ROAD REHABILITATION AND MODERNIZATION PROGRAM, PHASE II

(GU-0130)

EXECUTIVE SUMMARY

Borrower: Republic of Guatemala

Executing agency: Ministry of Communications, Infrastructure, and Housing (MICIVI)/Roads Directorate (DGC)

Amount and source:

IDB (OC)*:	US$ 150 million
Local counterpart contribution:	US$ 32 million
Total:	US$ 182 million

*Up to US$25 million of the loan will benefit from partial financing of interest using Intermediate Financing Facility (IFF) resources.

Financial terms and conditions:

Amortization period:	25 years
Grace period:	4 years
Disbursement period:	4 years
Interest rate:	variable
Inspection and supervision:	1%
Credit fee:	0.75%
Currency:	U.S. dollars, Single Currency Facility

Objectives: The objectives of the proposed program are to: (i) continue rehabilitation and maintenance efforts on Guatemala's network of highways and rural roads, by funding investments over the period 2000-2003; and (ii) consolidate road-subsector reform and modernization initiatives pursued thus far by the Guatemalan government with a view to concentrating coordination, strategic planning, and sector policy functions in MICIVI along with responsibility for works monitoring and supervision and the contracting out of roadwork and maintenance to private firms.

Description: The proposed four-year program would be a time-slice operation, drawing on the experience gained in the program currently under way. It will be made up of three components: (i) support for rehabilitation and improvement of about 450 km of roads and highway corridors (US$96 million); (ii) funding to rehabilitate approximately 350 km of roads in rural areas (US$41.9 million); and (iii) support for consolidation of road-sector institutional reforms (US$4.5 million).

Projects for year 1 of the operation have been selected, and engineering, economic, and environmental studies for these projects are ready. Project selection for years 2 and 3 of the program will be guided by criteria agreed on with the Bank.

The Bank's country and sector strategy: The program proposed by the Government of Guatemala is concordant with the Bank's country strategy, development of a sound road infrastructure being a cornerstone of the Bank's strategy guidelines for its operations in Guatemala. The strategy, set out in the country paper, entails support for: (i) incorporating poor indigenous groups and rural dwellers into the sustained development process, primarily by way of community participation programs that can help accelerate and consolidate the peace process; (ii) expansion and improvement of social services, through programs to broaden coverage and enhance the quality and efficiency of basic social services; (iii) modernization of the State, by supporting reforms to equip the three branches of government to operate more efficiently, deliver better (and better regulated) utility and other public services, and restructure government expenditure and controls of the public finances; and (iv) growth and advancement of the production sectors through actions to foster efficient capital flows and make Guatemalan products more globally competitive.

Environmental and social review: The roads slated for rehabilitation and improvement in the proposed program are already in operation, in developed areas already worked on, so the program would have no significant adverse environmental or social impact: its effects will be localized, foreseeable, and mitigatable. The rehabilitation work will be fairly straightforward, will not require resettlement of residents, and will leave the current routing unchanged. Environmental and social impact assessments were done for the four projects chosen for year 1: overall, according to their findings, these projects will have a positive impact. Their slight adverse effects on the environment would range in intensity, extension, and duration from medium to low; furthermore, they are reversible and geographically confined. The studies likewise show that none of the projects comprising the program provide for new developments in the respective service areas: the proposed works will improve access to what are already consolidated agricultural and urban areas. The designs produced include appropriate environmental protection precautions and budgets to mitigate environmental and social impacts.

Benefits: The proposed roadwork will give producers easier access to nearby agricultural markets and bring down vehicle operating costs, as rehabilitation projects improve the condition of roads. More serviceable roads also means shorter travel times for automobile and

bus passengers, which among other benefits should foster sustainable tourism in rural areas. When farmers and passengers to whom vehicle operating costs are passed on belong to low-income groups, the program's economic benefits will go hand in hand with the social benefit of improved income distribution in the roads' service areas.

Risks:

The proposed operation poses no substantive risks. The risks typical of this kind of program, having to do with continuity and standard of maintenance of the road system and weaknesses in structures in place to fund, plan, and manage road maintenance, have been mitigated thanks to the accomplishments of phase I of the program, currently under way. By helping to consolidate road-sector reforms, the institution-strengthening component of the proposed operation will further mitigate the aforementioned risks.

Special contractual clauses:

A. Conditions precedent to the first disbursement

The DGC is to provide the Bank with: (i) a detailed action plan for the program's implementation, showing the proposed organization structure, describing support that will be forthcoming from each DGC operations area, and demonstrating that the program coordinator has been hired with the Bank's concurrence (paragraph 3.2 of the proposal which follows); and (ii) evidence that the road maintenance fund continues to operate with an adequate level of autonomy, a clear mandate, and sufficient resources for execution (paragraph 3.7).

B. Other special contractual clauses

a. Before awarding contracts for program works, the executing agency must demonstrate that consultants have been engaged to supervise the works (paragraph 3.9).

b. Eligibility of projects for years 2 and 3 of the program will be subject to verification, during the respective annual monitoring meetings, that the conditions agreed on with the Bank are being fulfilled (paragraph 3.7).

c. In order to address the program's social and environmental aspects, the loan contract will include a clause similar to clause 4.05(b) of the current contract, with changes that reflect the obligation to conduct socioeconomic impact assessments and public consultations in the projects' service area; the hiring of a specialist on social issues; and the commitment to apply the policy on involuntary resettlements, if required in any of the projects.

The loan contract also will include standard Bank conditions regarding, *inter alia*, technical and environmental requirements,

audits, reports, inspections, evaluations, maintenance, hiring of consultants, and procurement.

Social equity and poverty reduction classification: This operation qualifies as a social equity enhancing project, as described in the indicative targets mandated by the Bank's Eighth Replenishment (document AB-1704). Furthermore, the operation qualifies as a poverty targeted investment (PTI): according to the analyses done, over 50% of the prospective beneficiaries have incomes below the poverty line (see paragraph 4.17). The borrower, at its request, would be using part of the 10 percentage points in additional financing corresponding to the PTI classification.

Exceptions to Bank policy: None

Procurement: Works, consulting, and equipment procurement contracts funded with Bank resources are to be awarded through competitive bidding, following Bank rules and procedures in that regard. International competitive bidding will be mandatory for the procurement of goods valued at the equivalent of US$300,000 or more and for works projects costing the equivalent of US$3 million or more. A bidder prequalification system will be used for projects costing the equivalent of US$5 million and up. International calls for proposals must be held for consulting services over US$200,000 equivalent (paragraph 3.11).

I. FRAME OF REFERENCE

1.1 The aim of the proposed second phase of the Road Rehabilitation and Modernization Program is to afford continuity to Bank support for Guatemala's efforts to rehabilitate its highway and rural roads system and consolidate modern road-sector institutions.

A. Progress on the operation currently under way

1.2 The rehabilitation and modernization program now under way, approved in 1995, is supporting reforms in the road sector and funding part of the 1996-1999 roadwork investment program. It is satisfactorily attaining its development objectives and the targets set for its two subprograms.

1.3 The program has been achieving its development objectives by way of marked improvements in the general condition of the country's road system and the rehabilitation and improvement of rural roads. The fruit of these efforts is a 40% reduction in vehicle operating costs for traffic on rural roads (measured mostly in terms of travel time, users' time, and vehicle operating outlays *per se*); on rehabilitated paved highways these costs have come down by about 18%. As a further benefit, new markets are being developed and integrated with the core of the nation's business, bringing progress to hitherto bypassed parts of Guatemala in the area that stands to gain directly from the program works, which is home to some 700,000 people. The economies of these regions have been given a boost thanks to the involvement of private maintenance firms that hire local residents to do roadwork through contracts with microenterprises, particularly in the ZONAPAZ area that takes in the departments of Quiché, Huehuetenango, San Marcos, Alta Verapaz, and Baja Verapaz. In tandem with the roadwork, health and education programs have been devised and implemented, a task made easier as population centers have become more accessible. Thanks to gains made on these fronts the current program has been able to help in the peace-accords consolidation process and support the government as it fulfilled a series of commitments taken on with the signing of the peace agreements, in the socioeconomic and agrarian areas, and consolidated its poverty-reduction policy.

1.4 Significant progress has been made toward the objectives of the road-sector reform and modernization subprogram: optimize functions of the State, focusing on policy formulation, strategic planning, and works monitoring and supervision, and increase private-sector involvement in roadwork execution and road maintenance. Specifically:

a. **Restructuring and strengthening the Roads Directorate (DGC).** This division of the Ministry of Communications, Infrastructure, and Housing (MICIVI) was restructured in 1996; its functions and mandates were rewritten and new procedures and personnel manuals were brought in. The newly created Environmental Management Department was given staff, training, equipment,

and office space. As a result of the modernization program the DGC's staff complement was pared from 11,300 to 6,100. Thus reorganized and strengthened, the DGC could plan, track, and supervise road rehabilitation and improvement works that have entailed yearly outlays 2.5 times the annual average (from US$89 million on average from 1992-1995 to US$229 million annually in 1996-1999).

b. **Maintenance sustainability**. In 1997 a special account (earmarked fund) was created for road maintenance, permanently funded with fuel-tax revenues to be administered by a Road Conservation Executing Unit (COVIAL) established at the time. Thanks to these funds, maintenance on the road system has surpassed the target standards for the program currently under way. On average, COVIAL and the DGC Regional Maintenance Units expended US$78 million annually, double the original US$39 million annual program target. At the start of the program only 30% of roads were receiving adequate maintenance; in 1998 this figure had risen to 79%. The 90% target is expected to be reached by the end of the program. COVIAL's creation also has helped generate employment: the contracts executed with more than 300 private maintenance firms in 1999 generated over 6,000 direct jobs during the year and 30,000 indirect jobs.

c. **Private-sector involvement**. The entire COVIAL budget allotment is used to contract roadwork out to the private sector. In 1998 such private contracts accounted for 88% of aggregate maintenance expenditure, surpassing the year-2000 target of 85%. MICIVI also set up a Concessions and Divestiture Unit (UCD) in 1999 to manage the concession program that aims to involve the private sector in highway construction. The Palín-Escuintla highway has already been concessioned out; the proposal now is to start off a second phase of the concessions program.

1.5 The targets of the road investment subprogram were met and exceeded by virtue of the rehabilitation and maintenance work performed. In 1995, 72% of the paved road network had been in poor condition; by 1998 only 22% of the road system was rated poor, by far exceeding the program-end target of 51%. Work on 359 km of the 420 km contracted out for rehabilitation under the program has concluded satisfactorily. Other program activities are the rehabilitation of 162 km of rural roads and maintenance work on 1,539 km of roadways in ZONAPAZ, mainly in the departments of Quiché and Huehuetenango.

B. The program setting

1. Macroeconomic backdrop

1.6 Guatemala lived through economic instability in the 1980s and a fiscal and balance-of-payments crisis in 1990. In January 1991 the government launched a comprehensive stabilization and structural adjustment program. Between 1995 and

1998 the macroeconomic situation improved considerably. The fiscal accounts and balance of payments were strengthened, inflation was brought down to single digits, and the country posted GDP growth of 4% annually, on average. Structural reforms moved ahead in 1997 and 1998, notably the divestiture and privatization programs. During the first part of 1999, however, economic growth slowed, and the macroeconomic environment deteriorated. The fiscal deficit is growing, in part as a result of budgetary expansion which, while subsequently repealed, resulted in increased total public spending for 1999. Moreover, the national currency is devaluing at an accelerated pace, the deficit on current account is growing, and external reserve losses are increasing, while inflation, while still at low levels, is rising. Conditions in the financial sector deteriorated in the first quarter of 1999 as depositors and investors lost confidence in the domestic financial system and capital fled the country. The resulting pressure on the exchange rate was heightened by a falloff in export revenues resulting from drops in the price of sugar and coffee. Against this backdrop, the forecast is for 3.6% GDP growth in 1999 and the central government deficit will be close to 2.7% of GDP.

1.7 To keep the peace agreements on track without further weakening the external position and sparking inflationary pressures, the fiscal policy must focus on further strengthening tax revenues and on keeping a close eye on spending growth. In this regard, it is anticipated that the authorities and other stakeholders committed to building a national consensus on the fiscal program (*Pacto Fiscal*) will quickly devise new tax proposals to be implemented by the next administration. The government's initiatives to strengthen the financial system produced a new Bank Act in August that raised bank capital requirements and put limits on related-party lending. However, there still is a need for sweeping reforms of the banking sector, which are being prepared with Bank support. In this macroeconomic context, it is important to highlight the efforts put forth in the fiscal area to provide the road sector with a secure source of funds, through the creation of an exclusive fund for road maintenance with resources from a tax on fuels.

2. The roads sector

1.8 MICIVI is the policy-setting and oversight agency for Guatemala's transportation sector. Following the modernization process that phase I of the program described here has been supporting, this ministry performs its road-sector functions through the following departments and units: (i) the DGC, which is responsible for strategic planning and for monitoring and supervising highway and road construction, rehabilitation, improvement, and maintenance; (ii) COVIAL, which administers the road-maintenance earmarked fund and is in charge of contract maintenance programming and supervision; and (iii) the UCD, in charge of infrastructure concession programs. The DGC has been restructured so it can effectively perform its road-rehabilitation project management, planning, and monitoring functions. Reporting to it are 14 Regional Maintenance Units throughout Guatemala, which take care of emergencies and force-account maintenance of part of the unpaved

road network that COVIAL does not service. The operation proposed here will assist in the consolidation of road-sector reforms by strengthening sector institutions.

1.9 COVIAL administers fuel-tax earmarkings through a trust fund arrangement. This road conservation agency is headed by an Advisory Board with six members: the Minister of Communications, Infrastructure, and Housing and the Minister of Finance (each of whom may delegate to a deputy minister), the Director General for Roads, and one representative each of the Transportation Workers Association, the Construction Industry Association, and the Agricultural Operators Association. COVIAL covers the entire paved roads system as well as many unpaved roads. The government and the sectors involved are currently examining a draft bill that would ensure COVIAL's sustainability, giving it greater autonomy, legal status, and its own capital.

1.10 MICIVI manages a network of about 13,900 km of roads and highways, 4,300 km of which (31%) are paved, 6,700 km (48%) are unpaved, and 2,900 km (21%) are rural earth roads. This network has had to contend with a number of factors: many years of use, deferral of preventive-maintenance strategies in past years, and heavy growth in passenger and freight traffic, but in 1999, thanks to the coordinated road rehabilitation and maintenance program operated by DGC and COVIAL, about 78% of the paved network is in good surface condition – a marked improvement over the 1996 figure of 28%.

1.11 In rural areas the DGC is one of many government agencies which, along with financing institutions, are promoting and executing roadwork. The resulting duplication of efforts and funding has made it difficult to coordinate these efforts properly. To help equip the DGC to effectively head up and coordinate these activities, the Bank provided support for an assessment of these problems and for a workshop on rural roads. The operation described here will help implement the conclusions of that workshop, including the establishment of interagency coordination mechanisms for rural road construction and maintenance and an up-to-date inventory of rural roads nationwide.

3. The 2000-2010 Road System Development Plan

1.12 Road and highway transportation predominates in Guatemala because of the country's size and the geographical concentration of its more advanced regions. The 2000-2010 Road System Development Plan (PDV), produced with Bank support, looks at future domestic transportation performance and at the factors at work in the country in this era of globalization and more open markets, notably with Central and North America. Among the policy aims of the PDV are the following: (i) incorporate markets in producing zones that are currently isolated or have difficulty reaching markets; (ii) improve the interoceanic (Pacific–Atlantic) highway corridor; (iii) improve the Central American Pacific highway corridor; and

(iv) raise the percentage of municipalities with paved road access from 43% to 100%.

1.13 One core objective of the PDV investment program is to strengthen the government's basic infrastructure supply policy set out in the Peace Agreement on Social and Economic Aspects and Agrarian Situation. It will do this by expediting implementation of the comprehensive strategy to give peasant farmers access to land and other factors of production and give indigenous communities a stronger voice in the nation's development. Roads that are serviceable year-round will help strengthen mechanisms and conditions to assure the indigenous population's effective participation and lay the foundation for participatory, sustainable development. Projects identified for the first four years of PDV investments will provide continuity to initiatives launched by the present administration to consolidate the peace process, foster development of northwestern Guatemala (the current ZONAPAZ), and provide the minimum inputs and services needed by local residents and by the refugees and repatriates settling there. In the process, these efforts will pursue the country's poverty-reduction policy.

1.14 As a way of lowering the unemployment rate and helping women and rural dwellers generally move into the productive mainstream, there are provisions in the PDV for awarding road maintenance and construction projects to private contractors. Working from a gender-equity approach, these private firms have generated various kinds of jobs for women in organization, supervision, control, logistical support, supply of goods and foodstuffs, and sundry services, ensuring that women have the same opportunities as men, in terms of service contracts and other factors of production and technologies, including credit. This strategy will further the country's economic policy that seeks greater use of local manpower, conditions conducive to sustained high employment rates, and emphatically lower structural underemployment, so that workers' real incomes can rise progressively.

1.15 According to the PDV findings, 2,455 km of paved roads and 3,541 km of unpaved roads will need to be rehabilitated between 2000 and 2010. The aggregate outlay for construction, rehabilitation, improvement, and maintenance of the road system over that period will come to about US$2.5 billion.

1.16 The authorities have indicated their interest in receiving Bank support for a second phase of the private-sector concessions program, to give continuity to the process launched with the Palín–Escuintla highway concession. Among the highways being considered for such a second phase are the 85-km alternate route to the Atlantic Highway CA-9N Guatemala City–El Rancho; CA-9S Escuintla–Puerto Quetzal; CA-2 alternate route La Máquina–Finca La Aurora; and CA-2W Escuintla–Cuyotenango. In light of MICIVI's preliminary analysis finding that public-private sector investment partnerships will be a necessity, the government plans to present a request for Bank financing for the State's contribution once it has the findings of the basic studies needed for the concession (detail engineering, traffic study,

economic-financial appraisal, environmental and social impact assessments). It has been proposed that funds available under loan 883/OC-GU be used to pay for studies for the section of highway selected as the most feasible concession candidate.

4. Road sector expenditure and funding

1.17 Table I-1 presents road sector expenditures in recent years, illustrating the sharp rise between 1992-1995 and 1996-1999. Annual expenditures in 1998 and 1999 averaged US$250 million. Two highlights of the period depicted were the creation of the Road Maintenance Earmarked Fund and a considerable increase in national budget allocations.

Table I-1
Road sector expenditure and funding
(US$ million equivalent)

	Total			**Annual average**		
	1992-95	**1996-99**	**2000-03**	**1992-95**	**1996-99**	**2000-03**
Road construction, rehabilitation, improvement	237.4	583.2	804.9	59.4	145.8	201.2
Road maintenance	108.1	312.9	311.8	27.0	78.2	77.9
Operating costs; other	12.4	18.3	13.5	3.1	4.6	3.4
Total expenditure	**357.9**	**914.4**	**1130.2**	**89.5**	**228.6**	**282.5**
IDB 883/OC, 884/OC, 1147/OC	-	141.2	25.3	-	35.3	6.4
IDB proposed	-	-	150.0	-		37.5
CABEI, contracted	36.1	139.2	130.8	9.0	34.8	32.7
CABEI, in negotiation	-	-	110.9			27.7
World Bank	5.6	32.0	54.7	1.4	8.0	13.7
OECF	-	-	49.8	-	-	12.5
Other donors	9.4	30.3	12.0	2.4	7.6	3.0
To be determined	-	-	-	-	-	-
Subtotal, external funding	**51.1**	**342.7**	**533.5**	**12.8**	**85.7**	**133.4**
National budget	306.8	429.5	352.5	76.7	107.4	88.1
Road Fund tax	-	142.2	244.2	-	35.5	61.0
Subtotal, local funding	**306.8**	**571.7**	**596.7**	**76.7**	**142.9**	**149.2**
Total funding, all sources	**357.9**	**914.4**	**1130.2**	**89.5**	**228.6**	**282.5**

1.18 Between 2000 and 2003 the road sector will require roughly US$1.13 billion (an average of US$282.5 million a year). The plan is to cover 47% of these outlays with external funding and the other 53% with local funds. About half the external

funding required has been secured under loans already in place: between 2000 and 2003 the sector will receive US$273.5 million in disbursements from the World Bank, Japan Bank for International Cooperation (JBIC), Central American Bank for Economic Integration (CABEI), KfW, and IDB. This leaves US$260.9 million in borrowings to arrange. The operation proposed here would supply US$150 million, and the government is negotiating with CABEI for additional financing, from which disbursements over the period will total US$110.9 million. The local contribution would come from the national budget (about US$88.1 million annually) and from the Road Fund (about US$61 million annually).

5. Other activities in the road sector

1.19 One of the government's focuses in its move to modernize the road sector is safety on the nation's roadways. A comprehensive program of traffic signs, road markings, and safety devices is currently under way using Guatemalan funds, US$13.7 million in CABEI financing, and US$400,000 in World Bank technical assistance. The CABEI program includes the design, fabrication, and installation of pavement markings, signage, and safety devices along 3,000 km of arterial and secondary highways. Another is an education and awareness program addressing road safety and conservation of traffic signs and signals. The World Bank program is financing the design of a national road safety program. By reference to that program, the proposed operation intends to support implementation of the recommendations arising from those studies, which will support the road safety strategy at the national level. The engineering designs and bid documents for works contracts include resources and technical specifications for the installation of traffic safety devices, pavement markings and signage, and arrangements for road safety measures during construction.

1.20 In the program currently under way the Bank is supporting implementation of a vehicle size and weight limit enforcement system. The DGC has been working on a pilot project with the Port Authority to concession out weighscale operations at ports, and is acquiring portable scales to monitor load-limit violations on roads and highways by force account. The complete system of permanently installed and portable weigh-stations is being implemented and will be completed before the program ends.

C. Experience of the Bank and other agencies

1.21 The Bank is providing funding for the Road Rehabilitation and Modernization Program through loans 883/OC, 884/OC, and 695/OP. Progress on that operation is satisfactory, all the program funds having been committed and 80% of the Bank's funds disbursed. The performance of contract covenants is satisfactory; as was noted above, many of the program's targets have been exceeded. In addition, in late 1998, in rapid response to the Hurricane Mitch emergency, the Bank approved an emergency program in response to natural disasters (loan 1147/OC-GU). That

operation is being executed by MICIVI in coordination with Guatemala's National Disaster Preparedness Coordination Agency (CONRED) and the Ministry of Agriculture and Food. The proceeds of the aforementioned operation plus US$22 million in funds reallocated from active operations enabled the authorities to repair damage caused by Hurricane Mitch to transportation infrastructure and facilities in other basic sectors.

1.22 The DGC is satisfactorily executing an arterial highways and rural roads program funded by the World Bank (US$66.7 million), for which the JBIC has provided US$49.8 million in cofinancing. CABEI is funding five projects in the amount of US$191.8 million, and KfW has supplied US$13 million to rehabilitate rural roads.

D. Concordance with the Bank's strategy

1.23 The proposed program is concordant with the Bank's country strategy, development of a sound road infrastructure being a cornerstone of the Bank's strategy guidelines for its operations in Guatemala. The strategy, set out in the country paper, entails support for: (i) incorporating poor indigenous groups and rural residents into the sustained development process, primarily by way of community participation programs that can help accelerate and consolidate the peace process; (ii) expansion and improvement of social services, through programs to broaden coverage and enhance the quality and efficiency of basic social services; (iii) modernization of the State, by supporting reforms to equip the three branches of government to operate more efficiently, deliver better (and better regulated) utility and other public services, and restructure government expenditure and control of the public finances; and (iv) growth and advancement of the production sectors through actions to foster efficient capital flows and make Guatemalan products more globally competitive.

II. THE PROGRAM

A. Objectives

2.1 The objectives of the proposed program are to: (i) continue rehabilitation and maintenance efforts on Guatemala's network of highways and rural roads, by funding investments planned for the period 2000-2003; and (ii) consolidate road-subsector reform and modernization initiatives pursued thus far by the Guatemalan government with a view to concentrating coordination, strategic planning, and sector policy functions in MICIVI along with responsibility for works monitoring and supervision and the contracting out of roadwork and maintenance to private firms.

2.2 The logical framework for the proposed program, presented in Annex II-1, was drawn up by reference to the performance of objectives set out in the phase I logical framework, which has been very satisfactory. The core objectives of the new program are continued institutional strengthening of the DGC and COVIAL, continuity in rehabilitation work on the principal highway corridors, and improvement of rural roads.

B. Program structure

2.3 The proposed four-year program would be a time-slice operation, drawing on the experience gained in the program currently under way. The three planned components are described in the following sections.

1. Road and highway corridor rehabilitation and improvement (US$96 million)

2.4 Funding under this component would pay for rehabilitation work and improvements along approximately 450 km of roads. Year 1 projects have been identified based on the findings of the 2000-2010 Road System Development Plan (PDV), taking into account economic parameters and strategies being pursued in national development plans. There will be an emphasis on export corridors, to make Guatemalan products more competitive. Works projects to be tendered for year 1 of the program have been selected. Those for years 2 and 3 would be chosen with regard to the PDV assessment and priority-setting and to selection criteria agreed upon with the Bank.

2. Rehabilitation and improvement of roads in rural areas (US$41.9 million)

2.5 This component would be a follow-on to work being done in the program currently under way in the departments of Quiché and Huehuetenango, with a possibility of taking in additional departments as studies are produced. Funding will be provided

for about 350 km of rural roads. Works projects to be tendered for year 1 of the program have been selected; road selection for years 2 and 3 will be based on the DGC's Rural Roads Development Plan inventory.

3. Institution-strengthening and maintenance sustainability (US$4.5 million)

2.6 The proposed operation will complement what the current program has been accomplishing to restructure the DGC, leave COVIAL solidly established and operating, and support the road safety strategy at the national level. An assessment was done of requirements for consolidating the modernization of the road sector, including the drafting of terms of reference for the requisite advisory support and technical assistance and equipment needs, with a cost estimate. To continue to strengthen, expand, and consolidate road maintenance activities, the program described here would support COVIAL in the areas of financial management, statistics, analysis of contractors' capacity, and studies and audits. A particular focus of this component will be modernization of DGC Regional Maintenance Units in charge of the upkeep of unpaved roads, which during the recent emergency proved to be an essential adjunct of the contract maintenance system for which COVIAL is responsible. According to the needs assessment, a high percentage of maintenance equipment in the Regional Units is in poor condition and in need of a major overhaul. To enable these zones to maintain unpaved roads efficiently so they will be serviceable in the event of emergencies, the proposed program will support the DGC's modernization plan, budgeting funds for consultants, training, and rehabilitation of part of the road maintenance equipment requiring repairs.

C. Cost and financing

2.7 The total program cost will be US$182 million, including direct costs for the three components summarized above, engineering and administration costs, financial charges, and contingencies. It is proposed that the Bank fund US$150 million of this operation, with partial financing of interest on US$25 million of that amount using Intermediate Financing Facility resources available for Guatemala.

2.8 The local counterpart of US$32 million would consist of US$16.9 million to defray local costs and US$15.1 million corresponding to payment of finance charges on the Bank's loan. The Government of Guatemala undertakes to provide the resources required for program execution, which will be allocated to the budgets of MICIVI and the Ministry of Finance (MINFIN). The local contribution would cover 17.6% of the project cost. Since the proposed operation qualifies as poverty targeted, that percentage satisfies the financing matrix for Guatemala, with the 10 percentage points of additional financing taken into consideration.

Table II-1
Cost estimate and financing plan
(US$ million equivalent)

Expenditure item		IDB	Local contribution MINFIN	Local contribution MICIVI	Total
1.	**Engineering and administration**	**13.0**		**1.5**	**14.5**
1.1	Engineering and studies	2.6	-	0.3	2.9
1.2	Supervision and audits	9.9		1.1	11.0
1.3	Support for program management	0.5	-	0.1	0.6
2.	**Direct construction costs**	**124.1**		**13.8**	**137.9**
2.1	Highway rehabilitation/improvement	86.4	-	9.6	96.0
2.2	Rural road improvement	37.7		4.2	41.9
3.	**Associated costs**	**4.1**	**-**	**0.4**	**4.5**
3.1	Institution-strengthening	2.2	-	0.2	2.4
3.2	Equipment	1.9	-	0.2	2.1
4.	**Unallocated**	**7.3**		**1.2**	**8.5**
4.1	Contingencies	7.3		1.2	8.5
5.	**Finance charges**	**1.5**	**15.1**	**-**	**16.6**
5.1	Interest	-	13.5	-	13.5
5.2	Credit fee	-	1.6	-	1.6
5.3	Inspection and supervision	1.5	-	-	1.5
	Program total	**150.0**	**15.1**	**16.9**	**182.0**

III. PROGRAM IMPLEMENTATION

A. Borrower and executing agency

3.1 The borrower will be the Republic of Guatemala. The program's executing agency will be the Ministry of Communications, Infrastructure, and Housing (MICIVI), through its Roads Directorate (DGC). The DGC will coordinate with COVIAL to execute the institutional-support component designed to consolidate the latter unit.

B. Program management

3.2 The DGC, after seeking the Bank's concurrence, will appoint a program coordinator to manage the program. The coordinator will be based in the External Financing Coordination Office, a unit of the Planning and Studies Division (DPE) that administers all the DGC's external funding operations. It will be this official's responsibility to coordinate the work of the various DGC units involved in this program. As a condition for the first disbursement the DGC will provide the Bank with a detailed action plan for the program's implementation, showing the proposed organization structure, describing support that will be forthcoming from each DGC operations area, and demonstrating that the program coordinator has been hired.

3.3 Since its 1996 revamping the DGC's organization structure for operations is solid. The DGC and the other units that will carry through the proposed program have worked alongside the firm that is managing phase I of the program, currently under way, from which they have received training and technology transfer. DGC units that will be involved in the proposed program are the DPE, Environmental Management Department, Construction Supervision Division (to manage construction contracts and supervision), Finance Division to keep the program's records and accounts, and Force-Account Maintenance Division. The Regional Maintenance Units reporting to the latter division will be modernized in the proposed operation. The DGC will receive advisory support as needed to resolve problems arising in the course of the program that its own staff cannot handle; these services are budgeted for under "Support for program management".

C. Implementation plan and disbursement timetable

1. Year 1 works projects

3.4 Preparation of the year 1 projects has been completed, using criteria devised and applied during the first phase of the program. These criteria used to select year 1 projects, which will be applied for similar projects in subsequent years of the program, are summarized in section III.C.3.

3.5 **Rehabilitation and improvement of roads and highway corridors.** The following are the works projects being proposed for year 1: CA-13 La Ruidosa–Río Dulce–Modesto Méndez (72 km), to give producing regions in the northeast better access to the interoceanic highway corridor; it will rehabilitate an existing road connecting Guatemala's principal arterial (Guatemala City–Puerto Barrios) to the highway toward the north; and the CA-9S Villanueva–Amatitlán section (16 km), to improve communications between Guatemala City and the Pan American Highway and Pacific ports and remedy the problem of traffic entering and exiting downtown Guatemala City.

3.6 **Rehabilitation and improvement of roads in rural areas.** Roads selected for year 1 investments under this component are RD-QUI-3 junction RN-7W–Nebaj (19 km) and RD-HUE-12 Nentón–Gracias a Dios (38 km). Engineering, economic, and environmental studies for these roads are ready. The first road, in the department of Quiché, includes the connection of the region's principal highway, RN-7W, to the village of Nebaj. This part of Guatemala, one of the most disrupted by the armed conflict, has one of the country's highest poverty levels. The second rural road project will be in the department of Huehuetenango. Its service area takes in zones hard hit by the armed conflict of the 1980s. This roadwork will complement the Bank's support to this area under the DECOPAZ program. The project will afford continuity for the rehabilitation project now being funded under phase I of the program, between the Pan American Highway CA-01 (Camojá Grande) and Nentón as far as the Mexican border. This will improve overland communications with Mexico and northern Guatemala across the strip of land known as Franja Transversal del Norte.

2. Conditions precedent to the first disbursement and to the selection of projects

3.7 Prior to the first disbursement, the executing agency will submit to the Bank: (i) a detailed action plan for the program's implementation, described in paragraph 3.2; and (ii) evidence that the road maintenance fund continues to operate with an adequate level of autonomy, a clear mandate, and sufficient resources for execution. Likewise, before works projects are selected for years 2 and 3 the annual supervision meetings referred to in section III.E.2 below will be held to ascertain the following:

a. That the program is satisfactorily achieving the logical framework objectives and targets and that corrective measures have been adopted whenever necessary to ensure that the program's development objectives are attained.

b. That the Road Maintenance Fund is still operating, is sufficiently autonomous, has a clear mandate, and has enough resources to operate effectively. To assure that the road system will be maintained to a satisfactory standard, the borrower undertakes to assign the necessary resources for road maintenance which it is

estimated will be at least US$78 million annually. At least 85% will pay for contract road maintenance work; the balance will pay for maintenance work managed by the Regional Maintenance Units.

c. That appropriate measures have been taken to assure that environmental quality assurance procedures have been applied at every stage in the planning and execution of all projects included in the program, and that the environmental conditions specified in section III.F of this proposal have been satisfied.

3. Project selection criteria

3.8 To qualify for funding under the proposed program, projects will have to satisfy a set of general criteria for rehabilitation and maintenance work, which are listed in Annex III-2 in the technical files for the program. The basic conditions are as follows: the proposed work must be on an existing road, selected by virtue of its demonstrated return and positive impact on the region's development, and there must be no legal right-of-way problems. Environmental and socioeconomic impact assessments must have been done for rehabilitation and improvement projects, including consultations with local residents, indigenous communities, and authorities of the projects' area of influence, to come up with specific mitigation measures to include in bid documents and construction and supervision contracts.

3.9 All designs and maintenance and rehabilitation work for the program will be done by private contractors. Specialized firms will be hired before works projects are awarded, for technical supervision and quality assurance of roadwork and of the environmental mitigation measures. Before bids are called for a project (or, if competitive bidding is not required, before work begins) the executing agency must provide the Bank with plans and specifications, bid conditions, and terms of reference, which are to include measures needed to mitigate any adverse environmental impact associated with construction and maintenance of the road segment in question. Such mitigation measures are to take into account the findings of the risk studies and corresponding contingency plans, and measures to attenuate any indirect or induced effects, for instance those that could stem from induced development once road infrastructure improves.

4. Investment and disbursement timetable

3.10 The program will run for four years, counted from the effective date of the loan contract. The estimated disbursement timetable is shown in Table III-1.

Table III-1
Disbursement timetable
(US$ million equivalent)

Source	2000	2001	2002	2003	Total	
IDB–OC	14.6	40.3	52.0	43.1	**150.0**	82.4%
MINFIN	1.0	2.3	4.6	7.2	**15.1**	8.3%
MICIVI	1.6	4.7	5.8	4.8	**16.9**	9.3%
Program total	**17.2**	**47.3**	**62.4**	**55.1**	**182.0**	
	9.4%	26.0%	34.3%	30.3%		

D. Procurement of goods and contracting of works and services

3.11 Works, consulting, and equipment procurement contracts funded with Bank resources are to be awarded through competitive bidding, following Bank rules and procedures in that regard. **Civil works**: international competitive bidding (ICB) will be mandatory for projects worth US$3 million or more; a bidder prequalification system will be used for projects costing US$5 million and up. Civil works contracts between US$300,000 and US$2,999,999 will be awarded through local competitive bidding (LCB). **Consulting services**: ICB will be mandatory for services costing over US$200,000. **Equipment procurement**: ICB will be mandatory for procurements exceeding US$299,999; LCB will apply for those worth over US$100,000 and up to US$299,999. Procurement, works, and service contracts below the aforelisted thresholds will be awarded in accordance with Guatemalan law. The tendering and procurement plan is presented in Annex III-1.

E. Monitoring of the program

1. IDB supervision

3.12 The Bank's Guatemala Country Office will supervise the program. As well, there will be annual administration and monitoring meetings in which the project team will be involved.

2. Annual meetings

3.13 Throughout the program the executing agency and the Bank will continue to meet each year, not later than September 30, to review the implementation status of the action plan and the investment plan for the previous year, and specifically the attainment of targets, objectives, and efficiency indices. The investment plan for the following year will be worked out, specifying concrete targets and any corrective measures required. MICIVI undertakes to report to the Bank each year, at least 15 business days before each such meeting, on the program's status, fulfillment of contractual covenants, and attainment of indicators and targets in the program's logical framework (Annex II-1). If the Bank ascertains that the program is not being

executed as agreed, MICIVI will be required to provide the Bank with a proposal for corrective action and an implementation timetable for same.

3. Annual report on road maintenance

3.14 The DGC, on MICIVI's behalf, will continue to provide the Bank with annual road system maintenance reports, on the terms agreed on for the operation currently under way, throughout the life of the program described here and for five years after the date of the last disbursement. The report covering a given year is to be presented during the first quarter of the following year.

4. External audits

3.15 The financial statements of the program are to be forwarded to the Bank each year throughout the life of the program, within 120 days after the executing agency's fiscal year-end. They must have been audited by a firm of independent auditors acceptable to the Bank, in accordance with Bank requirements in this regard. The cost of such audits will be defrayed with proceeds of the loan.

5. Ex post evaluation

3.16 It was decided in consultation with the executing agency, and in accordance with Bank policy, not to include an ex post evaluation in the project activities, because the annual meetings will provide the requisite information and an opportunity to draw lessons from the program.

F. Environmental and social impact of the program

3.17 The roads slated for rehabilitation and improvement in the proposed program are already in operation, in developed areas already worked on, so the program would have no significant adverse environmental or social impact: its effects will be localized, foreseeable, and mitigatable. The rehabilitation work will be fairly straightforward, will not require resettlement of residents, and will leave the current routing unchanged. Environmental impact assessments (EIAs) and social impact assessments (SIAs) were done for the four projects chosen for year 1. The SIAs were produced with input from residents of the roads' service area, with particular attention to the concerns of indigenous communities, who make up the majority in many of the communities that stand to benefit from projects in the departments of Quiché and Huehuetenango. These public consultations revealed additional needs of residents, which were built into the special technical specifications for tenders of the works in question. The EIAs were published locally on July 2, 1999, and forwarded to the Bank's Public Information Center on July 14.

3.18 According to the studies done, the projects' overall impact would be positive. The slight adverse effects on the environment would range in intensity, extension, and duration from medium to low; furthermore, they are reversible and geographically

confined. The studies likewise show that none of the projects comprising the program provide for new developments in the respective service areas: the proposed works will improve access to what are already consolidated agricultural and urban areas. The designs produced include appropriate environmental protection precautions and budgets to mitigate environmental and social impacts, including those stemming from development of the area in question and the scant attention given to environmental measures in the past. To that end, there will be an emphasis in the program's road rehabilitation projects on reforestation, construction of pedestrian crossings, and designated passenger pickup and dropoff areas. The legal framework for environmental management and supervision in the program and the general criteria and planned activities in that regard are described in the following paragraphs.

3.19 **Legal framework for environmental management**. The general framework for environmental protection in Guatemala is its Constitution in effect since May 31, 1985, which assigns responsibility for matters pertaining to the environment and the ecological balance. Decree 68-86 (Environmental Protection and Remediation Law) established the National Environment Commission (CONAMA), reporting directly to the President of Guatemala, to head up this sector. The Commission's mandate is to advise on and coordinate actions associated with the development and enforcement of national environmental policies. One stipulation in Decree 68-86 is that an environmental impact assessment (EIA) must be conducted by experts and approved by CONAMA before the start of any project, construction work, industry, or other activity that could harm renewable or nonrenewable natural resources, blight or otherwise significantly modify the landscape, or adversely affect the nation's cultural properties.

3.20 Under the terms of the June 5, 1996, **CONAMA/DGC agreement,** CONAMA recognizes the DGC as the government agency in charge of planning, constructing, and maintaining the country's road system, and undertakes to run and enforce an operating system such as will safeguard the nation's resource endowment and cultural patrimony, by way of commitments and actions that must be in place before roadwork may begin. Under this agreement, the DGC is to build the EIA requirement and associated monitoring for environmental protection purposes into its planning, construction, and operations phases. The EIA criteria set out in the agreement satisfy the legal and technical requirements of the two agencies and of Guatemalan and international financial institutions. The function of EIA review and approval for roads is delegated to the DGC, as is final approval of most of the latter. CONAMA reserves the right to request a more detailed EIA in any instance. The DGC establishes mechanisms to make certain that the implementation cost of measures to mitigate environmental impacts (significant or not) is built into the different stages of the project cycle, as well as measures provided for in the implemented EIAs. The DGC likewise establishes mechanisms to ensure that contractors implement the recommended mitigation measures and make due provision for the outlays involved.

3.21 The November 26, 1998 **agreement between the Anthropology and History Institute (IDAEH) and the DGC** sets out archeological assessment criteria that satisfy legal and technical requirements. The IDAEH is to continually monitor all DGC projects in order to protect and safeguard the nation's cultural properties. The agreement's aim is to ensure that the two parties have mechanisms to protect that cultural patrimony, without interfering with the State's efficient and timely pursuit of its national development function.

3.22 **Environmental protection requirements**. The environmental requirements established for phase I of this program will apply to all phase II activities, with sustainability as their underlying principle. Any potential effect on the environment is assessed early on, so as to avert, attenuate, or offset adverse impacts. The EIAs and SIAs prepared for this new operation and the requirements agreed on have been adjusted where necessary to reflect changes in CONAMA and Bank policies and rules:

a. By virtue of the agreements signed with CONAMA and the IDAEH, program actions will be carefully monitored to make certain they do not trigger any activity that could harm parks or protected areas, cultural properties, environmentally fragile zones, or ecologically rich areas.

b. The new CONAMA directives and technical specifications for EIAs will be applied in order to standardize environmental assessments in Guatemala.

c. At the Bank's request, the EIAs for projects selected for year 1 were broadened to include social impact assessments, including consultations with local residents, indigenous communities, and authorities in each project's area of influence. One feature of the eligibility criteria is similar consultations for year 2 and year 3 projects.

d. Since the roadways slated for rehabilitation lie in existing road corridors and there are no plans to widen the roadbed, there will be no need to resettle residents. One of the planned general requirements is that if any such resettlement became necessary the Bank's policy on involuntary settlements would be followed.

3.23 **Environmental management and oversight in the roads sector**. The DGC began operating its Environmental Management Program in 1986. A 1996 restructuring gave birth to the current Environmental Management Department (DGA), which has been strengthened thanks to technical assistance, training, and logistical support provided in phase I of the IDB-funded Road Rehabilitation and Modernization Program. The following are the DGA's functions:

a. Prepare terms of reference for consulting firms to be engaged to produce environmental impact assessments, review and approve the assessments.

b. Supervise and monitor ongoing roadwork, including development of road safety plans and occupational safety measures.

c. Carry out environmental education activities.

3.24 Though the DGA has shown that its employees are trained and qualified for environmental management of projects executed under the program, the institution-strengthening program needs to continue, to strengthen that department's technical capacity, particularly for social impact assessments and for eliciting active involvement of affected residents and analyzing disaster vulnerability. On the environmental side, the institution-strengthening includes hiring technical assistance to help the DGA examine the road system's vulnerability to natural hazards, hire a specialist in social issues, and continue the training programs, including staff of other DGC areas. Also included are the procurement of computer hardware and transportation and laboratory equipment.

3.25 To assure the program's environmental sustainability it is recommended that the loan contract contain a clause similar to clause 4.05(b) of the phase I contract, modified to reflect the new requirement of social impact assessments and public consultations in the projects' area of influence, engaging a specialist in social issues, and a commitment to apply the Bank's policy on involuntary resettlements if resettlement should become necessary in any project.

IV. VIABILITY AND RISKS

4.1 The program proposed here will help rehabilitate Guatemala's principal road corridors which for years languished without proper maintenance, and will give continuity to the rural road improvement program. Project selection for this operation was guided by the rehabilitation priorities set in the aftermath of Hurricane Mitch. As one benefit of the program the country will be able to move toward the 2000-2010 Road System Development Plan target of a paved road system reaching every municipal seat in the country.

4.2 The proposed works will give producers easier access to nearby agricultural markets and bring down vehicle operating costs as rehabilitation projects improve the condition of roads. More serviceable roads also means shorter travel times for automobile and bus passengers, which among other benefits should foster sustainable tourism in rural areas. When farmers and passengers to whom vehicle operating costs are passed on belong to low-income groups, the program's economic benefits will go hand in hand with the social benefit of improved income distribution in the roads' service areas.

4.3 The technical, institutional, financial, economic, environmental, and social viability of this operation has been established, taking into account the DGC's implementation capacity (within MICIVI) and the experience gained during the first phase.

A. Technical rationale

4.4 The rehabilitation and reconstruction work envisaged in this program poses no particular technical problems: the DGC, MICIVI, and private firms all have the capacity and experience to execute the work as planned. Specialized consulting firms will be assisting the DGC with civil works supervision and engineering designs for program works.

4.5 The two-lane La Ruidosa–Río Dulce–Modesto Méndez highway and the four-lane Villa Nueva–Amatitlán highway are nearing the end of their service life, so they are slated for rehabilitation to prolong their service life to 20 years. For the most part the rehabilitation projects will entail recycling/scarifying (breaking up) the existing surface course. On failed sections (deformations, segregation, raveling), the base course will be broken up and, if necessary, fortified with granular material or reinforced with asphalt. In most instances a coat of asphalt concrete will be laid and shoulders will be given variable asphalt treatments. Lined ditches and culverts will be replaced as necessary. A comprehensive set of pavement markings and traffic signs and signals will be installed, along with road safety devices where appropriate, particularly in built-up areas.

4.6 Two gravel roads – RD Q-3, 7W-Nejab intersection segment, and RD HUE-12, Nentón–Finca Gracias a Dios section – are to be rehabilitated and improved with double coat seals. Paving work will consist of improving the ballast layer, laying a granular subbase, a gravel or crushed stone base, and a two-coat seal wearing course. Other features of the rehabilitation projects will be comprehensive pavement markings and traffic signs and signals, and safety devices where appropriate, especially in built-up areas. Slope protection work will be done as a precautionary measure, and special provisions will be taken in landslide-prone areas. Among the environmental mitigation activities planned are spoil-bank restoration and grading and tree planting.

4.7 According to the analysis done, the program is a viable solution from the technical and operational standpoints, for the following reasons:

a. The standards and methods followed in designing the program conform to acceptable engineering practices and are appropriate for current and projected traffic volumes.

b. Civil works will be executed under contracts awarded after calls for offers, adhering to Bank rules and procedures on works contracting.

c. Since the rehabilitation and construction work can be done using simple methods, no technical problems are anticipated such as might hold up the program.

d. The roads to be worked on are already in operation, so the projects should have no significant adverse impact on the environment. Nevertheless, the special environmental technical specifications in the bid documents deal with mitigation measures.

B. Economic rationale

4.8 The project sample evaluated for execution in year 1 was selected by reference to priorities set out in the 2000-2010 Road System Development Plan. Their economic feasibility was assessed using the HDM III (Highway Design and Maintenance Standards) model. Present-value estimates were made using a rate of 12% for net present value and internal economic rate of return. A sensitivity analysis was run of these two indicators of economic viability to look at higher-cost and lower-benefit scenarios. Various wearing-course and durability options were examined for roads and highway corridors.

1. Methodology

4.9 Among the economic benefits examined for the planned rehabilitation projects on these highways were reductions in vehicle operating costs and travel time, plus significant benefits associated with lower future maintenance costs. Traffic flows

were estimated from counts which were then compared against MICIVI data. Benefits relating to normal traffic growth were quantified, but sensitivity testing was done as well, using estimates of traffic that would be generated once vehicle operating costs were lowered. Traffic growth rates were estimated at between 2% and 6.5% a year, and as high as 10% a year when generated traffic was factored in. Also taken into account were benefits that would be felt by the road agency and users in the form of maintenance costs that would be lower on rehabilitated roads than in the without-rehabilitation scenario. Estimates of anticipated benefits when commercial farm output increases (because transportation costs would be lower) and when farmers' produce losses are cut (because they have readier access to markets) were based on current agricultural output data, socioeconomic and population surveys in the proposed projects' service areas, and economic impact studies of previous projects in those areas.

4.10 Costs in these economic appraisals were based on estimated financial costs of the planned works according to MICIVI budgets, which include direct costs, studies and designs (engineering, economic, environmental, social), works supervision, and contingencies. The financial costs were reduced to account for the incidence of taxes and the presence of unemployed manpower. Thus adjusted, the investment at market prices represents an economic cost of 77% of the financial cost for the four road sections selected for year 1.

2. Appraisal findings

4.11 The economic internal rate of return (EIRR) and net present value (NPV) were calculated using the HDM III model, looking at various alternative strategies: asphalt paving, improvements using ballast, asphalt concrete, two-coat seals, etc., and varying wearing-course durability for 10 and 20 years. The findings summarized in Table IV-1 correspond to the strategy selected with the highest EIRR.

4.12 The EIRR for the four highway sections comes to over 20% with a high NPV, discounted at 12%. Average daily traffic along the La Ruidosa–Modesto Méndez road is about 2,000 vehicles, with an EIRR of 25%. The EIRR for the Villanueva–Amatitlán stretch is high mainly because of the high volume of traffic this road carries every day – on average, about 25,000 vehicles on four lanes – and because its service area is densely populated. The RN/7W junction–Nebaj and Nentón–Gracias a Dios segments carry low average daily traffic volumes (fewer than 200 vehicles) but the per-kilometer cost of rehabilitating them is also low because their surface course will be improved with a two-coat seal.

Table IV-1
Rehabilitation and improvement projects
Estimated EIRR, NPV and sensitivity

Project	Length (km)	Cost (US$000)	EIRR (%)	NPV (US$000)	Sensitivity	
					Costs +20%	Benefits −20%
La Ruidosa–M. Méndez	72.0	12,937	25.3	7,080	22.3	21.7
Villanueva–Amatitlán	16.0	9,039	42.3	14,310	35.9	34.7
Junction RN7W–Nebaj	19.1	3,928	24.1	3,120	20.4	20.4
Nentón–Gracias a Dios	38.5	3,028	25.9	2,370	20.4	20.0

4.13 The sensitivity of the economic feasibility indicators to changes in key cost and benefit determinants was analyzed. According to the sensitivity simulations, even assuming only 80% of the traffic growth rates and investment costs 20% higher than those estimated, the four highway segments still yield rates of return around 20%.

C. Institutional and financial viability

4.14 The road sector modernization process and the government's rewriting of functions have strengthened institutions and left clearly defined sector policies in place, which make the proposed program viable on that front. The financing plan for the road sector investment program, outlined in section I.B.4 above, assures that the program will have the necessary funding. The kind of budget constraints that hampered the sector until 1995 are no longer an issue, and the new earmarked fund for road maintenance is expected to supply the resources needed for sustainable upkeep of the country's roads.

4.15 During the preparation of this operation, assessments were done of the DGC and COVIAL and actions have been proposed to continue to strengthen them and make them sustainable. These include plans to bring in project technical/financial project management systems in those two units, an assessment of COVIAL's financial, administrative, and accounting procedures, an equipment maintenance system for the Regional Maintenance Units, a new system for those units and COVIAL to manage unpaved roads, and further development of the technology transfer plan in training for highway engineering students. Work will continue to be done to institute the interagency coordination mechanism for roadwork and maintenance in rural areas.

D. Environmental and social viability

4.16 Because the proposed program will rehabilitate and improve existing roads in areas that have already been developed and worked on, it will have no significant adverse

environmental or social impacts. The environmental and social impact assessments conducted have identified possible adverse impacts, and recommend preventive and mitigation measures. These recommendations were taken into account in designs and technical specifications for the year 1 projects, and in eligibility criteria for projects that will comprise the investment programs in subsequent years. On the basis of evaluations done of phase I, actions are being proposed in this program to continue with institutional strengthening of the DGA.

E. Beneficiaries

4.17 The program described here qualifies as poverty targeted: it is estimated, according to the analyses done, that over 50% of the prospective beneficiaries have incomes below the poverty line. Most of the works projects selected for year 1 are located in areas that have thus far not shared in the country's economic and social development. Estimates for all the planned project areas put the share of the total population living below the poverty line at over 50%. According to the most recent available household survey (1989), the percentage of residents living below the poverty line in departments that stand to benefit from these projects is as follows: Quiché 95.7%; Huehuetenango 92.1%; Izabal 56.8%; AltaVerapaz 92.1%, and Guatemala 54.2%.

4.18 The selection of projects for year 1 and criteria for prioritizing projects included in the Road System Development Plan, including the economic mainstreaming of marginalized areas, bespeaks a commitment to continue supporting the move initiated with the program currently under way to invest in areas that suffered the most from the armed conflict of the 1980s, which are home to most of the repatriates and have the highest poverty levels in the country.

F. Risks

4.19 The proposed operation poses no substantive risks. The risks typical of this kind of program, having to do with continuity and standard of maintenance of the road system and weaknesses in structures in place to fund, plan, and manage road maintenance, have been mitigated thanks to the accomplishments of the first phase of the program, currently under way. By helping to consolidate road sector reforms, the institution-strengthening component of the proposed program will further mitigate the aforementioned risks.

GUATEMALA

Road Rehabilitation and Modernization Program, Phase II (GU-0130)
Logical framework

Objectives	Verifiable indicators	Means of verification	Assumptions
Goal			
Promote socioeconomic advancement of Guatemala by improving road transport.	◆ Farmers have better access to markets and vehicle operating costs are lower because rehabilitated roads are more serviceable.	◆ National transportation statistics. ◆ Annual maintenance reports. ◆ Semiannual progress reports.	◆ Overall political and economic stability in the country.
Purpose			
1. Rehabilitation and maintenance of the highway system and rural roads.	◆ At the end of the program 90% of paved roads (relative to total length of road system) are in good condition. ◆ Percentage of paved roads being maintained to acceptable standard is 95% at program midpoint and 100% at program end. ◆ Percentage of unpaved roads being maintained to acceptable standard is 40% at program midpoint and 60% at program end.	◆ Periodic assessments of road conditions. ◆ Annual maintenance reports.	◆ COVIAL takes over maintenance of rehabilitated and improved roads. ◆ COVIAL is completely consolidated. ◆ Road Maintenance Units are modernized.
2. Consolidation of road-subsector reform and modernization.	◆ DGC consolidates its capacity as road-sector policy-setter and oversight agency. ◆ Road maintenance funding and execution mechanism is consolidated, with autonomy, a clear mandate, and adequate funding.	◆ Semiannual progress reports. ◆ Annual program monitoring meetings.	◆ Institutions and financing organizations involved are committed.
Components			
1.1 Rehabilitation of 450 km of paved roads and highway corridors.	◆ Rehabilitation work is completed in accordance with targets in each annual plan.	◆ Semiannual progress reports on the program. ◆ Project monitoring.	◆ Road System Development Plan (PDV) priorities are adhered to.
1.2 Rehabilitation of 350 km of rural roads.	◆ Rehabilitation work is completed in accordance with targets in each annual plan.	◆ Semiannual progress reports on the program. ◆ Project monitoring.	◆ PDV priorities are adhered to.

Objectives	Verifiable indicators	Means of verification	Assumptions
2.1 Consolidation of financing for road maintenance/upkeep.	♦ At least US$78 million is expended annually on road maintenance. ♦ At least 85% of maintenance outlays are for contract maintenance of road system; balance covers force-account maintenance by Reg. Maintenance Units.	♦ Annual maintenance reports prepared by COVIAL and DGC.	♦ Government shows political will to assure that Road Maintenance Fund keeps operating with sufficient autonomy and funding and a clear mandate.
2.2 Institutional strengthening of DGC and COVIAL.	♦ Agreed action plan for DGC and COVIAL institutional strengthening is implemented. ♦ Mechanism for interagency coordination of rural roadwork and maintenance is in place.	♦ Semiannual progress reports on the program.	♦ Government continues to pursue its road sector investment policy.
Activities			
Tendering, contracting, execution of works and consulting services for all program components.	♦ Targets in procurement and tendering plan (Annex III-1) and tendering and execution timetable (program technical files).	♦ Progress reports on the program. Audit report. Supervision reports.	

GUATEMALA
ROAD REHABILITATION AND MODERNIZATION PROGRAM, PHASE II (GU-0130)
TENDERING AND PROCUREMENT PLAN

	Amount (US$000)	IDB %	Local %	Method	Prequali-fication	SPN publication date
Procurement of goods:						
Environmental measuring equipment	10	90	10	2/	NA	NA
Reproduction equipment	100	90	10	2/	NA	NA
Computers and printers	450	90	10	2/	NA	NA
Transportation equipment	50	90	10	2/	NA	NA
Communications equipment	200	90	10	2/	NA	NA
Spares, road maint. equipment repair	1,100	90	10	2/	NA	NA
Civil works:						
CA-13: La Ruidosa-Modesto Méndez	12,937	90	10	ICB	Yes	2000
CA-09 S: Villanueva-Amatitlán	9,039	90	10	ICB	Yes	2000
RD Quiché 3: junction RN-7W-Nebaj	3,928	90	10	ICB	Yes	2000
RD HUE 12:Nentón-Gracias a Dios	3,028	90	10	ICB	Yes	2000
Rehabilitation works, years 2 and 3	1/	90	10	ICB	Yes	2001-2002
Consulting services:						
Works supervision, year 1		90	10	ICB	Yes	2000
Works supervision, years 2 and 3	1/	90	10	ICB	Yes	2001-2002
Technical assistance, DGC strengthening	1,800	90	10	3/	NA	NA
Technical assistance, COVIAL strengthening	400	90	10	3/	NA	NA

SPN Special Procurement Notice
ICB international competitive bidding
LCB local competitive bidding

1/ Since this is a time-slice program, specific amounts for rehabilitation works and supervision contracts to be tendered out in years 2 and 3 will be determined later, based on criteria agreed on for the program; Bank procurement rules will be followed.

2/ ICB, LCB, or shopping will be used, depending on individual contract amounts.

3/ The Bank's procedures will be followed depending on individual contract amounts.

RGII-GU183P
GU-0130
Original: Spanish
Appendix I

PROPOSED RESOLUTION

GUATEMALA. LOAN ___/OC-GU TO THE REPUBLICA DE GUATEMALA
(Road Rehabilitation and Modernization Program-Phase II)

The Board of Executive Directors

RESOLVES:

That the President of the Bank, or such representative as he shall designate, is authorized, in the name and on behalf of the Bank, to enter into such contract or contracts as may be necessary with the República de Guatemala, as Borrower, for the purpose of granting it a financing to cooperate in the execution of a Road Rehabilitation and Modernization Program-Phase II. Such financing will be for the amount of up to US$150,000,000, from the resources of the Single Currency Facility of the Bank's Ordinary Capital, and will be subject to the "Financial Terms and Conditions" and the "Special Contractual Conditions" of the Executive Summary of the Loan Proposal.

PROPOSED RESOLUTION

GUATEMALA. PARTIAL PAYMENT OF INTEREST ON LOAN No. ___/OC-GU TO THE REPUBLICA DE GUATEMALA

(Road Rehabilitation and Modernization Program-Phase II)

The Board of Executive Directors

RESOLVES:

That the President of the Bank, or such representative as he shall designate, is authorized, in the name and on behalf of the Bank, as administrator of the Intermediate Financing Facility Account, hereinafter referred to as the "account", to enter into such contract or contracts as may be necessary with the República de Guatemala, as Borrower, and to adopt such other measures as may be necessary to utilize the resources of the account to pay a part of the interest due by the Borrower on outstanding balances of up to US$25,000,000 of the loan authorized by Resolution DE-___/__, in accordance with applicable Bank policy.