guiyu	Manager of Project Development Division
14	Wu Meili	Manager of Human Resource Division

	Name	Designation
15	Tang LanYing	Vice Manager of Operation & Administration
16	Li Shufeng	Deputy director of the party and mass Division
17	Wang Hua	Office Chief
ASIAN DEVELOPMENT BANK		
	H. S. Rao	Director, General, ECRD
	Nigel C. Rayner	Director, ECTC
	M.Ojira	Principal Project Economist
	C.S. Chin	PAU, Head, ECTC
	Seiji Noda	Project Specialist, Roads
	Scott Ferguson	Sr. Resettlement Specialist
	X. Yang	Financial Specialist
	E. Infante	Asst. Project Analyst