

ASIAN DEVELOPMENT BANK

REPORT AND RECOMMENDATION
OF THE
PRESIDENT
TO THE
BOARD OF DIRECTORS
ON A
PROPOSED LOAN AND
TECHNICAL ASSISTANCE GRANT
TO THE
KYRGYZ REPUBLIC
FOR THE
ROAD REHABILITATION PROJECT

May 1996

CURRENCY EQUIVALENT

(as of 1 May 1996)

Currency Unit	—	Som
\$1.00	=	Som11.55
Som1.00	=	\$0.0866

For the purpose of calculations in this Report, an exchange rate of Som11.20 to US\$1.00 has been used, which was the prevailing rate at the time of Appraisal of the Project.

ABBREVIATIONS

CAR	-	Central Asian Republic
DGRMBOR	-	Directorate General for Rehabilitation and Maintenance of the Bishkek-Osh Road
DOR	-	Department of Roads
EBRD	-	European Bank for Reconstruction and Development
EIRR	-	Economic Internal Rate of Return
GDP	-	Gross Domestic Product
ICB	-	International Competitive Bidding
IEE	-	Initial Environment Examination
MOF	-	Ministry of Finance
MOT	-	Ministry of Transport
OECF	-	Overseas Economic Cooperation Fund
PIP	-	Public Investment Program
PIU	-	Project Implementation Unit
PSC	-	Project Steering Committee
RRMA	-	Regional Road Maintenance Agency
RSPS	-	Road Sector Policy Statement
TA	-	Technical Assistance
TSPS	-	Transport Sector Policy Statement
VOC	-	Vehicle Operating Cost
vpd	-	vehicles per day

NOTES

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

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**KYRGYZ REPUBLIC
ROAD REHABILITATION PROJECT
LOAN AND PROJECT SUMMARY**

Borrower	:	Kyrgyz Republic
Project Description	:	The Project includes rehabilitation of about 135 km of key sections of the Bishkek-Osh road, equipment to improve maintenance and safety of the road, and consulting services for Project design and construction supervision. The Project will also assist the Government in developing its road sector by improving the road infrastructure, supporting policy reform, and strengthening the road sector institutions.
Classification	:	Economic growth Environmental Category B — an initial environmental examination was undertaken.
Rationale	:	Efficient transport services are essential to support the development of domestic and international trade as the Kyrgyz Republic moves towards a market-based economy. The Bishkek-Osh road runs through four of the Republic's six regions and serves about half of the country's population. It connects the two major urban centers of economic activity and population, which together account for over half of the country's gross domestic product and 80 percent of the industrial enterprises. The road is the most important transport corridor in the country, and is part of the transnational route linking Uzbekistan and Tajikistan with Kazakhstan and Russia's Siberia. Poor maintenance has resulted in serious deterioration of certain sections of the road that are subject to periodic closure in winter months because of unsafe conditions. An all-weather road between the two key centers of the country is essential for the Republic's economic development and to improve transport safety. Policy and institutional reforms will improve the road sector's capability to respond more effectively to market demands.
Objectives and Scope	:	The prime objective of the Project is the rehabilitation of priority sections of the Bishkek-Osh road, thereby improving the efficiency and safety of the country's principal road transport corridor. Through policy dialogue and technical assistance (TA), the Project will also assist the Government in implementing market-orientated policy and regulatory reforms, institutional strengthening of the Department of Roads, preparing a road maintenance plan and implementing a road maintenance system, and developing a user-pay approach to road funding. The Project comprises three parts:

- (i) civil works for the rehabilitation of about 135 km of key mountainous sections of the Bishkek-Osh road, including road protection structures;
- (ii) equipment for road clearing, maintenance, and technical support; and
- (iii) consulting services for detailed design and construction supervision of civil works.

Cost Estimates

(\$ million)

Item	Foreign Exchange	Local Currency	Total Cost
A. Base Cost			
1. Civil Works	31.50	31.00	62.50
2. Equipment	6.25	0.25	6.50
3. Consulting Services	<u>2.50</u>	<u>0.60</u>	<u>3.10</u>
	40.25	31.85	72.10
B. Contingencies			
1. Physical	4.14	3.16	7.30
2. Price	<u>2.54</u>	<u>2.59</u>	<u>5.13</u>
	6.68	5.75	12.43
C. Service Charges	<u>1.47</u>	<u>—</u>	<u>1.47</u>
Total Project Cost (A+B+C)	48.40	37.60	86.00

Financing Plan

(\$ million)

Source	Foreign Exchange	Local Currency	Total Cost
Bank	32.50	17.50	50.00
Cofinancing	15.90	5.10	21.00
Government	<u>—</u>	<u>15.00</u>	<u>15.00</u>
Total	48.40	37.60	86.00

Loan Amount and Terms :

A loan of Special Drawing Rights 34.218 million (\$50 million equivalent) from the Bank's Special Funds resources with a repayment period of 40 years including a grace period of 10 years, carrying a service charge of 1 percent per annum.

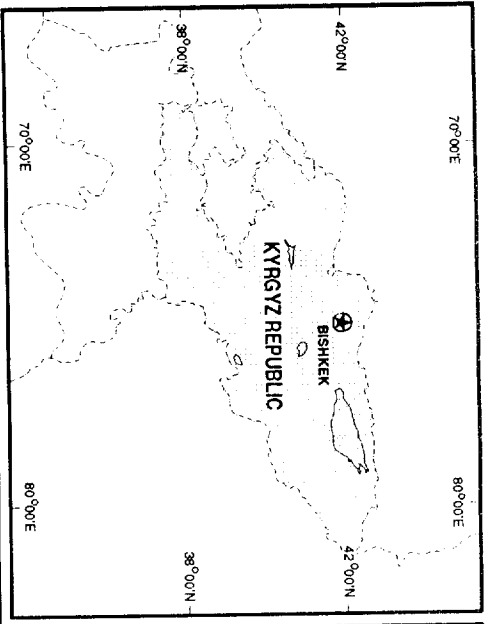
Period of Utilization :

Until 30 April 2000

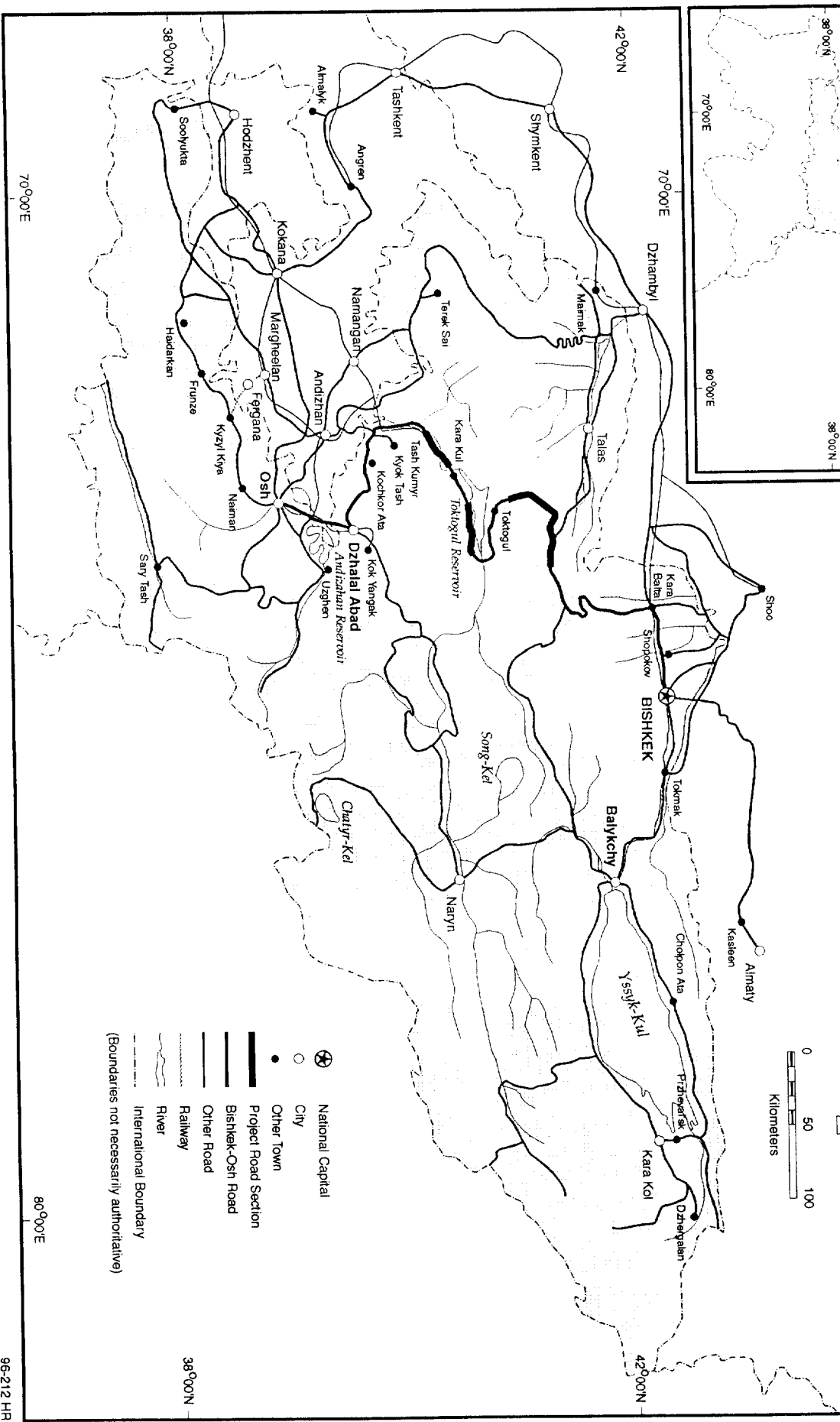
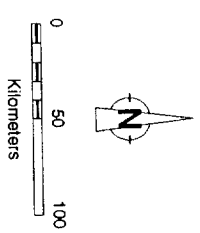
Implementation Arrangements

: The Government has established a Project Steering Committee to oversee the implementation of the Project and sector reforms, and a Project Implementation Unit to handle day-to-day implementation activities of the Project.

Executing Agency	:	The Office of the Prime Minister
Procurement	:	All procurement to be financed under the loan will be carried out in accordance with the Bank's <i>Guidelines for Procurement</i> , and tendering will utilize international competitive bidding (ICB) procedures. Advance procurement action and retroactive financing, in principle, were approved in November 1995 to expedite Project implementation.
Consulting Services	:	About 180 person-months of consulting services for Project design and construction supervision comprising 80 person-months of international consulting services and 100 person-months of domestic consulting services are required to implement the Project. The consultants will be engaged in accordance with the Bank's <i>Guidelines on the Use of Consultants</i> . Advance recruitment action and retroactive financing, in principle, were approved in February 1996 to expedite Project implementation.
Estimated Project Completion Date	:	31 October 1999
Project Benefits	:	The Project will (i) facilitate efficient movement of domestic and transnational freight and passengers on the Project road through reduced transportation costs and time, (ii) improve sector policies and the regulatory environment for developing the road sector, (iii) improve maintenance procedures and the safety of the road network, (iv) assist the development of the private construction industry, and (v) improve funding from road users. The Project is the least-cost alternative, and the economic internal rate of return for the Project road is estimated at 13.1 percent.
Technical Assistance	:	A TA grant of \$800,000 equivalent will provide advisory services to assist the Government improve its policy and regulatory framework for the road transport sector, strengthen the road sector institutions, develop a road maintenance plan and implement a road maintenance system, and improve road funding and develop a more broad-based approach to road funding. Advance recruitment action was approved in February 1996 to expedite the recruitment of consulting services to assist the Government's ongoing sector reforms.



KYRGYZ REPUBLIC TRANSPORT NETWORK



- ⊙ National Capital
- City
- Other Town
- ▬ Project Road Section
- ▬ Bishkek-Osh Road
- ▬ Other Road
- ▬ Railway
- ▬ River
- - - International Boundary
- - - (Boundaries not necessarily authoritative)

I. THE PROPOSAL

1. I submit for your approval the following Report and Recommendation on (i) a proposed loan to the Kyrgyz Republic for the Road Rehabilitation Project, and (ii) proposed technical assistance for Institutional Strengthening of the Road Sector.

II. INTRODUCTION

2. During the Bank's 1996 Country Programming Mission the Government of the Kyrgyz Republic confirmed its request for Bank assistance to develop the country's road sector. Feasibility studies for the proposed Project were prepared by the Road Design Institute under the Ministry of Transport (MOT). Project preparatory technical assistance (TA)¹ was approved to supplement studies prepared by the European Bank for Reconstruction and Development (EBRD)², assess the priority needs of the sector, and prepare a Project suitable for external financing. A second phase of the TA assisted the Department of Roads (DOR) in preparing designs and tender documents for the Project. A tripartite meeting for the TA was held in October 1995. A Fact-finding Mission to the Kyrgyz Republic was fielded in November 1995, and an Appraisal Mission³ in February 1996. Loan negotiations were held in Manila in April 1996 with representatives of the Government of the Kyrgyz Republic. The proposed Project has been formulated based on the findings of the Bank Missions, information provided by the Government, discussions with other funding agencies and private sector representatives, and the findings of the TA consultants. If approved, the proposed loan will be the Bank's first to the transport sector for the Kyrgyz Republic.

III. BACKGROUND

A. The Transport Sector

1. General

3. The transport infrastructure inherited from the former Soviet Union (FSU) was designed to facilitate integration of the republics of the FSU with Russia, rather than for internal or international trade. Within the context of the changing trading patterns of the newly independent Central Asian Republic (CAR), the transport network does not always utilize the shortest or most efficient links for domestic and non-FSU trade. Between some locations within a CAR there are no direct transport links at all. Road transport dominates the transport sector within the Kyrgyz Republic, accounting for about 95 percent of freight tonnage movements and 99 percent of passenger traffic in 1994. Most other freight, including a substantial part of the cross-border traffic, is moved by rail by means of separate branch lines that link the north of the country to the Kazak rail system and the south of the country to the Uzbek rail system, with no direct connection between the two.⁴ Air transport accounted for less than 1 percent of

¹ TA No. 2256-KGZ: *Road Rehabilitation Project*, for \$600,000, approved on 21 December 1994.

² Appraisal Mission for Bishkek-Osh Road, Kyrgyzstan, June 1994, and Central Asia Outline Transport Strategy, April 1995.

³ The Mission comprised S. Cattonar (Mission Leader, Senior Project Engineer); S. Tamang (Project Engineer); M. Ojira (Project Economist); and G. Atay (Counsel).

⁴ The cost of establishing a railway link between Bishkek and Osh has been estimated at about \$600 million, which is a low priority project given the country's other more urgent needs.

passenger movements in 1994, mainly on routes between Bishkek and Osh. Water transport is confined to a few small vessels on Lake Yssyk-Kul (see Map on page v). Freight carried by railway becomes more significant in terms of ton-kilometers (ton-km), because of longer average haulage, accounting for 44 percent of the total volume of traffic for 1994. Freight and passenger traffic, in ton-km and passenger-km (pk), respectively, carried by civil aviation and inland waterways were relatively small in comparison with the road sector in 1994 (see Appendix 1).

4. As with most other republics of the FSU, the economic crisis stemming from the breakup of the Council of Mutual Economic Assistance has resulted in a decline in economic activity and has disrupted customary trading patterns. There has been a dramatic fall in demand for transport since independence. The volume of freight (in ton-km) in 1994 was 16 percent of that in 1990, while passenger movements fell by 70 percent over the same period. This reflects a sharp decline in real incomes and output, and a statistical system that does not capture emerging private sector activities.¹ By most measures, the existing basic transport infrastructure is adequate for the current level and a moderate increase in economic activity. The primary concern is not expansion or major upgrading of the transport system, but maintenance and rehabilitation of the rapidly deteriorating infrastructure to preserve the investment in transport systems.

a. Transport Planning and Coordination

5. MOT is responsible for policy, regulation, planning, and development of the transport sector. MOT is divided into 10 departments with a total of 55 staff, and DOR is staffed by 3 people. MOT coordinates the activities of 12 agencies at various stages of corporatization and privatization, with a combined staff of about 30,000. The operations of MOT are severely constrained. Many staff in the agencies are currently laid-off without pay because of low demand for their services and budgetary constraints. MOT is in the process of divesting itself of the responsibility for direct operation of the transportation systems through a program of privatization. Restructuring of MOT and its subordinate agencies began in 1994. Decree No. 54 of 9 February 1994, subsequently amended by Decree No. 61 of 27 February 1995 and Decree No. 45 of 4 March 1996, has enabled the implementation of the interim MOT organizational structure shown in Appendix 2. Nine holding companies, including a road design institute, domestic road transport, and transnational road transport, were established to manage the Government's interest. The objective of each holding company is to operate as a self-financing entity.

6. The railway sector is separately administered, but remains under MOT. The railways employ about 5,000 people. The former State-controlled air transport agencies have been separated from MOT into two agencies. The agencies report to the Office of the Prime Minister and consist of the National Airlines of Kyrgyzstan, to be privatized in 1997; and the Committee on Airspace. The relationship of the two agencies, which employ about 3,000 people, with MOT is still being determined. The Motor Vehicle Transport Department within MOT, staffed by four

¹ Transitional economies often lack statistical systems to record new private sector activities, and the activities of the informal economy are difficult to estimate.

people, has also been established with general regulatory and monitoring responsibility for the operations of the whole transport network, and will remain under State control. Its precise functions are still being defined. The State Automobile Inspection Agency, located in the Ministry of the Interior, is an independent authority outside the control of MOT that is responsible for traffic control and vehicle inspection, including vehicle registration and accident documentation.

b. Investments

7. Public investment in the transport sector dropped from about 2 percent of gross national product (GNP) during 1990 to near zero during 1995. As a result of this under-investment, transport infrastructure has deteriorated to a point where major reconstruction will be required unless adequate funds are allocated for operation and maintenance of the transport systems. Total transport investment needs to be increased to about 3 percent of GNP to avoid major reconstruction costs, and incremental investment needs to be allocated efficiently among transport modes to achieve cost effectivity at minimum cost.

8. The Public Investment Program (PIP), 1996-1998, prepared by the General Directorate of the State Commission on Foreign Investment and Economic Assistance (Goskominvest), provides a prioritized summary of the country's investment program for foreign assistance. The Project is accorded a high priority in the PIP. A comprehensive review and analysis of investment needs in the transport sector is required, taking account of the relative roles of the different modes of transport and projections of future levels of transport demand in a market economy. The Ministry of the Economy is preparing an Economic Development Strategy Plan for the Kyrgyz Republic that will include the transport sector. The Plan is expected to be completed in mid-1996 and will guide public investment decisions in the sector over the next five years.¹

2. The Road Sector

a. The Road Network

9. The road network in the Kyrgyz Republic provides extensive services to all six provinces (oblasts); connections to communities; and links to neighboring countries. There are 18,590 km of roads presently under MOT jurisdiction. These consist of 9,686 km of State roads and 8,904 km of local roads. Roads are divided into five design categories, distinguished mainly by carriageway width. About 15 percent of the roads are category I (15 meters [m] or wider), II (9-11.5 m) or III (7.5 m), while 85 percent are category IV (6 m) and V (4.5 m). About 40 percent of the roads are sealed, including some with gravel mixed with a bitumen binder,

¹ The Economic Development Strategy Plan will be reviewed by the Bank and, if necessary, TA may be provided by the Bank in 1997 to strengthen the Plan.

while over 50 percent are gravel and less than 10 percent are unsurfaced earth roads. In comparison with countries of similar terrain and levels of development, the Kyrgyz Republic has quite a high road density (0.1 km/km^2) relative to population density (22 persons/km^2). This compares favorably with countries at a similar level of development in Eastern Europe. Meaningful comparisons with the Bank's DMCs are more difficult, as few exhibit similar characteristics of geography, climate, and population.¹

10. There are some 15,000 km of roads outside MOT's jurisdiction, comprising mainly local rural and farm roads. Most of these roads were formerly the responsibility of State and collective farms, and responsibility for their maintenance is likely to be devolved to local district administrations following the progressive break-up of the State and collective farming system. The extent and capacity of the road network is adequate for the developmental needs of the country. Of most concern is the deteriorating state of the roads; over 60 percent now require periodic maintenance or rehabilitation, and this is expected to increase because of the Government's fiscal crisis.

b. Road Standards and Safety

11. The FSU's road standards and specifications continue to be used in the Kyrgyz Republic. A number of studies have indicated that the design standards of the FSU State roads are higher than those of the United States or Western Europe. If standards are compared with those in other developing countries, then, for lower categories of roads, standards for design speed and cross section can be considered comparable. For higher categories of road, the FSU standards are higher. Although design standards specify that pavements should be designed for a 10-ton axle load, for many years a 6-ton design axle load was implemented, as this was the maximum permitted axle load at that time. Recent increases in the permitted axle load have enabled more efficient use of the truck fleet, but have resulted in a considerable reduction in the residual design life of pavements. Although design standards and specifications currently in use are generally more than adequate, the quality of construction is rarely of an acceptable standard.² This has occurred because of a lack of cost-effective construction techniques, and inadequate independent construction supervision and quality control.

12. Road safety is dependent upon a number of factors, including road user behavior, vehicle fleet condition, physical characteristics of the road, accident prevention measures, and maintenance of the road and safety features. An accurate analysis of the relative importance of these factors in the Kyrgyz Republic needs to be carried out. Measures need to be taken to improve the education of road users so that accidents resulting from their behavior are minimized as traffic volumes increase, and as faster, more modern vehicles are introduced to

¹ Nepal is of comparable size and geography, but its road density of 0.05 km/km^2 is half that of the Kyrgyz Republic despite a much higher population density of 134 persons/km^2 .

² A regional TA is planned for Bank approval in 1997 to recommend appropriate road technical and safety standards for the Bank's member CARs.

the fleet. The physical characteristics for roads, including alignment and condition, also contribute to accidents. While significant investment will be required to improve the physical condition and characteristics of roads, an effective method of accident prevention would be a road safety education system and an efficient maintenance system to ensure that the road surfaces are kept in good condition, with improved physical safety measures and adequate hazard warning signs.

c. Vehicle Traffic and Fleet

13. The busiest main roads in the vicinity of Bishkek typically carry about 12,000 Vehicles per Day (vpd), while traffic levels on similar roads around Osh reach about 4,000 vpd (see Appendix 1). Sections of main roads farther away from the larger towns, such as the central sections of the Bishkek-Osh road, now carry below 700 vpd, with a predominance of trucks. Traffic levels are generally well below the design capacities of the road network, although the roads are not being maintained in a condition to cater to the designed traffic levels. Traffic volumes on some road sections were 3 and 6 times higher for freight and passengers, respectively, before the present economic crisis. Seasonal variations, reflecting both changes in transport demand and weather-related constraints, are significant on roads crossing the central mountainous areas of the country.

14. In 1994 the country's vehicle fleet comprised about 54,000 trucks, 10,000 buses, 140,000 cars, and 15,000 special purpose vehicles such as ambulances, mobile cranes, and snow-clearing vehicles. About 95 percent of the cars are privately owned. Previously, most trucks and buses were operated by State organizations. Following the introduction of the privatization program and auctions, about 40 percent of the trucks and 20 percent of the buses are now owned by private individuals. The balance are owned and operated by 89 transport companies, of which 71 have been privatized; a further 18 are still controlled by MOT, but 12 of them are scheduled for privatization by 1998. The vehicle fleet is dominated by makes of the FSU. This reflects the inherited fleet from the FSU, and a continuing preference for these makes because they are generally simpler and cheaper to purchase and maintain than other makes. A few other modern buses have been procured under bilateral arrangements and assigned to selected bus companies. Some trucking companies have procured second-hand trucks of larger capacity and of more modern design, mainly for use on transnational routes. A substantial number of cars, most of them second-hand, are now being imported privately from Western Europe, but foreign models account for less than 10 percent of the country's car fleet.

15. The number of trucks has increased slightly since 1990, bus numbers have been stable, and the number of cars has fallen marginally because of the reduction in cars owned by Government departments and the contraction of the economy. The vehicle fleet is aging, since few companies have been in a position to buy modern vehicles during the last five years. In 1994, only 2 percent of vehicles were less than 3 years old, about 50 percent were between 3 and 8 years old, and the remainder were over 8 years old. The mean truck size is about 7 tons in terms of payload capacity. Over half the truck fleet has a capacity of less than 7 tons, with a predominance of 5-ton trucks. Many trucks are off the road or are confined to local travel due

to a down-turn in demand. Longer distance interurban freight movements are handled mainly by three-axle vehicles, and semitrailers with average payloads in the range of 8-15 tons. About 5 percent of the fleet has a capacity of 15 tons or more.

d. Road Transport Industry

16. In 1994, transport companies were temporarily controlled by a holding company, Kyrgyz Auto Transport, but it was abolished by Decree No. 61 and its role in MOT is now carried out by the Motor Vehicle Transport Department. The current transport enterprise industry was formed in 1994 and comprises 89 transport companies, 71 of them private, which operate trucks and buses. The transport companies employ over 6,000 people. KyrgyzIntrans is a private company established in 1993 to coordinate the activities of 18 transport companies, engaged primarily in trucking on transnational routes, and forwarding agencies. Twelve of the remaining 18 transport companies that are still under MOT's control are scheduled for privatization by 1998 (see paras. 35-37).

17. Because of the sharp contraction in demand, the number of commercial vehicles currently exceeds requirements. Accordingly, the average utilization per truck fell from 148,000 ton-km in 1991 to 32,000 ton-km in 1995. This implies a current average annual utilization of less than 5,000 km per truck compared with 50,000-100,000 km a year, which would normally be regarded as an economic level of usage. The more efficient companies are operating at about one third of their capacities by concentrating operations on the larger and more modern diesel-driven units in their fleet and mothballing, cannibalizing, or scrapping the smaller and older petrol-driven trucks. Recorded bus utilization also fell, though less dramatically, from 1.1 million pk per bus in 1991 to 0.5 to 0.7 million pk per bus in 1994-1995. The average annual utilization is about 20,000 km compared with internationally accepted utilization levels of 50,000-80,000 km. Small, privately rented or owned buses with 20 seats are competing on many interurban routes with the scheduled services provided by State-owned or privatized companies, which use mainly 32-seat capacity buses.

18. Most of the freight and passenger transport companies are operating at the provincial and district (rayon) level, with a small number of national-level specialist operators. In 1994, measures were introduced to increase competition within the sector. These comprised the abolition of national and provincial holding companies and associations (which had continued to exercise control over the operations of individual transport companies) and a reduction in the Government's shareholding in companies through the auctioning of surplus vehicles and assets to private bidders. Privatized transport companies have financial autonomy, but at present levels of demand few are profitable on a commercial accounting basis. Most companies cover only their short-term operating costs and do not provide for depreciation and fleet replacement. Some companies supplement their income from the sale of older vehicles, while others lay off staff or rent vehicles to their drivers on a monthly basis for speculative business. Few appear to have access to conventional credit arrangements and knowledge of commercial business practices to sustain their businesses.

e. Road Resources and Expenditure

19. Government expenditure on the road sector, funded by allocations from the State budget, is inadequate. MOT estimates its requirements for financing road maintenance and investment annually. In 1994, the requirements for maintenance and rehabilitation alone were estimated at Som1,759 million. However, the initial allocation was Som125 million, and the actual amount made available was only Som56.8 million (3 percent of needs). Similarly in 1995, the initial allocation was Som98.6 million, but only about Som82 million was made available. Inadequate appropriation for maintenance and rehabilitation is exacerbated by high inflation.

20. The major sources of funds for road works are a 0.8 percent tax on the gross revenues of all enterprises and a 2 percent levy on the incomes of transport companies. In addition, vehicle drivers and owners are currently taxed for road use as follows: (i) taxation on fuel (less than 15 percent of the pump price); (ii) vehicle registration fees; (iii) annual vehicle driving licenses; and (iv) import duty on foreign vehicles. However, these revenues are not used for road expenditure. The abolition of taxation on fuel is under consideration by Parliament. The Ministry of Finance (MOF) is examining various alternate fuel tax initiatives in case this occurs.

21. In mid-1995, gasoline prices ranged between Som3.80 and Som4.50 per liter (about \$0.34-0.40 per liter), and diesel prices between Som1.6 and Som2.5 per liter (\$0.14-0.22 per liter). It is difficult for the Government to increase fuel prices through specific taxes, partly because of inflationary effects, but also because of the country's open borders with the adjacent CARs. This means that the country's prices for tradable goods, including fuels, cannot be significantly different from those prevailing in its larger neighbors. Fuel price increases must be coordinated and reflect the prices in neighboring countries. The vehicle registration fee is levied at 5 percent of the new or second-hand vehicle price at the time of purchase. Commercial vehicles are not registered individually but collectively through a process whereby the entire enterprise is licensed. There is also a small annual driving license fee. Fees from these sources do not provide significant revenue in relation to the needs of the sector and are not made available for road maintenance. The road tax, levied at 0.8 percent of gross company revenue, forms the main source of funds for maintenance. The current road tax is levied on all enterprises and does not specifically target people in proportion to their use of the road network. Reform is required in this area if the main user groups of the transport sector, the vehicle owners, are to pay fees that significantly contribute to maintaining and operating the road network. In addition, there is a need for a regional taxation policy among CARs (see para. 41), which may occur when the Kyrgyz Republic joins the Customs Union.¹

¹ The Kyrgyz Republic is negotiating to join the Customs Union with Russia, Belarussia, and Kazakhstan. Negotiations are expected to be completed by mid-1996. Arrangements proposed under the Customs Union include (i) common external tariffs, (ii) fiscal harmonization, (iii) exchange rate and monetary coordination, (iv) customs cooperation, and (v) common investment policies.

f. Road Administration

i. Organizational Structure

22. The responsibility for planning and administering road sector policies, programs, and projects was entrusted to MOT by the Automobile Road Act of May 1994. Staffed by 3 people, DOR within MOT is responsible for management of the road sector and the Regional Road Maintenance Agency (RRMA). The existing DOR is inadequate in terms of organizational structure, staffing, and expertise to manage a road sector in a market economy. Through Decree No. 45 of 4 March 1996, the Government established the Directorate General for Rehabilitation and Maintenance of the Bishkek-Osh Road (DGRMBOR) under the Office of the Prime Minister (see para. 61). For the road sector, other important related agencies include (i) a private company, designated "Kyrgyzjoldoru" (Kyrgyz Roads), created by 29 mostly privatized former MOT road construction entities; (ii) the transport enterprise industry group, comprising 89 transport companies operating trucks and buses; (iii) KyrgyzIntrans, a holding agency for 18 freight transport companies and forwarding agencies engaged mainly in international trade; (iv) technical agencies in various stages of divestment from MOT control, including the Road Design Institute (Kyrgyzdortranproet), a small agency responsible for developing and testing new road construction techniques and equipment (Kyrgyzztranstekhnika, not presently operating), and a privatized training agency for equipment operators; and (v) the State Automobile Inspection Agency, an independent authority outside the control of MOT.

ii. Planning and Design

23. Existing plans to upgrade the network by increasing the proportion of categories I, II, and III roads from 15 percent to 50 percent of the network have been suspended because of lack of funds. Given the fall in economic activity and traffic levels on most roads, these plans require reassessment. In recent years the road network has suffered serious deterioration, with over 60 percent now requiring periodic maintenance or rehabilitation, while some sections require reconstruction. A maintenance plan needs to be prepared and costed, consistent with economic forecasts for the country, to ensure that the existing road infrastructure does not deteriorate to the state where major reconstruction is required.

iii. Construction and Maintenance

24. The Government's aim is to commercialize and privatize construction and maintenance operations that are essentially commercial in nature. The Government is encouraging privatization of road construction by devolving all construction-related activity, personnel, and plant (except that required for routine road maintenance) from DOR to separately incorporated companies; and encouraging international contractors to participate in tendering for road projects in association with local construction companies. The present DOR has limited capability for contract administration and construction supervision. All 29 former Government

construction entities, previously employing about 1,500 staff, have been privatized and are coordinated by Kyrgyz Roads. Although local road construction contractors exist, their participation in road construction and maintenance is limited because there is minimal work available and most of their equipment is obsolete. Furthermore, the uncertainty relating to DOR's road construction program has hindered the development of the private road construction industry.

25. RRMA, with a nominal staffing of over 2,800 people, is responsible for maintaining the interurban road network. Maintenance is carried out by 86 units, organized into six administrative regions, one for each province. Intra-urban roads are maintained by the municipalities. RRMA is responsible for road repair, snow removal, and maintenance of road structures such as bridges, snow sheds, and road signs. No effective routine maintenance has been carried out over the past five years primarily because of the lack of funds. The available maintenance budget is largely directed at winter maintenance. The equipment and methods used for snow clearance do not correspond to current practices in similar environments in developed countries and contribute to the damage sustained by the road pavement during the winter months. A realistic maintenance plan and program that takes account of the immediate maintenance needs of the existing road network, and likely financial resources, needs to be prepared. To implement the maintenance plan, a road maintenance system, with clear priorities for the roads to be maintained, needs to be designed and implemented effectively.

B. Government Policies and Plans

26. The Government's transport sector strategy and plans are included in the PIP, prepared by Goskominvest. The Government's overall policy objectives for the transport sector include (i) ensuring the maintenance of adequate transport infrastructure to support reform of the economy; (ii) privatizing transport operations and promoting competition among operators, while addressing safety and environmental concerns; and (iii) increasing transport sector revenues from the users of transport infrastructure. The strategy to achieve these objectives includes (i) developing a transport policy for the coming decade; (ii) increasing financial provision for the maintenance of the road network; (iii) completing the privatization of road transport operations and dismantling of licensing controls, which hinder competition; (iv) promoting, in collaboration with neighboring countries, rail transport as the most efficient means of transporting bulk loads over long distances; (v) privatizing lake shipping services; (vi) promoting civil aviation infrastructure and supporting services that encourage foreign and local airline operations; and (vii) increasing road sector revenues through appropriate pricing and taxation policies. The Government's policies and strategies for the development of the transport sector are considered appropriate to support the country's transition to a market economy (see paras. 31-42).

C. External Assistance

27. Prior to 1991, funding for the road sector was provided by the FSU, which assisted MOT in building the existing paved road network and provided road construction and maintenance equipment and motor vehicles. Funding to MOT was provided on a highly concessional or grant basis and was utilized with limited consideration to developing a user-pay approach to road funding. Since 1991, assistance has been limited to EBRD TA to review the status of the sector in 1994, and United States Agency for International Development (USAID) assistance in a privatization program across several sectors, including the transport sector. Past Bank assistance to the sector has been limited to the project preparatory TA No. 2256-KGZ. The 1993-1996 USAID program in the sector consisted of helping the Government in (i) introducing enabling legislation for privatization, (ii) identifying and privatizing monopolies in the transport and wholesale sectors, (iii) dismantling regulatory barriers to competition, (iv) partly dismantling the holding company structure of MOT, and (v) training local staff to continue the privatization process. The Bank plans to play the leading role in the aid community in providing capital financing for the road sector. While USAID's program is complementary to the Bank's activities, it does not plan to finance major civil works in the road sector. The World Bank is not active in the sector. Because of its lack of concessional finance (and its mandate), EBRD cannot play a leading role in the sector.

D. Lessons Learned

28. Although the Project will be the Bank's first road sector project in the Kyrgyz Republic, valuable experience has been gained from a number of interventions such as the transport projects in Mongolia,¹ which is undergoing a similar rapid transition to a market economy. The Bank's implementation experience with regard to these projects has demonstrated that skills are available to implement straightforward infrastructure projects and has highlighted the need for investments to be accompanied by comprehensive support for policy reform, institutional strengthening, significant consultant assistance, and human resource development. These lessons have been taken into account in the design of the Project. EBRD and the World Bank have shared with the Bank their experience in implementing projects in the Kyrgyz Republic, and the lessons of their experience have also been reflected in the Project design. During Project processing the Mission also held discussions with USAID, which has considerable experience in providing assistance to the Kyrgyz Republic.

E. The Bank's Operational and Sector Strategy

29. The main objective of the Bank's interim operational strategy for the Kyrgyz Republic is to facilitate the country's transition to a market economy. This objective entails (i) supporting macroeconomic and sectoral policy reforms in close cooperation with other multilateral

¹ Loan No. 1256-MON(SF): *Ulaanbaatar Airport*, for \$36 million, approved on 17 August 1993; and Loan No. 1364-MON(SF): *Road Development*, for \$25 million, approved on 22 August 1995.

institutions, (ii) institutional strengthening and human resource development, and (iii) selected sectoral infrastructure interventions in support of general economic growth and private sector development. In addition to quick-disbursing lending,¹ the Bank's operations aim at growth-oriented investments in physical infrastructure such as transport and power that are comparatively less demanding of institutions and less management intensive. The Bank is focusing its initial operations on high-priority infrastructure rehabilitation that is within the absorption capacity of the Government.

30. The Bank's sectoral strategy supports the Government's ongoing economic transition to a market-driven economy by assisting in (i) developing an efficient policy and regulatory framework; (ii) commercializing and privatizing operations of State-owned enterprises; (iii) promoting competition and private sector participation in the provision and operations of transport facilities and services; (iv) increasing road funding by improving collection of taxes and duties, developing a user-pay approach to road funding, and removing subsidy-induced distortions in pricing of transport services; (v) rehabilitating and improving operations, maintenance, and safety standards of the road network; (vi) developing human resources; and (vii) improving environmental standards.

F. Sector Reform and Policy Dialogue

31. The transition to a market economy requires major changes in the role of the Government in the transport sector. The Government is divesting itself of the responsibility of operating transport services, and is focusing on the following core tasks: (i) establishing an appropriate policy, legal, and regulatory framework for the sector; (ii) providing and maintaining public infrastructure for the road and rail networks, and civil aviation facilities; and (iii) ensuring the efficient operation of the transport entities under its control. In February 1994, the Government issued Decree No. 54, which restructured MOT and established nine shareholding companies and agencies to manage the Government's interests in the joint-stock companies. The Government's privatization and reform process in the transport sector has made significant progress in privatizing and corporatizing the sector entities. These steps in improving transparency and efficiency need to be supported by reform in the overall role of the Government, in terms of its core business services and regulatory functions, as the sector is progressively deregulated.

32. The Bank's policy dialogue during processing of the Project has focused on the need for (i) establishing an enabling policy and regulatory environment that is consistent with the requirements of a market economy; (ii) restructuring MOT and strengthening DOR; (iii) establishing a road maintenance program and implementing a road maintenance system; (iv) establishing a financial system that increases financing for the development and maintenance of the road network through improved tax collection and road sector revenues from users, and appropriate administration; and (v) developing capacity building through human resource

¹ Loan No.1342-KGZ: *Special Assistance Project*, for \$40 million, approved on 8 December 1994; and Loan No. 1407-KGZ: *Agriculture Sector Program*, for \$40 million, approved on 23 November 1995.

development. The Government agreed to implement the Bank's recommendations discussed below, which are also included in an agreed upon Road Sector Reform Action Plan in Appendix 3.

1. Policy and Regulatory Framework

33. The Government's commitment to market-based reforms for the road transport sector needs to be translated into a set of specific policies and guidelines. The Government and the Bank agreed that specific policies and guidelines should be developed that will (i) create a business and regulatory environment in which transport customers are free to choose among competing services; providers of transport services are not restricted by the Government beyond normal regulations (e.g., vehicle registration and safety measures); there is no Government discrimination on the basis of ownership of transport enterprises; and prices are determined by the market; (ii) open the transport sector to competition; (iii) facilitate the upgrading of transport infrastructure; (iv) improve the efficiency of the State transport enterprises by granting them greater commercial and managerial autonomy; and (v) develop safety and environmental standards. Through the proposed TA (see paras. 64-65), the Bank will assist the Government in preparing a Transport Sector Policy Statement (TSPS) and in revising the interim Road Sector Policy Statement (RSPS). The Transport Sector Development Framework and the interim RSPS (see Appendix 4) will provide the basis for preparing a TSPS that embodies the above policies and guidelines for the forthcoming decade. The TSPS and RSPS will be formally adopted and issued by the Government by 31 December 1996. The proposed TA will also provide services to review existing legislation, including the Automobile Roads Act of May 1994, to ensure that suitable provisions are included for the development of a market economy.

34. In common with other CARs, the Government is planning to enact the Road Fund Act during 1996 to increase financing for the maintenance and development of the road sector. The proposed TA will assist the Government in reviewing the Road Fund Act to ensure that it includes the principles of the user-pay approach to road funding for the maintenance and development of the road sector. The Road Fund Act will be submitted for consideration by Parliament by 31 December 1996.

2. Restructuring and Private Sector Participation

35. The Government has agreed to implement reforms that will improve accountability and promote self-financing of the management and operations of the road sector. The Government will achieve these objectives by restructuring road sector institutions so that the role of the Government is limited to managing the sector in the areas of (i) road policies, and planning of programs and projects; (ii) monitoring performance; and (iii) regulation, licensing, and safety. DOR should be responsible for (i) formulating road sector policies; (ii) programming and budgeting road activities; (iii) mobilizing resources for funding of road activities, including management of the Road Fund for all road works; (iv) managing routine maintenance and periodic maintenance; (v) maintaining a centralized road inventory; (vi) controlling the cost and

quality of works; and (vii) road standards and safety. While the past reductions in MOT's functions are in accord with the goal of reducing the role of the State in a market economy, the remaining MOT staff do not have the capacity to handle their core regulatory, planning, and monitoring tasks adequately. As an interim measure, the Government established the DGRMBOR in March 1996 (see Appendix 2), so that it can implement the Project and form the nucleus of a new DOR, subject to the recommendations of the TA consultancy. The role of MOT and DGRMBOR, together with other operational aspects, will be examined further under the proposed TA for restructuring of MOT and institutional strengthening of DOR.

36. The Government's privatization program for the transport sector is in a state of transition. In 1992, the Kyrgyz Republic embarked on a program of privatization of State enterprises implemented by a newly created entity called the State Property Fund. Privatization was effected mostly by transforming enterprises into joint stock companies and transferring shares to the labor collective of the enterprise. A 1993 Privatization Law initiated a second phase of privatization in the 1994-1995 period, which tried to remedy some of the deficiencies of the earlier program by making the process more transparent and competitive through (i) allowing the free use and transfer of shareholders' rights by banning retroactively the "closed" form of joint stock company; (ii) introducing competitive procedures for all types of privatization, and allowing strategic investors to bid for up to 70 percent of shares in medium and large-scale enterprises (these are temporarily retained in State ownership); (iii) broadening the ownership of company assets by selling at least 25 percent of shares in medium and large-scale industries by voucher auctions; (iv) restricting the share entitlement of all members of labor collectives to 5 percent; and (v) reducing State control over partially privatized companies by selling the remaining shares in enterprises privatized in the first privatization program.

37. As of January 1996, 118 entities of the original 269 defined entities formerly under State control through MOT had been privatized. This included 71 of the 89 domestic transport companies, and all 29 construction entities. A further 32 entities are scheduled for privatization over the next two years, including all but five of the transport entities (most of which have a strategic civil defence role). Only entities involved in railway administration, and MOT recreation and social facilities such as rest houses, are not scheduled for privatization. The major achievements of the program have been to separate companies into stand-alone organizations, each responsible for its own expenses and revenues. As a result of the Government's privatization program, transport customers are free to negotiate conditions directly with the operators on the basis of price and quality of service. However, most road transport companies are not financially viable, and this may not occur until economic activity recovers to provide a sufficient scale of operation, and until the Government's fiscal crisis diminishes to the extent that renewed public investment can generate demand for transport services. Key issues include the commercialization of the newly privatized enterprises, measures to improve the technical and managerial capabilities of companies, and the efficiency of relationships between the companies and the Government. The absence of a reliable banking credit is also a limiting factor in the development of the private sector.¹ MOT's role in terms of core services and regulatory

¹ This issue will be addressed by TA No. 2220-KAZ: *Strengthening of the Banking Sector*, for \$600,000, approved on 5 December 1994.

functions, as the sector is progressively privatized, will be strengthened by the proposed TA. TA for the privatization and commercialization process is being provided by USAID.

3. Maintenance

38. Under the centrally planned economy, road construction and maintenance were undertaken by a State-owned construction department. MOT has expertise in road construction and maintenance, and construction materials are available locally, but it is operating under difficult circumstances because of budgetary constraints. Although MOT has a large fleet of road construction and maintenance equipment, much is obsolete and inoperable, and MOT continues to rely on Russia and other countries of the FSU for spare parts and equipment. The majority of this equipment does not meet current international standards, which restricts the transfer of productivity-enhancing technology from other countries.

39. The capability of the private sector for road construction and maintenance is limited because of the large capital investment required to purchase heavy construction equipment and the uncertainty arising from the low level of Government road construction activities required to sustain the investment. The approach taken by the Government is to progressively develop privately owned road construction companies and private contractors to enable DOR to carry out road construction through tendering. Routine maintenance of the road network will remain with DOR. In the absence of a vigorous private sector, and taking into account the geographical isolation and difficulties in mobilizing road maintenance equipment, DOR (and, in the interim, DGRMBOR) requires a minimum amount of equipment for routine maintenance and to handle potential calamities. The proposed TA will assist DOR in preparing a maintenance plan, quantifying the resource requirements for maintenance, and implementing an appropriate road maintenance management system for the regional maintenance centers.

4. Road Expenditures and Road Sector Revenues

40. The level of Government expenditure within the road sector, funded by allocations from the State budget, is inadequate. The major sources of funds for road works yielded only Som82 million in 1995. These funding provisions are inadequate, as yearly routine maintenance alone has been estimated to require about Som400 million per year. The Government's Road Fund should be enacted at the earliest opportunity to support road maintenance and reconstruction of the road network, at least during the country's transitional period to a full market economy.¹ The revenues from the Road Fund would be generated primarily from a fuel tax, vehicle registration fees, vehicle purchase or import taxes, and a general road tax. The TA

¹ Road funds have been used for some time in developing countries and in developed countries such as Japan, US, and New Zealand to finance the maintenance and development of the road networks. While diverging views can be found on the benefits of earmarking government revenue for specific activities, the use of road funds in transitional economies minimizes the erosion of existing and newly created assets, enables the establishment of road maintenance management systems, and encourages user-pay principles.

consultants will assist MOT in reviewing the Road Fund Act to ensure that users pay for the cost of the road network and that the damage caused to the road surface is recouped from the users. The Act should be administratively simple and provide the funds required for maintenance and reconstruction.

41. However, the Road Fund Act may not fully address MOT's financial problems. The State tax collection system needs to be improved; the current road tax that is levied on all enterprises does not target people in proportion to their use of the road network. The International Monetary Fund is providing TA to improve the general tax system and collection. Coordinated reform with the neighboring CARs is required, in regard to increasing taxes and prices, so that the main user groups of the road network (including transnational vehicles) pay adequate fees for maintaining and operating the network. The Bank's policy dialogue with the Government (and with that of Kazakhstan)¹ has emphasized the need to implement a consistent regional tax policy among the CARs. To strengthen medium to long-term financing, the Bank's policy dialogue is also focusing on the need to develop a more broad-based philosophy and a user-pay approach to road funding, which should be implemented to achieve a set of road sector revenue targets. Improving user-pay principles in both a practical and conceptual context will require, among other things, examining the various classes of road users, and determining the impact of various cost-inducing factors. The Government requested the Bank to provide the proposed TA to prepare the required analysis, and to develop an appropriate set of recovery practices and targets that can be implemented within the context of the country's state of economic development.

5. Human Resource Development

42. Capacity building in the Kyrgyz Republic is starting from the basic level of defining new structures, systems, procedures, technologies, and relationships.² The proposed TA will continue this process with the establishment of planning and management frameworks within the reorganized DOR and the training of its staff, particularly in the areas of planning, accounting, project management, and maintenance. Emphasis will be given to developing the basic skills of DOR staff through on-the-job training. This process will also be facilitated through consulting services for the design and construction supervision of the Project. Implementation supervision of the Project will be carried out initially by DGRMBOR with the help of international and domestic consultants. The role is expected to be transferred to DOR after the TA consultants determine MOT's and DOR's restructuring needs. MOT will allocate additional staff to DOR, as counterpart staff for the consultants, to be exposed to international design, tendering, and construction management practices. The proposed TA will also determine DOR's human resource requirements for the next five years, and prepare a human resources development plan for implementation by MOT and DOR.

¹ A road rehabilitation project in Kazakhstan is being processed concurrently with the Project, for approval in 1996.

² TA No. 2175 KGZ: *Seminars on Operational Policies and Procedures in 1995 and 1996*, for \$80,000, approved on 28 September 1994; and TA No. 2226-KGZ: *Institutional Support for Procurement and Disbursement*, for \$476,000, approved on 8 December 1994. These TAs will assist Government agencies in familiarizing themselves with Bank operations and procurement procedures. Future TAs will provide capacity building to Government agencies on a selective basis.

IV. THE PROJECT

A. Rationale

43. Transformation from a command to a market-based economy requires an efficient transport system. To support this transformation, it is essential to improve road infrastructure and prevent its further degradation. The Bishkek-Osh road interconnects the two major centers of economic activity and population in the country. The road runs through four of the country's six regions and serves over two million people, almost half of the country's population. Bishkek, the capital, is located in the north of the country and has a population of about 600,000. Together with its adjacent region, it accounts for over half of the country's gross domestic product (GDP) and 80 percent of the industrial enterprises. Osh has a population of about 250,000 and is the main commercial center for the southern regions, which are the principal sources of the country's agricultural output. The mountainous center sections of the road provide access to hydropower generating facilities, which are important sources of foreign exchange earnings. The Bishkek-Osh road is a key infrastructure for the new Republic, providing a means to integrate its economy and strengthen social and cultural links among its diverse population groups. The road is the most important transport corridor in the country, and is part of the transnational route linking the agriculturally productive Fergana valley in Uzbekistan, as well as the neighboring country of Tajikistan, to Almaty, the capital of Kazakhstan, and proceeding onwards to Russia's Siberia. Poor maintenance has resulted in serious deterioration of the road in certain sections; the road is subject to periodic closures in winter months because of unsafe conditions. The establishment of an all-weather road between the two largest population centers of the country is essential for the country's economic development and to improve transport safety. The proposed advisory TA will assist the Government's reform process aimed at improving the efficiency of the sector and the delivery of services.

B. Objectives and Scope

44. The objective of the Project is the rehabilitation of priority sections of the Bishkek-Osh road, thereby improving the efficiency and safety of the country's principal road transport link. Through policy dialogue and TA, the Project will also assist the Government in implementing market-oriented policy and regulatory reforms, institutional strengthening, preparing a maintenance plan and program, increasing road sector revenues by developing a user-pay approach to road funding, and implementing a road maintenance system that will improve maintenance and safety procedures.

45. The Project consists of three parts:

- (i) civil works for the rehabilitation of about 135 km of key mountainous sections of the Bishkek-Osh road, including road protection structures and minor realignment to improve safety;

- (ii) equipment for road clearing, maintenance, and technical support; and
- (iii) consulting services for detailed design and construction supervision of the civil works.

C. Technical Justification

46. The landlocked country is set in the Tien Shan mountain range, with 90 percent of its land area exceeding an elevation of 1,500 m. The Bishkek-Osh road traverses passes at over 3,000 m elevation and presents difficult driving conditions in its current deteriorated state. Most of the road between Bishkek and Osh was constructed before 1960. Poor construction of the road and the lack of maintenance have resulted in its deterioration. In winter months, heavy snowfalls and avalanches block the road, while in the spring and summer months, melting snow and rain cause frequent rock falls and landslides. Because of heavy snowfalls, unstable slopes, and a lack of equipment to clear the road, the road is often impassable during the winter months. The rehabilitation of the road is a national priority to prevent irreversible degradation of the main transport link and to improve road safety in the hazardous mountainous sections of the road. The proposed Project will be the first phase of a rehabilitation program for the Bishkek-Osh road that has been estimated to require about \$200 million. The Project will rehabilitate the highest priority sections in the mountains, which are in a deteriorated condition. Rehabilitation is essential for efficient movement of freight and passengers, and improved road safety. The rehabilitation of the remaining sections of the road may be considered for Bank financing in the future.¹

47. Because of the downturn of the economy, the current volume of traffic is about the same level as that of the mid-1980s. Freight and passenger vehicle traffic in 1995 for the Project road sections was estimated between 640 and 690 vpd, while the road sections close to Bishkek and Osh were estimated at about 11,920 vpd and 4,270 vpd, respectively (see Appendix 1). Average speeds are below optimum levels, and a number of road sections have deteriorated to gravel surfaces. Traffic volumes on the Project road sections are restricted because of the poor condition of the road; this is a constraint to national and foreign trade and to the expansion of a market economy. Traffic growth rates of 8 percent per annum are forecast from 1999 to 2008, and 6 percent thereafter. The forecasts are based on 1995 traffic data; estimated average annual GDP growth rate of about 6 percent for the country between 1999 and 2020; anticipated growth in population, incomes, and vehicle ownership; and income elasticity of demand for passenger vehicles in the range of 1.2-1.4.

48. Rehabilitation is required to restore the road and preserve previous road investments. The civil works component of the Project is designed to prevent the worst sections of the road, in the mountains, from deteriorating to a condition where more expensive major pavement reconstruction would be necessary. The criteria for selecting road sections for inclusion in the

¹ A second loan of \$50 million for road rehabilitation is programmed for Bank financing in 1998.

Project included the need to avoid major reconstruction of sections of the road that are in the worst state of disrepair, unsealed sections with excessive roughness, major restrictions to traffic flows, the need to improve safety in potential accident-prone areas, and road sections subject to closure during winter. Civil works will consist of reconstructing of some embankments, adding a crushed aggregate base course, surfacing with asphalt concrete, improving drainage, and easing sharp bends. Appropriate road protection structures will be designed and constructed at key locations. Road maintenance equipment proposed under the Project will complement the existing equipment of the road maintenance units. The Project scope includes consulting services for detailed design and construction supervision.

D. Cost Estimates

49. The total cost of the Project is estimated at \$86 million equivalent, of which \$48.4 million (56 percent) is the foreign exchange cost and \$37.6 million equivalent (44 percent) is the local currency cost. The Project cost estimates are summarized in Table 1 and are detailed in Appendix 5.

Table 1: Summary of Project Cost Estimates
(\$ million)

Item	Foreign Exchange	Local Currency	Total Cost
A. Base Costs ^a			
1. Civil Works	31.50	31.00	62.50
2. Equipment	6.25	0.25	6.50
3. Consulting Services	<u>2.50</u>	<u>0.60</u>	<u>3.10</u>
	40.25	31.85	72.10
B. Contingencies			
1. Physical Contingencies ^b	4.14	3.16	7.30
2. Price Escalation ^c	<u>2.54</u>	<u>2.59</u>	<u>5.13</u>
	6.68	5.75	12.43
C. Service Charges During Construction			
	<u>1.47</u>	<u>—</u>	<u>1.47</u>
Total (A+B+C)	48.40	37.60	86.00

^a At 1996 prices.

^b At 10 percent of base costs.

^c At 2.7 percent per annum.

E. Financing Plan

50. A financing plan for the Project is summarized in Table 2 (for details see Appendix 5). The Government has requested the Bank to provide a loan from its Special Funds resources in an amount equivalent to \$50 million to finance 67.1 percent of the foreign exchange cost (\$32.5 million) and 45.2 percent of the local currency expenditure (\$17.5 million equivalent) for the Project. The proposed Bank loan will represent 58.1 percent of the total cost of the Project, including contingencies and service charge on the loan during construction. The borrower will be the Kyrgyz Republic. The terms of the loan will include the Bank's standard terms and conditions for loans from its Special Funds resources, including a service charge of 1 percent annually and an amortization period of 40 years including a grace period of 10 years. Parallel cofinancing of \$21 million equivalent is being sought by the Government for civil works and maintenance equipment, to finance 24.4 percent of the total Project cost consisting of 32.9 percent of the foreign exchange cost (\$15.9 million) and 13.6 percent of the local currency expenditure (\$5.1 million) equivalent.¹ The balance of the local currency expenditures amounting to \$15 million equivalent (17.5 percent of the total Project cost), consisting of taxes, duties, and associated contingencies, will be financed by the Government. The Government has given an assurance that adequate local counterpart funds will be provided annually in DGRMBOR's (and MOT's) budgets for FY1996-FY1999 to enable the Project to be implemented in a timely manner. The Government will allocate \$2.5 million equivalent in 1996, \$4 million equivalent in 1997 and in 1998, and \$4.5 million equivalent in 1999 to meet the local currency expenditure to be financed by the Government.

Table 2: Financing Plan
(\$ million)

Source	Foreign Exchange	Local Currency	Total Cost	Percent of Project Cost
Bank	32.50	17.50	50.00	58.1
Cofinancing	15.90	5.10	21.00	24.4
Government	—	<u>15.00</u>	<u>15.00</u>	<u>17.5</u>
Total	48.40	37.60	86.00	100.0

¹ The Overseas Economic Cooperation Fund (OECF) of Japan is expected to cofinance civil works for a section of the road of about 34 km, and procurement of equipment for road clearing, maintenance, and technical support. In the absence of this cofinancing, the rehabilitation of 34 km of the road would be deleted and the total cost of the Project would be reduced to \$69.21 million (\$39.91 million foreign exchange cost and \$29.30 million equivalent local currency expenditure). The Bank financing would be unchanged at \$50 million equivalent (\$32.5 foreign exchange cost and \$17.5 million equivalent in local currency expenditure) or 72.2 percent of the total Project cost. For the procurement of equipment estimated to cost \$7.41 million, the other cofinanciers that have expressed interest would be approached formally by the Government only if cofinancing from OECF does not materialize. The balance of \$11.8 million equivalent in local currency expenditure, mainly for taxes and duties, would be financed by the Government.

51. Because of ongoing Government fiscal problems, the provision of adequate counterpart funds is a concern for all projects in the Kyrgyz Republic. Enactment of the Road Fund Act is proposed by the Government to ensure the availability of adequate funds for the Project and future maintenance of the road network.

F. Implementation Arrangements

52. The Government has established, and will maintain for the duration of the Project, a Project Steering Committee (PSC) to (i) oversee and coordinate all Project activities including liaison among the agencies involved in its implementation and sector reforms agreed upon during policy dialogue with the Bank; (ii) review the status of the implementation of Project components; (iii) monitor the progress achieved and resolve difficulties encountered; and (iv) serve as a forum for discussions on, and review of, the Project's impact on regional development. The PSC is chaired by the Director General of DGRMBOR, and its members are the Project Manager and representatives from MOT, Goskominvest, MOF, and the Ministry of the Economy. The PSC will meet at least twice a year, and more often if required.

53. To ensure cost effective and timely implementation of the Project, a Project Implementation Unit (PIU) within DGRMBOR has been established, headed by a qualified Project Manager. The Project Manager is supported by three civil engineers with expertise in materials and soil engineering, roads, bridges, and tunnels; and financial and clerical staff will be made available from DGRMBOR. About four additional staff will be made available in the field for the PIU throughout Project implementation, and the PIU will be assisted by the consultants to be recruited for the Project design and construction supervision. The PIU will undertake day-to-day implementation supervision of the Project and provide the necessary liaison among DGRMBOR, contractors, suppliers, the cofinancier, and the Bank.

1. Implementation Schedule

54. The Project is expected to be implemented in about four years commencing in mid-1996, and is expected to be completed by the last quarter of 1999 (see Appendix 6).

2. Procurement

55. Two civil works contract packages have been formulated for implementation under the Project. One civil works contract package (Package 1) for the rehabilitation of 101 km of the road is proposed for Bank financing, while the second civil works package (Package 2) for the rehabilitation of a 34-km section of the road is proposed for cofinancing. Package 1 consists of a section of the road from km 412 to km 426, and a section of the road from km 161 to km 248. Package 1 will be procured using international competitive bidding (ICB) procedures

in accordance with the Bank's *Guidelines for Procurement* (see Appendix 7). Contract packaging of civil works has been arranged to encourage international competition, including joint venture participation by international and local contractors, and to meet the Government's need for urgent rehabilitation of key sections of the road. Given the limited yearly construction period because of winter snow between November and March, and the need to minimize implementation delays and ensure the timely completion of the Project, the Bank approved the Government's request for advance procurement action and retroactive financing for Package 1 on 9 November 1995, in principle, to a maximum of \$5 million.¹ The Government has been advised that Bank approval of advanced procurement action and retroactive financing, in principle, does not commit the Bank to financing the Project.

56. Package 2 for the rehabilitation of a section of the road of about 34 km, from km 327 to km 361, together with two packages for road maintenance and technical support equipment, are proposed for parallel cofinancing.

3. Consulting Services

57. Consultants to be financed under the loan will undertake detailed design, construction supervision, and Project management. About 80 person-months of international consulting services and 100 person-months of domestic consulting services will be recruited in line with the Bank's *Guidelines on the Use of Consultants*. Given the national priority of the Project and the need to minimize Project implementation delays, the Bank approved the Government's request for advance recruitment action and retroactive financing, in principle (within the approved maximum of \$5 million), on 7 February 1996.² The main objectives of the consulting services are to ensure that the design and construction under the Project are undertaken in an efficient manner, consistent with international engineering standards and practices, and in accordance with the Bank's *Guidelines for Procurement*. In providing the services, the international consultants will ensure that on-the-job training and the transfer of expertise are provided to DGRMBOR and MOT staff and local experts (see the outline terms of reference in Appendix 8).

4. Midterm Review

58. In 1998, the Bank and the Government will carry out a midterm review of the Project. The main objectives of the review will include (i) examining the Government's progress in implementing sector reforms, (ii) reviewing the implementation of the Project and determining

¹ Bank approval was reported in the March 1996 edition of *Asian Development Bank Business Opportunities* (ADBBO). Advance procurement action and retroactive financing will also achieve faster disbursement, reduce service charges, and reduce cost increases caused by possible escalation in prices resulting from delayed contract award.

² Bank approval was reported in the March 1996 edition of ADBBO.

compliance with relevant standards, and (iii) examining compliance with assurances provided in the Loan Agreement.

5. Reports, Accounts, and Audit

59. DGRMBOR will prepare and submit to the Bank quarterly reports on the progress of Project implementation. DGRMBOR will maintain separate accounts for the Project and have them audited by the Government audit authority. The audited accounts and auditor's report, prepared in accordance with internationally accepted accounting standards, will be furnished to the Bank within nine months of the end of the financial year. To facilitate postevaluation of the Project, DGRMBOR and MOT will furnish to the Bank, within three months of its physical completion, a Project completion report covering the execution and initial operation of Project facilities.

6. Benefit Monitoring and Evaluation

60. A system for recording baseline data, including traffic data, and collecting statistics for monitoring Project benefits will be established by 30 June 1997 with the assistance of the TA consultants. DGRMBOR and DOR will monitor and report to the Bank on physical, economic, and social benefits during the course of Project implementation, yearly from 31 December 1997, with the assistance of the Project design and construction supervision consultants. These activities will be reviewed by the Bank through the quarterly reports and review missions that will monitor progress of the Project and the Government's sector reform.

G. The Executing Agency

61. The Government has accorded high priority to the implementation of the Project. To ensure the timely and successful implementation of the Project, and given the limited Project implementation capacity of DOR, the Office of the Prime Minister has been made the Executing Agency (EA), and DGRMBOR has been established as the implementation agency for the Project. DGRMBOR will be fully staffed with a total of 23 suitably trained people, including the PIU (see Appendix 2), and divisions for procurement, construction, maintenance, and finance. The TA consultants will review the role of DGRMBOR and DOR, and it is expected that the institutional capacity of DOR would be expanded to enable project implementation and to allow (i) formulating road sector policies; (ii) programming and budgeting road activities; (iii) mobilizing resources for funding of road activities, including management of the Road Fund for all road works; (iv) managing routine maintenance and periodic maintenance contracts; (v) maintaining a centralized road inventory; and (vi) controlling the cost and quality of works.

H. Environmental and Social Measures

62. The Project is Environmental Category B, and an initial environment examination (IEE) has been carried out under TA No. 2256-KGZ in line with the Bank's *Environmental Guidelines for Selected Infrastructure Projects*. A summary of the IEE has been prepared. The IEE has indicated that there are no significant adverse environmental impacts associated with the Project, as it involves rehabilitation of a road along an existing alignment and will not require land acquisition for rights-of-way. Consultants engaged for the detailed design and construction supervision of the Project will supervise and monitor (i) selection and restoration of borrow areas and quarries, (ii) the extraction of water for construction purposes, (iii) control of hazardous and toxic materials, and (iv) impairment of downstream water quality. These environmental monitoring and mitigating measures have been incorporated in the terms of reference of the consultants. The Government has assured the Bank that it will address adequately any adverse environmental impacts of the Project.

63. As the road rehabilitation will be carried out on the existing road, there are no relocation, resettlement, compensation, or social issues involved in the Project. The Project has no particular impact on vulnerable groups or human uplifting dimension. The Project and the TA are expected to provide employment for domestic contractors and consultants. Civil works contracts are expected to generate about 650 person-years for skilled and unskilled labor. Additional local employment will be generated for routine and periodic maintenance on completion of the Project and through the road maintenance system to be established under the TA for financing by the Road Fund. Detailed design and construction supervision of the Project, and for the TA will require about 100 person-months and 18 person-months of domestic consultants, respectively. The Project will also reduce transport costs, enabling improved transport services, which will promote new economic and commercial activities.

I. Technical Assistance

64. The Government has requested advisory TA for institutional strengthening of the road sector. The objectives of the TA will include assisting the Government in:

- (i) developing an appropriate policy and legal framework for transport in general and the road sector in particular, and reviewing and amending the TSPS and the interim RSPS and existing legislation to ensure they make suitable provisions for a market economy;
- (ii) restructuring MOT and DGRMBOR, institutional strengthening of DOR, and preparing a human resources development plan so that the entities can carry out their new functions efficiently in a market economy;

- (iii) preparing a maintenance plan, formulating a road maintenance program, and developing and implementing a road maintenance system to enable DOR to carry out routine maintenance of the road network and to improve safety; and
- (iv) developing and implementing a more broad-based approach to road sector revenues by developing a user-pay approach to road funding, assisting the Government in revising the Road Fund Act, and recommending appropriate measures for its effective implementation.

65. About 25 person-months of internationally recruited consulting services and 18 person-months of domestic consulting services will be required to implement the TA over a 5-month period. The total cost of the TA is estimated at \$840,000 equivalent, comprising \$800,000 in foreign exchange costs and \$40,000 equivalent in local currency expenditures. It is proposed that the Bank finance the entire foreign exchange cost of \$800,000, as a grant, and that the Government finance the remaining \$40,000 equivalent in kind (for details see Appendix 9). A consulting firm will be selected and engaged by the Bank in accordance with the Bank's *Guidelines on the Use of Consultants*. To obtain maximum benefits from the proposed TA and to complement ongoing sector reforms, the Bank approved the Government's request for advance recruitment action of consulting services on 7 February 1996.¹ The Government has been advised that approval of advance recruitment action does not commit the Bank to finance the TA. The TA is expected to commence in mid-1996 and to be completed by December 1996. The terms of reference for the proposed TA are shown in Appendix 9.

V. PROJECT JUSTIFICATION

66. Economic evaluation has been carried out for the Project sections of the road and for the entire Bishkek-Osh road, based on a comparison of the "with" and "without" Project scenarios. The principal sources of economic benefits from the Project accrue from savings in (i) vehicle operating costs (VOCs); (ii) freight and passenger time costs; (iii) periodic maintenance costs; (iv) costs to diverted traffic; and (v) vehicle composition changes. In the "with" Project case, VOCs will be lower than would be the case "without" the Project. VOC savings were determined as a function of anticipated changes in existing surface roughness and improved pavement as well as traffic volume. VOCs were calculated on the basis of vehicle types representative of the road traffic. In the "without" Project case, to prevent further deterioration of road surfaces, major periodic maintenance would be required at shorter intervals and at higher costs. Implementation of the Project will result in longer periodic maintenance cycles at lower costs. Road maintenance costs were based on the routine and periodic expenditures required to maintain the Project road in a useable condition.

67. The estimated VOC savings will amount to about 60 percent of the benefits that have been quantified. The remaining 40 percent of the benefits will accrue from the savings in time,

¹ Bank approval was reported in the March 1996 edition of ADBBO.

maintenance costs, costs to diverted traffic, and vehicle composition changes. In addition to these savings the Project will also provide the following benefits, which are difficult to quantify and have thus not been included in the analysis: potential tax revenue from transnational traffic by foreign-registered vehicles; potential fuel traffic from an oil refinery plant being built in Jalalabad; saving due to a reduced number of accidents¹; benefits derived from an all-weather link between the two major centers of economic activity and population in the country; improved access to the mountainous areas, where hydropower-generating facilities are located that are important sources of foreign exchange earnings; the integration and strengthening of social and cultural links among the country's diverse population groups; and the benefits of the Bishkek-Osh road linking neighboring countries.

68. The overall economic internal rate of return (EIRR) for the Project road sections is estimated at 13.1 percent, while the EIRR for the rehabilitation of the entire road is estimated at about 27 percent (see Appendix 10). The difference in the EIRRs is due to the Project having targeted the road sections that are in the worst physical condition and are likely to fall into total disrepair. These road sections are mostly located in the mountains, where the costs per kilometer are higher. Sensitivity analysis tested the effects of possible unfavorable scenarios for changes in key parameters that determine the costs and benefits of the Project. The results of the analysis are shown in Table 3 and indicate that the EIRR is relatively robust under adverse circumstances. The impact on the EIRR of removing the cofinanced civil works component from the Project is negligible.

Table 3: Sensitivity Analysis for the Project

Sensitivity Test	Percentage Change	EIRR (%)	Sensitivity Indicator ^a
1. Base Case	—	13.1	—
2. Capital Cost	10% increase	11.8	0.96
3. Benefits	10% decrease	11.7	1.06
4. Combination of 2 and 3	—	10.5	—
5. Implementation Delay	1 year	11.5	—

$$^a \text{ Sensitivity Indicator} = \frac{\text{Change in EIRR (\%)}}{[\text{Change in Variable Tested (\%)}]}$$

¹ Reliable accident statistics are difficult to obtain. Indicative figures suggest that the number of accidents and the number of deaths are high compared with Russia and Kazakhstan. Deaths per billion vehicle-kilometers are estimated at about 250, compared with levels of 65 to 138 in some FSU countries and only 77 in the United Kingdom.

69. The Project has been formulated to reduce potential risks. To minimize the risk of delays during implementation, the Bank has approved advance procurement action and advance recruitment action, the latter for the Project design and construction supervision consultants. Given the country's limited absorptive capacity, the Project does not involve any unique or sophisticated technology. The Project is not expected to face any major technical or managerial risks. DGRMBOR and DOR capabilities in project implementation will need to be strengthened, with the assistance of international consulting services, and will be carefully monitored to ensure that adequate numbers of qualified and skilled staff are made available to implement the Project and manage the road sector satisfactorily. The proposed use of ICB procedures and the packaging of the main civil contracts have focused on minimizing the potential for logistical difficulties during Project implementation. To minimize the risk of poor quality control during construction, the consultants for detailed design and construction supervision will assume overall responsibility for materials testing, monitoring, and other quality control measures.

70. To minimize the potential delays in Project implementation because of a shortage of counterpart funds (i) the Project scope and proposed financing have been designed to take account of the country's absorptive capacity, (ii) extensive discussions have been undertaken with MOF regarding budgetary provisions and the enactment of the Road Fund Act, and (iii) policy dialogue will continue with MOF and MOT to ensure increased domestic resource mobilization and road sector revenues. Several steps have been taken to address the risks posed by MOT's lack of familiarity with the policies and procedures of multilateral financing institutions: The experience of the World Bank and EBRD with projects in the Kyrgyz Republic, and elsewhere in the CARs, was reviewed, and the Project has been designed to reflect the lessons of this experience; detailed discussions on project implementation will continue to be held within DGRMBOR and MOT, and a detailed Project Administration Memorandum has been prepared; during implementation of the Project, there will be intensive Project supervision through regular review missions; and the Bank has begun to implement a broad strategy, which is supported through TA, to build institutional capacity in the Kyrgyz Republic related to the Bank's policies and procedures.¹

VI. ASSURANCES

71. The Government has given the following assurances, in addition to the standard assurances, which have been incorporated in the legal documents:

(i) Policy and Regulatory Reforms

By 31 December 1996, with the assistance of the consultants financed under the TA, the Government will promote market-oriented principles by undertaking a comprehensive review of the existing legislation in the transport and road sectors;

¹ See footnote, para. 42.

issuing a TSPS and a revised RSPS, and implementing regulations consistent with the TSPS and the RSPS; submitting for Parliament's consideration the Road Fund Act to finance road maintenance commencing 1997; and implementing amendments, as necessary, to the existing legislation to ensure consistency with the TSPS, RSPS, and the Road Fund Act.

(ii) Institutional Reforms

- (a) By 30 June 1996, the Government will implement an interim DGRMBOR structure, acceptable to the Bank, with a minimum staff of 23 qualified people to ensure effective implementation of the Project.
- (b) By 30 June 1996, MOT and DGRMBOR will provide counterpart staff for the implementation of the TA and will provide a core of staff for the management of the road sector.
- (c) By 30 June 1997, taking into account the recommendations of the TA and in consultation with the Bank, the Government will restructure MOT and DGRMBOR, and institutionally strengthen DOR, including implementation of the recommendations from the human resource development plan, so that the policy, regulation, and management of the road sector are carried out in a manner consistent with a market economy.

(iii) Road Funding and Maintenance

- (a) By 31 December 1996, the Government will establish a 1997 road maintenance budget for DGRMBOR and DOR to be financed by the Road Fund, and will continue to do so yearly thereafter. The budget will be funded from the Road Fund collections made by MOF on the basis of recommended tax collections under the Road Fund Act. MOF will release the Road Fund collections directly to MOT and DGRMBOR, up to the amount of the agreed upon annual budget.
- (b) By 30 June 1997, the Government will adopt measures to improve road sector revenues by developing a user-pay approach to road funding, taking into account the recommendations made in this regard under the TA. This will include the taxing of transnational traffic on the Bishkek-Osh road.
- (c) By 30 June 1997, the Government will implement the road maintenance system to be prepared under the TA, in consultation with the Bank, and will give priority to operation and maintenance activities to improve safety and

enhance maintenance of the Bishkek-Osh road, including the Project road sections.

- (d) The Government will make available appropriate local counterpart funds for the Project, annually, in DGRMBOR's and MOT's budgets from FY1996 to FY1999 to enable the Project to be implemented in a timely manner.

(iv) Supervision, Benefit Monitoring, and Evaluation

- (a) The Government has established a PSC and a PIU and has agreed to maintain them for the duration of the Project.
- (b) By 30 June 1997, a system for collecting and recording traffic data will be established for selected road sections with the assistance of the TA consultants. MOT and DGRMBOR, with the help of consultants for detailed design and construction supervision engaged under the Project, will undertake benefit monitoring and evaluation of the Project in accordance with the terms of reference and schedule to be agreed upon by the Government and the Bank, and will submit a benefit monitoring and evaluation report to the Bank yearly, commencing 31 December 1997.

(v) Environment

The Government will ensure that appropriate environmental protection and safety devices are included in the design of the Project facilities as detailed in the engineering design; and will implement the Project, and operate and maintain the Project facilities, in accordance with the IEE and the Bank's *Environmental Guidelines for Selected Infrastructure Projects*.

VII. RECOMMENDATION

72. I am satisfied that the proposed loan and technical assistance would comply with the Articles of Agreement of the Bank and recommend that the Board approve:

- (i) the loan in various currencies equivalent to Special Drawing Rights 34.218 million to the Kyrgyz Republic for the Road Rehabilitation Project, with a service charge at the rate of 1 percent per annum and with an amortization period of 40 years, including a grace period of 10 years, and such other terms and conditions as are substantially in accordance with those set forth in the draft Loan Agreement presented to the Board; and
- (ii) the provision of technical assistance in an amount not exceeding the equivalent of \$800,000 to the Government of the Kyrgyz Republic for Institutional Strengthening of the Road Sector.

MITSUO SATO

President

8 May 1996

APPENDIXES

Number	Title	Page	Cited on (page,para.)
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3	Road Sector Reform Action Plan	37	12, 32
4	Transport Sector Development Framework and Interim Road Sector Policy Statement	39	12, 33
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SUPPLEMENTARY APPENDIX

(available upon request)

Summary Initial Environmental Examination

NATIONAL TRAFFIC AND TRAFFIC PROJECTIONS FOR THE BISHKEK–OSH ROAD

A. National Freight Traffic

Transport Mode	Actual ^a					Forecast ^b
	1990	1991	1992	1993	1994	2000
1. Total in million tons	339	366	238	71	42	58
Road	330	359	232	68	40	55
Railway	8	7	6	3	2	2
Waterway	1	1	0	0	0	1
Civil Aviation ^c	—	—	—	—	—	—
Road (percent)	97.4	98.1	97.5	95.2	95.1	94.2
Railway (percent)	2.4	1.8	2.3	4.6	4.8	4.1
Waterway (percent)	0.2	0.2	0.1	0.2	0.1	1.7
Civil Aviation (percent) ^c	—	—	—	—	—	—
2. Total in million ton-kilometers	8,737	8,813	5,632	2,263	1,435	1,858
Road	5,631	5,936	3,759	1,271	787	1,085
Railway	2,620	2,415	1,589	923	575	687
Waterway	114	98	61	23	9	10
Civil Aviation	372	364	223	46	64	76
Road (percent)	64.5	67.4	66.7	56.2	55.9	55.9
Railway (percent)	30.0	27.4	28.2	40.8	44.0	44.0
Waterway (percent)	1.3	1.1	1.1	1.0	0.6	0.5
Civil Aviation (percent)	4.3	4.1	4.0	2.0	4.5	4.1

^a Source: TA No. 2256–KGZ: Road Rehabilitation Project.

^b Figures are indicative and are based on the European Bank for Reconstruction and Development, Central Asia Outline Transport Strategy.

^c Freight traffic for civil aviation in million tons is negligible.

B. National Passenger Traffic

Transport Mode	Actual ^a					Forecast ^b
	1990	1991	1992	1993	1994	2000
1. Total in million passengers	657	610	445	274	270	393
Road	653	607	442	271	267	390
Railway	1	1	2	2	2	2
Civil Aviation	2	2	1	0	0	1
Road (percent)	99.5	99.5	99.4	99.1	99.0	99.3
Railway (percent)	0.2	0.2	0.4	0.8	0.8	0.6
Civil Aviation (percent)	0.3	0.3	0.2	0.1	0.1	0.1
2. Total in million passenger-kilometers	9,524	9,495	6,576	2,935	2,849	4,009
Road	5,501	5,530	3,835	2,182	2,051	2,993
Railway	205	200	231	295	192	204
Civil Aviation	3,818	3,765	2,510	458	606	812
Road (percent)	57.8	58.2	58.3	74.3	72.0	74.7
Railway (percent)	2.2	2.1	3.5	10.1	6.7	5.1
Civil Aviation (percent)	40.1	39.7	38.2	15.6	21.3	20.3

^a Source: TA No. 2256–KGZ: Road Rehabilitation Project.

^b Figures are indicative and are based on the European Bank for Reconstruction and Development, Central Asia Outline Transport Strategy.

C. Socioeconomic Characteristics of the Bishkek-Osh Road

1. The 620-km route of the Bishkek-Osh road traverses the following three distinct segments: (i) Chui valley extending for 60 km from Bishkek to Karabalta, running through densely settled areas and flat terrain, forming part of the main international highway between Almaty, Bishkek, and Tashkent, and carrying local and through traffic of 6,000-10,000 vehicles per day (vpd); (ii) Mountains connecting Karabalta and Tashkumry for 390 km, passing through predominantly sparsely populated terrain and carrying mainly through traffic of 600-700 vpd; and (iii) Fargana Valley linking Tashkumry and Osh for 170 km, traversing relatively densely settled agricultural land and flat terrain and carrying mainly local traffic of 1,000-2,000 vpd, rising to about 4,000 vpd near Osh.

2. The direct influenced area of the Bishkek-Osh road serves about 1.2 million people (excluding the terminal cities), of whom about 100,000 are located in the mountainous areas, while the indirectly influenced areas include a further 1.2 million people located more than 25 km from the road, but dependent on the road for interregional movement of cargo and passenger traffic. More than 80 percent of the population served by the road are rural and engaged mainly in agriculture. About 15 percent of the land area served by the road is arable. The proportion of arable land rises to 20-25 percent in the valley districts and falls below 5 percent in the mountainous areas. The arable land is used for production of grains, cotton, tobacco, sugar beet, and fodder. Animal husbandry, especially of sheep, is a major occupation in all areas and the predominant source of livelihood in the mountain areas. Total output of the main agricultural products amounted to about 600,000 tons in the direct influence area, while the indirect influence areas contributed a further 600,000 tons.

3. Most of the country's industrial capacity is located in Bishkek and Osh and the adjoining province of Chui. With the disruption of the former Soviet Union markets and the collapse of local demand, almost all sectors of industry have substantial excess capacity, and many plants are closed or working at very low levels. Coal mining is an important activity in the south, and its local demand is served by the Project road. While present output from the oilfields in the Fargana Valley is small, meeting less than 15 percent of national demand, production is being revived and expanded by a joint venture with a foreign company in Jalalabad. Petroleum products to be shipped from this area to the north will result in movements by the Bishkek-Osh road.

D. Traffic Projections for the Bishkek-Osh Road

4. The trip generation and distribution model was calibrated using the results of traffic counts for selected vehicle types, an origin and destination survey, and roadside interviews that were carried out at key locations along the Bishkek-Osh road. Generated traffic was added to the normal traffic and was further refined to take account of likely changes in the size and composition of the vehicle fleet over the 20-year period of evaluation. Traffic growth rates were based primarily on expected gross domestic product growth (2 percent in 1996, increasing to 6 percent in 1999 and onward); growth rate of population; and future economic activities in the Project area. The traffic forecast methodology and results of traffic projections were reviewed and refined by TA No. 2256-KGZ, which concluded that the traffic forecasts are reasonable and consistent with those of other relevant projections for the Kyrgyz economy.

5. Traffic projections for the Bishkek-Osh road, including road sections proposed for Bank financing, are shown in Table 1. Total traffic in sections proposed for Bank financing was estimated at about 600-700 vpd in 1995, and is forecast to increase at about 8 percent per annum to reach about 2,000 vpd by the year 2008. The traffic will then grow more slowly at about 6 percent per annum to reach 3,400-3,700 vpd in 2018.

**Table 1: Traffic Projections for the Bishkek–Osh Road
(Average Annual Daily Traffic)**

Year	Road Section	Pick-ups Cars	& Vans	Buses	Light Trucks	Heavy Trucks	Articulated Trucks 1	Articulated Trucks 2	Total
1995	1 Bishkek – Karabalta (1) km 7 – km 19	8,635	666	859	980	406	336	37	11,919
	2 Bishkek – Karabalta (2) km 19 – km 60	5,008	386	498	568	235	195	21	6,911
	3 Karabalta – Km 80 km 60 – km 81	330	39	46	84	214	69	8	790
	4 Km 80 – Susamyr Jn km 81 – km 144	330	39	45	84	214	69	8	789
	5 Susamyr Jn – Talas Jn km 144 – km 161	269	29	38	64	214	69	8	691
	6 Sumamyr Jn – Alabel Pass ^a km 161 – km 248	269	29	38	64	214	69	8	691
	7 Alabel Pass – Naryn km 248 – km 318	269	29	38	64	214	69	8	691
	8 Naryn – Kokbel (1) km 318 – km 327	245	22	40	54	210	62	7	640
	9 Naryn – Kokbel (2) ^b km 327 – km 361	245	22	40	54	210	62	7	640
	10 Kokbel – Karakul km 361 – km 386	245	22	40	54	210	62	7	640
	11 Karakul – Kurpsai (1) km 386 – km 412	258	23	46	56	198	49	6	636
	12 Karakul – Kurpsai (2) ^a km 412 – km 426	258	23	46	56	198	49	6	636
	13 Kurpsai – Tashkumyr km 426 – km 450	258	23	46	56	198	49	6	636
	14 Tashkumyr – Madaniyet km 450 – km 500	731	55	104	125	161	58	7	1,241
	15 Madaniyet – Jalalabad km 500 – km 564	1,687	66	97	206	97	59	7	2,219
	16 Jalalabad – Karasoo km 564 – km 590	911	36	115	81	55	18	2	1,218
	17 Karasoo – Osh km 590 – km 620	3,253	222	236	304	157	85	9	4,266
2008	1 Bishkek – Karabalta (1) km 7 – km 19	16,132	1,244	1,605	1,831	758	628	69	22,267
	2 Bishkek – Karabalta (2) km 19 – km 60	9,446	729	940	1,072	444	368	40	13,039
	3 Karabalta – Km 80 km 60 – km 81	1,673	129	166	190	79	65	7	2,309
	4 Km 80 – Susamyr Jn km 81 – km 144	963	114	134	245	624	201	23	2,305
	5 Susamyr Jn – Talas Jn km 144 – km 161	806	87	114	192	641	207	24	2,071
	6 Sumamyr Jn – Alabel Pass ^a km 161 – km 248	806	87	114	192	641	207	24	2,071
	7 Alabel Pass – Naryn km 248 – km 318	806	87	114	192	641	207	24	2,071
	8 Naryn – Kokbel (1) km 318 – km 327	734	66	120	162	629	186	21	1,918
	9 Naryn – Kokbel (2) ^b km 327 – km 361	734	66	120	162	629	186	21	1,918
	10 Kokbel – Karakul km 361 – km 386	734	66	120	162	629	186	21	1,918
	11 Karakul – Kurpsai (1) km 386 – km 412	773	69	138	168	593	147	18	1,906
	12 Karakul – Kurpsai (2) ^a km 412 – km 426	773	69	138	168	593	147	18	1,906
	13 Kurpsai – Tashkumyr km 426 – km 450	773	69	138	168	593	147	18	1,906
	14 Tashkumyr – Madaniyet km 450 – km 500	2,027	153	288	347	446	161	19	3,441
	15 Madaniyet – Jalalabad km 500 – km 564	4,467	175	257	545	257	156	19	5,876
	16 Jalalabad – Karasoo km 564 – km 590	2,411	95	304	214	146	48	5	3,224
	17 Karasoo – Osh km 590 – km 620	6,197	423	450	579	299	162	17	8,127

^a Road sections proposed for Bank financing.

^b Road section proposed for cofinancing.

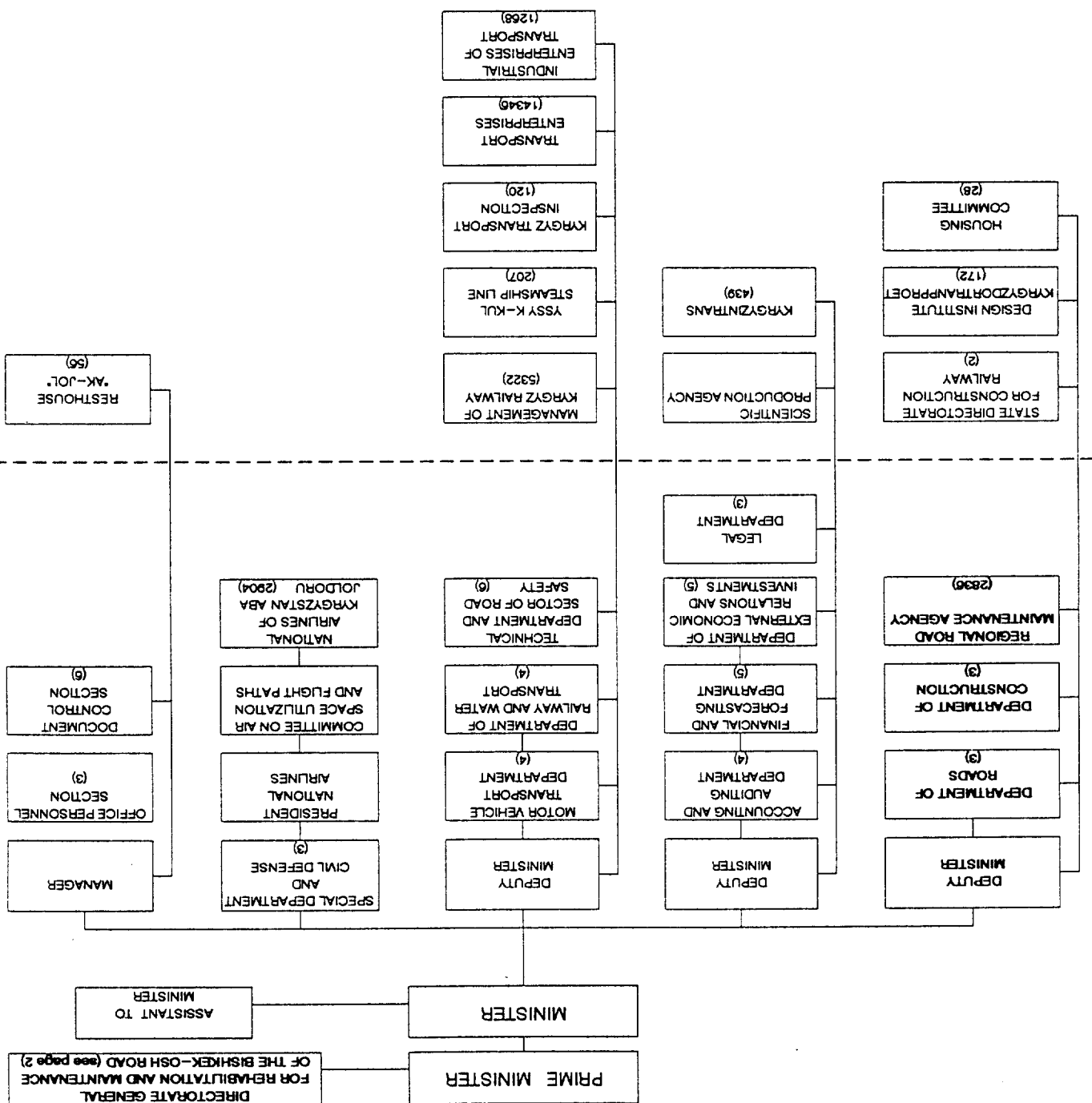
Table 1: Traffic Projections for the Bishkek–Osh Road
(Average Annual Daily Traffic)

Year	Road Section	Pick-ups		Buses	Light Trucks	Heavy Trucks	Articulated Trucks 1	Articulated Trucks 2	Total
		Cars & Vans							
2018	1 Bishkek – Karabalta (1) km 7 – km 19	26,277	2,027	2,614	2,982	1,236	1,022	113	36,271
	2 Bishkek – Karabalta (2) km 19 – km 80	15,391	1,186	1,530	1,746	722	599	65	21,239
	3 Karabalta – Km 80 km 80 – km 81	1,727	204	241	440	1,120	361	42	4,135
	4 Km 80 – Susamyr Jn km 81 – km 144	1,727	204	236	440	1,120	361	42	4,130
	5 Susamyr Jn – Talas Jn km 144 – km 161	1,444	156	204	344	1,149	370	43	3,710
	6 Sumamyr Jn – Alabel Pass a km 161 – km 248	1,444	156	204	344	1,149	370	43	3,710
	7 Alabel Pass – Naryn km 248 – km 318	1,444	156	204	344	1,149	370	43	3,710
	8 Naryn – Kokbel (1) km 318 – km 327	1,315	118	215	290	1,127	333	38	3,436
	9 Naryn – Kokbel (2) b km 327 – km 361	1,315	118	215	290	1,127	333	38	3,436
	10 Kokbel – Karakul km 361 – km 386	1,315	118	215	290	1,127	333	38	3,436
	11 Karakul – Kurpsal (1) km 386 – km 412	1,385	123	247	301	1,063	263	32	3,414
	12 Karakul – Kurpsal (2) a km 412 – km 426	1,385	123	247	301	1,063	263	32	3,414
	13 Kurpsal – Tashkumyr km 426 – km 450	1,385	123	247	301	1,063	263	32	3,414
	14 Tashkumyr – Madaniyet km 450 – km 500	3,630	273	516	621	800	288	35	6,163
	15 Madaniyet – Jalalabad km 500 – km 564	8,000	313	460	977	460	280	33	10,523
	16 Jalalabad – Karasoo km 564 – km 590	4,319	171	545	384	261	85	9	5,775
	17 Karasoo – Osh km 590 – km 620	10,095	689	732	943	487	264	28	13,238

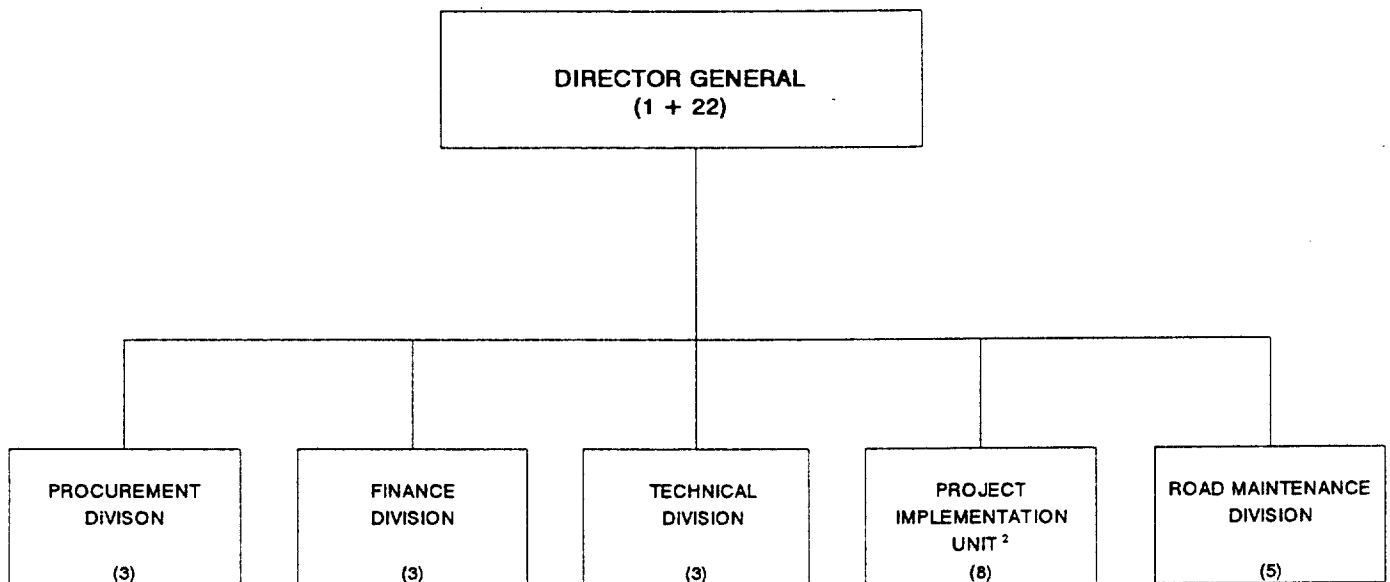
a Road sections proposed for Bank financing.

b Road section proposed for cofinancing.

ORGANIZATION STRUCTURE OF THE MINISTRY OF TRANSPORT, AND THE DIRECTORATE GENERAL FOR REHABILITATION AND MAINTENANCE FROM BISHKEK-OSH ROAD



**ORGANIZATION STRUCTURE OF THE DIRECTORATE GENERAL
FOR REHABILITATION AND MAINTENANCE
OF THE BISHKEK-OSH ROAD ¹**



¹ The Organization structure has been established and will be fully staffed by 30 June 1996. Staff numbers are shown in brackets.

² The Project Implementation Unit (PIU) has been established. Four additional staff will be added to the PIU in the field as required when civil works commences for the Project.

ROAD SECTOR REFORM ACTION PLAN

Initiatives	Current Status	Actions	Target Date
1. POLICY AND REGULATORY FRAMEWORK			
a. Transport Sector Policy Statement (TSPS) and Road Sector Policy Statement (RSPS)	Ministry of Transport (MOT) has prepared a Transport Sector Development Framework and an Interim RSPS.	TA consultants will assist MOT in preparing TSPS and RSPS for issue by MOT.	31 December 1996
b. Road Fund Act	MOT has prepared a draft Road Fund Act and has discussed its requirements with the Ministry of Finance (MOF).	TA consultants will review the draft Road Fund Act and make appropriate recommendations and assist MOT in having the road Fund enacted.	31 December 1996
c. Review of existing legislation to ensure consistency with TSPS and a market economy	The Automobile Act makes some provisions for a market economy.	TA consultants will review the Automobile Act and other legislation and recommend appropriate amendments.	31 December 1996
2. INSTITUTIONAL STRENGTHENING OF MOT/DEPARTMENT OF ROADS (DOR)			
a. The existing MOT/DOR is not organizationally structured and does not have the required number or trained staff to manage the transport sector, and in particular the road subsector.		a. Restructuring of MOT and DOR, Institutional Strengthening of DOR and appropriate training in the required function of a DOR in a market economy.	30 June 1997
b. The Government has agreed to establish the Directorate General for Reconstruction and Maintenance of the Bishkek-Osh Road (DGRMBOR) with a minimum of 23 people, by 30 June 1996.		b. TA consultant will assist DGRMBOR/MOT/DOR with restructuring and training.	30 June 1996
3. MAINTENANCE			
MOT/DOR is in the process of divesting itself of all construction/maintenance activities to the private sector, except for routine maintenance.		a. Prepare a maintenance plan and implement a maintenance system (within the context of the country's economy) with the assistance of the TA consultants.	30 June 1997
		b. The TA consultants will need to review the existing maintenance structure and recommend appropriate restructuring initiatives and staffing for the Bishkek-Osh Road Maintenance centers. The consultants will also instruct MOT/DOR/DGRMBOR on how the restructuring can be implemented at all maintenance centers and how safety can be improved.	31 December 1996
		c. A maintenance system needs to be prepared for the Bishkek-Osh Road and implemented with the assistance of the TA consultants. The TA consultants will also instruct MOT/DOR/DGRMBOR on how the maintenance system can be implemented for all interurban maintenance centers.	30 June 1997

Initiatives	Current Status	Actions	Target Date
4. ROAD FUNDING AND COST RECOVERY	a. Funding for the road sector is inadequate and taxes are not targeted to road users, and are not efficiently collected or allocated to MOT/DOR.	a. The TA consultants will assist DGRMBOR/MOT/DOR in reviewing the Road Fund Act to ensure adequate funding for the road sector.	Submission of the draft Road Fund Act for Parliament's consideration by 31 December 1996.
	b. A Road Fund Act has been prepared by MOT/DOR. It need to be revised to ensure adequate funds are collected and the user-pay principle is implemented.	b. The TA consultants will assist DGRMBOR/MOT/DOR in having the revised Road Fund Act enacted.	
	c. The whole tax system for the country is being reviewed and is in a state of transition. The IMF is assisting the Government in rationalizing and improving the tax system.	c. MOF must collect appropriate taxes for the Road Fund and transfer the funds to DGRMBOR/MOT/DOR.	
5. HUMAN RESOURCE DEVELOPMENT	DOR does not have adequate and suitably trained staff to carry out its functions in a market economy.	a. MOT, as an interim measure, will increase the number of staff in DOR so the TA consultants have a nucleus of staff to work with and to commence implementing appropriate restructuring and training.	30 June 1996
		b. DGRMBOR/MOT/DOR to commence an intense English language training course for DOR staff.	Commence June 1996
		c. A Human Resource Plan for MOT/DOR will be prepared by the TA consultants and will be implemented by MOT/DOR.	30 June 1997

TRANSPORT SECTOR DEVELOPMENT FRAMEWORK¹ AND INTERIM ROAD SECTOR POLICY STATEMENT

A. Transport Sector Development Framework

1. Overview

1. The Kyrgyz Republic has a well-developed transport infrastructure. In 1991, the sector contributed 4.1 percent of gross domestic product (GDP). The total freight traffic was 1,435 million ton-kilometers (km) in 1994, while the total passenger traffic was 2,849 million passenger-km. These were about 16 percent and 30 percent of freight traffic and passenger traffic levels in 1990, respectively. Road transport dominates the sector and in 1995 accounted for 95 percent of freight traffic (in tons) and 99 percent of total passenger traffic (in number of passengers). In recent years, transport infrastructure has begun to deteriorate because of inadequate provision for maintenance. If allowed to continue, this neglect of maintenance will result in considerable economic losses from both increased transportation costs and the higher costs of eventual reconstruction. The State is still heavily involved in transport operations. However, a program has been initiated to develop competitive markets for transport services through privatization and deregulation.

a. Roads

2. With 34,000 km of roads, the Kyrgyz Republic has the highest density road network among the central Asian republics of the former Soviet Union (FSU). Around 18,600 km of the network are urban and interurban main roads under the control of the Ministry of Transport (MOT). The remainder of the network consists of local roads, mainly in the rural areas.

3. The main road network is well developed, serving all areas of the Kyrgyz Republic. Roads are classified into five categories (see Table 1). Plans exist to upgrade the network by increasing the length of Class I roads to 270 km, Class II roads to 760 km, and Class III roads to 8,230 km. However, implementation of this program is stalled because of lack of funds. In recent years, the road network has suffered significant deterioration, with over 60 percent of main roads now requiring periodic maintenance and resealing. Additionally, a number of sections of road now require reconstruction, particularly in the Sussamyr Valley areas, where infrastructure was damaged following the 1993 earthquake.

Table 1: Main Road Network by Class of Road

Class of Road	Length (km)	Specification
Category I	140	asphalt, double highway with separation
Category II	380	asphalt, 9-11.5 m width without separation
Category III	2,060	asphalt, 7.5 m width
Category IV	8,910	asphalt, 6.0 m width
Category V	7,100	asphalt, 4.5 m width

Source: Ministry of Transport.

¹ Source: Kyrgyz Republic's Public Investment Program (PIP), 1996-98.

4. Traffic counts undertaken by MOT indicate that road traffic levels have fallen significantly since 1985. Despite the fall in economic activity, traffic levels have stabilized since 1990 and on a number of routes are now increasing. This may reflect a switch in freight traffic from rail to road transport.

5. The planning, construction, and maintenance of the main road network has been the responsibility of Kyrgyzjol (Kyrgyz Roads). This operates as a holding company, with enterprises in the provinces and districts responsible for construction and maintenance work. There is thus no competitive contracting. Most of the road construction and maintenance machinery is outdated and will require replacement in the near future. There is a need to introduce new technologies, for example to allow the reutilization of bitumen, which could significantly reduce costs and improve construction standards.

6. The rural road network consists of about 15,000 km and is similarly facing major deterioration.

b. Road Transport

7. The numbers of commercial vehicles currently exceed requirements, reflecting both the downturn in the economy and the inefficient fleet utilization practices of the former State transport enterprises. Since 1991, road transport enterprises, for both passengers and freight, have been turned into joint stock companies while remaining under majority State ownership. An exception is the urban passenger transport operation of the Bishkek City Council.

8. Most of the transport companies, both passenger and trucking, are established at the provincial and district level, with a small number of national-level specialist operations. In late 1994, measures were introduced to increase competition within the subsector. These involved (i) the abolition of national and provincial holding companies and associations, which had continued to exercise control over the operations of individual transport companies; and (ii) a reduction in the Government's shareholding in companies through the auctioning of surplus vehicles and assets to private bidders.

9. Because of the city's size, passenger transport operations in Bishkek are facing particular difficulties. The Bishkek City Transport Department operates a network of 1,200 km of trolley-bus and bus routes. In 1994, it carried an average of 8 million passengers per month. Services are provided by a fleet of 256 trolley-buses, 372 large buses, and 367 smaller buses and minibuses. Most of the fleet is old and will require replacement in the near future. Approximately 60 percent of the fleet is unserviceable, leading to severe overcrowding. The services receive a subsidy from the Bishkek City Council although this has been insufficient to cover day-to-day operating costs.¹

¹ During 1994, the Bishkek City Transport Department incurred an operating loss of Som17 million, against which it received a subsidy from the City Council of Som3.4 million.

c. Railways

10. The railway network was formerly under the control of the Almaty and Central Asian divisions of the FSU railway system, but is now controlled by the Kyrgyz Republic. The network consists of (i) a single track 340-km line that runs from Balykchi to Bishkek and on to Lugovaya in Kazakhstan, where it links with the Kazak railway network; and (ii) 110 km of spur-lines linking Osh, Djalal-Abad, and mines in the Fergana Valley with the Uzbek railway system. In addition to local services, passenger services are operated from Bishkek to Djalal-Abad (via Tashkent), to Moscow, to Krasnoyarsk, to Ekaterinburg, and to Novokuznetsk. Traffic levels on the Lugovaya-Bishkek-Balykchi line have fallen by 78 percent for freight traffic and 15 percent for passenger traffic since 1990.

11. Rolling stock consists of 60 locomotives, 580 railway carriages, and 3,000 freight wagons. Over 70 percent of railway carriages and 30 percent of locomotives are now beyond their economic life. Track and signalling systems are generally in reasonable condition, although around 10 percent of the track is subject to speed restrictions. Railway operations are well integrated with those in neighboring countries and Russia through the Railway Directorate in Moscow. Tariffs follow those set by the neighboring railway networks. Although the railway system covers its immediate operating costs, it is unable to meet its capital rehabilitation and replacement requirements.

d. Lake Transport

12. There is a small State-owned operation on Lake Yssyk-Kul operating mainly between Balykchi and Karakol. This comprises two 600-metric tons motor vessels, three tugs, and ten lighters with a combined capacity of 8,400 tons.

e. Civil Aviation

13. The Kyrgyz Republic has two international airports at Manas (Bishkek) and Osh. There are two other airports, at Djalal-Abad and Karakol, which are served by regular air services, and a further 19 operational airfields. Air passenger traffic fell from 1.7 million trips in 1991 to less than 0.4 million trips in 1994. Freight traffic showed a similar reduction. The fall in air traffic can be attributed to a number of factors including (i) the severe economic downturn, (ii) the increase in aviation fuel prices towards world market levels, (iii) the reduced need for official travel to Moscow, and (iv) the shortages of aviation fuel that affected airline operations in 1993.

14. Manas Airport is the largest airport in Central Asia. With a runway of 4.2 km built in the early 1970s, it is capable of taking the heaviest aircraft. A very extensive passenger terminal for internal (FSU) flights was completed in 1989, and a smaller international terminal was completed in 1994. Passenger traffic at Manas fell from 1.1 million trips in 1991 to fewer than 0.2 million in 1994. Currently, there are around 15 aircraft movements per day. The existing physical facilities at Manas are thus heavily underutilized and are expected to be adequate to meet forecast traffic levels over the next 20 years. However, the airport has a number of deficiencies that need to be addressed to bring it to compliance with International Civil Aviation Organization standards for safe operation of aircraft. The most important of these relate to the poor condition of the runway and the outdated and unreliable airfield lighting system. There is also a need to modernize the Kyrgyz Republic's air navigation system.

15. The national airline Kyrgyzstan Aba Zholduru (KAZ) is the major user of Manas Airport. It has a fleet of over 100 ageing aircraft and helicopters inherited at the time of the break-up of the Soviet Aeroflot. These include 13 Tu154s, 6 Tu134s, and 24 Yak44s, which are used for airline operations. KAZ is also responsible for the running of the Manas International Airport and for air traffic control operations.

2. Transport Sector Strategy

a. Policy Framework

16. The overall policy objectives for the transport sector are to:

- (i) ensure the maintenance of an adequate transport infrastructure necessary to support the reform and recovery of the economy,
- (ii) privatize transport operations and promote competition among operators while ensuring that safety and environmental concerns are addressed, and
- (iii) ensure increased cost recovery for transport operations remaining under State control.

b. Transport Sector Strategies

17. The measures through which these objectives will be implemented include:

- (i) increasing financial provision for the maintenance of the road network, which carries the overwhelming share of commercial and passenger traffic;
- (ii) completing the privatization of road transport operations and dismantling of licensing controls, which hinder competition among firms;
- (iii) promoting, in collaboration with Russia and neighboring countries, rail transport as the most efficient means of transporting large loads over long distances;
- (iv) privatizing lake shipping services;
- (v) providing civil aviation infrastructure and support services that encourage foreign and local airlines to operate to and within the Kyrgyz Republic; and
- (vi) increasing cost recovery within the sector through appropriate pricing and taxation policies.

18. The transition to the market economy implies major changes to the role of the Government in the transport sector. The State will no longer be responsible for directing all aspects of transport operations. Instead, it will focus on the following core tasks:

- (i) establishing an appropriate policy, legal, and regulatory framework for the sector;

- (ii) providing and maintaining public infrastructure, comprising the road and rail networks, and civil aviation facilities; and
- (iii) ensuring the efficient operation of those transport services that remain under State control; by 1998, it is expected that these will mainly be limited to rail services and urban bus services in Bishkek.

19. The immediate priority is to proceed with the creation of a competitive road transport sector. This will be achieved through the completion of the program to reduce Government shareholdings in road transport companies through the auctioning of surplus assets. This will lead to the creation of new small private transport operators, and at the same time move the existing semiprivatized transport operations fully into the private sector. These measures will be backed up by the progressive removal of the remaining administrative barriers to competition.

20. There is also a need to develop modern institutional structures for the sector. This involves:

- (i) strengthening transport policy and planning capabilities in MOT, and bringing all regulatory functions directly under the Ministry;
- (ii) completing the break up of Kyrgyzjol, the organization responsible for road construction and maintenance; its planning, management, and supervisory functions will be retained in the public sector, either directly under MOT or as a separate Department of Roads; its contracting companies will be corporatized prior to privatization and will be required to bid for construction and maintenance contracts; and
- (iii) breaking up KAZ into separate airport, air navigation, and airline operations; air navigation services are already being brought under the Committee for Airspace Management, and Manas Airport would similarly be brought under the control of MOT; the airline operation will eventually be privatized.

21. There will be a requirement to establish capacity at the district administrations for taking over the maintenance of local road networks, which were previously the responsibility of the *kolhozes* and State enterprise conglomerates.

3. Public Investment Priorities

22. There is a need for a comprehensive review and analysis of investment requirements in the transport sector that takes into account the relative roles of the different modes of transport and projections of future levels of transport demand. The Ministry of the Economy is preparing an Economic Development Strategy of the Kyrgyz Republic for the period up to 2005 and an Indicative Social and Economic Plan for 1996-1998, which will guide the sector's development over the next decade. The plan is expected to be completed and approved by the Government by mid-1996. The 1996-1998 Public Investment Program determined preliminary priority investment projects. In most cases, economic feasibility studies have yet to be undertaken, and the appropriate level and phasing of investment has therefore yet to be determined.

B. Interim Road Sector Policy Statement¹

1. Introduction

23. The transition to a market economy requires major changes in the role of the Government in the transport sector. The Government is divesting itself of the responsibility of operating transport services, and is focusing on the following core tasks: (i) establishing an appropriate policy, legal, and regulatory framework for the sector; (ii) providing and maintaining public infrastructure for the road and rail networks, and for civil aviation facilities; and (iii) ensuring the efficient operation of the transport entities under its control. In February 1994, the Government issued Decree No. 54, subsequently amended by Decree No. 61 of 27 February 1995, which restructured MOT and established nine shareholding companies and agencies to manage the Government's interests in the joint-stock companies. The Government's privatization and reform process in the transport sector has made major progress in privatizing and corporatizing the sector entities. This first step in improving transparency and efficiency needs to be supported by reform in the overall role of the Government, in terms of its core business services and regulatory functions, as the sector is progressively deregulated.

24. Road transport dominates the transport sector within the Kyrgyz Republic, accounting for about 95 percent of freight tonnage movements and 99 percent of passenger traffic in 1994. Most other freight, including a substantial part of the cross-border traffic, is moved by rail by means of separate branch lines that link the north of the country to the Kazak rail system, and the south of the country to the Uzbek rail system, with no direct connection between the two. Air transport accounted for less than 1 percent of passenger movements in 1994, mainly on routes between Bishkek and Osh. Water transport is confined to a few small vessels on Lake Yssyk-kul. Freight carried by railway becomes more significant in terms of ton-km, because of longer average haulage, accounting for 44 percent of the total volume of traffic in 1994. Freight and passenger traffic, in ton-km and passenger-km, respectively, carried by civil aviation and inland waterways were relatively small in comparison with the road sector in 1994. Because of the dispersed centers of economic activity and land-locked location of the Kyrgyz Republic, its economy is very transport intensive. Consequently, the future economic development of the country will depend on the improvement of transport infrastructure, the provision of cost-effective transport services, and policy and institutional reforms aimed at improving institutional capabilities so that the transport and road sectors can respond efficiently to market demands.

2. Underlying Principles

25. The Road Sector Policy Statement (RSPS) is founded on the following principles which underlie the reforms to which the Government is committed and which are being carried out:

- (i) The long-term development of the Kyrgyz Republic depends critically on an efficient, low-cost transport system — one in which the available resources of capital, labor, equipment, and materials are used in the most economically productive way.

¹ The Government's Road Sector Policy Statement will be revised with the assistance of Bank-financed consultants.

- (ii) The key to achieving efficiency and low costs lies in the incentives associated with competitive markets, whereby transport suppliers compete to increase market share, reduce costs, and improve standards of service — to the benefit of transport users.
- (iii) The Government continues to be concerned about the affordability of transport services and the social and economic impacts of transport prices. It recognizes that competition, under free market conditions, is the most effective way of containing costs and improving efficiency. Only in exceptional circumstances (for example, where there is limited competition, or where subsidies are considered to be in the national interest) would price controls be justified, and then only on temporary basis, with the costs and benefits carefully monitored.
- (iv) Under a market-oriented system for transport, the essential role of the Government will be limited to the aspects listed below.
- (v) The State-owned transport enterprises will play a role in fostering competition with the private sector, but in fulfilling this role they should operate as independent commercial enterprises, with progressively less Government involvement in their management decisions. As shareholder on behalf of the public, the Government will hold their managers accountable for financial performance. Where there is evidence that their role can be equally or better performed by the private sector, they will be privatized.

3. Policy Objectives

26. The objectives of the policies set out in the RSPS are as follows:

- (i) Establish a business and regulatory environment in which (a) customers of transport services are free to choose among competing alternatives on the basis of price and quality of service; (b) providers of transport services, when all the standards have been maintained, are not restricted by Government intervention in tailoring their services in response to the needs of customers; (c) there is no Government discrimination (through regulations, price controls, or other interventions) between Government-owned and private operators of transport services — i.e., they are treated on an equal basis; and (d) prices, set by market forces, reflect the real cost to the economy of the resources consumed, and are not distorted by Government controls, subsidies, and other interventions.
- (ii) Open the transport sector to competition.
- (iii) Facilitate upgrading and rehabilitation of road transport infrastructure by making road users pay for portion of the infrastructure-related costs that result from their use of the system.

- (iv) Raise the efficiency of the State transport enterprises by granting their management greater autonomy and providing incentives to run their businesses along commercial lines while at the same time holding them accountable for their financial performance.
- (v) Improve safety and environmental standards and the interests of the socially or economically disadvantaged, in the latter instance by making provision for temporarily but carefully targeted support.

4. Roles of Government

27. The role of the Government in the transport system will be limited to that which is necessary to fulfil national and social objectives, including:

- (i) establishing an appropriate policy, legal, and regulatory for the sector;
- (ii) implementing transport policies, programs, and projects, including mobilizing resources;
- (iii) monitoring developments, performance, and the efficiency of the transport system, including prices; and
- (iv) regulating market entry and the licensing of transport services with the aim of (a) ensuring competition and preventing the development of monopoly situations, (b) making transport services efficient and providing transport services to customers at the lowest prices, (c) preventing imposition of discretionary license conditions to discriminate between new and existing operators, and (d) ensuring that adequate safety and environmental standards are maintained.

28. Given the competitive advantage of road transport in handling the emerging traffic and the Government's social democratic approach for developing its economy by following an "open" policy and improving external relations, the issue of the development of a reliable road transport system has been given more priority by the Government. Road projects will be implemented by mobilizing domestic and foreign resources.

5. Organizational Structure and Sector Management Development

29. The following approach will be taken for improving the management and the organizational structure of the road and road transport sector:

- (i) The Department of Roads (DOR) will be responsible for preparing sector policies and establishing a legal framework that will involve (a) preparing legislation, as required, for the development of the road sector and supervising its implementation; (b) creating a legal, regulatory, and policy environment to foster competition to prevent discrimination on the basis of ownership of the enterprises (through regulations, price control, or other interventions); (c) programming and planning of road sector policies, programs, and projects, taking into account the overall development objective of the country and mobilizing resources (State, private, and foreign) to provide efficient road transport services; (d) identifying the

sources of funds for implementation of the policy, programs, and projects and establishing a clear policy for the efficient use of resources; (e) establishing technical standards for road and road transport infrastructure and services, and defining performance indicators; (f) regulating vehicle size, weight, and roadworthiness; (g) developing and implementing human resource development policies and programs; (h) developing rational road user cost recovery practices to meet operation and maintenance and part of construction costs of the road infrastructure; and (i) ensuring environmental, social, and road safety standards.

- (ii) Institutional restructuring of DOR, the Directorate General for Rehabilitation and Maintenance of the Bishkek-Osh Road (DGRMBOR), the Research and Design Institutes, and the Regional Road Maintenance Agency will be carried out taking into account their future functions, roles and responsibilities. The restructuring will initially comprise (a) strengthening of DOR by recruiting or moving staff to DOR to form a department with the capacity to undertake planning and programming, technical development, and implementation/supervision functions; (b) commercializing the services of the sector agencies remaining under State control, which can be well defined and for which progress can be objectively monitored; and (c) reorganizing and developing an Auto Transport Department to carry out its responsibilities, which include (i) formulating road transport sector policy, including privatization policy; (ii) regulating road transport, including licensing commercial and entrepreneurial operations; (iii) regulating traffic, including licensing of drivers and preparing traffic rules; (iv) controlling cost and quality of services; (v) preparing road transport acts; and (vi) ensuring safety and environmental requirements.

30. To take account of the views of transport owners and operators both within and outside the Government, a National Transport Advisory Committee (NTAC) will be established in MOT. NTAC will be chaired by the Minister of Transport (or a representative), and its members will be comprised of representatives of the Ministry of Economy, the State Commission on Foreign Investment, DOR, the Auto Transport Department, the Police Department, State-owned road and transport enterprises, and the private sector. The role of NTAC will be to:

- (i) recommend to the Government ways of improving transport efficiency in the interests of both customers and suppliers of transport services;
- (ii) promote dialogue on transport issues (such as obtaining adequate fuel and credit supplies for the industry, and developing a tax system helpful to the sector); and
- (iii) comment on the Government's policy proposals and programs in the road and road transport sector.

6. Sector Privatization

31. The Government's privatization process, which is aimed at involving the private sector in all aspects of road and road transport services, including its participation in road infrastructure development, will continue. Existing regulations and practices that inhibit or prevent private sector participation will be amended. The operations of the remaining State-

owned road transport enterprises and departments will be reviewed with the aim of identifying areas that would benefit from greater competition.

32. The Government's aim is to privatize all those operations of the State-owned enterprises that are essentially commercial. The Government's past privatization process has focused on the change in ownership, but the management of the privatized firms also need to be fully commercialized. Management and operation of State road and road transport enterprises will be guided by the RSPS and based on the Performance Contract executed between the Government and the State-owned enterprises. When the enterprises are managed and operated on commercial principles, steps will be taken to put existing private enterprises on a proper commercial footing, including a progressive reduction in Government involvement in the affairs of commercialized public sector and private enterprises.

33. Roads and bridges are State properties, and the proper maintenance of these infrastructure assets will be the responsibility of DOR and DGRMBOR (for the Bishkek-Osh Road). A road maintenance management system will be established to improve maintenance of these assets.

34. Privatization of road construction operation has been achieved by adopting the following approach:

- (i) transferring the Government's responsibilities for management of the road sector to DOR and DGRMBOR, and
- (ii) privatizing all joint-stock road construction companies for carrying out all construction-related activities.

76. State-owned Enterprises

35. The construction of roads and bridges will be financed by the Road Fund and other internal and/or external funding sources. Construction contracts will be awarded through competitive bidding among private road construction enterprises. Routine maintenance will be retained under State control and will be the responsibility of DOR and DGRMBOR.

36. All State-owned enterprises will be required to prepare a corporate plan. In selected cases where competitive bidding is not feasible, the State-owned enterprises will be asked to carry out the construction on the basis of negotiated Performance Contracts between the enterprise and the Government. The Performance Contracts will specify:

- (i) general rules and criteria governing the legal status of the enterprise, the commercialization of its services, the delegation of financial and management autonomy, and the procedures by which management will be held accountable for performance;
- (ii) general accounting principles and procedures, including restructuring of the accounts; the principles governing valuation and depreciation of assets; treatment of capital grants, loans, and other forms of Government assistance; valuation of fuel and foreign exchange transactions; the method to be used for cost-specific services and traffic; and debt restructuring/retiring arrangements;

- (iii) agreed upon annual financial performance targets;
- (iv) arrangements governing services that are not profitable but are performed at the request of the Government, including procedures to be used for identifying and costing these, the prices to be levied, and specific arrangements for financing the associated losses through Government transfers;
- (v) prevailing a broader macroeconomic climate, including Government policies on the exchange rate, the allocation and pricing of fuel, and access to foreign exchange and capital; and
- (vi) measures that will be taken by the Government to move towards more competitive operation of the transport market and to expose the enterprise to competition;

37. State-owned enterprises will be free to enter into joint ventures and other cooperative arrangements with private investors, including foreign partners, subject to prevailing laws governing trade, finance, and foreign investment. Such arrangements will be prohibited, however, if they are likely to result in a restrictive competitive environment.

38. To attract and retain high caliber staff, the State-owned enterprises will be free from the restrictions on salaries and incentives for Government employees.

39. New administrative arrangements will be put in place by MOT to supervise sector performance and negotiate and monitor the performance of State-owned enterprises.

7. Regulation of Transport Services

40. Existing regulations governing the licensing of transport businesses and services will be reviewed with the aim of eliminating those that are no longer effective or consistent with the Government's market-oriented policies. Wherever possible, the aim will be to allow market forces to establish appropriate capacity levels, service standards, and prices.

41. Controls intended to protect Government road infrastructure and safety standards (for example, control over vehicle weights, dimensions, and road worthiness), including their associated enforcement procedures, will be strengthened.

42. The existing vehicle inspection system will be strengthened to ensure the roadworthiness of vehicles in accordance with specified technical standards.

43. Transport customers will be free to choose among competing transport alternatives on the basis of price and level of service. The allocation of freight to Government departments, acting as a support mechanism for an inefficient fleet of trucks, and queuing by other transport enterprises will be progressively discontinued. Transport customers will be free to negotiate conditions directly with the operators on the basis of price and quality of service. The role of local provincial governments will be limited to monitoring and regulating, including licensing, inspection, and safety audit.

44. To facilitate free marketing and to extend the range of services available to customers, the role of freight forwarding agencies will be enhanced. Freight forwarders will be encouraged to negotiate and arrange intermodal transport services, thus facilitating door-to-door transport arrangements, and to offer services directly themselves.

45. The existing system of contracting transporters to operate intercity and city passenger transport services by a system of cross-subsidy will be discontinued. Route allocation will be on a basis of either lowest offered cost of operation, which will be applicable for services of a noncommercial nature (the services to be performed under the Performance Contracts) in the public interest, or highest route license bid.

46. Since the licensing and monitoring functions in the case of freight and passenger transport are noncommercial in nature, the Government will consider establishing an organization (Road Transport Board) under each province to perform these functions on behalf of the Auto Transport Department. The licensing system will cover the provision of commercial freight and passenger road services, including the provision of services to the agriculture and industry sectors but excluding freight forwarding services.

9. Fuel Supply

47. The supply of fuel, including importation, transportation, and retailing, has been privatized. The further privatization of fuel supply will be continued with the objective of increasing efficiency and cost effectiveness. The number of fuel stations required to operate in the Kyrgyz Republic will be evaluated to ensure efficient retailing of the fuel supply.

10. Pricing, Road Sector Revenues, and Subsidy

48. All transport fares and tariffs will be progressively liberalized in line with market demand, when the Government is assured that competitive transport services have been established.

49. Transport operating costs and transport prices will be analyzed and arrangements will be made to keep them comparable by, as far as possible, reducing transport prices where it is found that prices are significantly higher than costs.

50. Financing for road construction and maintenance will be derived from the Road Fund. The Road Fund will essentially finance routine and periodic maintenance expenditures and will be in place to meet near-term financial needs. To strengthen medium- to long-term financing, the Government will develop a more broad-based philosophy and approach to the user-pay principle, which should be implemented to achieve a set of clear cost recovery targets by examining the various classes of road users for more equitable taxation, and determining the impact of various cost-inducing factors. The Government will give priority to preparing the analysis and developing appropriate cost recovery from road users closely related to wear and tear for which they are responsible, and which can be implemented within the context of the road and road transport sector in the Kyrgyz Republic.

51. When the strategy for road user charges has been determined, road users will be charged for their use of road infrastructure to meet operation and maintenance costs. Allocations will be made to meet road infrastructure maintenance requirements and the balance, if any, will be utilized for construction and/or improvement of roads.

52. In cases where the Government determines that services of a noncommercial nature are in the public interest, contracts for their provision will be offered to transport operators (both private and Government-owned) that contain incentives to minimize costs. By this process, subsidies for such services will be clearly identified, and their cost effectiveness can be regularly reviewed.

11. Planning, Budgeting, and Development Priorities

53. The Kyrgyz Republic's existing road network, particularly the national road network, needs to be improved. To implement a systematic road rehabilitation program, a transport planning and budgeting process will be developed to ensure that projects with demonstrated economic priority are funded and that road users participate in the selection of projects. The road expenditure plans and budgets will be prepared based on a road maintenance system that helps optimize the economic benefits of the funds provided by the Central and local governments and by international financing agencies. Priority will be given to establishing simple procedures for preparing expenditure plans and budgets.

54. The Government will progressively remove its controls over the budgets of the State-owned enterprises. Provided they are in accordance with the relevant Performance Contract and meet prevailing regulations of the Ministry of Finance, decisions about the investment plans and priorities of these enterprises will be made by their management alone. The costs of any capital, loans, or other inputs, whether provided by the Government or the private sector, will be fully borne by the enterprise.

55. The State transport enterprises are permitted to hold their own local and foreign exchange bank accounts in accordance with existing laws and will be permitted to retain their revenues, subject only to withholding tax, which may be set from time to time by the Government.

12. Human Resources

56. To ensure development and effective operation of the sector, it is essential that qualified personnel (technical, financial, and accounting) are recruited, trained, and retained. For this purpose, a human resource development master plan will be prepared and its implementation will be given priority.

57. Training in foreign languages, particularly in English, will receive immediate attention, and suitable instruction will be made available as soon as possible for training of MOT, DOR and DGRMBOR staff.

13. Road and Road Transport Sector Legislation

58. The existing transport laws and regulations will need to be made fully compatible with the policies set out in the RSPS. MOT will form a Committee for Transport Sector Legal Reforms that will, in consultation with the Ministry of Justice, undertake a comprehensive review and overhaul of the legal framework governing the road transport sector and the Automobile Roads Act. The Committee will be chaired by the Minister of Transport (or representative), and its members will comprise representatives of the Ministry of Justice, Auto Transport Department, DOR, DGRMBOR, and one member from the Parliamentary Standing Committee on Transport.

59. The Road Automobile Act will regulate the effects arising from the implementation of the sector development program, namely to:

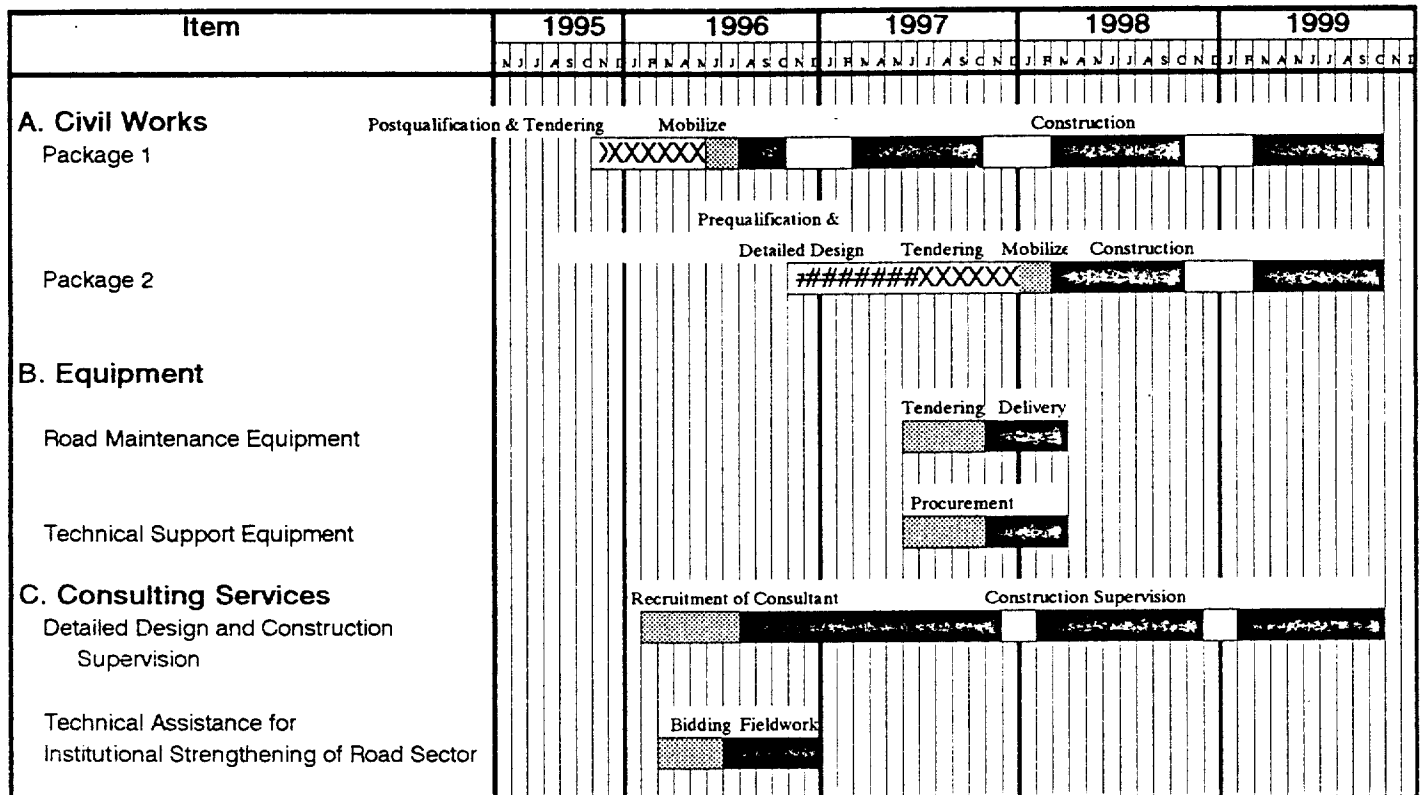
- (i) develop an organizational structure, management practices, investment principles, and regulatory measures;
- (ii) privatize operations that are essentially commercial in nature and foster competition;
- (iii) define the roles and functions of policy-making and regulatory organizations, the rights and duties of operators, and the interest of transport customers; and
- (iv) regulate the relationship between road sector agencies and foreign and domestic companies, entities, or persons.

60. The Government will ensure a legal basis for participation in road construction and maintenance by public, private, and foreign enterprises or combinations thereof.

COST ESTIMATES AND FINANCING PLAN
(\$ million)

Item	Foreign Exchange	Local Currency	Total Cost
I. Bank Financing			
Part A: Civil Works			
Road Rehabilitaton	24.30	14.50	38.80
Part B: Equipment			
1. Road Maintenance Equipment	—	—	—
2. Technical Support Equipment	—	—	—
Part C: Consulting Services			
Detailed Design and Construction Supervision	2.50	0.60	3.10
Part D: Contingencies			
1. Physical	2.80	1.40	4.20
2. Price	1.88	1.00	2.88
Part E: Service Charge During Construction	1.02	—	1.02
Subtotal I	32.50	17.50	50.00
II. Cofinancing			
Part A: Civil Works			
Road Rehabilitaton	7.20	4.30	11.50
Part B: Equipment			
1. Road Maintenance Equipment	6.00	—	6.00
2. Technical Support Equipment	0.25	—	0.25
Part C: Consulting Services			
Detailed Design and Construction Supervision	—	—	—
Part D: Contingencies			
1. Physical	1.34	0.51	1.85
2. Price	0.66	0.29	0.95
Part E: Service Charge During Construction	0.45	—	0.45
Subtotal II	15.90	5.10	21.00
III. Government			
Part A: Civil Works			
Road Rehabilitaton	—	12.20	12.20
Part B: Equipment			
1. Road Maintenance Equipment	—	0.25	0.25
2. Technical Support Equipment	—	—	—
Part C: Consulting Services			
Detailed Design and Construction Supervision	—	—	—
Part D: Contingencies			
1. Physical	—	1.25	1.25
2. Price	—	1.30	1.30
Part E: Service Charge During Construction	—	—	—
Subtotal III	0.00	15.00	15.00
TOTAL	48.40	37.60	86.00

IMPLEMENTATION SCHEDULE



PROPOSED CONTRACT PACKAGES

Contract and Description	Contracts (no.)	Estimated Contract Value ^a (\$ million)	Procurement Method ^b
A. Civil Works			
1. Package 1 for Rehabilitation of about 101 km of Road	1	38.80	ICB
2. Package 2 for Rehabilitation of about 34 km of Road	1	11.50	ICB/CF
B. Equipment			
1. Road Maintenance Equipment	1	6.00	ICB/CF
2. Technical Support Equipment	1	0.25	ICB/CF
C. Consulting Services			
Consulting Services for Detailed Design and Construction Supervision	1	3.10	ICR/CF

^a Exchange contingencies.

^b ICB : International Competitive Bidding

ICR : International Competitive Recruitment

CF : Cofinanced.

ROAD MAINTENANCE EQUIPMENT FOR THE SIX ROAD MAINTENANCE UNITS

I t e m	Sosnokova (Section 9) Maintenance Unit			Alamedin (Section 958) Maintenance Unit			Suzak (Section 22) Maintenance Unit			Toktogul (Section 23) Maintenance Unit			Karakul (Section 30) Maintenance Unit			Tashkumyr (Section 38) Maintenance Unit			T o t a l				Further Requirement			
	Total		Avail.	Total		Avail.	Total		Avail.	Total		Avail.	Total		Avail.	Total		Avail.	Total		No.	\$ '000	Unit Cost	Total Cost	Total + Spares	\$ '000
	Req.			Req.			Req.			Req.			Req.			Req.			Req.							
Bulldozer	7	7	1	1	2	4	4	2	0	16	0	16	0	2	0	1	1	0	2	2	0	0	0.0	0.0	0.0	0.0
Below 100 HP				1					0											2	2	120	240.0	276.0		
Above 100 HP																				2	2	110	220.0	253.0		
Bulldozer Wheel Type		1		0					0										0	2	2	160	480.0	552.0		
Excavator	2	2	2	2	2	1	1	2	3	1	2	2	2	1	1	0	0	7	3	10	3	3	150	450.0	517.5	
Grader	2	2	3	3	1	0	1	2	1	1	1	1	1	1	2	1	1	11	0	11	0	185	0.0	0.0	0.0	
Snow Plough	0	1	0	1	0	1	1	1	1	1	1	1	1	1	1	1	1	0	3	3	3	50.0	300.0	345.0		
Vibratory Roller									0									0	6	6	0	160.0	0.0	0.0	0.0	
Asphalt Paver	1	2		0			0		0									0	3	3	25.0	50.0	57.5			
Lowbed Trailer	1	1	1	1	0	1	0	1	0									0	2	2	45.0	90.0	103.5			
Truck Tractor	3	6	0	4	5	1	6	1	4	5	0	4	4	0	4	2	2	9	18	27	18	45.0	810.0	931.5		
Dump Truck																		0	0	0	0	85.0	0.0	0.0		
Bitumen Distributor																		0	0	0	0	0.0	0.0	0.0		
Loader	2	3	0	1	0	1	1	0	1	1	1	1	1	1	2	1	1	3	6	9	6	70.0	420.0	483.0		
Water Tanker	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	2	3	5	3	50.0	150.0	172.5		
Pick-up 4x4																		0	6	6	6	25.0	150.0	172.5		
Pick-up Dbl. Cab 4x4																		1	0	6	6	30.0	180.0	207.0		
Patch Repair Machine																		1	0	6	6	125.0	750.0	862.5		
Mobile Workshop		0	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	4	4	4	225.0	900.0	1,035.0		
	19	12	31	8	11	19	10	10	20	8	13	21	5	15	20	1	8	9	51	69	120	69	5190	5968.5		

Appendix 7, page 2

Source: Department of Roads

OUTLINE TERMS OF REFERENCE FOR CONSULTING SERVICES FOR DETAILED DESIGN AND CONSTRUCTION SUPERVISION

A. Objectives of the Consulting Services

1. Consulting services will ensure that the construction of the proposed rehabilitation and procurement of equipment under the Project are undertaken in an economical and efficient manner, consistent with widely accepted engineering standards and practices for such works, and to the satisfaction of the Government and the Bank. In providing the services, the consultants should use, to the extent possible, locally available expertise. Also, they should make a special effort to ensure that on-the-job training and transfer of engineering and project management expertise are provided by the internationally recruited consultants to the Directorate General for Reconstruction and Maintenance of the Bishkek-Osh road (DGRMBOR) and local design and supervision companies engaged in the Project.

B. Scope of the Project

2. The Project has three parts.

- (i) **Part A. Civil Works:** rehabilitation of about 135 kilometers (km) of key mountainous sections, including road protection structures, comprising the following sections of the Bishkek-Osh road:
 Package I : about 101 km
 Package II : about 34 km
- (ii) **Part B. Equipment:** provision of road maintenance and technical support equipment
- (iii) **Part C. Consulting Services:** construction supervision of works described under Part A

C. Scope of the Services

3. The consulting services will be implemented in two phases — tendering and procurement, and construction supervision. Since the award of contract for Package I may be completed prior to the engagement of the consultants, and considering the urgent nature of the works, the consultants are expected to begin construction supervision for Package I and detailed design and tendering for Package II. If the award of contract for Package I has not been completed, the consultants will be required to assist DGRMBOR in the evaluation of bids and the awarding of contract. In all the phases, the consultants will ensure compliance with relevant international engineering standards.

1. Preparation of Design and Tender Documents

4. The consultants will undertake the following activities leading to the preparation of detailed designs for rehabilitation of Package II of the Bishkek-Osh road and the preparation of tender documents to be given to prequalified contractors:

- (i) Perform a complete topographic/geodetic survey of the road section and bridges, and fix horizontal and vertical control points closely following the existing alignment, which should be tied to triangulation station to benchmarks known in the country,
- (ii) Survey road cross-sections at appropriate intervals to provide the necessary detail for calculating earthwork quantities with an accuracy of 5 percent of the final quantities,
- (iii) Determine the strip hydrographic/topographic river bed profile and cross-section at bridge sites,
- (iv) Carry out geotechnical engineering investigations to determine (a) subgrade materials through auger boring along the centerline of the road at appropriate intervals and depths, (b) underground structures by drilling at each abutment and pier, and (c) the quality of materials with test pits at the proposed material source sites,
- (v) Perform analysis and testing on disturbed and undisturbed soil samples, pavement samples, as well as construction material samples in accordance with American Association of State Highway and Transportation Officials (AASHTO) and American Standard of Testing Materials (ASTM) standards,
- (vi) Test soils for classification as per AASHTO and determine their dry density/moisture content relationship and bearing capacity by the California Bearing Capacity Ratio test on representative samples of the different types of soil,
- (vii) Tests undisturbed soil samples to determine their classification, shear strength, compressibility, and shrinkage,
- (viii) Identify material source sites after evaluation of alternative sources established during preliminary engineering design, and test materials from these sites for (a) grain size distribution, (b) liquid limit, (c) plasticity index, (d) Los Angeles abrasion, (e) unit weight and water absorption, (f) chemical water analysis, (g) soundness, and (h) sand equivalent,
- (ix) Carry out hydrological and drainage surveys for bridge sites to assess the trend of watercourse, stream/river velocity, maximum flood levels, floodprone areas, drainage characteristics and conditions, and the extension and nature of catchment basins from the available data (physical, geological, and topographical maps; aerial photographs; climatology reports and maps; and flood control projects details) and field investigations,
- (x) Carry out hydrological and drainage surveys to assess the floodprone areas, drainage characteristics, and conditions, keeping in view the climatic conditions of the area,

- (xi) Tests rock samples to determine their classification and shear strength,
- (xii) Based on the above considerations, surveys, and investigations (including laboratory investigations), produce detailed engineering designs for road structures, bridges, drainage, intersections, and pavements,
- (xiii) The detailed design will incorporate appropriate environmental monitoring and mitigation measures to be undertaken during the Project and during future maintenance and reconstruction of any bridges, which will be with regard to:
 - (a) proper selection and restoration of borrow areas and quarries,
 - (b) abstraction of water for construction purposes in populated areas,
 - (c) control of hazardous and toxic materials, and
 - (d) impairment of downstream water quality.
- (xiv) Carry out detailed designs for bridges, drainage, and protection structures in accordance with the AASHTO Standards and Specifications for Highways and Bridges, 13th Edition, 1983,
- (xv) Carry out detailed designs of ancillary works such as pavement markings, traffic signs, landscaping, detour roads, and structures for environmental mitigation/protection,
- (xvi) Calculate quantities and analyze unit prices for all the items needed for the works. The unit price will comprise direct costs (cost of materials including transport, handling, storage, and miscellaneous expenses; cost of construction plant and equipment including rental rates or depreciation, wages, fuel, and maintenance; and cost of labor including salaries and allowances) and indirect costs (overhead, profit, and taxes), broken down into foreign currency, local currency, and tax components,
- (xvii) Prepare specifications for specific items of work or methods of construction, measurement, and payment,
- (xviii) Prepare specifications for road rehabilitation in sufficient detail to ensure high quality work,
- (xix) Prepare an indicative Project implementation schedule,
- (xx) Prepare tender documents and Project cost analysis for the road rehabilitation. Submit them to DGRMBOR and the Bank for approval — the cost will be broken down into foreign exchange, local currency, and taxes and duties,

- (xxi) Combine the above documents into a comprehensive design brief and a bid package to be distributed to the contractors.

2. Assist DGRMBOR in the Prequalification of Contractors

- 5. Carry out the following to ensure timely prequalification of suitable contractors: (i) prepare the necessary prequalification and tender documents in anticipation that the civil works for Package II will be undertaken under a two-stage process that will require the contractors to be prequalified and then be followed by international competitive bidding (ICB) procedures in accordance with the Bank's *Guidelines for Procurement*; and (ii) provide necessary assistance in the invitation, review, and evaluation of prequalification submissions. The consultants will also assist the Government in preparing a recommended list of contractors and in the preparation of invitations to prequalified firms for the bidding process.

3. Assist DGRMBOR in the Invitation and Evaluation of Contractors' Proposals

- 6. Assist DGRMBOR in the following matters relating to bidding and evaluation of bids for two subpackages for Package II by: (i) issuing tender documents to prequalified bidders; (ii) providing on-site assistance to prequalified contractors in identifying sources of local materials and labor and understanding the Project objectives, designs, and specifications; (iii) organizing prebid conferences for prequalified and invited bidders; (iv) providing interpretation of plans, specifications, and contract conditions; (v) evaluating bids in accordance with the Bank's *Handbook on Bid Evaluation* and preparing evaluation reports; and (vi) preparing documents necessary to finalize the contracts with the successful bidders and providing advisory assistance to DGRMBOR for (a) completing the signing of contracts, issuing orders to proceed; and (b) procuring equipment according to procedures agreed upon between the Bank and DGRMBOR.

4. Design and Mobilization Review

- 7. Conduct the following prior to the commencement of construction: (i) review and approval of selected contractor's designs, working drawings, and specifications during mobilization and the commencement of construction; and (ii) review and approval of the contractor's plans for mobilization and establishment of contracting operations.

5. Procurement of Equipment

- 8. The consultants will review the existing road maintenance equipment with road maintenance units along the Bishkek-Osh road and also the list of the equipment proposed to be procured under the Project. This review will explicitly indicate the plans of other external agencies to provide road maintenance, such as the World Bank, the Government of Japan, and the United States Agency for International Development, to ensure that there is no duplication in the equipment to be provided by the external funding community.

- 9. Based on this, the consultants will review the requirement of equipment and prepare (i) specifications for road maintenance and workshop vans in sufficient detail to ensure high quality equipment; and (ii) cost analysis separately for maintenance equipment and workshop vans (the cost will be broken down into foreign exchange and local currency

portions). The specifications and analysis will be submitted to DGRMBOR and the Bank for approval. Bidding documents for procurement of road maintenance and workshop vans using ICB procedures will be prepared.

10. The consultants will provide assistance to DGRMBOR in the following matters relating to bidding and evaluation of bids for the ICB equipment package: (i) issuing tender documents to bidders; (ii) identifying local materials and labor and understanding the Project objectives, designs, and specifications; (iii) organizing prebid conferences for bidders; (iv) providing interpretation of specifications and contract conditions; (v) evaluating bids in accordance with the Bank's *Handbook on Bid Evaluation* and preparing bid evaluation reports; and (vi) preparing documents necessary to finalize the contracts with the successful bidders, and providing advisory assistance to DGRMBOR in completing the signing of contracts and issuing orders for supplying and commissioning the equipment.

11. In addition, the consultants will assist DGRMBOR in the procurement of technical support equipment following the Bank's international shopping procedures.

6. Supervision of Construction

12. For Package I and after award of contracts for Package II for civil works, the consultants will carry out all duties ascribed to "The Engineer" in the International Conditions of Contract issued by the International Federation of Consulting Engineers. In Part A, the consultants' tasks will include, but not necessarily be limited to:

- (i) organizing and supervising preconstruction conferences;
- (ii) monitoring the setting out of the works by the contractors;
- (iii) checking and inspecting, for DGRMBOR's approval, all working drawings and as-built drawings prepared by the contractor;
- (iv) reviewing the contractors' quality control program;
- (v) inspecting and testing all materials and works to ensure that they comply with the specifications, and giving immediate notice to the contractors in the event that such materials and works do not comply with specifications;
- (vi) preparing recommendations to DGRMBOR on acceptance or rejection of any part or parts of the completed works;
- (vii) advising DGRMBOR on changes in plans or specifications that may prove necessary or desirable during construction, together with preparing the necessary revised plans or specifications for any changes that DGRMBOR and the Bank may approve;
- (viii) measuring the quantities of approved and accepted works and materials, and checking and certifying contractors' monthly invoices;
- (ix) periodically checking the remaining quantities and undertaking constant monitoring of Project costs;
- (x) examining and making recommendations to DGRMBOR and the Bank on claims arising from the contractors for extensions of time, payments for extra work, and other matters as may arise from time to time;
- (xi) negotiating with the contractors and recommending to DGRMBOR the rates for any unscheduled work that may arise;

- (xii) preparing monthly reports to DGRMBOR and the Bank for the whole program of works;
- (xiii) upon completion of construction, carrying out an inspection of the works and facilities and certifying to DGRMBOR the date of the commencement of the 12-month maintenance periods; and
- (xiv) preparing a Project completion report (the benefit monitoring and evaluation report will be prepared for the road sections in relation to the socioeconomic baseline data earlier established by the consultants under the Bank's technical assistance).

D. Other Services

13. The consultants will provide any additional services related to the Project upon request and approval of the Government on the basis of justifiable and mutually acceptable billing rate/costs. Such additional services will also be subject to prior approval by the Bank.

E. Required Expertise

14. Approximately 180 person-months (80 person-months of international consultants and 100 person-months of domestic consultants) will be needed. The international consultants will form an association with a suitably qualified firm of domestic consultants. The consultants will have expertise in the following areas: (i) road and bridge planning and design; (ii) road and bridge surveys; (iii) construction supervision, quality control, and inspection of road and bridge projects; (iv) procurement of construction services, workshops, and road construction equipment under ICB procedures for multilateral lending institutions; (v) construction management of road and bridge projects; (vi) supervision of road rehabilitation works; (vii) operation and maintenance of heavy earth-moving equipment workshop; and (viii) road safety.

F. Submission of Reports, Documents, and Drawings

15. The consultants are required to submit various reports/documents as provided under the contract schedule including a copy in Russian to DGRMBOR of key documents:

(i) Design, Tendering, and Procurement

(a) conceptual, preliminary, and detailed designs, detailed cost estimates, and design brief for civil works — 5 copies; (b) equipment specifications and cost estimates (for road maintenance equipment) — 5 copies; (c) monthly progress reports — 5 copies; (d) draft tender documents — 10 copies; (e) final tender documents — 15 copies; (f) pre-qualification evaluation reports — 10 copies; (g) tender evaluation reports — 5 copies; (h) draft contract — 5 copies; and (i) signed contract — 10 copies.

(ii) Supervision of Construction

(a) monthly progress reports — 5 copies; (b) quarterly progress reports — 5 copies; (c) contract completion reports — 5 copies; (d) maintenance period completion reports — 5 copies; (e) project completion reports — 5 copies; and (f) benefit monitoring and evaluation reports — 5 copies.

G. Schedule

16. It is estimated that tendering and procurement will take about 12 months and construction supervision will take place over approximately 39 months, including final testing, benefit monitoring and evaluation report, commissioning, hand-over, and preparation of the Project completion report.

H. Local Project Office and Logistics

17. DGRMBOR will be responsible for providing Project offices in Bishkek during tendering, contract award, mobilization, and construction supervision. The consultants will be responsible for equipping the offices with furniture, computers, copier, telephone, and facsimile machine; for hiring appropriate local administrative staff, including translators and interpreters; and for providing their own means of local transportation. DGRMBOR will also provide, within the Project office, suitably trained staff established within the Project Implementation Unit of DGRMBOR, furnished office space, and administrative support for the Project Manager to assist in administration and management of the Project.

OUTLINE TERMS OF REFERENCE FOR TECHNICAL ASSISTANCE FOR INSTITUTIONAL STRENGTHENING OF THE ROAD SECTOR

A. Background

1. The Government is committed to implementing market-based reforms for the road transport sector, which need to be translated into a set of specific policies and guidelines within the following principles: (i) creating a business and regulatory environment in which transport customers are free to choose among competing services, providers of transport services are not restricted by the Government beyond normal regulations, there is no Government discrimination on the basis of ownership of transport enterprises, and prices are determined by the market; (ii) encouraging competition; (iii) facilitating the upgrading of transport infrastructure; (iv) improving the efficiency of State transport enterprises by granting them greater commercial and managerial autonomy; and (v) improving safety and environmental standards.

2. A Transport Sector Policy Statement (TSPS) will need to be prepared and be formally adopted by the Government in 1996. The TSPS will provide the basis for reviewing an interim Road Sector Policy Statement (RSPS), and the existing legislation, including the Automobile Roads Act of May 1994, to ensure they make suitable provisions consistent with a market economy. The Ministry of Transport (MOT) has prepared an interim RSPS and a Road Fund Act, which is under discussion with the Ministry of Finance (MOF). MOT and MOF are reviewing the Act to ensure that it includes the principles of cost recovery and adequate funds are provided for the maintenance of the road network. The Road Fund Act is required to be submitted for Parliament's consideration in 1996.

3. To improve the development of the road sector there is a need for (i) establishing an enabling policy and regulatory environment that is consistent with the requirements of a market economy, (ii) institutional restructuring and privatization of the sector entities, (iii) establishing a financial framework that increases financing for the development and maintenance of the road network through improved tax collection and cost recovery, (iv) improved maintenance practices, and (v) human resource development.

B. Objectives

4. The Government has requested advisory technical assistance (TA) to assist its ongoing sector reforms. The prime objectives of the TA are to assist the Government in the following prime areas:

- (i) developing an appropriate policy and legal framework for the road sector by assisting the Government in preparing the TSPS, and in reviewing and amending existing legislation and the RSPS to ensure they have suitable provisions for a market economy;
- (ii) restructuring of MOT and the Directorate General for Rehabilitation and Maintenance of the Bishkek-Osh Road (DGRMBOR), and institutional strengthening of the Department of Roads (DOR), including defining the human resource requirements in a brief human resources development plan, so that the entities can implement the plan and can carry out their new functions in a market economy;

- (iii) preparing a maintenance plan, formulating criteria for determining road maintenance priorities and a road maintenance program, developing and implementing a road maintenance system for the Bishkek-Osh road to enable DOR to carry out routine maintenance of the road, and identifying key initiatives to improve road safety standards and operations; and
- (iv) developing a more broad-based approach to cost recovery to ensure adequate funding for the road sector, assisting the Government in revising and submitting the Road Fund Act for Parliament's consideration, and recommending appropriate measures for its effective implementation.¹

C. Scope of Services

1. Legal Framework for the Road and Road Transport Sector

5. The consultants will be required to assist the Government in preparing and issuing the TSPS, which will provide the framework for the development of the sector for the next decade.² In addition, the consultants will review and recommend amendments to the RSPS and to existing legislation such as the Automobile Roads Act of May 1994 to ensure suitable provisions for (i) the organization and jurisdiction of sector institutions, including division of responsibilities for regulation, supervision, and implementation between the Government and the private sector; (ii) road infrastructure, including road classification according to functional and administrative considerations, planning considerations, technical designs, construction, maintenance, supervision, and road management systems; (iii) the road transport industry and its operation and management, covering licensing, tariffs and fares, and organizational aspects; (iv) registration, licensing, and inspection of motor vehicles; and control of vehicle dimensions, weights, and emissions; (v) licensing of repair/workshops; and requirements regarding motorized vehicles; (vi) road traffic management, control, and safety, including movement of traffic on roads, speed limits, responsibilities of drivers, road signs, signals and markings, and regulation and enforcement; and (vii) user charges and cost recovery, including identification of various classes of road users and a longterm strategy for road-user cost recovery. In preparing any draft legislation and proposed amendments to existing legislation, the consultants will liaise with the Ministry of Justice to ensure overall consistency with the existing legal framework.

2. Restructuring and Institutional Strengthening

6. As a result of the Government's privatization program, transport customers are free to negotiate conditions directly with the operators on the basis of price and quality of service. The role of MOT should be strengthened to include monitoring and regulation, including licensing and inspection. Similarly, the role of DOR should be strengthened. Restructuring of MOT, including the possible establishment of a Department of Transport (DOT), restructuring or

¹ The consultants should also consider the period during which a Road Fund should remain operative in a transitional economy.

² In preparing the TSPS the consultants will need to consult the Ministry of Economy, which is expected to complete an Economic Development Strategy for the Kyrgyz Republic and an Indicative Social and Economic Plan in mid-1996.

relocation of DGRMBOR to MOT, and institutional strengthening of DOR are required so that the entities can carry out their new functions in a market economy. This component of the TA will consist of three subcomponents:

a. Organizational and Institutional Development

7. The consultants will assist the Government in:

- (i) establishing an organization and system in MOT/DOT and DOR to monitor, review, and update its sector policies, planning, and programming of projects, taking into account the overall responsibilities of MOT/DOT/DGRMBOR and DOR; performing program and budget activities for roads; mobilizing resources and funding of road activities, including management of the Road Fund; maintaining a centralized road inventory; controlling cost and quality of works; and improving safety;
- (ii) finalizing the reallocation of activities among MOT/DOT/DGRMBOR/DOR, and public sector road construction companies to achieve focused and accountable operations by the Government and commercial organizations;
- (iii) designing and implementing an appropriate organizational structure for MOT/DOT and DOR in line with their roles, responsibilities, and functions; and
- (iv) developing and implementing simple and relevant works accounting, financial, and management systems for DOR, in close coordination with other aid institutions providing similar assistance to other sectors; and providing on-the-job training on the objectives and operation of the system.

b. Enhancing the Planning Capability of DOR

8. The consultants will assist DOR in establishing its Policy and Planning Unit and in enhancing its planning functions by:

- (i) preparing a road maintenance plan and program for the five major interurban roads within the context of the country's economic development,
- (ii) helping MOT and DOR in the operations of basic accounting principles,
- (iii) developing procedures for traffic and other surveys for interurban and secondary roads, and
- (iv) identifying and recommending key initiatives to improve road safety.

9. Traffic count and other planning benchmarks¹ for benefit monitoring and evaluation of the Project road sections will be established by (i) carrying out with the assistance of the DOR, surveys of traffic flows, patterns, and speeds, and establishing a systematic traffic counting system; (ii) establishing inventory characteristics and road maintenance costs; (iii) introducing vehicle population and distribution statistics; (iv) updating vehicle operation costs; and (v) establishing a benefit monitoring and evaluation system. The consultants will need to closely follow the Bank's *Benefit Monitoring and Evaluation: A Handbook for Bank Staff, Staff of Executing Agencies and Consultants*. The consultants will also give maximum emphasis to on-the-job training and transfer of knowledge to the local counterpart staff.

c. Human Resource Development

10. The consultants will review the road sector's existing human resources (in relation to its needs for the next five years) to identify (i) the skills by appropriate category that are required for MOT and DOR; (ii) the nature of training required to upgrade the skill base identified above; and (iii) an approach, including sources of possible finance, to implement the training strategy. Based on this work, the consultants will prepare a brief human resource development plan for implementation by MOT and DOR.

3. Develop and Implement a Road Maintenance System for DOR

11. The approach is being taken by the Government to progressively develop privately owned road construction companies and private contractors to enable DOR to carry out road construction through tendering. Routine maintenance of the road network will remain with DOR. In the absence of a vigorous private sector, and taking into account the geographical isolation and difficulties in mobilizing road maintenance equipment, DOR requires a minimum amount of equipment for routine maintenance and to handle potential calamities. Maintenance equipment is proposed to be procured under the Bank-financed Project for the rehabilitation of the Bishkek-Osh Road. The TA consultants will need to review the existing maintenance works and equipment on the Bishkek-Osh Road and recommend appropriate restructuring, staffing, and equipment in consultation with MOT/DGRMBOR/DOR and the consultants providing detailed design and construction supervision for the Project. The TA consultants will prepare and assist DGRMBOR/DOR in implementing an appropriate computerized road maintenance system for the Bishkek-Osh Road, and will advise on how the system can be expanded for the remaining roads, consistent with the road maintenance plan and program prepared under the TA. The consultants will also assist DGRMBOR/DOR in assessing road accident records, recommend procedures for improved recording and analysis of records, and identify key initiatives to improve safety standards and operations. Transfer of and training are an essential component of the consulting services.

¹ Benchmarks to be established should include freight and passenger rates so that the later changes in real rates can be compared with changes in Vehicle Operating Costs.

4. Developing a More Broad-based Approach to Cost Recovery

12. The Government's policy of trying to meet the need for funding for road construction and maintenance from the proposed Road Fund needs to be reviewed within the context of a user-pay principle, the road sector maintenance plan and program prepared under the TA, financial resource requirements quantified under the maintenance plan, and the country's ability to provide adequate tax funds within the state of its economic development. In reviewing the Road Fund Act, the consultants will be required to (i) recommend an appropriate policy for road-user cost recovery; (ii) identify the various classes of road users; (iii) develop an efficient and practical scheme to provide for more equitable taxation of road users including cost recovery from transnational traffic, (iv) recommend a long-term strategy for cost recovery from road users, and appropriate amendments to the Road Fund Act; (v) develop an appropriate set of cost recovery targets and practices that can be implemented with due consideration to the state of the economy; and (vi) recommend how the Road Fund Act can be effectively implemented. To achieve these objectives, the consultants will analyze the overall balance between revenues and expenditures relating to the usage of the road networks and will give due consideration to the ongoing tax reform assistance currently provided by International Monetary Fund advisors. The analysis will distinguish among capital expenditures, maintenance, administration, and indirect costs and revenues, and will focus on charging the road users the operation and maintenance costs for their use of transport infrastructure.

D. Required Expertise

13. An international consulting firm will provide about 25 person-months of consulting services with expertise in the following areas:

- (i) advising on the legal framework in transitional economies and drafting legislation, preferably having experience in civil law legal systems and road sector legislation;
- (ii) organizational strategy, design, planning, and operations of a ministry of transport and road department, management and operation of public road and road transport sector enterprises including preparation of corporate strategies, privatization plans, and performance contracts for public sector enterprises;
- (iii) road transport economics; and road investment planning, budgeting, and cost recovery, particularly the development of equitable taxation of road users and longer term cost recovery strategies from road users;
- (iv) works accounting in the roads and bridges context, and management information systems for a road department;
- (v) road maintenance and operations, standards for road maintenance and bridges, and road safety standards and operations;
- (vi) traffic studies and other surveys; and
- (vii) human resource planning, development, and training in the areas of road planning, construction, management, maintenance, and safety.

14. The international consulting firm will use about 18 person-months of local consultants with expertise in the following areas:

- (i) drafting legislation, civil law legal systems, and road sector legislation;
- (ii) investment planning, management, operation, and maintenance of a road department, and operation of public road and road transport entities; and
- (iii) road maintenance and operations, construction of roads and bridges, and safety standards and operations.

E. Implementation Arrangements and Timing

15. MOT will be the Executing Agency and with the assistance of DGRMBOR, will provide overall guidance for the activities to be carried out under the TA. MOT and DGRMBOR will appoint suitable senior counterparts who will be responsible for the day-to-day supervision and coordination activities, including monitoring progress achieved and resolution of any difficulties that may arise during implementation. The consulting services are expected to start in the third quarter of 1996, and should be completed within five months.

F. Counterpart Staff and Facilities

16. MOT and DGRMBOR will provide counterpart staff who, will be trained by the TA consultants; office accommodation; local communications; and administrative support.

G. Reporting

17. The consultants will provide the following reports:

- (i) an inception report detailing work program, deliverables under the TA, and timetable for achievements, within four weeks of the commencement of the consultancy (five copies for the Government and three copies for the Bank);
- (ii) brief monthly reports on the status of the consultancy and its achievements (three copies for the Government and one copy for the Bank);
- (iii) draft final report, within 18 weeks of the commencement of the consultancy (five copies for the Government and three copies for the Bank), which will include the TSPS; the Road Fund Act; any revised legislation including RSPS; details of institutional restructuring and human resource development of MOT/DOR; a brief human resource development plan for MOT, and in particular DOR; road maintenance plan and program; the road maintenance system; and the benefit monitoring and evaluation system; and
- (iv) final report incorporating the Government's and the Bank's comments, within two weeks of receiving all comments (five copies for the Government and three copies for the Bank).

**COST ESTIMATES FOR
INSTITUTIONAL STRENGTHENING OF THE ROAD SECTOR
(\$'000)**

Item	Foreign Exchange	Local Currency	Total Cost
A. Bank Financing			
1. International Consultants			
a. Remuneration	487.50	—	487.50
b. Per Diem ^a	114.60	—	114.60
c. International Travel	30.00	—	30.00
2. Reports and Communications	8.00	—	8.00
3. Computers, Software, Office Equipment, and Supplies	10.00	—	10.00
4. Domestic Consultants' Remuneration	18.00	—	18.00
5. Vehicle Hiring	13.50	—	13.50
6. Translation, Secretary, and Logistical Support	13.50	—	13.50
7. Contingencies	<u>104.90</u>	—	<u>104.90</u>
Subtotal (A)	800.00	—	800.00
B. Government Financing			
Administrative Costs (office space, support staff, secretaries, communications, salaries of counterpart staff, office supplies, statistics, maps, and technical data).	—	<u>40.00</u>	<u>40.00</u>
Subtotal (B)	—	40.00	40.00
Total	800.00	40.00	840.00

^a Includes provision for Government officials to attend contract negotiations and engage in policy dialogue at Bank Headquarters.

ECONOMIC INTERNAL RATE OF RETURN

A. General

1. The economic assessment of the entire Bishkek-Osh road (620 kilometers [km]) was conducted for 20 road sections based on the comparison of the "with" and "without" Project scenarios. The individual road sections are homogeneous in terms of the proposed rehabilitation works and have fairly uniform traffic flows. For the derivation of the economic internal rate of return (EIRR), benefit streams were estimated over a period of 20 years from 1999, which covers the economic life of the improved roads, while construction costs were spread to cover an implementation period of four years from 1996. Costs and benefits were estimated net of taxes and duties and expressed in constant 1996 prices.¹ Consultants engaged under Technical Assistance (TA) No. 2256-KGZ recommended that the rehabilitation work for the whole road be implemented in three phases over eight years starting in 1996. The three priority road sections selected for implementation under Phase I are Karakulkul - Kurpsai section from km 412 to km 426 (14 km); Susamyr Jn - Alabel Pass section from km 161 to km 248 (87 km); and Naryn - Kokbel section from km 327 to km 361 (34 km). The rationale for selecting the above sections was the fact that these sections already suffer from rough and dangerous surfaces and require urgent rehabilitation and improvement works to prevent them from total deterioration. The economic assessment of the Project has been conducted based on the feasibility studies prepared by the Highway Design Institute of the Ministry of Transport and the TA consultant.

B. Costs

2. The economic costs of implementing the Project have been estimated based on financial costs of civil works, maintenance and technical support equipment, and consulting services. Price escalation provisions, interest during construction, and taxes and duties have been deducted from the financial costs to derive the economic costs. Periodic maintenance of the asphalt concrete road surface is assumed to take place during the operation of the Project.

C. Benefits

3. The main sources of economic benefits from the Project include savings (i) in vehicle operating costs (VOCs); (ii) in time costs for passenger and cargo traffic; (iii) in periodic maintenance costs; (iv) in costs of diverted traffic; and (v) derived from vehicle composition change. In estimating benefits, the financial benefits were adjusted to economic benefits by applying the same approach as in the estimation of economic costs. Among the expected benefits, those from VOC savings account for a substantial proportion of the gross benefits. Unit economic VOCs for passenger and freight vehicles under the "with Project" and "without Project" scenarios were estimated by using the VOC submodel of the Highway Design and Maintenance Model version III. VOC savings will accrue primarily from improvements in road surface measured by the roughness indicator. Based on the traffic projections and improved road

¹ A conversion factor for the economic analysis was not used, as it was not available at the time of preparing this Report.

surface, VOC savings by vehicle type, in US dollars per vehicle-kilometer, were estimated as shown in Table 1. As a result of reduction in VOC, it was assumed that about 20 percent of existing traffic would be generated traffic. VOC savings were attributed as a benefit to this traffic at 50 percent of unit VOC saving.

Table 1: Vehicle Operating Costs by Vehicle Type
(\$/vehicle-km)

Scenario	Car	Small Bus	Large Bus	Light Truck	Heavy Truck	Articulated Truck
Without Project ^a	0.13	0.57	1.32	0.67	0.83	1.07
With Project ^b	0.10	0.49	1.23	0.59	0.70	0.93
VOC Savings	0.03	0.08	0.09	0.08	0.13	0.14

^a For an international roughness indicator (IRI) of 9.

^b For an IRI of 4.

4. The improvement in road surface conditions achieved by the Project will result in time savings for cargo and passenger traffic. This was calculated using the average cargo value and average annual wage for passengers. Cargo delay costs are represented by the interest paid on cargo in transit by its owners. Savings in cargo delay costs and passenger delay costs were assumed at \$0.01 per hour per ton of truck capacity and \$0.18 per passenger-hour, respectively. These benefits were also attributed to generated traffic. Data are not available to separate work-related from non work-related travel.

5. Under the "without Project" case, to prevent further deterioration of road surfaces, major periodic maintenance at shorter intervals will be required at higher cost. Under the "with Project" case periodic maintenance cycles will be longer, and the associated costs will be less. Periodic maintenance cost savings were estimated at about \$6,000-\$7,000 per km.

6. It was assumed that under the "without Project" case the existing road conditions would deteriorate further and would result in increased temporary closures of the road, which would then lead to a greater diversion of mainly through traffic to an alternative road via Tashkent in Uzbekistan. The distance by the alternative route is about 80 percent longer, on average, than that by the Bishkek-Osh road (depending upon the southern destination), while the cost of taking the alternative road is about 50 percent more in terms of VOC and time cost for divertible traffic. This is because for the most part it is a flatter and straighter route and has a better road surface and geometric standard than the Bishkek-Osh road. Based on the current diversion of traffic and future road conditions, it was assumed that under the "without Project" case the proportion of diversion of normal through traffic would increase from 20 percent in 1995 to 40 percent in 2003 in winter, and from 7 percent to 20 percent in summer over the same period. The difference in

assumed diversion effects under the "with" and the "without" Project results in savings in VOC and time costs of about \$139 per diverted vehicle. The diverted traffic has not been included in the traffic for which VOC savings have been calculated, and therefore the benefits for diverted traffic would be additional.

7. Road improvement was assumed to influence the type of vehicle used on the roads. At present, trucks with payloads of 8-15 tons predominate in summer, and in winter the semitrailers and truck-trailer combinations are mostly diverted via Tashkent or substituted by smaller vehicles because of difficult driving conditions. For safety reasons, only small buses with 20 seats are presently allowed to operate on the mountain sections. Improvement of the road will lead to greater use of higher capacity trucks and buses. A progressive switch to larger vehicles, replacing a third of the existing-three axle trucks with semitrailers and half the small buses with larger capacity vehicles, results in savings in VOC and time cost. Without road improvement, it was assumed that use of semitrailers would be progressively phased out and that there would be no change in bus use. The changes in vehicle composition have not been incorporated in the VOC savings, and therefore would be additional benefits.

8. To capture the benefits from transnational transit traffic, which accounts for about 10-20 percent of total traffic, depending on the section, the Government plans to introduce a transit tax on foreign-registered vehicles at the proposed rates of about \$2 per car and \$15 per heavy truck. These rates are expected to be increased more in line with the taxes currently levied by neighboring countries such as Kazakhstan, which charges \$260 per vehicle. The revenue from this tax is a benefit to the country; however, it was not included in the analysis, as the benefit was found small at the current proposed rates. Savings in VOC and time costs for transnational transit have not been taken into account, since these benefits do not accrue directly to the Kyrgyz economy.

9. Other unquantified benefits include those accruing to potential fuel traffic from the oil refinery being built in Jalalabad to meet part of the demand in Bishkek and the northern market. This would imply a volume of movement of about 130,000 tons of oil products in 1999, increasing to over 250,000 tons a year by 2008. This additional traffic was not included in the economic analysis. As a result of the Project, traffic safety aspects will also improve, which will reduce accident costs. However, safety and other intangible benefits were not quantified because of lack of adequate statistics.

D. Results of Economic Analysis

10. The EIRR has been estimated at about 13.1 percent for the Project (see Table 2), while the EIRR for the rehabilitation of the entire road has been estimated at about 27 percent. Sensitivity analysis was carried out to test the effects of possible unfavorable scenarios with respect to changes in the key parameters. This analysis indicated that the proposed Project roads would continue to be economically viable under an adverse scenario involving a 10 percent cost increase and a 10 percent decrease in benefits.

Table 2: Economic Internal Rate of Return
(\$ million)

Year	Cost		Benefit				Vehicle Composition Change	Net Benefit
	Capital	Maintenance	Savings in VOC	Savings in Time Cost	Savings in Major Maintenance	Diverted Traffic		
1996	3.827							-3.827
1997	15.370							-15.370
1998	22.374							-22.374
1999	20.608	0.207	1.622	0.039	5.570	0.630	0.398	-12.556
2000		0.207	3.245	0.077		0.971	0.429	4.515
2001		0.207	3.576	0.086		1.468	0.464	5.388
2002		0.207	3.955	0.094		2.151	0.500	6.493
2003		0.207	3.948	0.094		2.934	0.541	7.311
2004		0.207	4.394	0.105		3.168	0.583	8.044
2005		0.207	4.850	0.118		3.423	0.630	8.814
2006		0.207	5.373	0.133		3.696	0.681	9.676
2007		0.207	5.956	0.149		3.992	0.735	10.626
2008		0.207	6.605	0.166	2.281	4.312	0.793	13.951
2009		0.207	6.225	0.160	2.449	4.570	0.842	14.039
2010		1.866 ^a	5.488	0.147	0.840	4.845	0.892	10.347
2011		1.278 ^a	5.799	0.155		5.136	0.946	10.759
2012		0.207	6.511	0.174		5.443	1.003	12.925
2013		0.207	6.907	0.186		5.770	1.063	13.718
2014		0.207	7.333	0.199		6.115	1.125	14.566
2015		0.207	7.664	0.213		6.483	1.193	15.346
2016		0.207	7.892	0.223		6.871	1.265	16.045
2017		0.207	8.025	0.231		7.284	1.340	16.673
2018		0.207	8.226	0.242	2.281	7.720	1.421	19.684
EIRR = 13.1%								

^a Periodic maintenance.