



Project Administration Memorandum

Project Number: 35338
Loan Number: 2089
December 2005

People's Republic of China: Hunan Roads Development II

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

PROJECT ADMINISTRATION MEMORANDUM

FOR THE

**HUNAN ROADS DEVELOPMENT II PROJECT
(LOAN NO. 2089-PRC)**

December 2005

CURRENCY EQUIVALENTS

(as of 15 August 2004)

| | | |
|---------------|---|------------|
| Currency Unit | – | yuan (CNY) |
| CNY1.00 | = | \$0.121 |
| \$1.00 | = | CNY8.27 |

The exchange rate of the yuan is determined under a floating exchange rate system. In this report, a rate of \$1.00 = CNY8.27, the rate prevailing at project appraisal is used.

ABBREVIATIONS

| | | |
|-------|---|---|
| ADB | – | Asian Development Bank |
| CECC | – | Changji Expressway Construction and Development Company |
| CSE | – | chief supervision engineer |
| DMS | – | Detailed measurement survey |
| EA | – | Executing Agency |
| EIA | – | environmental impact assessment |
| EMDP | – | ethnic minorities development plan |
| HCD | – | Hunan Provincial Communications Department |
| HEPB | – | Hunan Environmental Protection Bureau |
| HPG | – | Hunan provincial government |
| HPSB | – | Hunan Public Security Bureau |
| ICB | – | international competitive bidding |
| LCB | – | local competitive bidding |
| LIBOR | – | London interbank offered rate |
| OM | – | operation and maintenance |
| PCR | – | project completion report |
| PPMS | – | project performance management system |
| PRC | – | People's Republic of China |
| QPR | – | Quarterly Progress Report |
| RP | – | resettlement plan |

NOTES

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

CONTENTS

| | | |
|------------|--|--------|
| | Loan Processing History | ii |
| | Project Framework | iii-iv |
| I. | PROJECT DESCRIPTION | 1 |
| | A. Project Area and Location | 1 |
| | B. Objectives | 1 |
| | C. Components and Outputs | 1 |
| | D. Special Features | 1 |
| II. | COST ESTIMATES AND FINANCING PLAN | 5 |
| | A. Detailed Cost Estimates | 5 |
| | B. Financing Plan | 5 |
| | C. Allocation of Loan Proceeds | 6 |
| III. | IMPLEMENTATION ARRANGEMENTS | 6 |
| | A. Executing and Implementing Agencies | 6 |
| | B. Project Management Organization | 7 |
| IV. | IMPLEMENTATION SCHEDULE | 7 |
| V. | COST ESTIMATES AND FINANCING PLAN DURING IMPLEMENTATION | 7 |
| VI. | CONSULTANT RECRUITMENT | 8 |
| VII. | PROCUREMENT | 8 |
| VIII. | DISBURSEMENT PROCEDURES | 9 |
| IX. | PROJECT MONITORING AND EVALUATION | 9 |
| X. | REPORTING REQUIREMENTS | 10 |
| XI. | AUDITING REQUIREMENTS | 10 |
| XII. | MAJOR LOAN COVENANTS | 10 |
| XIII. | KEY PERSONS INVOLVED IN THE PROJECT | 10 |
| XIV. | ANTICORRUPTION | 10 |
| XV. | CONTRACT VARIATIONS | 11 |
| APPENDIXES | | |
| 1 | Transport Services in the Project Area | |
| 2 | Operation and Maintenance Concession to the Private Sector | |
| 3 | Road Safety and Vehicle Emissions | |
| 4 | Summary Resettlement Plan | |
| 5 | Cost Estimates | |
| 6 | Project's Organization Chart | |
| 7 | Construction Schedule | |
| 8 | Outline Terms of Reference for Consultants | |
| 9 | Contract Packages | |
| 10 | Pro Forma of the Executing Agency's Project Progress Report | |
| 11 | Suggested Topics and Format for Borrower's Project Completion Report | |
| 12 | Sample Audit Letter | |
| 13 | Major Loan Covenants | |
| 14 | List of Key Persons Involved in Project Implementation | |

LOAN PROCESSING HISTORY

| | Date |
|---|--------------------|
| a. Approval of project preparatory technical assistance (TA 3929-PRC) | 23 September 2002 |
| b. Feasibility Study | 21 July 2003 |
| c. Fact-finding | 5-13 November 2003 |
| d. Management Review Meeting (MRM) | 4 May 2004 |
| e. Appraisal Mission | 8-14 May 2004 |
| f. Staff Review Committee (SRC) | 17 June 2004 |
| g. Loan Negotiations | 9-13 August 2004 |
| h. Board Circulation | 19 August 2004 |
| i. Board Consideration and Approval | 9 September 2004 |
| j. Loan Agreement signing | 26 May 2005 |
| k. Cofinancing arrangement finalized and agreements signed | Not applicable. |
| l. Loan Effectiveness | 16 August 2005 |

PROJECT FRAMEWORK

| Design Summary | Performance Indicators/Targets | Monitoring Mechanism | Assumptions and Risks |
|---|--|---|--|
| Goal Economic development and poverty reduction | <ul style="list-style-type: none"> • A 10% increase in gross domestic product over 3 years • A 10% decrease in poverty incidence in the project area over 5 years • Generated employment in the nonfarm sector that is 10% higher than in the control area in 5 years • A 10% growth in the number of rural enterprises within 3 years • A 10% increase in inter and intra provincial trade in the western regions within 3 years. | <ul style="list-style-type: none"> • Hunan Statistics Yearbook • Socioeconomic and livelihood surveys by the EA • ADB missions to assess project implementation | |
| Purpose Increase transport efficiency Provide rural farmers with better access to markets and social services Improve road safety in the transport corridor | <ul style="list-style-type: none"> • A 10% decrease in congestion along NR319, between Changde and Huaihua, within 3 years • A 10% reduction in VOC or transport fares within 3 years • A 10% improvement in input and output prices within 3 years • An annual 10% increase in interprovincial traffic—passengers and tonnage—within 3 years • A 10% reduction in travel time to nearest markets, health services, and schools within 3 years • Traffic from villages to townships and counties that is 10% higher than in the control area • A 25% decrease in accident rate in the project roads during the first 5 years of operation | <ul style="list-style-type: none"> • Project completion report • Traffic counts survey by the EA along the corridor • Annual reports of transport enterprises in Hunan • Direct measures of cost and travel time by the consultants • Direct measurement of cost and time for small trucks along the corridor, as well as socioeconomic surveys by the consultants • Accident statistics provided by the Hunan Public Security Bureau | <ul style="list-style-type: none"> • Continued rapid economic growth in the People's Republic of China (PRC) and Hunan Province. • The reduction in VOC is passed on to consumers. • The EA implements the local road improvement program as planned. • Better traffic enforcement and accident reporting procedures are in place. |
| Outputs Civil Works and Equipment 173 kilometers (km) of expressway, 11 km of class II connector roads, 81 bridges including 3 extra-large bridges, and 7 interchanges Upgrading of 517 km of local roads | <ul style="list-style-type: none"> • Construction completed and open to traffic by 2008 • Works carried out and completed concurrently with expressway works, using Government design and standards acceptable to ADB | <ul style="list-style-type: none"> • Project administration missions, progress reports, and PCR • Project administration missions, progress reports, international consultant reports, and PCR • Construction supervision by domestic consultants | <ul style="list-style-type: none"> • Implementation capacity of the EA; good performance of contractors; and strict construction supervision and quality control • Local government will be able to mobilize adequate resources to implement the program. |

Continued on next page.

PROJECT FRAMEWORK—Continued

| Design Summary | Performance Indicators/Targets | Monitoring Mechanism | Assumptions and Risks |
|--|---|--|--|
| <p>Procurement and installation of equipment for traffic engineering, road safety, traffic monitoring, road maintenance, and tunnel operation</p> <p>High quality construction supervision and monitoring and evaluation; capacity building for Changji Expressway Construction and Development Company (CECC)</p> <p>Adequate resettlement and rehabilitation of all affected people and households (About 37,000 people affected)</p> <p>Operation and Maintenance (OM) Concession awarded to the private sector</p> <p>Enhanced provision of transport services</p> | <ul style="list-style-type: none"> Equipment package contents, procurement schedule, and actual equipment cost Achievements in terms of quality control and timely implementation Improved CECC implementation capacity and expressway operation Implementation of resettlement plan (RP). Compensation levels for permanent loss of farmland, housing and other assets as agreed Welfare of those resettled at least to level prevailing before acquisition OM concession framework and time-specific schedule of the concession award Enhanced transparency in the bidding process. Implementation of the measures to increase the adequate transport services | <ul style="list-style-type: none"> Progress report, Project review missions, and PCR Progress reports; project administration and completion review missions; training assessment Progress reports, review missions. Baseline household survey. Independent consultants to monitor entitlements, prepare periodic report during resettlement implementation, and evaluate achievement of objectives upon RP completion and one year after OM concession framework and bidding document, review missions Progress reports, review missions | <ul style="list-style-type: none"> Completion of equipment procurement and installation at project opening Timely selection of experienced and qualified consultants Land acquisition and RP implemented as agreed. Affected population compensated at agreed rates. Off-farm income opportunities increase. Capacity and capability of the provincial government and EA to undertake private sector transactions Enough private investors are interested in the bidding. Adequate coordination among various government offices |
| <p>Activities/Inputs</p> <p>Inputs</p> <p>Provision of adequate counterpart funds</p> <p>Recruitment of supervision consultant including 49 person-month (pm) of international and 5,184 pm of domestic consulting services for construction supervision; 24 pm of domestic consultants for monitoring and evaluation; About 65 pm of international training.</p> | <ul style="list-style-type: none"> Funds (\$156 million) allocated from the Ministry of Communications and HCD; domestic commercial bank loan (\$319.2 million) Consultants to be recruited by March 2005 Actual international and domestic consultants inputs. Development and implementation of the training program. | <ul style="list-style-type: none"> Project budget by financing sources Contract documents | <ul style="list-style-type: none"> Timely provision of adequate counterpart funds |

Continued on next page.

PROJECT FRAMEWORK—Continued

| Design Summary | Performance Indicators/Targets | Monitoring Mechanism | Assumptions and Risks |
|---|---|--|---|
| Award of contracts. | <ul style="list-style-type: none"> • Civil works contracts to be awarded by March 2005 | <ul style="list-style-type: none"> • Contract documents | <ul style="list-style-type: none"> • Effective project management, activities coordination and planning |
| Expressway construction and upgrading of selected local roads | <ul style="list-style-type: none"> • Expressway construction including testing and commissioning, and upgrading completed by 2008 | <ul style="list-style-type: none"> • Progress reports, project administration mission, PCR | <ul style="list-style-type: none"> • Effective project and contract management; timely implementation of remedial actions required by unexpected situations; effective performance of contractors |
| Construction supervision Training program | <ul style="list-style-type: none"> • Implementation of supervision activities; development and implementation of contract management system and quality control procedures | <ul style="list-style-type: none"> • Progress reports and review missions; training program and list of candidates; posttraining reports and evaluation | <ul style="list-style-type: none"> • Qualified and experienced consultants; effective transfer of knowledge from the trainees to CECC |
| Funding and staff resources for land acquisition and resettlement. Implementation of compensation measures. | <ul style="list-style-type: none"> • \$53 million and compensation measures implemented | <ul style="list-style-type: none"> • Project review and administration missions, EA and consultant reports, resettlement monitoring program, detailed action plan. | |
| Implementation of measures in ethnic minorities development plan (EMDP) | <ul style="list-style-type: none"> • Actions in EMDP implemented during project implementation | <ul style="list-style-type: none"> • Project review missions • Progress reports by the EA • EMDP monitoring program • Detailed action plan | <ul style="list-style-type: none"> • Good monitoring and review takes place. |
| Implementation environmental impact mitigation measures in project design and construction. | <ul style="list-style-type: none"> • Mitigation measures and environmental enhancement measures from the environmental impact assessment and environmental management plan | <ul style="list-style-type: none"> • Environmental monitoring reports by EA and provincial environmental protection bureau | <ul style="list-style-type: none"> • Timely provision of funds and provision of additional funds if required. |
| Monitoring and evaluation of benefits from the road development | <ul style="list-style-type: none"> • Development and implementation of Project performance management system (PPMS) | <ul style="list-style-type: none"> • PPMS. Consultant reports, progress reports; provincial and county statistics; midterm, completion, and post-evaluation missions | <ul style="list-style-type: none"> • Timely recruitment of domestic consultants for following up and monitoring socioeconomic impacts; effective consultation and coordination among the agencies involved |

ADB = Asian Development Bank, CECC = Changji Expressway Construction and Development Company, EIA = environmental impact assessment, EMDP = ethnic minorities development plan, ha = hectare, HCD = Hunan Provincial Communications Department, km = kilometer, NR = national road, PRA = participatory rural appraisal, PRC = People's Republic of China, PCR = project completion report, PPMS = project performance management system, VOC = vehicle operating cost.

I. PROJECT DESCRIPTION

A. Project Area and Location

1. The Project is located in the western part of Hunan Province, one of the poorest regions of the People's Republic of China (PRC). Hunan, located in the middle reaches of the Yangtze River, is bordered by Jiangxi to the east, Chongqing to the west, Guangxi to the south, and Hubei to the north. The project area is largely rural and mountainous with limited accessibility. Around 56% of the rural population is defined as poor with an annual income of below CNY900. Road infrastructure is inadequate to support economic growth, a necessary prerequisite to tackle poverty in the project area. Some 86% of the roads in Hunan fall below class III. The national highway (NR319), which runs parallel to the project expressway and currently serves as an outlet to major trading destinations such as Chongqing, is a combination of class III and below roads with pavement in poor condition. Over 65% of the highway's length experiences frequent congestion and interference from nonmotorized traffic. Traffic on NR319 has grown at around 7.3% annually over the past few years and will exceed the highway's capacity at several points by 2008.

B. Objectives

2. The principal objective of the Project is to facilitate efficient, sustainable economic growth and thus contribute to poverty reduction in Hunan. The Project will (i) improve economic efficiency, foster trade, and facilitate interregional integration by alleviating congestion, reducing vehicle operating costs, and improving traffic safety; (ii) supply a missing link in the Changsha-Chongqing western corridor; (iii) spread economic and social benefits over a wider cross-section of local communities by improving accessibility for the rural poor in the corridor; and (iv) improve people's incomes and well-being.

C. Components and Outputs

3. The Project comprises (i) the construction of a 173 km, four-lane access-controlled, toll expressway from Changde to Huaihua, including tunnels and bridges, interchanges and toll stations, and service areas; (ii) the upgrading or improving of 517 km of local roads, thereby providing improved access to 404 villages; (iii) the procurement of equipment for road maintenance and safety, toll collection, surveillance and communications, tunnel ventilation and lighting, vehicle axle road testing, and environmental protection; (iv) land acquisition and resettlement; and (v) consulting services for construction supervision, safety audits, monitoring and evaluation, and capacity building.

D. Special Features

1. Poverty Reduction Impacts—the Local Road Component

4. In line with the Asian Development Bank's (ADB) policy dialogue, a local road improvement program was integrated into the Project to expand the road network in rural minority villages and to meet their needs.¹ The integrated approach will help spread the expressway benefits to the poor. Better tie-ins between the expressway and local roads will help rural agricultural products reach markets and allow farmers to upgrade farming practices. As

¹ Since 1995, the scope of the ADB-financed road projects has been expanded to strengthen their impacts on poverty reduction by adding local road improvements to improve the accessibility of poor communities.

reliable transport to markets becomes more readily available, cash-crop farming in remote or isolated areas will be stimulated and the access to off-farm employment opportunities will be broadened. A set of 9 priority local road sections in the poor area, totaling 517 km, was selected from Hunan's road development plan.

5. Of the ADB loan of \$312.5 million, \$12.5 million will be provided for the local road component, which will finance one section from Zhangjiajie to Yuanling.² The total cost of the local road component is about \$81.9 million, of which \$12.5 million (15.3%) will be the foreign exchange cost and \$69.4 million equivalent (84.7%) will be the local currency cost. Around 627,000, or 49% of the 1.3 million rural beneficiaries, including the 287,000 poor beneficiaries of the local road component, have an annual per capita income of below CNY900. The nine local road segments will (i) be implemented concurrently with the expressway component, (ii) use Government designs and standards that are acceptable to the ADB, (iii) apply ADB's social safeguard policies, and (iv) be accorded the same degree of attention as the expressway in impact monitoring. The procurement for the ADB-financed section will use LCB, while that for the domestically financed sections will follow government procedures acceptable to ADB. About 300 person-months of domestic consulting services will be allocated to the local road component for ensuring proper design and supervision, project monitoring and evaluation, training the engineering staff, and project management.

2. Transport Services in the Project Area

6. The extent to which the lower transport costs derived from a road investment project are passed on to the rural poor depends on their access to reliable, affordable and competitive transport services. The less the access, the less benefits they will receive compared to other social groups, and thus the lower the poverty impact of the Project. Transport services are well developed in the eastern section of the project area close to Changde, but less so in the western section—mountainous and underdeveloped. Few bus and truck operators ply the routes to the poor villages due to bad road conditions or limited road access. The fares and routes of the formal bus system are regulated, which may result in inefficient services. Thus, people in these areas rely more on informal transport services, such as bicycles and motorized tricycles. Despite the crucial role of informal transport services in rural transport, their supply is also insufficient. As a result, the rural poor sell their produce to drive-in traders who have the advantage of a buyer's market. Adequate and affordable transport services provided on a competitive basis are a prerequisite to spreading the Project's benefits to the rural poor, especially those who are beyond the reach of road transport services. Due attention will be given to such services during the Project's implementation so that the Project's benefits reach the rural poor in the project area. Under the ADB loan, an international consultant will be engaged to develop an action plan and associated measures, which would be incorporated into the Project. She/he will examine the following measures: (i) increasing the competition among transport service providers, (ii) deregulating fare and route controls to raise system efficiency and enhance commercial viability, (iii) making more credit available for the purchase of transport vehicles, and (iv) integrating rural transport services into the local roads development (**Appendix 1**).

² This 135-km section, of which 29 km is class IV and the rest is unclassified, will be upgraded to class II (11 km) and class 3 (124 km). The upgrading of this section is expected to spur the tourism in the project area.

3. Operation and Maintenance (OM) Concession to the Private Sector

7. Hunan has actively diversified highway financing and encouraged private sector participation in expressways. The private sector is involved in 5 expressways in Hunan: Changtan, Changyong, Xiheng, Changtan West, and Changyi.³ In Changtan, Changyong, Xiheng, and Changyi, the private sector has been involved in OM through concession agreements.⁴ During the Project's initial years of operation, its OM will be entrusted to the Changji Expressway Construction and Development Company (CECC).⁵ Then Hunan Provincial Communications Department (HCD) will enter into an OM concession after a few years of opening. To this end, HCD will develop the concession agreement framework during the implementation of the Project. In particular, due attention will be given to enhance transparency in the bidding process for the concession, to optimize the gain of the concession to the efficiency in expressway operation. HCD will prepare a bidding document—which specifies the concession period and selection criteria, and ensures adequate pricing and transparent bidding—and submit it to ADB for review by the midterm review in 2006. Under the ADB loan, an international consultant will be engaged for 1 month to help HCD prepare the concession agreement and bidding document. The agreement should include incentives and penalties to ensure expressway maintenance adheres to the agreed standards. HCD will assess a specific schedule of the concession's implementation and advise ADB about it by the midterm review. HCD and ADB will ensure that (i) the concession is adequately priced by awarding it through transparent bidding; and (ii) expressway maintenance will meet the agreed standards (**Appendix 2**).

4. Road Safety

8. Road safety is a serious concern in Hunan and the PRC. The number of accidents in the project area has increased substantially over the past few years. The 2002 Road Safety Action Plan prepared by the Ministry of Public Security aims to reduce accidents. This goal will be achieved through driver training, targeted traffic enforcement, and better traffic management. The Road Traffic Safety Law, effective from May 2004, is enforced nationwide. A Road Safety Committee has been established by Hunan Provincial Government (HPG) to investigate causes of road accidents and identify preventive measures. At least 6 months prior to the opening of the expressway, HCD will (i) develop and implement a road safety action plan acceptable to HPG and ADB—with the help of an international consultant—for the safe operation of the expressway; and (ii) ensure, in collaboration with the Hunan Public Security Bureau (HPSB), that a team of HPSB personnel will patrol the expressway and enforce the new law and regulations in accordance with national and provincial standards. The Project's major contribution to road safety will be the application of a high standard to the expressway's construction to reduce accidents in the corridor. HCD will (i) use its traffic control and surveillance system for the safety of the expressway, (ii) make all facilities of the system available to the agencies concerned to strengthen traffic enforcement and emergency services in the corridor; (iii) promote the use of the *Road Safety Audit Guidelines*, applied to expressways in Hunan, in local roads; and (iv) ensure the enforcement of road safety measures in the expressway and local roads. An international road safety specialist will be engaged for 2

³ They are Changsha-Xiangtan, Changsha-Yongtan, Xiangtan-Hengyang, Changsha-Xiangtan West, and Changsha-Yiyang. Changtan and Changyong were funded by ADB (Hunan I Expressway Project).

⁴ The OM of Changtan was awarded as a 30-year concession to a company in 1998; in Changyong, the concessionaire was successfully listed in the A-share section of the Shenzhen Stock Exchange in 1998; and in Xiheng, funded by the World Bank, a 20-year concession was awarded in 2002.

⁵ The CECC was established as a 100% state-owned company in July 2004 for the construction and operation of the project expressway.

month under the Project to assist HCD in developing the road safety action plan, and check all designs and safety aspects of the expressway during implementation (**Appendix 3**).

5. Vehicle Emissions

9. The rapid rise in the number of private vehicles has drawn attention the problem of vehicle emissions. Vehicle emissions will have an adverse impact on the environment if no mitigation measures are taken. The Government has taken several measures to control emissions, through regulation on the automobile industry, annual vehicle test, and inspection and maintenance program. The new measures also set emissions and fuel efficiency targets and offer tax incentives to encourage developing more environmentally friendly cars. Hunan has formal vehicle emission standards by which all types of vehicles regularly tested by the Hunan Environmental Protection Bureau (HEPB), in collaboration with the traffic police. At least 6 months prior to the opening of the expressway, HCD will (i) provide ADB with the vehicle emission regulation limits prepared by the HEPB and the penalties for violating emission standards; and (ii) provide ADB with the latest government plan to improve air quality in Hunan, including the cleaner fuel programs (e.g. ethanol and CNG), vehicle testing center facilities, and an inspection and maintenance program. An international vehicle emissions specialist will be employed to develop an action plan to control vehicle emissions in the project area, with the help of the HCD and HEPB.

6. Resettlement Plan

10. The Resettlement Plan (RP) was prepared by the HCD based on the detailed measurement survey (DMS), 56 village surveys, 657 household surveys, local government statistics, and consultations with local officials, village leaders, and affected households. Unless proper mitigation measures are adopted, some 37,000 people could be adversely affected by the Project, which includes 6,414 people to be relocated. The total resettlement cost including contingencies is estimated at CNY434.5 million (\$52.5 million). A resettlement information booklet, with sections on resettlement policy and impacts, compensation rates and entitlements, organizational arrangements, consultation and participation, and grievance procedures, was distributed to the affected villages and publicized in the local media in November 2003. The RP, which has been discussed with county level offices, was submitted to ADB in January 2004 and approved by ADB in May 2004. The final RP, updated based on the DMS, was submitted to ADB in June 2004, posted on ADB's web site both in English and Chinese in August 2004, and will be distributed to affected county and township offices. For the local roads component, HCD is the responsible agency and the implementing agencies will be the county communications bureaus. There will be some resettlement along the local road section to be financed by the ADB loan; other local roads will only require paving. A summary RP is in **Appendix 4**.

7. Stakeholder Participation and Consultations

11. During the feasibility study, environmental impact assessment (EIA), and resettlement planning, consultations were conducted with government agencies, villagers, other people likely to be affected by the Project, and local groups to discuss environmental concerns, land acquisition and resettlement issues, and economic development potential. Village investigations and surveys were conducted in the project area to assess the potential adverse effects and benefits of the Project. Over 3,370 people were interviewed in public opinion surveys, social assessment, environmental assessment, and resettlement planning. For the RP, consultation meetings were held with the affected counties, townships, and villages. The Project was well known by the rural people and public support for it was high. The local officials explained the policies and regulations

for land compensation and housing removal to those who would be adversely affected by the loss of farmland or housing. These concerns were considered in (i) determining the alignment to reduce adverse social, resettlement, and environmental impacts; (ii) designing connector roads and pedestrian access; and (iii) completing a detailed RP. The consultation process was expanded to finalize the design and formulate appropriate compensation standards and rehabilitation measures for people displaced by land acquisition or house demolition. Villagers participated in the discussions and decisions on village resettlement.

II. COST ESTIMATES AND FINANCING PLAN

A. Detailed Cost Estimates

12. The total cost of the Project is the equivalent of \$778.1 million, with a foreign exchange cost of \$314.2 million (40%) and a local currency cost amounting to the equivalent of \$463.9 million (60%) (**Appendix 5**). The cost of the local road component is \$81.9 million. Of the ADB loan, \$12.5 million is allocated for the local road component, with the remaining costs to be funded by the provincial and county governments. HCD has committed to ensure the appropriate implementation of the local road component during the project period.

**Table 1: Cost Estimates
(\$ million)**

| Item | Foreign Exchange | Local Currency | Total Cost |
|--|------------------|----------------|---------------|
| A. Base Cost | | | |
| 1.Civil Works | 256.76 | 239.53 | 496.30 |
| 2.Equipment | 8.81 | 0.00 | 8.81 |
| 3.Land Acquisition and Resettlement | 0.00 | 46.00 | 46.00 |
| 4.Consulting Services and Training | 1.69 | 34.13 | 35.82 |
| 5.Local Road Program | 12.50 | 69.36 | 81.86 |
| Subtotal | 279.76 | 389.02 | 668.79 |
| B. Contingencies^a | | | |
| 1.Physical Contingencies | 19.47 | 23.34 | 42.81 |
| 2.Price Contingencies | 5.37 | 23.91 | 29.28 |
| Subtotal | 24.84 | 47.25 | 72.09 |
| C. Interest During Construction | 9.56 | 27.65 | 37.21 |
| Grand Total | 314.17 | 463.93 | 778.10 |

Note: Numbers may not add up due to rounding.

^a Physical contingency is computed at 5.0% and price escalation is at 2.0% per annum.

Source: Asian Development Bank estimates.

B. Financing Plan

13. The Government has requested a loan of \$312.5 million from ADB's ordinary capital resources to help finance the Project. The Borrower of the Loan will be the PRC. The loan will carry a 25-year term, with a grace period of 5 years, an interest rate determined in accordance with ADB's London interbank offered rate (LIBOR) -based lending facility, a commitment charge of 0.75% p.a., and other terms and conditions set forth in the draft 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 independently made, not influenced by any communication or advice from ADB.

14. Of the total project cost, ADB will finance 40.2%; the Government, 13.7%, on a grant basis; and HPG, 5.1%, using its own funds. The remaining local currency cost of \$319.2 million will be domestically raised by HPG. The ADB loan proceeds will be made available to the Government, which, in turn, will make them available to HPG, on the same financial terms and conditions as those of the ADB loan. HPG will bear the interest rate fluctuation and foreign exchange risks. HPG will onlend a portion of the loan proceeds—\$300 million—to CECC on the same financial terms and conditions as those of the ADB loan. CECC will bear the interest fluctuation and foreign exchange risks. Hunan Province will keep the balance of \$12.5 million and use it for the local road component; it will bear the interest rate variation fluctuation and foreign exchange risks.

Table 2: Financing Plan
(\$ million)

| Source | Foreign Exchange | Local Currency | Total Cost |
|-----------------------------|------------------|----------------|--------------|
| Asian Development Bank | 312.5 | 0.0 | 312.5 |
| Ministry of Communications | 0.0 | 106.4 | 106.4 |
| Hunan Provincial Government | 1.7 | 38.3 | 40.0 |
| Domestic loan | 0.0 | 319.2 | 319.2 |
| Total | 314.2 | 463.9 | 778.1 |

Source: Asian Development Bank estimates.

C. Allocation of Loan Proceeds

15. The allocation of loan proceeds is in Table 3.

Table 3: Allocation of Loan Proceeds

| Category | | Amount Allocated (\$) | | Percentage of ADB Financing |
|----------|--------------------------------|-----------------------|--------------------|----------------------------------|
| No. | Description | Subcategory | Category | |
| 1 | Civil Works | | 269,260,000 | |
| 1A | Expressway | 256,760,000 | | 52% for foreign and 0% for local |
| 1B | Local Road* | 12,500,000 | | 45% for foreign and 0% for local |
| 2 | Equipment | | 8,810,000 | 100% of foreign expenditure |
| 3 | Consulting Services | | 1,690,000 | 100% of foreign expenditure |
| 4 | Interest and Commitment Charge | | 9,560,000 | 100% of amounts due |
| 5 | Unallocated | | 23,180,000 | |
| | Total | | 312,500,000 | |

*For local road from Zhangjiajie to Yuanling.

III. IMPLEMENTATION ARRANGEMENTS

A. Executing and Implementing Agencies

16. HCD will be the Executing Agency (EA) responsible for overall Project implementation and implementation of the local road component of the Project. CECC will be the implementing agency, responsible for coordinating and monitoring all construction activities of the expressway, as well as operating the expressway.

B. Project Management Organization

17. CECC's general manager, the project director, will be responsible for overall project management in respect to the expressway, the approval of contracts, and payments. HCD will implement the local road component through two agencies under the Hunan Highway Bureau. A project implementation unit established within CECC will facilitate land acquisition, resettlement, and environmental protection measures, and ensure that local concerns are adequately addressed. The unit is headed by a project manager, who will oversee physical implementation activities day-to-day and prepare progress reports. Apart from its central office, CECC has seven toll stations and four maintenance centers. CECC has sufficient technical capability to handle the Project. However, its institutional capacity needs to be further strengthened; assistance will be provided under the consulting services. The organization chart of CECC is in **Appendix 6**.

IV. IMPLEMENTATION SCHEDULE

18. Preconstruction activities—detailed design, the preparation of bidding documents, the prequalification of contractors, and the tendering and awarding of contracts—began in April 2003. Preliminary design was completed in March 2003 and detailed design in December 2003. Preconstruction activities were completed in July 2005 with ADB's approval of the award of 21 civil works contracts. The construction of the expressway started in September 2005 and the Project will be completed by December 2008. The construction schedule is in **Appendix 7**.

V. COST ESTIMATES AND FINANCING PLAN DURING IMPLEMENTATION

19. The projected contract awards and disbursements for the whole project implementation period are in Tables 4 and 5 below.

**Table 4: Projected Contract Awards
(\$ million)**

| Component | 2005 | 2006 | 2007 | 2008 | 2009 | Total |
|----------------------|---------------|--------------|--------------|-------------|------|---------------|
| Expressway | 444.82 | | 94.49 | | | 539.31 |
| Local Road <i>a/</i> | | 48.13 | | | | 48.13 |
| Equipment | | 16.74 | | 2.50 | | 19.24 |
| Consulting Services | 1.51 | | | | | 1.51 |
| Total | 446.33 | 64.87 | 94.49 | 2.50 | | 608.18 |

a/ Only for ADB-financed contract section.

**Table 5: Projected Disbursements *a/*
(\$ million)**

| Component | 2005 | 2006 | 2007 | 2008 | 2009 | Total |
|---------------------|--------------|---------------|---------------|--------------|-------------|--------------|
| Expressway | 67.00 | 117.00 | 84.87 | 5.78 | 4.60 | 279.25 |
| Local Road | | 3.13 | 5.62 | 3.75 | | 12.50 |
| Equipment | | 1.67 | 9.34 | 7.43 | 0.80 | 19.24 |
| Consulting Services | 0.13 | 0.39 | 0.49 | 0.50 | | 1.51 |
| Total | 67.13 | 122.19 | 100.32 | 17.46 | 5.40 | 312.5 |

a/ Only for ADB loan proceeds.

VI. CONSULTANT RECRUITMENT

20. The Project will provide 49 person-months of international consultants and approximately 5,184 person-months of domestic consultants. Thirty-six of the 49 person-months of international consultants will be for the supervision of the civil works; 1 person-month each for pavement design, tunnel construction, vehicle emissions and environment, the operation and maintenance concession, and transport services; 2 person-months each for road safety, and socioeconomic and poverty impact monitoring and evaluation; and 4 person-months for additional experts, as needed. The international consultant's terms of reference are in **Appendix 8**. Of the total of 5,184 person-months of domestic consulting services, 300 person-months will be allocated to the local road component. HCD will establish 6 resident supervision engineer offices for construction supervision, environmental and resettlement monitoring, and project performance monitoring and evaluation. Overall project supervision will fall under the responsibility of the chief supervision engineer's office. The chief supervision engineer (CSE) will be assisted by 2 deputy CSEs, one of whom will be the team leader of the international consultants. He or she will assist the CSE in project and contract management activities, and certify the contractor's progress payments and contract variations prior to their approval by the CSE. The international consultants will be financed by the ADB loan and will be recruited based on the quality- and cost-based selection method in accordance with ADB's *Guidelines on the Use of Consultants*. Domestic consultants will be funded by domestic financing and recruited in accordance with government procedures acceptable to ADB.

21. **Capacity Building and Human Resources Development.** To cope with increased expressway construction and management activities, a Human Resources Development Plan will be drawn up in time for the start of civil works. The plan will take into account the EA's need for capacity building, and the recruitment and training requirements. One element of the plan, an international training program funded by the loan, will cover expressway operations; accounting, auditing, and reporting of financial statements; commercial development of expressways and business planning; expressway maintenance; road safety; project management; bridge and tunnel design; traffic engineering; and pavement design. HCD staff will undergo about 65 person-months of international training. Assisted by the consultants, HCD will prepare the training programs, their location, and a list of candidates, for ADB's concurrence. The output of the training will be disseminated through HCD and CECC.

VII. PROCUREMENT

22. All ADB-financed procurements will follow ADB's *Guidelines for Procurement*. The main civil works will be divided into 21 packages and the equipment, into 3 packages, all of which are to be procured under international competitive bidding (ICB) procedures (**Appendix 9**). Ancillary facilities, including the administration building and service areas building under domestic financing, will be procured using local competitive bidding (LCB). The procurement for the local road section financed by the ADB loan will use LCB, while the procurement for the local roads under government financing will follow government procedures acceptable to ADB. The international bidding will be conducted by a qualified tendering company with previous experience in externally funded projects. Only prequalified contractors with adequate technical and financial capacities will be allowed to bid for several packages; they may be awarded more than one contract based on the least-cost combination of contracts. The relevant sections of ADB's anticorruption policy will be included in all documents and contracts related to the bidding and implementation of the Project.

23. **Advance Action.** The Government requested for advance procurement action for civil works, which ADB approved in May 2004. This covered the prequalification of contractors, tendering, and bid evaluation for civil works contract packages, but did not include the signing of contracts. The advance actions were undertaken in accordance with ADB's *Guidelines for Procurement* and *Guidelines on the Use of Consultants*. The Government and HCD had been advised that the approval of the advance action would not commit ADB to finance the Project.

VIII. DISBURSEMENT PROCEDURES

24. The loan will be disbursed in accordance with ADB's *Loan Disbursement Handbook*. Since most of the payments will be made for large contracts (above the equivalent of \$100,000), direct payments, reimbursements, and commitment procedures will be used to withdraw loan funds. If government funds are used first for eligible expenditures, ADB's reimbursement procedure will be followed. To expedite the flow of funds, the statement of expenditures procedure may be used for reimbursement of eligible expenditures for any individual payment not exceeding the equivalent of \$100,000.

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

| Loan Category | Disbursement Procedure |
|---------------------|------------------------|
| Civil Works | Reimbursement |
| Equipment | Commitment Procedures |
| Consulting Services | Direct Payment |

IX. PROJECT MONITORING AND EVALUATION

26. The HCD concurred with the proposed set of indicators for monitoring and evaluating the performance of the Project in relation to its goals and objectives. Based on the results of TA 3900, a set of monitoring indicators for the socioeconomic and poverty reduction impacts was refined, in close consultation with HCD and local government officials. The key indicators and assumptions outlined under goal and purpose in the project framework will form the core of the data required for assessment. Prior to project implementation, HCD will establish the necessary baseline values for impact indicators and update them during project implementation. Where relevant, indicators will be disaggregated by gender and ethnic group. HCD will measure the indicators for project evaluation on project inception, completion, and annually for 3 years after completion. The level of effort for the project performance monitoring system (PPMS) tasks will include: 3 person-months of international expertise to design and set up the PPMS and train domestic consultants on monitoring methodology; and 24 person-months of domestic expertise for database management, village-level surveys, analysis, and reporting—for which HCD will recruit an independent local institute. To facilitate the assessment of the Project's socioeconomic impact, the terms of reference to monitor and evaluate project impacts are included in the scope of consulting services to be provided under the Project. Reports summarizing the key findings of monitoring at inception, completion, and annually for 3 years thereafter will be submitted to ADB.

27. **Project Review.** In 2007 (originally scheduled for 2006), ADB and HCD 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 sectoral reforms, policy development, resettlement, and compliance with assurances in the Loan Agreement.

X. REPORTING REQUIREMENTS

28. HCD will make satisfactory arrangements for reporting implementation progress through quarterly progress reports (QPR). Suggested format and contents of the QPR are in **Appendix 10**. Within 3 months of completion, HCD will submit a project completion report (PCR) to ADB. The suggested topics and format for the PCR to be prepared by the Borrower is in **Appendix 11**.

XI. AUDITING REQUIREMENTS

29. HCD and CECC will maintain separate accounts for the Project related financial statements, such as statements of source and application of funds, income statements, and balance sheet. The income statements will start on the commencement of toll operations. CECC and HCD will prepare one set of financial statements each for the expressway and local road component and have them audited annually. The audit will be in accordance with appropriate auditing standards consistently applied by independent external auditors whose qualifications, experience, and terms of reference are acceptable to ADB. HCD and CECC will submit to ADB within 6 months of the end of each related fiscal year, certified copies of audited project accounts and financial statements and an auditor's report for the Project, all in English. To ensure that internal controls and checks on the project construction costs and operations are effective, HCD will establish an internal audit unit and will maintain it during implementation and operation of the Project. The unit, composed of full-time accountants, will undertake independent tests on day-to-day transactions, prior to reference to external auditors.

30. Once the auditor for the Project has been appointed, the Borrower and/or the CECC should inform ADB and ADB will send an audit letter specifying the financial reporting and auditing requirements under the Project. A sample audit letter is in **Appendix 12**.

XII. MAJOR LOAN COVENANTS

31. The major loan covenants are in **Appendix 13**.

XIII. KEY PERSONS INVOLVED IN THE PROJECT

32. The key persons who will be involved in the implementation of the Project from the Borrower, the EA, IA, and ADB are in **Appendix 14**.

XIV. ANTICORRUPTION

33. During project processing, the mission explained ADB's anticorruption policy to provincial and local government officials, highlighting the section on fraud and corruption that was added to ADB's *Guidelines on Procurement* and *Guidelines on the Use of Consultants*.

ADB's program for the PRC includes assistance that will improve governance and provide incentives to reduce the incidence of corruption in the longer term. For the Project, the EA will take the following anticorruption actions: (i) involving full-time officials from HCD's supervision division in bidding, construction, and operations; (ii) introducing a dual-signing system, in which the civil-works contract winner also signs an anticorruption contract with the employer; and (iii) periodic inspections on the contractor's activities related to fund withdrawals and settlements.

XV. CONTRACT VARIATIONS

34. CECC should seek ADB's prior approval for contract variations worth \$100,000 and above.⁶

⁶ Further clarification will be sought with ADB officials upon return of Inception Mission to ADBHQ and CECC will be advised accordingly.

TRANSPORT SERVICES IN THE PROJECT AREA

A. Overview

1. The eastern part of the project area includes fertile river flats, and easier access to major cities, while the central and western part is mountainous terrain with a higher incidence of poverty. The eastern section of the project area is close to Changde where the economy is prosperous and transport services are adequate in both quality and extent. In the middle and western section, including Huaihua Prefecture, however, transport services are limited. The rural population in the area lives in remote, isolated natural villages, of which only two thirds are served by roads—most are of poor quality. The mountainous terrain in the area makes it difficult to develop a good road network; many administrative villages have only one road linking them to a town. An inefficient transport system can serve as a significant constraint on agricultural efforts in rural areas, both by raising the cost and effectiveness of inputs to production and by delaying the sale of harvested crops.

B. Transport Demands and Means in the Western Part of the Project Area

2. In the central and western part of the project area, trucks and buses provide services to villages, but the cost of travel is high. The people in the area mostly rely on informal transport services including bicycles and motorized tricycles to travel to a town. A survey found that the average trip for the poor was longer than that for the non-poor because villages are far away from commercial centers. Such trips are costly for the poor and hence infrequent.¹ As a result, the poor who are often limited to walking to nearby rotating village markets can sell their produce up to the amount that they can carry on their backs, or sell it to four-wheel drive-in traders who benefit through a buyer's market situation. Likewise, the poor are comparatively limited in traveling to buy farming inputs. On the other hand, higher income households trade at larger markets in towns because they have access to affordable transport services.

3. Where there is no road access, all personal trips are made on foot (or at least start on foot). In those villages with road access, a variety of modes is used for journeys. Walking and bicycles are the dominant modes for short journeys, but as the journey length increases, the number of motorized trips increases. Most walking trips are of less than 6 kilometers (km). Even on short journeys, motorized transport, such as motorized tricycles, is often used. The total number of trips per household is low. With each household making 1 trip every 3 days, trips within the township constitute the vast majority of all trips. The traffic volume in a village is quite low. The average volume of grain marketed in a village is below 80 tons per year (equivalent to less than one small truck load per week), with similarly small volumes of fertilizer being brought in. Only small volumes of passenger traffic are generated. The survey found that the rural population is most concerned with availability and quality of local roads. The absence of roads or very poor quality roads limits access to markets and social infrastructure, health, and education. For instance, one village reported difficulty crossing a major river that separates them from important social services, such as hospitals.

4. **Buses.** Two-thirds of the villages in the rural remote area are connected to a bus route. Most roads in the rural villages are unclassified and in poor condition. Bus operators do not normally operate on unclassified roads, or they operate with smaller buses and fares 20% higher than those charged on classified roads. Bus fares depend on the road class, road conditions, daily frequency of bus services, and bus size. For a small bus (15–20 seats), the

¹ ADB. 2002. *Technical Assistance for the People's Republic of China for Hunan Roads Development II Project*. Manila.

official fare is CNY0.18 per km. Fares can vary in the range of plus or minus 20%. Long-distance services are run by companies, while intracounty services are normally run by individuals. Normally several operators provide services on each route, but the extent of competition on fares or on service is limited. The Hunan Provincial Communications Department (HCD) controls the number of operators on each route, to prevent over-supply. The number of trips per day carried out by each operator is also controlled, either through operator associations, or directly by state-owned bus terminal companies, which control the bus schedule and allocate slots to operators. The interviews with operators carried out during the survey found that these restrictive operating practices result in low vehicle utilization and, as a consequence, unnecessarily high operating costs.

5. **Trucks.** Any commercial trucking operation requires a license. The number of large trucks has decreased slightly, while small trucks have increased substantially. Operators must meet basic requirements for financial resources and maintenance. Once licensed, the trucks can operate anywhere in the country. In practice, rates are negotiated between the shipper and the trucker and are normally lower than the Government guidelines. Current freight rates in the project area are CNY0.5 per ton-km. Most trucks are run by small, private operators, although some large state and private companies exist. The state companies are being privatized, and the market appears to be competitive. The restrictions on the granting of licenses are not unreasonable, and trucking capacity is adequate, possibly in excess.

6. **Small trucks: Agricultural Use Vehicles.** The agricultural use vehicle is a registration category, rather than a vehicle type. They are normally small trucks, based on agricultural tractors, with a registered capacity of between 500 kilograms and 1 ton, although in practice loads of up to twice as much can be carried in these vehicles. In addition, normal trucks, with a nominal capacity of less than 2 tons can also be registered for agricultural use. The tractor-based vehicles are common in country towns and villages.

7. **Other Informal Transport Means.** Mini-taxis (7-seat buses) are run by a large numbers of operators, many of whom appear to be unlicensed. They are based in towns and provide services into the rural areas. The vehicles are normally owned by the drivers. They operate a fixed route, pick up and drop off passengers on demand, and are prepared to negotiate variations on the routes. Fares are normally on a per-trip basis and established by custom, but can be negotiated.

8. Motor-tricycles provide short distance passenger services in both urban areas and villages. They are also used to carry small volumes of freight, in addition to, or instead of, passengers. The negotiable fares are on a per-trip basis. Rates for freight are about CNY0.50 per ton-km. However, for short journeys and small volumes, rates are set by custom on a trip-by-trip basis. Drivers operate the motor-tricycles without licences. The large urban areas are gradually prohibiting motor-tricycles services.

9. Twin-cab pickups are used to carry both passengers and freight. The back of a pickup is enclosed and benches are provided for passengers. The benches can be removed when freight is carried.

10. Agricultural tractors equipped with pulling carts carry cargo on occasion.

C. Assessment of Transport Services

1. Adequacy of Transport Services

11. The study survey found that informal transport services, for both passenger and freight, respond to demand in a flexible way. Service provision increases on market days for those who buy or sell at local markets. Informal transport services play a crucial role in meeting the transport demand for rural residents, thereby improving their mobility. However, informal transport supply in rural villages is not sufficient to meet the transport demand. The provision of informal transport services should be increased through an increase in vehicle ownership. There are also safety driver licensing issues that need to be addressed. The formal bus system is regulated on fares, but there is flexibility on route planning, with the initiative for new routes lying with the operators. Although the number of routes operated in the last 5 years has increased substantially, about one third of villages in the rural area still do not have a bus route. Most roads in those rural villages are unclassified or are in poor condition. The survey results indicate that road accessibility is crucial for bus operators to provide services. The market for trucking services is active and fares are market determined. Where larger volumes of cargo have to be moved, traders are able and willing to pick up produce and bring in inputs.

2. Constraints of Accessing Transport Services

12. The rural poor, especially in the rural, mountainous areas, often have difficulty accessing transport services. Regulated transport services often lead to inefficient service, routing, and/or pricing in rural areas. Provision of transport services in the project area, especially the central and western part, is insufficient. This is mainly due to lack of competition in the transport services market, regulations, or government interference. Private operators lack access to credit to purchase vehicles, especially for means of informal transport. Inadequate roads make the provision of transport services to the rural poor difficult. In most rural villages, the poor quality of road access was identified as a major problem in accessing transport services.

3. Interventions to Enhance Provision of Transport Services

13. The extent to which the rural poor benefit from a road investment project depends on their access to reliable and affordable transport services. The less the access, the less benefits they will receive compared with other social groups, and the lower will be the poverty impact of the Project. Due attention will be given to such services during project implementation. The Project includes an action plan to enhance the provision of transport services. Under the loan, an international consultant will be engaged for 1 month to develop an action plan and promote specific measures that will be incorporated into the Project. The consultant, in close coordination with the Executing Agency, will also recommend ways to implement the plan. The report will be submitted to the Asian Development Bank for review by 2006. She/he look will examine the following measures: (i) increasing competition among transport service providers,² (ii) deregulating fare and route controls to raise system efficiency, (iii) making more credit available for the purchase of transport vehicles,³ and (iv) integrating rural transport services into local roads development.

² To construct competitive environment in rural transport, the following regulatory reforms may be considered: (i) regulatory responsibility should be separated from operational responsibility; and (ii) any subsidy should be in the form of service contracts between government authorities and operators, and it should be open to competitive process.

³ New credit schemes should be established, link to existing credit lines, or work with existing credit institutions to broaden their scope of credit services to support private ownership of informal transport means.

OPERATION AND MAINTENANCE CONCESSION TO THE PRIVATE SECTOR

A. Operation and Maintenance Concession

1. An operation and maintenance (OM) concession is an agreement between a government or a state enterprise and a private enterprise whereby a private enterprise: (i) collects tolls from users, to finance the maintenance and reward the concessionaire; (ii) maintains the road to agreed standards; and (iii) pays an agreement amount to the government. Any surplus will accrue to the concessionaire as profit. The bidder who commits the highest canon (or the lowest negative canon, meaning the lowest government support) under a certain toll level will be selected as a concessionaire. The OM concession (i) overcomes public sector budget constraints by securing toll revenues as a maintenance fund without requiring funds to flow through the budgeting process; and (ii) increases efficiency in service provision by bringing in an experienced private sector concessionaire who can operate and maintain the project expressway, at a lower cost than the government.

2. Under an OM concession, the concessionaire assumes the traffic and ultimately the revenue risk. As such, the OM concession is differentiated from a maintenance management contract whereby the private sector maintains an existing road under performance specifications, for which it receives fixed management fees from the government. It is also different from a build-operate-transfer (BOT) scheme where the private sector finances designs, builds, operates, and maintains the expressway, under which significant project risks including construction and finance risk are transferred to the private sector. The OM concession is the promising alternative modality for private sector participation in the road sector as it leads public-private sector partnering in a feasible way by more equally allocating project risks between the government and the private sector.

B. Operation and Maintenance Concession in Hunan Expressways

3. Compared with other provinces, Hunan has actively diversified highway financing and encouraged private sector participation in expressways. The private sector is involved in five expressways in Hunan: Changtan, Changyong, Xiheng, Changtan West, and Changyi.¹ Changtan and Changyong were funded by the Asian Development Bank (ADB) under the Hunan Expressway Project.² Except for Changtan West, which was implemented using a BOT scheme, in the other four expressways the private sector has been involved in operation and maintenance through concession agreements. For the Changtan expressway, the 30-year OM concession was awarded to the Modern Investment Company in 1998; the traffic risk is borne by the company. For Changyong, the concessionaire, the Modern Investment Company, was successfully listed in the A-share section of the Shenzhen Stock Exchange in 1998. For Xiheng, funded by the World Bank, the 20-year OM concession was awarded in 2002 to the Modern Investment Company. For Changyi, a joint venture between the Government (51%) and the Hong Kong Road King Company (49%) was established for construction and operation (Table

¹ The sections are Changsha-Xiangtan, Changsha-Yongtan, Xiangtan-Hengyang, Changsha-Xiangtan West, and Changsha-Yiyang, respectively.

² ADB. 1993. *Report and Recommendation to the President to the Board of Directors on a Proposed Loan to the People's Republic of China for the Hunan Expressway Project*. Manila. The Hunan Expressway Construction and Development Corporation, established in 1993 as a 100% state owned enterprise, was initially responsible for the construction and operation of these ADB-funded expressways, and now operates the majority of expressways in Hunan.

A5). The Hunan Provincial Communications Department (HCD) is pursuing OM concessions with the private sector for three more expressways.³

4. These arrangements have introduced sounder business practices to Hunan's expressways and enhanced financial efficiency. However, the full potential of the benefits may not have been achieved, as the concessionaires were merely joint ventures between the government and the private sector; the concessions' terms were set through direct negotiation and with little transparency. To ensure adequate pricing, the concession should be awarded through competitive and transparent bidding.⁴

Table A5: Private Sector Participation in Expressways in Hunan

| Expressways | Length | Open to Traffic | Revenue (CNY million) | | Form of Private Participation | Initial Setting |
|---------------|----------|-----------------|--------------------------|-------|--|-----------------|
| | | | 1 st year | 2003 | | |
| Changtan | 52 km | 1996.12 | 123.0 (1998) | 136.1 | OM concession (30 yrs) | SOE |
| Changyong | 25 km | 1994.12 | 24.5 (1995) | 38.9 | Initially OM Concession and then securitized in 1998 | SOE |
| Changtan West | 28 km | | | | BOT (30 yrs) | Sole venture |
| Xiheng | 117.9 km | 2000.12 | 247.2(2002) | 299.2 | OM concession (20yrs) | SOE |
| Changyi | 76 km | 1998.7 | 27.1 (1998) | 122.8 | OM concession | Joint venture |

BOT = build-operate-transfer, SOE = state-owned enterprise.

Source: Hunan Provincial Communications Department.

C. Operation and Maintenance Concession for the Project Expressway

5. During the Project's initial years of operation, its OM will be entrusted to the Changji Expressway Construction and Development Company (CECC), a state-owned company.⁵ Then HCD will enter into an OM concession after a few years of opening. To this end, HCD will develop the concession agreement framework during the implementation of the Project. In particular, due attention will be given to enhance transparency in the bidding process for the concession, to optimize the gain of the concession to the efficiency in expressway operation. HCD will prepare a bidding document—which specifies the concession period and selection criteria, and ensures adequate pricing and transparent bidding—and submit it to ADB for review by the midterm review in 2006. Under the ADB loan, an international consultant will be engaged for 1 month to help HCD prepare the concession agreement and bidding document. The concession agreement will set out the rights and responsibilities of the concessionaire and government during the concession period, to maintain the project expressway to agreed standards, and to collect tolls from users. A draft concession agreement will be included in the bidding documents to ensure that all bidders have equal opportunities. HCD will assess a specific schedule of the concession's implementation and advise ADB about it by the midterm review. HCD and ADB will ensure that (i) the concession is adequately priced by awarding it through bidding; and (ii) expressway maintenance will meet the agreed standards.

³ The sections are Yiyang-Changde, Hengyang-Zaomupu, and Xiangtan-Shaoyang—the construction is complete on all.

⁴ ADB. 1997. *Technical Assistance to the People's Republic of China for Corporatization, Leasing, and Securitization in the Road Sector*. Manila.

⁵ The CECC was established in July 2004 for the construction and operation of the project expressway.

D. Key Aspects of the Optimal Operation and Maintenance Concession

1. Environment for Workable Operation and Maintenance Concession

6. Two basic laws should be in effect: (i) a law that permits concessions, whereby government can transfer the right of maintenance to a private party; and (ii) a law that permits tolling for use of public facilities and tolling by the private sector. Other laws and regulations are also essential to address traffic management by the concessionaire, policing the road, advertising control on the road, arrangement for emergency vehicles, etc. Estimates of traffic volumes are crucial in determining the toll road viability. However, any traffic forecast may be uncertain because of the complexity of interaction between economic development, the toll rate, and traffic. This high uncertainty for traffic sometimes discourages the private sector from bidding for concessions. Increasingly, agreement exists that when traffic is particularly uncertain, the traffic risk should be shared by the government and the private sector. The government can provide a downside guarantee for a certain minimum level of traffic, with a complementary scheme put together for sharing super-profits if traffic is higher than expected. Most concession agreements should include a toll escalation formula that is related to the consumer price index and allows for toll increases either every year or every few years. However, the concessionaire is sometimes not permitted to increase the toll as specified in the agreement because of administrative intervention or contract frustration. In this case, a clause should be added in the agreement to prescribe compensation arrangements that can be acted upon when the toll increase is denied.

2. Monitoring of Maintenance Performance

7. The concessionaire is responsible for maintaining the road at performance standards agreed in the concession contract. These standards should be defined to minimize the long-term cost of preserving the road as well as the cost to the road user. Performance-based concessions must have appropriate monitoring procedures, combined with penalties for noncompliance. Concession contracts should include well-defined monitoring procedures. Inspectors may be hired to inspect the road and make regular random checks to verify compliance. A well-documented inventory of the road and daily records of activities undertaken by the concessionaire will help understand the specific behavior of the roads and contribute to better preventive maintenance. To strengthen the monitoring and compliance, road users may also be encouraged to report road deficiencies to the road agency.

3. Bidding Process

8. The guiding principle for bidding processes should be to maximize competition, transparency, and clarity in the process so that the ultimate road users pay a competitive toll. The major aspects that should be considered for ensuring competitive and transparent bidding processes are

- (ii) detailed development of the concession should be set out clearly in the bidding documents, specifying the responsibilities of the concessionaire and government;
- (iii) a draft concession agreement should be prepared by the government and include it in the bidding documents to ensure that all bidders make similar assumptions; and
- (iv) the decision criteria should be clearly set out in the bidding documents. The most transparent approach is to select a single criterion, perhaps the highest level of canon (or the lowest level of government support) for a given toll.

ROAD SAFETY AND VEHICLE EMISSIONS

A. Road Design Standards

1. The Project expressway has been designed and will be constructed in accordance with Ministry of Communications' standards. This will provide a facility of a high standard in keeping with international practice and will ensure a good degree of safety and operational efficiency.¹ The geometric design of the expressway has been selected to ensure that speed limits are chosen to suit the geometric design rather than the design speed. Signs, markings, interchange structure, and crash barriers will be selected carefully prior to the expressway opening. All interchanges of the new expressway are of the trumpet layout to minimize land acquisition. They have low loop radii (50 meters [m] to 60 m) and low design speeds (35 kilometers [km]/hour [hr]). The minimum taper plus deceleration lengths used in the design are 150 m for the 100 km/hr sections and 130 m for the 80 km/hr sections. Current accident statistics show a significant number of tail-end collisions at the exit tapers. It was recommended to review the deceleration lengths to take account of the main line to loop design speed change prior to the commencing civil works. Guardrails will be installed when the consequences of a vehicle impact with the barrier are likely to be less severe than an impact with the feature being shielded. For the new expressway, the median width is 2.0 m and continuous guardrail is proposed on both sides of the median.

2. To maximize benefit from the expressway project, the Hunan Provincial Communications Department (HCD) will undertake all necessary measures to impound and prohibit overloaded vehicles from entering the expressway until the load is reduced to the legal requirements. Maintenance works can have a serious effect on traffic flow and safety, especially as traffic volumes increase. Adequate advanced warnings of maintenance interruptions to normal expressway traffic will be given to the road users to minimize inconvenience and delays. The expressway has 15 tunnels. HCD will implement a pavement management system on the expressway and local roads and develop a complete maintenance management system to provide realistic maintenance budgeting, expenditure control, performance standards, and evaluation. Regarding the safety of tunnels, HCD has developed an emergency plan according to a safety audit. As part of the final design, HCD will prepare a risk management plan to cover areas of safety concern during construction, especially construction of bridges and tunnels.

B. Road Accidents And Traffic Enforcement

3. Accident rates in the PRC are high compared with many other developing countries. Road accidents and their resultant economic losses represent a substantial problem and require urgent attention. The 2002 accident statistics for the PRC were 773,137 accidents, 109,381 fatalities, and 562,074 injuries. This equates to one death every 5 minutes, the highest such rate in the world. The economic cost to the country is significant; between 1–3% of its gross domestic product. Hunan had 28,056 accidents, 3,658 fatalities, and 27,468 injuries in 2002. To address this issue, the Ministry of Public Security prepared the 2002 Road Safety Action Plan, which aims to (i) reduce serious accidents, involving more than 10 fatalities, by 10% compared with 2001; and (ii) eliminate major accidents, involving 30 or more fatalities. This will be achieved by improved vehicle safety, driver training, and improved traffic management. In Hunan, the Traffic Police, under the Hunan Public Security Bureau (HPSB), is responsible for investigating accidents and identifying preventive measures. The Traffic Police also makes

¹ The design speed of the expressway varies along the route with 62 km having a design speed of 100 km/hr and the remaining 111 km having a design speed of 80 km/hr.

substantial efforts to identify accident blackspots, to establish the causes and so to avoid similar accidents in the future. This work is coordinated with HCD when the causes are road related rather than driver or vehicle related. The Hunan Safety Audit for Highway Design was developed during the implementation of a World Bank funded project and has been used for all expressways since 2000. Although the guidelines are comprehensive, it needs to strengthen the end of construction and pre-opening to traffic practice. Such audits should also involve the Traffic Police since this group will have the traffic safety responsibility after opening to traffic and may well spot different safety issues from their practical experience of operating on the expressways. Such guidelines need to be more practical rather than theoretical and the audit staff should be experienced accident or safety personnel or have been involved in accident investigation. The international consultant will review the guidelines during the implementation of the Project expressway.

C. Organization and Action Plan

4. The organizations responsible for road safety and enforcement on the expressways in Hunan are the HPSB and HCD. The Road Safety Committee of HPSB currently implements accident management in Hunan, which is responsible for enforcement of traffic, accident records, accident analysis, and identification of blackspots. An interdepartmental framework will be established under the Project to enhance road safety in the project area. While HCD will concentrate on the engineering, road safety audit, and blackspot improvement, HPSB will undertake traffic law enforcement for safer expressways. A qualified team will be set to manage traffic operations for the expressway. The local traffic police will be responsible for road safety of the local roads. HPSB will assign a senior officer to coordinate the smooth implementation of the Project. HCD will help develop a comprehensive road safety strategy in the project area, with the help of an international road safety specialist. The strategy aims to improve road safety through: (i) institutional strengthening, (ii) capacity building, and (iii) enhanced coordination among various agencies.

D. Vehicle Emissions

5. Motor vehicle emissions are a growing contributor to air pollution. The Government is taking significant measures to control emissions by regulating the automobile industry, enforcing an annual vehicle test and inspection and maintenance program. The new measures also set emissions and fuel efficiency targets and offer tax incentives to encourage development of more environment friendly cars. In the new rule, it targeted that average fuel consumption will be reduced 15% points from 2003 to 2010. Hunan is developing alternative fuels that could help reduce petroleum imports. A 300,000 ton per year ethanol plant has been proposed in Changde; it would use corn and other grains as feedstock. The Sichuan-Hunan gas pipeline project is currently under construction. Natural gas will be provided for power generation, industrial fuel, commercial and residential users, and transport. HCD and Hunan Environmental Protection Bureau (HEPB) will proceed with the planning for a vehicle emissions control implementation plan. Implementing such a program will require the cooperative of a number of agencies, jurisdictions, and the community, as well as Government commitment. An implementation plan will be developed to promote efficient vehicle emission reduction measures in the project area. An integrated approach may be adopted to facilitate the implementation of the action plan. A vehicle emissions specialist will be engaged to develop a comprehensive vehicle emissions action plan, including enforcement management, prevention measures, socioeconomic costs, and major issues for the emission control programs.

SUMMARY RESETTLEMENT PLAN

1. The 173-kilometer (km) project expressway and 3 interconnector roads (12 km) will affect 22 townships and 97 villages in 3 district or counties: Dingcheng, Taoyuan, and Yuanling. Based on the detailed measurement survey (DMS), the Project will permanently occupy about 1,349 hectares (ha) of land, including 509 ha (38%) of cultivated land. About 30,564 people will lose some land. The temporary use of land during construction will amount to 290 ha. The number of rural people whose houses will be demolished is 4,807 people (1,414 households), with a total floor space of 225,139 square meters (m²). Some 1,607 persons in 5 schools and a forestry farm also require relocation. Land acquisition and resettlement impacts were minimized through consultations with local officials, aligning the expressway away from densely populated areas, and avoiding irrigated land and facilities.

A. The Resettlement Plan

2. The Resettlement Plan (RP) was prepared by the Hunan Provincial Communications Department (HCD). The RP includes the project expressway, interconnector roads, and 517 km of existing local roads. The RP is based on the project preliminary study, and Hunan Design Institute detailed design survey data on impacts. The socioeconomic survey covered 657 households from 72 villages, and 56 interviews of village representatives. The draft RP was reviewed by the affected people and the Asian Development Bank (ADB). HCD incorporated comments into the RP. The RP and cost implications were finalized based on the DMS.

B. Policy Framework and Compensation

3. The resettlement objective is to ensure attainment of equal or better livelihoods and living standards for people affected by the Project in line with the Land Administration Law (1998) of the People's Republic of China (PRC) and the ADB's policies on involuntary resettlement (1995) and indigenous people (1998). The RP is also based on the *Implementation Measures for the Land Administration Law of the PRC in Hunan Province* (2000) and the Hunan Provincial Government's *Management Measures on Temporary Land Occupation*. HCD will ensure that any people losing land, housing, other assets, or other means of production will be assisted in restoring their incomes and living standards to at least the levels without the Project's intervention. Lost assets will be replaced or compensated at replacement cost. The RP also stipulates eligibility and entitlement provisions for affected people and provides rehabilitation subsidies. Permanent land losses are compensated either through land reallocation within the villagers' group or through cash payments to the collective at rates of 8 times the average annual output value. Temporary land losses will be directly paid to the individual at a rate stipulated in the RP. House losses will be paid directly in cash at replacement cost, free of demolition expenses and salvaged materials. Crops and tree losses will be directly paid in cash at rates. Each resettled household will also receive an allowance to cover transport costs, work loss, transfer costs, medical expenses, and temporary housing.

C. Relocation Site Development and Rehabilitation Assistance

4. The three options for residential resettlement site selection are (i) new housing sites will be selected in the same village or land owning group for villages where only several households will be relocated (light impact); (ii) a site suitable for clustered buildings will be selected if more households are involved in relocation, but enough land is available for their livelihood (moderate impact); and (iii) relocation to towns with the permission from the township government for households that are engaged in nonfarm business. Along the Changji expressway, no structure loss is expected for enterprises. Five schools and one forestry farm will be affected, and general

relocation plans have been prepared. Since project impacts are spread over many village groups, the degree of income loss is not serious. Most affected people prefer cash compensation for their land loss. Village groups will decide based on villagers' preference. Consequently, no village income rehabilitation plans are needed. But, initial rehabilitation plans have been discussed for the 10 most seriously affected villages, and further consultation will be conducted on compensation disbursements. Relevant training will also be arranged for farmers wishing to expand their skills. Special assistance for vulnerable groups will be provided by the Project to secure their livelihood.

D. Stakeholder Participation, Disclosure of Resettlement Plan, and Grievances

5. At various stages of the project planning, the people affected by the Project have been informed and consulted about the likely project impacts. Stakeholders consulted include (i) heads of households to be affected, (ii) village heads and villagers' representatives, (iii) local government agencies and departments, and (iv) women and other vulnerable groups. Consultations will continue through the project implementation period. HCD prepared the RP, which was discussed with local government and stakeholders for review and comments. HCD also organized consultations in each affected district or county. Consultations revealed full support for the Project. Some concerns raised during consultations have been addressed by adjusting the road design and by improving compensation and resettlement policy measures and entitlements. Resettlement information booklets have been distributed and discussed with affected villages and households. A working organization for resettlement consisting of officials from the Land Administration Bureau and related department will implement the RP. Claims will be reviewed and resolved within 3 weeks.

E. Implementation Arrangements and Budget

6. The HCD is responsible on behalf of the Hunan Provincial Government for the general administration of the project implementation and the monitoring of the work done by project implementation agency to complete the project. The Changji Expressway Construction and Development Company (CECC) is responsible for resettlement implementation and supervision. A resettlement office has been established in CECC, and others have been set up in each affected district or county. This office will be headed by a district leader and have 5–8 members from different government departments, usually 1 from each department of land administration, municipal construction, and environment protection. Each affected township will have a resettlement office and each village committee will appoint at least 1 person. Resettlement and land acquisition costs are estimated at CNY435 million (\$52.5 million). The budget includes land and buildings compensation, income restoration assistance, repair of infrastructure, management costs, monitoring, taxes, and contingencies.

7. CECC will carry out internal monitoring of land acquisition and resettlement to ensure timely activities in accordance with the RP, and to protect the interest of those affected by the Project. The following will be monitored: (i) compensation payments, (ii) house rebuilding or relocation of people affected, (iii) land redistribution, and (iv) grievance redress. CECC will prepare progress reports and submit them to ADB quarterly, until resettlement is completed. CECC will also prepare a resettlement completion report for submission to ADB. Hunan University will carry out the external monitoring every 6 months in the first 2 years, and then annually for 2 years or until resettlement is deemed successful. Tasks include: (i) review and verification of the compensation payments; (ii) determination of the status of land acquisition and payments; (iii) assessment of the disbursement of compensation procedure; (iv) appraisal of the grievance procedure; (v) reaction and satisfaction of affected people with the entitlements and compensation; (vi) assessment of the restoration of livelihoods of affected people; and (vii)

lessons learned for future policy implementation, formulation, and planning. Monitoring reports will be provided in Chinese to CECC and in English to ADB.

Table A7: Resettlement Supervision Milestones

| No. | Resettlement Tasks | Target | Responsible Agency | Deadline | Status |
|-----------|--|---|--------------------|-------------------|-------------------------|
| 1. | Disclosure | | | | |
| 1.1 | - Information booklet - Stage I | 81 villages, 375 groups, 1275 AF | CECC | 2003.11.30 | Completed |
| | - Information booklet - Stage II | 27 villages, ___ groups, 136 AF | CECC, CROs | 2004.06.30 | Completed |
| 1.2 | - Resettlement Plan circulation (draft) | 3 Counties/District | CECC | 2003.11.30 | Completed |
| | - Resettlement Plan circulation (final) | 3 Counties/District, 22 townships | CECC | 2004.06.30 | Completed |
| 1.3 | - RP placed on ADB website | English & Chinese | CECC & ADB | 2004.06.30 | Completed |
| 2. | Resettlement Plan & Budget | | | | |
| 2.1 | - Approval of RP & budget (including compensation rates) | 173 km + 12km connector road \$ 51.6 million | HPCD | 2003.11.30 | Completed |
| 2.2 | - Submit Final RP to ADB based on DMS | | CECC | 2004.06.15 | Completed |
| 2.3 | - Detailed Budget by county/district | 3 Counties/District | CECC | 2003.11.30 | Completed |
| | - Detailed Budget by county/district based on DMS | 3 Counties/District | CECC | 2004.06.15 | Completed |
| 2.4 | - Resettlement impacts and budget for local roads component (included in RP) | 517 km | HPCD | 2004.05.10 | Completed |
| 3. | Compensation Agreements | | | | |
| 3.1 | - Village agreements | 108 villages | 3 CROs | 2003.12.31 | Completed |
| 3.2 | - Household agreements | 1411 AF | TROs | 2004.1.31 | Completed |
| 4. | Detailed Measurement Survey | | CROs, TROs | 2003.10.31 | Completed |
| 5. | Detailed Resettlement Plans | | | 2004.1.15 | |
| 5.1 | - Village rehabilitation plans (initial) | 10 villages | 3 CROs | 2003.12.31 | Completed |
| 5.2 | - Land replacement plans | 3 counties | County Governments | 2004.08.30 | Submitted to City level |
| 5.3 | - Plan for Vulnerable Groups Fund | CNY5,000,000 | CECC | 2004.06.30 | |
| 5.4 | - Technical training plan for AF | 2000 AF | CECC | 2004.12.31 | |
| 6. | Implementation Capacity | | | | |
| 6.1 | - 3 CROs and CECC | 20 staff | CECC | 2003.11.30 | 20 mobilized |
| 6.2 | - Staff 22 township/ward offices | 92 staff | CROs | 2003.11.30 | 92 mobilized |
| 6.3 | - Designate village representatives | 108 staff | TROs | 2003.11.30 | Completed |
| 6.4 | - Training of staff | 200 staff | CECC/CROs | 2003.11.30 | Completed |
| 7. | Monitoring & Evaluation | | | | |
| 7.1 | - Baseline survey (480 surveys) | As per RP | Monitor | 2004.3.31 | Completed |
| 7.2 | - Set-up internal supervision | As per RP | CECC/CROs | 2003.12.30 | Completed |
| 7.3 | - Contract external monitor | As per RP | CECC | 2003.12.30 | Completed |
| 7.4 | - Internal monitoring reports | Quarterly | CECC | 2004.06.30 | Completed |
| 7.5 | - External monitoring reports | Semi-annual | Monitor | 2004.07.20 | Completed |
| 7.6 | - Evaluation/completion reports | Annual | Monitor | 2005.3.31 | Completed |
| 7.7 | - Resettlement Completion Report | | CECC | 2007.3.31 | |
| 8. | Documentation of Consultation | As per RP | CECC/CROs | | To be recorded |
| 9. | Documentation of Grievances | As required | CECC/TROs | | To be recorded |

AF=affected families; CRO=County(District) resettlement office; HPDI=Hunan Provincial Communications Survey & Design Institute; RIB=resettlement information booklet; RP=resettlement plan; CECC=Chang-Ji Expressway Construction & Development Co.; TRO=Township/Ward Resettlement Office; VC=Village/Neighborhood Committee; HPCD=Hunan Provincial Communications Department.

* - RIBs with details of impacts, compensation rates and entitlements should be provided to all affected families as early as possible, preferably 120 days prior to removal or loss of land.

COST ESTIMATES
(\$ million)

| Item | Foreign Exchange | Local Currency | Total Cost | ADB Financing |
|--|---------------------|-------------------|---------------|------------------|
| A. Base Cost | | | | |
| 1. Expressway Civil Works ^a | 256.76 | 239.53 | 496.30 | 256.76 |
| 2. Equipment | 8.81 | 0.00 | 8.81 | 8.81 |
| 3. Land Acquisition and Resettlement | 0.00 | 46.00 | 46.00 | 0.00 |
| 4. Consulting Services and Training | 1.69 | 34.13 | 35.82 | 1.69 |
| 5. Local Road Program ^b | 12.50 | 69.36 | 81.86 | 12.50 |
| Subtotal (A) | 279.76 | 389.02 | 668.79 | 279.76 |
| B. Contingencies | | | | |
| 1. Physical Contingencies ^c | 19.47 | 23.34 | 42.81 | 19.47 |
| 2. Price Contingencies ^d | 5.37 | 23.91 | 29.28 | 3.71 |
| Subtotal (B) | 24.84 | 47.26 | 72.09 | 23.18 |
| C. IDC/Commitment Charge | 9.56 | 27.65 | 37.21 | 9.56 |
| Total | 314.16 | 463.93 | 778.10 | 312.50 |

ADB = Asian Development Bank, IDC = interest during construction.

Note: Numbers may not add up due to rounding.

^a Civil works includes the cost of environmental protection and mitigation measures.

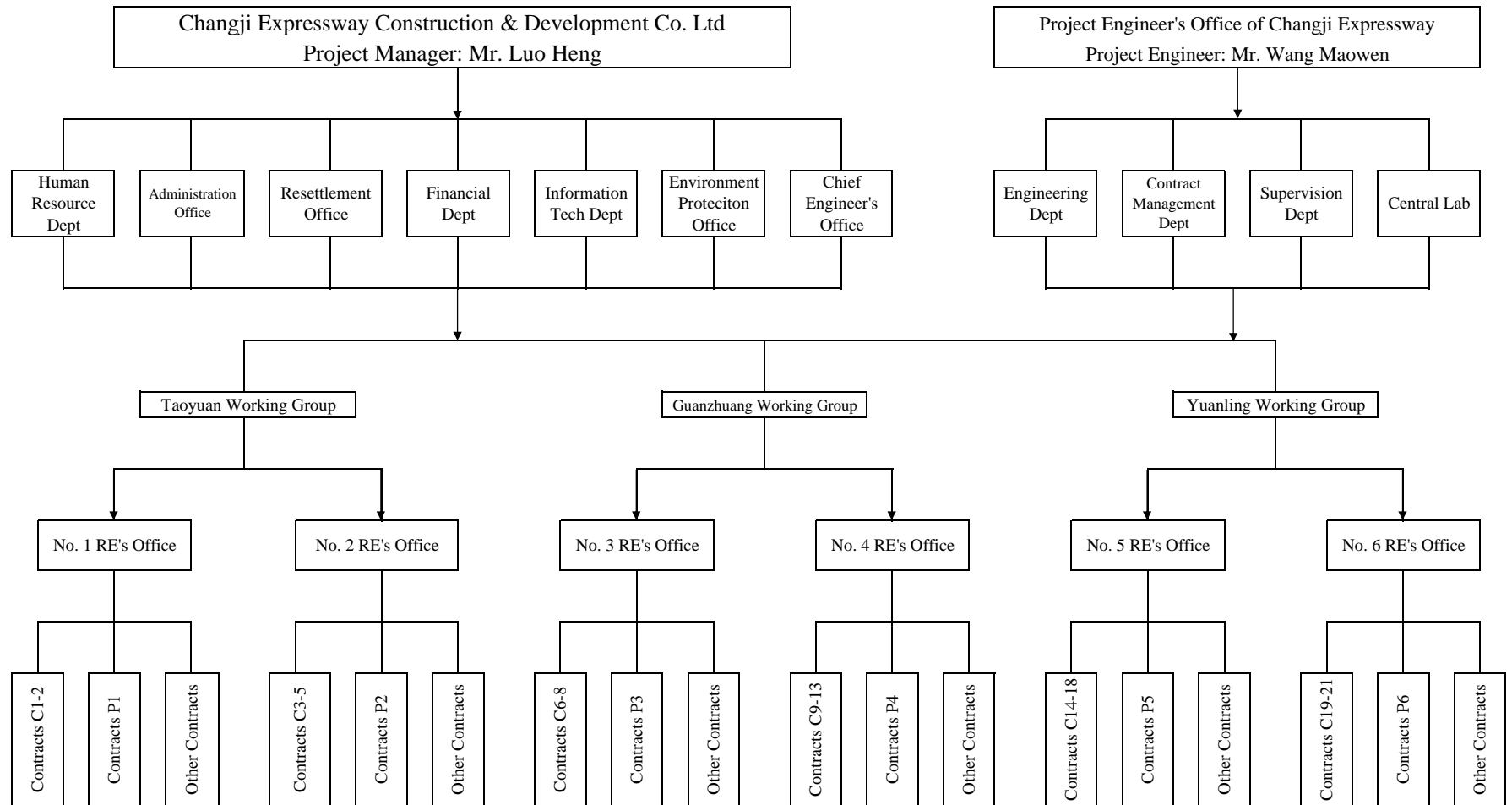
^b Local road component includes nine packages.

^c Physical contingency at 7.0% of expressway and local road component.

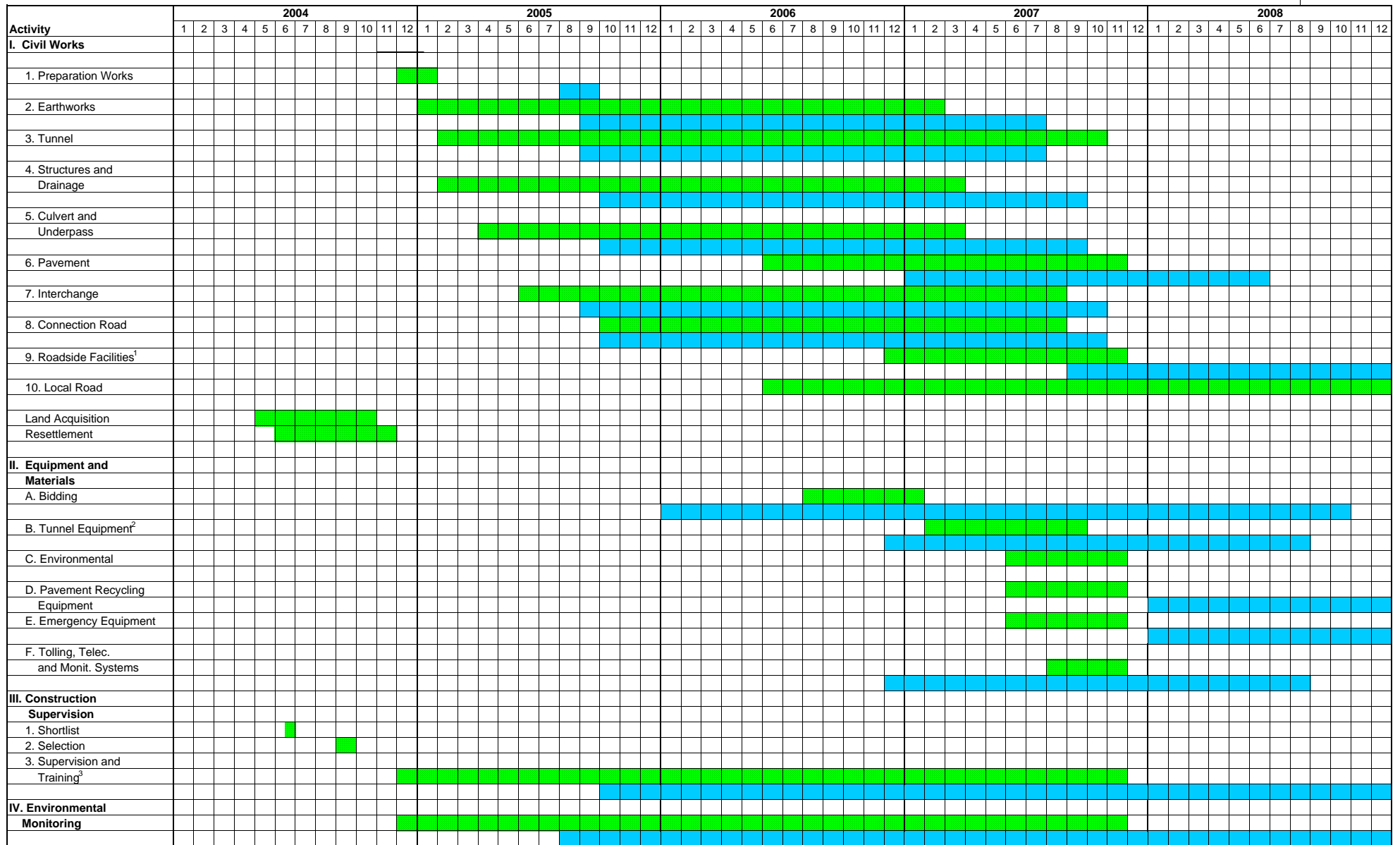
^d Price contingencies were computed based on ADB rates.

Source: Asian Development Bank estimates.

Organization Chart of Changji Expressway



PROJECT IMPLEMENTATION SCHEDULE (at Inception Mission)



Note: 1.Roadside facilities include service and rest areas, toll plazas, maintenance depots, and management offices.

2.Tunnel Equipment include Lighting,ventilator,fire fighting and power supply.

3.Supervision and Training Schedule continue for 39 months include 3 months holiday.

Original
Revised

OUTLINE TERMS OF REFERENCE FOR CONSULTANTS

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, vehicle emissions, operation and maintenance concession, and monitoring are implemented in accordance with the recommendations of various studies, plans, analysis of the project. A total of 49 person months are required for international consultants and an estimated 5,184 person months for domestic consultants. The international consultants will be engaged under ADB financing.

B. Scope of Services and Staffing Requirements

1. Domestic Consultants

2. Domestic consultants will be recruited to supervise construction activities, and develop and implement a project performance management system (PPMS).

3. Construction supervision activities will include the following:

- (i) Assist the EA with contractors' applications for subcontracting parts of the civil works, by reviewing ambiguities and discrepancies in contract documents, and in settling disputes with contractors.
- (ii) Ensure that all required data for setting out the civil works are provided.
- (iii) Help the EA on drawings quality, and advise the EA on further drawing or instructions to the contractors.
- (iv) Assist the EA to review the contractors' organizational arrangements, key personnel and construction programs, materials, and sources of materials.
- (v) Monitor the progress of the works against programmed targets, advise the EA on measures to be taken to improve progress and quality, review and advocate proposed variation orders, determine rates for works, and decide on alternatives.
- (vi) Inspect the quality of the works in terms of workmanship and compliance with specifications; order, supervise, or perform tests on materials and civil works; advise on approval or disapproval of the contractors' plan and equipment; propose, if required, the uncovering of completed civil works and the removal and replacement of improper material and works.
- (vii) Check the progress of civil works, examine and review sampling measurements of any work that is about to be covered or put out of view before permanent work is placed thereon, examine the measurements of the completed civil works, and (as directed by the EA) order the initiation of additional civil works that are part of the contract.

- (viii) Supervise the contractors in all matters concerning safety and care of civil works including the provision of necessary lights, guardrails, fencing, and security.
- (ix) Examine the contractors' accounts, invoices, claims, and other statements for errors in complying with the contract, and suggest and make corrections.
- (x) Advise the Chief Engineer on how and when to issue certificates of payment to the contractors and certify the completion of the civil works or parts thereof.
- (xi) Monitor progress with the implementation of the Social Action Plan (SAP) and provide advice to the EA, relevant local government authorities and the ADB on how the poverty reduction enhancement impact of the SAP can be increased.
- (xii) Provide advice, help and supervision for the local government authorities to facilitate implementation of the local roads program.

4. The domestic consultants recruited to develop and implement the PPMS will collect and analyze a set of indicators for evaluating project performance against project objectives, purposes, and outputs. A baseline survey will be conducted at the beginning of project implementation, and follow-up surveys at project completion, and one year and three years after completion. Data collected during and after implementation will be compared with the baseline data and the target values to be established by the EA and agreed upon with the Asian Development Bank (ADB) before the works start. The main indicators to be monitored include (i) economic development and poverty indicators at the municipality level and for each county in the project area; (ii) transport costs and time for specific types of vehicles and trips; (iii) transport services and charges; (iv) accident rates; (v) air quality; (vi) financial indicators of the expressway operating company; (vii) township incomes per capita; (viii) access to social services, and (ix) jobs created during construction and maintenance, and (x) SAP implementation. Where relevant, indicators will be disaggregated by gender, income and ethnic group, using the poverty stratum absolute poor, poor and non-poor. The data collection method will consist of (i) reviewing secondary data from local government statistics; (ii) conducting household socioeconomic sample surveys; and (iii) developing participatory rural appraisal methods among communities affected by the expressway and the feeder roads. About 24 person-months of domestic consultants specializing in socioeconomic and transport fields will be required to develop and implement the PPMS.

5. About 5,184 person-months of domestic consultants will be required for construction supervision and the PPMS. The consultant team, headed by the Chief Engineer, will be composed of graduate engineers or the equivalent, with at least 5 years of practical experience in supervision and administration of major road, bridge, and tunnel contracts. The consultants will be recruited in accordance with the EA's procedures acceptable to ADB.

6. Domestic specialists may also be recruited for special topics to be included in domestic training. The topics can include workshops on quality assurance principles and procedures, training courses in financial accounting and financial management business planning and corporate development. The appropriate topics will be identified in the human resources development plan to be prepared with the assistance of the international consultants.

2. International Consultants

7. The international consultants will act as adviser to the EA, and support and assist staff and domestic consultants in the performance of their duties. The Project will provide 49 person-months of international consultants. Thirty-six of the 49 person-months of international consultants will be for the supervision of the civil works; 1 person-month each for pavement design, tunnel construction, vehicle emissions and environment, and the operation and maintenance concession; 2 person-months for road safety; 3 person-months for socioeconomic and poverty impact monitoring and evaluation, and transport services; and 4 person-months for additional experts, as needed.

8. The Deputy Chief Engineer, will be appointed over the whole construction period. While being responsible for coordinating the inputs and the activities of the international short-term specialists, he will also 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 a negative impact on the project development.
- (vii) Monitor performance and recommendations of the short-term consultants;
- (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.

9. The road safety specialist will be recruited 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. The specialist will provide a second input to inspect the completed works before the facilities are opened and, where appropriate,

recommend additional traffic engineering improvements, particularly for lighting, hazard barriers, signage, and marking.

10. A road safety specialist with over 20 years experience in road safety strategy development, enforcement management, prevention measures, socioeconomic cost and critical issues of successful road safety programs is required for a period of 2 person months. The road safety specialist is required to develop actions plan and monitoring protocol, including road safety audit and traffic enforcement issues, for the proposed interdepartmental road safety component of the project.

10. The tunnel engineer will be fielded for a period of 2 person months to help the construction supervision consultants implement quality control procedures, improve construction methods, and to train the site engineers on tunnel construction, maintenance and control and monitoring systems.

12. The vehicle emission consultant will be required for a period of 1 person month to develop actions plan and monitor the interdepartmental component of the project, including promotion of the inspection and maintenance and other prevention measures.

11. The financial management specialist with expertise in the operation and maintenance concession will, with close guidance and collaboration with the HCD, prepare the bidding document and the optimal framework of the concession, which will specifies the concession period and selection criteria, and ensures adequate pricing and transparent auctioning. The bidding document and concession framework will be submitted to ADB for review by the midterm review scheduled for 2006. He will also examine the specific schedule of the operation and maintenance concession to a private enterprise and recommend it to the HCD.

12. The social and poverty specialist who has expertise and experience in monitoring will be recruited for 3 month. He will be engaged for 1 month to develop specific ways to implement the measures to enhance the provision of transport services available for the poor including how to extend credit available for the poor to buy vehicles and how to increase the competition among transport service providers. For 2 months, he will produce the benefit and monitoring evaluation (BME) report in accordance with the bank's procedures and requirements. The BME report will evaluate the overall benefits of the expressway project in terms of the bank objectives.

13. In-country and international training programs will be submitted to ADB for review and concurrence. The international consultants will conduct workshops in their fields of expertise. Details of the international training programs, including procedures for selecting candidates, will be determined by the EA in consultation with the international and domestic consultants. Candidates trained abroad will be required to submit to the EA and ADB a report on the training received. On their return, the trainees will serve as resource persons in training seminars to disseminate knowledge learned. ADB will finance about 65 person-months of international training for 84 staff in the areas listed in Table 1.

C. Records and Reports

14. The construction supervision consultants will maintain records of implementation progress, contract variations, and design revisions for incorporation in the drawings for the final works. They will also (i) assist the EAs in preparing progress and financial status reports, and a final project completion report; (ii) certify, where required by the EAs, interim and final payments; (iii) give the EAs technical and engineering advice on the day-to-day project

activities; (iv) keep records of all works done, and prepare monthly and quarterly progress reports; (v) prepare, before the works start, a project implementation schedule based on the contractors' work programs; and (vi) keep records of all payments approved and report the same in the monthly progress reports. The monthly reports will cover a description of the activities, the progress charts, the expenditure records, and implementation-related issues and the suggested remedial actions. The monthly reports will be consolidated into quarterly reports comparing the actual and originally anticipated work program.

15. Upon completion of their short-term inputs, the international consultants will prepare for each relevant technical area, progress reports giving intermediate findings and recommendations. Upon completion of their services, the international consultants will submit a final report covering the work performed, and highlighting findings and recommendations to the EA. Copies of these reports and actions taken should be provided to ADB.

16. A strategic plan regarding performance measures, effectiveness, training, and various activities of the Deputy Chief Engineer should be developed during the first two months of the duty commencement, and ADB should be informed.

Table 1: Proposed International Training Program

| Ref No. | Training Item | No. of Trainees | Months | Person-Months | Cost US\$ |
|-----------|---|-----------------|--------|---------------|-----------|
| A. | Study Tours | | | | |
| 1. | Expressway Commercialization | 8 | 0.50 | 4.00 | 40,000 |
| 2. | Highway Operation and Management | 10 | 0.50 | 5.00 | 50,000 |
| 3. | Tunnel Operation and Maintenance | 8 | 0.50 | 4.00 | 40,000 |
| B. | Training | | | | |
| 4. | Financial Management | 8 | 0.75 | 6.00 | 54,000 |
| 5. | Highway Construction and Supervision | 8 | 1.00 | 8.00 | 64,000 |
| 6. | Highway Maintenance and Asset Management | 10 | 1.00 | 10.00 | 80,000 |
| 7. | Pavement Design and Construction | 8 | 1.00 | 8.00 | 64,000 |
| 8. | Bridge and Tunnel Construction and Technology | 8 | 1.00 | 8.00 | 64,000 |
| 9. | Traffic Engineering and Road Safety | 10 | 0.75 | 7.50 | 67,500 |
| 10. | Risk Management | 6 | 0.75 | 4.50 | 40,500 |

D. Support Services for the International Consultants

17. The EA will make the following available to the international consultants: (i) administrative assistance in obtaining visas, customs clearance, and any other administrative permits required to perform their duties; (ii) all relevant reports; documents relating to the assignment; (iii) appropriate and suitably qualified counterpart staff; (iv) suitable office accommodations, and secretarial and clerical support; and (v) local transportation, including a driver, at the various project sites. Counterpart staff and the number of vehicles will be agreed upon with the EAs before the services start.

E. Consulting Services Cost

18. The estimated costs for international and domestic consulting services are summarized in Table 2, and summary of international consulting services in Table 3.

Table 2: Cost Estimates for Consulting Services and International Training

| Item | Person-Months | Total Cost (\$'000) |
|--|----------------------|----------------------------|
| Domestic Consultants | 5,184 | 12,001 |
| International Consultants (Fees, Airfares, Per Diems, Reporting), | 49 | 1,127 |
| International Training (Per Diems, Airfares, Training Costs) | 65 | 564 |

Note: Domestic consultants person-months are for engineering staff. The total figure including technical and support staff is 11,100 person-months.

Table 3: Summary of International Consulting Services

| Consultant | No. | Person Months |
|---|------------|----------------------|
| 1. Deputy Chief Engineer | 1 | 36 |
| 2. Tunnel Engineer | 1 | 2 |
| 3. Road Safety Specialist | 1 | 2 |
| 4. Vehicle Emissions Specialist | 1 | 1 |
| 5. Social, poverty, and BME Specialist | 1 | 3 |
| 6. Operation and maintenance concession | 1 | 1 |
| 6. Others as required | 1 | 4 |
| TOTALS | 5+ | 49 |

CONTRACT PACKAGES (Revised)

| No. | Start (km) | End (km) | Length (km) | Yuan (mill) | US\$ (mill) | Contract Type |
|--------------------------------|---|-------------|----------------|----------------|----------------|------------------|
| 1 Subgrade | | | | | | |
| C1 | 4+117.919 | 19+000 | 14.882 | 201.11 | 25.14 | ICB |
| C2 | 19+000 | 31+400 | 12.4 | 149.91 | 18.74 | ICB |
| C3 | 31+400 | 46+000 | 14.6 | 199.68 | 24.96 | ICB |
| C4 | 46+000 | 56+000 | 9.983 | 182.68 | 22.84 | ICB |
| C5 | 56+000 | 65+100 | 9.1 | 170.50 | 21.31 | ICB |
| C6 | 65+100 | 75+385.646 | 10.286 | 223.56 | 27.95 | ICB |
| C7 | 72+498.5 | 82+800 | 10.303 | 168.94 | 21.12 | ICB |
| C8 | 82+800 | 90+300 | 7.495 | 146.03 | 18.25 | ICB |
| C9 | 90+300 | 97+000 | 6.7 | 203.47 | 25.43 | ICB |
| C10 | 97+300 | 103+600 | 6.6 | 199.17 | 24.90 | ICB |
| C11 | 103+600 | 109+500 | 5.9 | 135.35 | 16.92 | ICB |
| C12 | 109+500 | 114+200 | 5.177 | 167.15 | 20.89 | ICB |
| C13 | 114+200 | 119+000 | 4.8 | 99.90 | 12.49 | ICB |
| C14 | 119+000 | 123+200 | 4.2 | 147.98 | 18.50 | ICB |
| C15 | 123+200 | 129+500 | 6.3 | 152.92 | 19.12 | ICB |
| C16 | 129+500 | 135+000 | 5.5 | 238.73 | 29.84 | ICB |
| C17 | 135+000 | 141+700 | 6.7 | 117.72 | 14.72 | ICB |
| C18 | 141+700 | 149+500 | 7.8 | 209.36 | 26.17 | ICB |
| C19 | 149+500 | 157+527 | 8.032 | 118.53 | 14.82 | ICB |
| C20 | 157+527 | 166+556 | 9.029 | 167.11 | 20.89 | ICB |
| C21 | 166+556 | 175+384.027 | 8.828 | 158.75 | 19.84 | ICB |
| Sub.Total | | | 174.615 | 3558.55 | 444.82 | |
| 2 Pavement | | | | | | |
| P1 | 4+117.919 | 31+400 | 27.282 | 96.72 | 12.09 | ICB |
| P2 | 31+400 | 65+100 | 33.683 | 101.40 | 12.68 | ICB |
| P3 | 65+100 | 90+300 | 28.084 | 100.62 | 12.58 | ICB |
| P4 | 90+300 | 119+000 | 29.177 | 102.96 | 12.87 | ICB |
| P5 | 119+000 | 149+500 | 30.5 | 99.84 | 12.48 | ICB |
| P6 | 149+500 | 175+384.027 | 25.889 | 87.36 | 10.92 | ICB |
| Sub.Total | | | 174.615 | 588.90 | 73.61 | |
| 3 Traffic Engineering | | | | | | |
| T1-T12 | | | 174.615 | 133.00 | 16.63 | LCB |
| T13-T15 | Supply and Installation of cable ducting | | | 34.00 | 4.25 | LCB |
| Sub.Total | | | | 167.00 | 20.88 | |
| 4 Building Construction | | | | | | |
| B1 | | | | 24.00 | 3.00 | LCB |
| B2 | | | | 23.00 | 2.88 | LCB |
| Sub.Total | | | | 47.00 | 5.88 | |
| 5 Local Roads | | | | | 12.50 | LCB |
| 6 Equipment | | | | | | |
| E1 | Pavement Recycling Equipment | | | 16.00 | 2.00 | ICB |
| E2 | Emergency Equipment | | | 4.00 | 0.50 | ICB |
| E3 | Tolling, Telec. and Monit. Systems | | | 83.00 | 10.38 | ICB |
| E4 | Tunnel Equipment(Lighting,ventilator,fire fighting,power supply) | | | 50.89 | 6.36 | ICB |
| Sub.Total | | | | 153.89 | 19.24 | |
| Total | | | | 4515.34 | 576.92 | |

Note:

1. Rate is 8RMB/1U.S. dollar

2. Tolling, Telec. and Monit. Systems of Huaihua to Jishou section (The cost was excluded in E3)

46.00

5.75

3. The costs of subgrade civil works C1-C21 are contract prices; others are estimated prices.

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).

SUGGESTED TOPICS AND FORMAT FOR BORROWER'S PROJECT COMPLETION REPORT

I. PROJECT DESCRIPTION

- A. Objectives
- B. Components (or subprojects for sector and multiprojects)
- C. Implementation methods
- D. Description and justification of changes in components (or subproject appraisal criteria) or implementation methods

II. PROJECT IMPLEMENTATION

- A. Compare original and actual implementation schedules. Indicate delays, length and causes of delays, and remedial action taken.
- B. Compare cost estimates made during appraisal and actual costs (foreign and local). Local currency costs incurred, appropriate exchange rates for their conversion into US dollars, and the foreign exchange costs financed by cofinanciers must be compiled correctly with reference to audited project accounts. Indicate factors that contributed to any significant overruns or underruns.
- C. State problems or difficulties in recruiting consultants, with reference to ADB procedures. Assess the consultant's work and the working relationship between the executing agency (EA) and the consultant. Use of a logical framework is strongly recommended.
- D. State problems or difficulties encountered in procuring goods and services (including civil works) with reference to ADB procedures. Assess the supplier's or contractor's performance under the contract.
- E. Give the extent of compliance of the borrower and EA with loan covenants, with reasons for noncompliance or delays in compliance and the remedial actions taken.
- F. State reasons for any delays in loan utilization. Evaluate the appropriateness of the disbursement methods used. Justify the reallocation of loan proceeds.
- G. State problems or difficulties with subproject appraisal. Evaluate the EA's performance and capacity to appraise subprojects.

III. INITIAL OPERATIONS

- A. Describe initial operations of the project and transitional problems encountered from project completion to initial operations.
- B. Describe measures taken to ensure continued smooth operation of the project relative to management, staffing, funding, and maintenance of project facilities.

- C. Analyze the prospects of the project benefits being realized.

IV. EVALUATION OF THE ASIAN DEVELOPMENT BANK'S PERFORMANCE

A. Assess ADB's performance in supervising project implementation. Include comments on the adequacy of the consultants' terms of reference and appropriateness of specifications in tender documents. Evaluate the effectiveness and timeliness of assistance extended by ADB to solve implementation problems.

B. Comment on problems encountered with ADB's procedures. Note the measures taken to resolve these problems and suggest changes in procedures and requirements.

SAMPLE AUDIT LETTER

ASIAN DEVELOPMENT BANK

Regional Department
Sector Division / Regional or Resident Mission

[Date]¹

[The Borrower]
Dear Sir or Madam:

Subject: **[Loan No. and Project Title]**
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 *Handbook for Borrowers on the Financial Governance and Management of Investment Projects Financed by the 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,

Director/Country Director
(Sector Division/Regional or Resident Mission)

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

MAJOR LOAN COVENANTS

| | Covenants | Reference to Loan and/or Project Agreements | Status of Compliance |
|---|--|--|-----------------------------|
| | IMPLEMENTATION ARRANGEMENTS | | |
| 1 | HCD shall be the Project Executing Agency responsible for the overall implementation of the Project and implementation of the local road component of the Project through the concerned municipal and county communications bureaus. | (LA, Sch 6, para 1) | Being complied. |
| 2 | CECC shall be the Implementing Agency, responsible for coordinating and monitoring all construction activities of the Project expressway and operation and maintenance of the Project expressway. CECC's general manager, the Project director, shall be responsible for overall project management in respect of the Project expressway, the approval of contracts, and payments. A project implementation unit (PIU) established within CECC shall facilitate land acquisition, resettlement, and environmental protection measures, and ensure that local concerns are adequately addressed. PIU shall be headed by a Project manager, who will oversee day-to-day physical implementation activities and prepare progress reports. | (LA, Sch 6, para 2) | Being complied. |
| | SECTOR | | |
| 3 | Construction Quality. HPG shall, through HCD, ensure that (i) the Project is constructed in accordance with the revised technical standards of highway engineering issued by the Borrower's Ministry of Communications; (ii) the local roads under the Project are upgraded, constructed, and maintained in accordance with national standards; and (iii) project construction supervision, quality control, and contract management are conducted in accordance with national standards and internationally accepted practices. | (PA, Sch, para 4) | Being complied. |
| 4 | Road Safety. Six months prior to the commencement of operation of the Project expressway, (a) HPG shall cause HCD to, | (PA, Sch, para 5) | Not yet due. |

| | Covenants | Reference to Loan and/or Project Agreements | Status of Compliance |
|---|---|--|---|
| | in coordination with the international consultant, develop, adopt and implement a plan, acceptable to HPG and ADB, for ensuring safe operation of the Project facilities; and (b) HPG shall establish teams of security personnel, in accordance with national and HPG standards, to patrol the Project expressway and enforce the national laws and regulations. HPG shall cause that HCD utilize its traffic control and surveillance systems to implement road safety measures for the Project and provide road safety education programs to local communities. | | |
| 5 | CECC shall (a) put in place the road safety signage, emergency communication system, traffic monitoring included in the Project design; and (b) take all appropriate measures in order to prevent overloading on the Project expressway by installing vehicle axle weighing and weighing scales equipment at the Project expressway tollgates. | (PA, Sch, para 6) | Not yet due. |
| 6 | Operation and Maintenance Concession. HPG shall cause that HCD, with the help of an international consultant engaged under the Project, prepare the bidding document and the optimal framework for making the concession of the operation and maintenance of the Project expressway by 2006, which shall specify the concession period and selection criteria and ensure adequate pricing and transparent auctioning. HPG shall ensure that HCD submit it to ADB for review by 2006. HPG shall ensure that HCD advise ADB of the specific schedule of the operation and maintenance concession, when available. | (PA, Sch, para. 10) | Not yet due. Bidding documents and optimal framework will be prepared by June 2006 and submitted to ADB on 1 July 2006. |
| 7 | Monitoring and Evaluation. HPG shall cause HCD to, and CECC shall, monitor and evaluate Project impacts through PPMS to ensure that the Project facilities are managed effectively and the benefits, particularly to the poor, are maximized. HPG shall cause HCD to, and CECC shall, collect PPMS data agreed with ADB prior to implementation of the Project, at completion | (PA, Sch, para. 24) | Being complied. Baseline data will be submitted to ADB by 31 March 2006. |

| | Covenants | Reference to Loan and/or Project Agreements | Status of Compliance |
|----|--|--|---|
| | of the Project, and annually for 3 years thereafter. | | |
| | ENVIRONMENTAL | | |
| 8 | CECC shall ensure that (i) the Project be constructed and operated in accordance with national and local environmental procedures and guidelines, ADB's environmental procedures and guidelines and the EIA, (ii) any adverse environmental impacts arising from the Project be minimized by implementing the mitigating measures and environmental monitoring program presented in the EIA, and (iii) the implementation of the environmental management plan and any violation of environmental standards, if any (and the actions taken to remedy such violations), be regularly reported to ADB in accordance with the specifications set forth in the EIA. | (PA, Sch, para. 15) | Being complied. First environmental report will be submitted to ADB on 15 January 2006. |
| 9 | Vehicle Emissions. At least 6 months prior to the opening of the Project expressway, HPG shall provide ADB with the Hunan Environmental Protection Bureau (HEPB) emission standards and the penalties for infringement of such standards. HPG shall ensure that through the relevant agencies the HEPB vehicle emission standards as well as the national vehicle emission standards be enforced. | (PA, Sch, para. 16) | Not yet due. |
| | SOCIAL | | |
| 10 | Land Acquisition and Resettlement. CECC shall (i) implement the RP in accordance with its terms; (ii) ensure that all land and rights-of-way required by the Project be made available in a timely manner; (iii) ensure that the provisions of the RP, including compensation and entitlements for affected persons (APs), be implemented in accordance with all applicable laws and regulations of the Borrower and ADB's Policy on Involuntary Resettlement; (iv) ensure compensation and resettlement assistance be given to the APs prior to dispossession and displacement; (v) ensure that the counterpart funds for land acquisition and resettlement activities be | (PA, Sch, para. 17) | Complied. |

| | Covenants | Reference to Loan and/or Project Agreements | Status of Compliance |
|----|--|--|---|
| | timely provided; (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. | | |
| 11 | CECC shall also ensure that (i) adequate staff and resources be committed to supervising and monitoring the implementation of the RP and to providing quarterly reports on such implementation to ADB, (ii) an independent agency acceptable to ADB be contracted to carry out monitoring and evaluation, and forward reports to ADB as specified in the RP, (iii) monitoring data be disaggregated by gender and monitoring focus on gender impacts and vulnerable groups, (iv) a summary of government audits of resettlement disbursements and expenditures be provided to ADB, and (v) local resettlement offices keep records of consultation and grievances and make such records available to ADB on request. | (PA, Sch, para. 18) | (i)-(iii) Complied. (iv)-(v) Being complied. |
| 12 | CECC shall update the RP (a) upon the completion of the detailed measurement survey as described in the RP and prior to the commencement of civil works, submit any such modifications to ADB for its concurrence and (b) as necessary to reflect any significant material changes in the Project scope or other causes, and submit any such changes to ADB for its approval. CECC shall ensure that civil works contract specifications include requirements to comply with the RP and entitlements for permanent and temporary impacts to APs, and shall supervise the contractors to ensure compliance with requirements of the RP, applicable law, and ADB policy. | (PA, Sch, para. 19) | (a) Complied. (b) Being complied. |
| 13 | HPG shall through HCD ensure that (a) any land acquisition carried out by the municipal or county communications bureaus for the local roads component of the Project also be implemented in accordance with the RP, and (b) adequate resettlement compensation funds be available and properly utilized. | (PA, Sch, para. 20) | Being complied. |

| | Covenants | Reference to Loan and/or Project Agreements | Status of Compliance |
|----|--|--|--|
| 14 | Poverty Reduction. CECC shall advise the contractors to maximize their employment of local poor people who meet the job and efficiency requirements for the construction of the Project facilities. HPG shall cause HCD to monitor the impacts of the Project on poverty in accordance with the guidelines set forth in the Project Performance Monitoring System (PPMS). | (PA, Sch, para. 21) | Being complied. |
| 15 | Ethnic Minority Development. HPG shall cause that HCD implement the Ethnic Minorities Development Plan (EMDP) and ensure that (i) ethnic minorities benefit from the Project in at least an equitable manner and in accordance with ADB's Policy on Indigenous Peoples; (ii) ethnic minorities in the Project area are consulted and provided with full opportunity to participate in the implementation of EMDP; (iii) sufficient budget for implementation and monitoring of the EMDP be made available in a timely manner; (iv) any significant changes to EMDP be submitted to ADB for approval; and (v) implementation of EMDP be monitored and evaluated by an independent agency which will provide annual reports to ADB on the progress of EMDP implementation. | (PA, Sch, para. 22) | Being complied. The same domestic consultant for the PPMS will do the EMDP monitoring. The status will be included in the Quarterly Progress Report. |
| 16 | Gender and Development. CECC shall follow ADB's Policy on Gender and Development during Project implementation and take all necessary steps to encourage women living in the Project area to participate in planning and implementing the Project, including advising the contractors on maximizing employment of women in connection with the Project. HPG shall cause HCD to monitor under PPMS the Project's effects on women during Project implementation. | (PA, Sch, para. 25) | Being complied. |
| 17 | Health Risks. HPG, through HCD, and CECC, in coordination with the appropriate agencies identified by HPG, shall cause the contractors to disseminate information on the risks of socially and sexually transmitted diseases, including HIV/AIDS, to their employees during Project implementation. | (PA, Sch, para. 26) | Being complied. |

| | Covenants | Reference to Loan and/or Project Agreements | Status of Compliance |
|----|--|--|-----------------------------|
| | HPG shall, through HCD, cause the appropriate agencies to disseminate similar information to transport operators and to the communities in the Project area during Project implementation and operation of the Project facilities. | | |
| | FINANCIAL | | |
| 18 | Tolls. Six months prior to the commencement of operation of the Project expressway, HPG shall cause that HCD propose appropriate toll rates for the Project expressway in accordance with the Borrower's Highway Law, which requires that toll rates be set at levels sufficient to fulfill the debt service obligations of the Project expressway as well as maintain sound operation, management, and maintenance practices for the Project expressway. | (PA, Sch, para. 7) | Not yet due. |
| 19 | For the first 3 years of full commercial operation of the Project expressway, HPG shall cause that HCD, on an annual basis, review the toll structure and levels and report to ADB any significant difficulties in meeting the principles established under the Highway Law. | (PA, Sch, para. 8) | Not yet due. |
| 20 | Financial Performance Ratio. Except as ADB shall otherwise agree, CECC shall not incur, for each fiscal year commencing from the first day of the third year of the full operation of the Project expressway, any debt unless reasonable forecast of the revenues and the expenditures of CECC shows that the estimated net revenues of CECC for each fiscal year during the term of the debt to be incurred shall be at least 1.0 times the estimated maximum debt service requirements of CECC for any succeeding fiscal year on all debt of CECC , including the debt to be incurred. | (PA, Sch, para. 9) | Not yet due. |
| 21 | Nongovernment Financing. Six months prior to the commencement of the Project expressway operation, HPG shall cause that HCD analyze the feasibility of attracting nongovernment investment funds for future | (PA, Sch, para. 11) | Not yet due. |

| | Covenants | Reference to Loan and/or Project Agreements | Status of Compliance |
|----|--|--|--|
| | road sector investment, including private sector participation in the operation and maintenance of the Project expressway, and report its conclusions to ADB. | | |
| 22 | Counterpart Financing. The Borrower shall take, and shall cause HPG, through HCD, to take all necessary measures to ensure that (i) CECC can successfully construct the Project expressway; (ii) HPG and the local communication bureaus in the Project area can successfully construct, manage and maintain the local roads; and (iii) the local roads construction and improvements are completed prior to the completion of the Project expressway. | (LA, Sch. 6, para. 3) | Being complied. |
| | CONSULTANT | | |
| 23 | The international consultants shall be selected and engaged as a firm by CECC using the quality-and-cost-based selection method in accordance with the procedures outlined in Schedule 5 of the Loan Agreement. | LA, Sch. 5, para. 4(a)-(e). | Complied. |
| | HUMAN RESOURCE DEVELOPMENT AND TRAINING | | |
| 24 | Prior to the start of civil works for the Project expressway, CECC, in consultation with HCD, shall develop and implement a human resources development plan, acceptable to ADB, that identifies the managerial, staffing, and investment requirements of CECC in relation to the Project and that includes an international training component to address these needs. For each following year, as an integral part of this human resources development plan, CECC shall prepare an annual training plan, including (i) the objectives of the training activities, (ii) number of the training participants, (iii) duration, (iv) cost estimates, and (v) the program of workshops to be given to CECC employees by those who will participate in the international training. On completion of each international training, CECC shall submit to ADB an evaluation of the training. | (PA, Sch, para 13) | Annual training plan will be submitted to ADB in January 2006. |
| 25 | HPG shall, through HCD, and CECC shall require that the persons participating in the | (PA, Sch, para. 14) | To be complied. |

| | Covenants | Reference to Loan and/or Project Agreements | Status of Compliance |
|----|--|--|--|
| | international training workshops remain in the employment of the transport sector in Hunan Province, as the case may be, for a minimum period of 5 years after Project completion to ensure skills retention and continued implementation of workshops for other staff members. | | |
| | OTHERS | | |
| 26 | Change in Ownership and Operation. In the event that the Borrower, HPG or CECC plan to make (a) any change in ownership of the Project facilitates, or (b) make any sale, transfer, or assignment of HPG's or CECC's interest in the Project expressway, or (c) lease out, or contract out, or otherwise modify CECC's responsibilities for operation and maintenance of the Project expressway, the Borrower shall, at least six months prior to implementation of such plan, consult ADB and obtain ADB's consent. The Borrower shall ensure that such transfer be made in a transparent manner. | (LA, Sch 6, para 4) | Not yet due. |
| 27 | HPG and CECC shall furnish to ADB quarterly reports on the execution of the Project during the construction period and reports on the operation and management of the Project facilities as ADB may reasonably request. Such reports shall be submitted in such form and in such detail and within such a period as ADB shall reasonably request, and shall indicate, among other things, progress made and problems encountered during the quarter under review, steps taken or proposed to be taken to remedy these problems, and proposed program of activities and expected progress during the following quarter. | [PA, Section 2.08(b)] | Being complied. First quarterly progress report will be submitted to ADB on 15 January 2006. |

LA – Loan Agreement
PA – Project Agreement

LIST OF KEY PERSONS INVOLVED IN PROJECT IMPLEMENTATION

Borrower (MOF)

Mr. Chen Huan
Director, IFI Division III
International Department
Ministry of Finance

Executing Agency (HCD)

Mr. Zhan Xinhua
Deputy Director General

Mr. Chen Xiaodong
Project Official
Project Office of HCD

Implementing Agency (CECC)

Mr. Luo Heng
Project Manager

Mr. Wang Maowen
Project Engineer
Project Engineer's Office

ADB

Mr. Nigel Rayner
Director
Transport and Communications Division

Ms. Eunkyung Kwon
Sr. Transport Economist
Transport and Communications Division

Mr. Seji Noda
Project Specialist (Roads)
Transport and Communications Division

Ms. Teresita S. Capati
Associate Project Analyst
Transport and Communications Division