

RIO GRANDE DO SUL STATE ROADS PROGRAM

(BR-0251)

EXECUTIVE SUMMARY

BORROWER: State of Rio Grande do Sul

GUARANTOR: Federative Republic of Brazil

EXECUTING AGENCY: State Highway Department

AMOUNT AND SOURCE: IDB: US\$150 million (OC)
Cofinancing: US\$ 75 million
Gov't. of Rio Grande do Sul: US\$ 75 million
Total: US\$300 million

FINANCIAL TERMS AND CONDITIONS: Amortization period: 20 years
Disbursement period: 5 years
Interest rate: Variable
Inspection and supervision: 1%
Credit fee: 0.75%
Currency: U.S. dollars

OBJECTIVES: The general objective is to reduce transportation costs in the state of Rio Grande do Sul and enhance conditions for highway integration within MERCOSUR.

Specifically, the program aims to improve all-weather driving conditions on state roads, especially those used for hauling the state's agricultural output, with an eye to linking producer regions to the corridors of the national intermodal transportation system for the domestic and international markets.

DESCRIPTION: This five-year program will pave approximately 800 kilometers of state roadways that are connected to paved sections of federal or state highways and are included in the government's action plan.

The program also includes specific activities to strengthen the executing agency institutionally and technically with a view to ensuring that the program's objectives are met.

ENVIRONMENTAL CLASSIFICATION: The Environment Committee, at its meeting of April 30, 1996, classified this as a Category III operation.

The environmental report was approved by the Committee on October 15, 1996, and forwarded to the PIC on November 18, 1996.

BENEFITS:

The program will contribute generally to the development of economic activity in the targeted roads' service areas and will result in lower vehicle operating costs across the state. It will also help to foster trade with neighboring MERCOSUR countries by upgrading hauling conditions for agricultural and industrial output.

RISKS:

The possibility that the State might not have all the counterpart funds available when they are needed prompted the recommendation that it seek other sources of cofinancing to make sure funds would be available to meet the program's investment needs on a timely basis.

At this writing, the state government is negotiating with the Export-Import Bank of Japan for program cofinancing. The IDB is lending the necessary support to facilitate these negotiations.

If the above-mentioned cofinancing does not materialize, the State will need to locate other financing alternatives.

**EXCEPTIONS TO
BANK POLICY:**

As requested by the Government of Brazil, the guarantee contract for this operation will not include a federal-government guarantee to provide the local counterpart funds required for the program or a guarantee to honor any of the borrower's obligations to perform that are not the legal responsibility of the federal government.

**THE BANK'S
COUNTRY AND
SECTOR STRATEGY:**

The Bank's strategy and pipeline of operations for Brazil for the 1995-1997 period, as described in the February 1996 country paper, reflect the government's focus on systematically eliminating poverty at its roots (alleviating also some of its social consequences), and the need to build a modern economy. The core elements of the Bank's lending strategy seek to support the following areas both directly and by way of joint initiatives: (i) modernization of the State, by assigning priority to the goals of expanded planning and management capacity, public-sector reform, and fiscal reform; (ii) productive infrastructure, through support for an open economy, regional integration, and the government's cost-reduction initiative, with priority investments in the transportation and energy sectors; and

(iii) social sectors, basic sanitation, and the environment. The proposed program pursues the objectives stated under points (i) and (ii), above, by paving new roads which will help to reduce transportation costs in the region, boost productive capacity, bring down production and distribution costs in Brazil, and open the way for fuller integration with the other MERCOSUR countries. The program also includes a series of components aimed at boosting the sector's planning and management capacity in line with the process of modernization of the State for which it is receiving support from the federal government, the IDB, and other multilateral agencies.

The Bank's strategy is in line with the government's program in that it supports the opening up of the Brazilian economy, regional integration, and the national cost-reduction initiative by revamping and upgrading productive infrastructure and by modernizing productive sectors.

**POVERTY-TARGETING
AND SOCIAL
ASPECTS:**

For purposes of the Eighth Replenishment document (AB-1704), the proposed program cannot be classed as a poverty-targeted operation either geographically or in terms of its beneficiaries, nor does it contain activities that specifically target women.

**PROCUREMENT OF
WORKS, GOODS, AND
CONSULTING
SERVICES:**

Applicable Bank policy will be followed for procuring works, goods, and consulting services to be financed under the program. When Bank funds are involved, international competitive bidding will be required above the following thresholds: US\$350,000 for goods, US\$5 million for construction work, and US\$200,000 for consulting services.

**SPECIAL
CONTRACTUAL
CONDITIONS:**

The following conditions must be met to the Bank's satisfaction prior to the first disbursement: the program coordinating unit is to have been set up and be operational (paragraph 3.6); funding is to have been secured for the rehabilitation and maintenance program (paragraph 3.37); terms of reference are to have been presented for environmental monitoring (paragraph 3.18); satisfactory evidence is to have been provided that cofinancing or some other acceptable source has been secured (paragraph 5.12).

The contract will also contain adequate provisions as to ex post evaluation of the program (paragraphs 3.40 and 3.41), presentation of audited financial statements (paragraph 4.20), adherence to Bank procedures

for procuring goods and consulting services (paragraph 3.22), hiring of a consulting firm to work with the program coordinating unit (paragraph 3.6), presentation of environmental permits (paragraph 3.13), compensatory measures (paragraph 3.16), strengthening of environmental management (paragraph 3.18), road safety (paragraph 3.21), rights of way (paragraph 3.10), maintenance of program works and presentation of annual maintenance plans (paragraph 3.38), presentation of yearly reports on vehicle weight limit enforcement (paragraph 3.39), and financial management by the State (paragraph 5.13).

I. FRAME OF REFERENCE

A. Introduction

- 1.1 Rio Grande do Sul is Brazil's southernmost state and covers an area of 282,200 square kilometers. Bordering on the Brazilian state of Santa Catarina to the north, Argentina to the northwest, and Uruguay to the south, Rio Grande do Sul is prominently situated for playing a role in integration within the Southern Common Market (MERCOSUR).
- 1.2 The state's sizable economy is based mainly on farm products and their industrial processing, namely, soybeans, tobacco, leather (footwear), meat, and chemicals. The government is currently looking into intermodal and multimodal transport options that would optimize the transportation costs for these products on the home market and enhance their competitiveness as an export sector.
- 1.3 The state's finances have displayed less than satisfactory performance over the last few years, as witnessed by the fast pace of growth in borrowings to cover yearly budget deficits. Such high indebtedness has undermined attempts to achieve financial equilibrium in the public sector, and has had a severe impact on the flow of funds available for capital investments and maintenance.
- 1.4 To remedy this situation, the state government has embarked upon an ambitious program to balance its fiscal and financial accounts, modernize the State apparatus, and decentralize and privatize many basic public utilities, with an eye to jump-starting investment flows that will help to grow Rio Grande do Sul's economy. The reform program, which is discussed in detail in chapter IV, is built around three pillars: (i) fiscal adjustment, (ii) infrastructure reform, (iii) and civil service reform.
- 1.5 The state faces a series of clearly identified hurdles standing in the way of development: proper infrastructure is lacking, the road and port systems are in a poor state of repair, the telecommunications system does not work well, and electricity supply is limited.
- 1.6 With financial assistance obtained or awaiting approval from multilateral lending organizations, the federal and state governments are engaged in a program to rehabilitate federal highways and transfer them to state jurisdiction. The national highway system program is part of the federal government's multiyear development plan and will be supported by the IDB and the World Bank. This program calls for investments in transportation infrastructure to rehabilitate the federal highway system prior to the transfer of any part of it to the states. At that time, the IDB would also support the Ministry of Justice's efforts to launch a nationwide highway safety program.

- 1.7 The states have signed a protocol indicating their intention to take over administration and maintenance of 13,000 kilometers of roads, on the condition that the federal government fund the rehabilitation of sections slated for transfer that are presently in poor condition.

B. The transportation sector

- 1.8 In the past, cargo in Brazil was transported chiefly over the country's rail- and waterways, to the virtual exclusion of all other modes. Today, road transportation accounts for over one half of total haulage and is expected to increase even more in the future.
- 1.9 Most cargo these days is hauled over federal highways, with state roads following in second place. The state's roadways enjoyed a spurt in use until 1980, when investments in the sector began to drop off. This notwithstanding, road haulage continues to be the main mode of cargo transfer in Rio Grande do Sul and in Brazil, as in most of the world.
- 1.10 The internal constraints posed by other modes of transport normally mean higher costs, since cargo volumes are not large enough to warrant the necessary investments. This is the case of the state's waterways, which have been used only for door-to-door movement of cargo between producers and consumers who are located on the banks of rivers that flow into the port at Porto Alegre. The other modes - rail, air, and pipelines - together account for only a very small share of the total.

C. Status of state highways

- 1.11 Considering its contribution to GNP, its population, and its total area, Rio Grande do Sul has less paved roadway than its neighboring states of Santa Catarina and Paraná. Moreover, recent years have seen a gradual increase in traffic flows, a trend that is expected to continue into the foreseeable future. The state's network of paved roads is comparatively modest, with only 35.4 km of paved roads for each 1,000 square kilometers of land surface. Santa Catarina and Paraná both have significantly higher paved-road ratios: 53.1 km and 63.3 km per 1,000 square kilometers, respectively. The following table gives some specifics on the road network in Rio Grande do Sul.

<p align="center">Table I-1 Paved and unpaved roads in Rio Grande do Sul (in thousands of kilometers)</p>			
Jurisdiction	Paved	Unpaved	Total
Federal	5.9	1.3	7.2
State	3.8	2.8	6.6
Municipal	0.3	123.4	123.7
TOTAL	10.0	127.5	137.5

1.12 As the table shows, approximately one third of the roads in the federal and state network are unpaved. Worth noting, too, is the fact that maintenance of these roads has been less than adequate: in 1995, only 32% of the network was in good condition, nearly 20% was in poor condition, and the rest was considered to be in fair condition.

1.13 The following problems have been identified in this subsector and require immediate attention: (i) paved federal and state roads are in poor condition; (ii) there is no proper maintenance system; and (iii) substantial portions of the main network (which are under the state's jurisdiction) need to be paved.

1.14 What is lacking, then, is a sector strategy at the state level, aimed at providing a lasting solution for the problem and consistent with the financial constraints imposed by the state's fiscal adjustment and administrative reform process.

D. Sector reform, the state's strategy, and the role of multilateral banks

1.15 The state government's strategy is built around the following set of actions, which are intended to provide a comprehensive response to the situation in the transportation sector: (a) implement the national highway system, (b) revamp the transportation sector; (c) bring in private enterprise; (d) rehabilitate the road network; and (e) carry out a road paving program. The following paragraphs give details on each of these actions.

1. The national highway system

1.16 The National Highway Department [Departamento Nacional de Estradas de Rodagem] (DNER) is considering an initial transfer of approximately 13,000 km of paved roadways to the states, of which roughly 2,500 km are located in Rio Grande do Sul. The state wishes to upgrade the roads currently under its jurisdiction so they will be in the same good condition as the federal ones that are to be

transferred to it. This will enable the state to assume greater responsibility for the road system, since it will be in good technical condition to start with.

2. Sector reform

- 1.17 As the state's financial difficulties have mounted, the situation in the transportation sector has gotten progressively worse, to the point that sector agencies now lack the financial and technical resources to efficiently administer the state's highway maintenance and expansion requirements. To address this situation, a proposal has been made to entirely revamp the way in which the road sector operates.
- 1.18 As part of the State reform program that it is carrying out with financial support from the World Bank, the Government of the State of Rio Grande do Sul plans to reform the transportation sector by modernizing its State Highway Department [Departamento Autônomo de Estradas de Rodagem do Rio Grande do Sul] (DAER/RS) and gradually bringing private enterprise into road operations management and maintenance. Once the reform process is completed, DAER/RS's role would be limited to managing, planning, and inspecting of road works and services, with a massive but progressive reduction in work done on force account.
- 1.19 This new model requires restructuring DAER/RS's administrative apparatus, revamping its organization, and modernizing its services. The basic principles underlying the institutional and structural reform of DAER/RS are reflected in the draft legislation that the Transportation Secretariat, after clearance by the State Road Council, has submitted to the state governor for consideration and subsequent presentation to the state legislature.

3. A role for private enterprise

- 1.20 The private sector would be brought into road operation and maintenance activities under two different arrangements. One would involve concessions that would be granted at nine development hubs across the state. These hubs are served by 811 km of national roads, 562 km of national roads that are slated for transfer to the state, and 761 km of state roads. The other arrangement would be used for roads whose traffic volumes do not justify operating them as toll-based concessions. In these cases, DAER/RS would hire private companies to provide maintenance services under a management contract arrangement.
- 1.21 The management-contract option would have the following features:
(i) The concession-holder would be responsible for keeping roads in good condition. (ii) DAER/RS would monitor road conditions by means of representative indicators and specific quality standards. Monitoring would focus not on the services performed by contractors but rather on the condition of the roads. (iii) The contractor

would retain responsibility and would have to cover all maintenance costs throughout the life of the contract. This will prompt the contractor to take a greater interest in quality, thus promoting technological advancement at the business level. (iv) Payments will be staggered according to a timetable stipulated in the contract and guaranteed by the state government.

- 1.22 To ensure that the program will be successfully received by the private sector, DAER/RS is carrying out a pilot program over a network totaling some 300 kilometers, with technical cooperation from the International Road Federation, the German technical-cooperation agency GTZ, and the U.N. Economic Commission for Latin America and the Caribbean. This program is being studied by other Brazilian states and by the DNER.

4. State roads rehabilitation program

- 1.23 Lack of systematic maintenance has left 2,700 kilometers of state roads in need of rehabilitation, further underscoring the need for work on an institutional level to strengthen the workings of the sector. The Bank's operating policies for the transportation sector assign priority to specific transportation-system maintenance and rehabilitation projects aimed at extending the service life and efficiency of infrastructure and associated machinery and equipment. In this regard, government action in the institutional and road rehabilitation spheres will serve to guarantee that the state network will receive systematic maintenance.
- 1.24 The state's strategy for this sector calls for action in both these spheres as well, such that its efforts to rehabilitate the existing network will be accompanied by reform of road maintenance management and bolstered by firm action to strengthen DAER/RS institutionally and bring in private-sector participation.
- 1.25 To this end, a loan in the amount of US\$80 million has been requested of the World Bank in parallel with the program proposed herein, and is currently being processed. This assistance will go toward rehabilitating state roads and to three specific areas of institutional action: (i) coordination and administration of the program, (ii) private-sector contracting arrangements for maintenance activities, and (iii) rightsizing of DAER/RS and training for its staff. The project for which World Bank funding is being sought is at a very advanced stage of preparation, with technical appraisal already completed. The only steps remaining are negotiation of the operation and its subsequent presentation to the Executive Board for consideration.
- 1.26 In view of the foregoing, the IDB-funded program proposed here has no road rehabilitation component. Rather, it is limited to expanding the paved network and meeting the routine road maintenance requirements that are called for under the operating policies.

5. Road paving program

- 1.27 The state government has assigned priority to the state road network expansion plan as a means of providing an enabling environment for economic growth in Rio Grande do Sul, with an eye to reducing road transportation costs, facilitating regional integration with neighboring countries, and helping to bring isolated areas of the state into the economic mainstream. The state has requested financial assistance from the IDB and from the Export-Import Bank of Japan to pursue this part of its strategy.
- 1.28 The financial difficulties referred to earlier have seriously limited the possibilities for performing the road work that is needed in order to keep pace with economic growth in the state. As a result, the current administration decided to embark on a program to revamp and expand the state's road infrastructure. This program's priority is reflected in the financial plans contained in agreements with the federal government and the World Bank to move forward with the State reform plan.
- 1.29 The roads selected for this program are sections that, once paved, will cut substantially the distances that vehicles currently have to travel, ultimately helping to cut transportation costs as well. Also, since these roads connect up with state and federal corridors, they will provide more economical and expeditious outlets in specific regions of the state and thus satisfy a real demand that is currently unmet.
- 1.30 Furthermore, the roads identified for inclusion in this program will help to foster trade with neighboring MERCOSUR countries by enhancing conditions for the transportation of agricultural and industrial output. The program will also provide better access to the state's main port, which occupies an ideal position within the MERCOSUR area; the state government is currently in the process of privatizing terminal operations with an eye to modernizing the port overall. Worthy of special mention is the fact that these roads will help to link virtually isolated regions, veritable pockets with no paved roads, with the rest of the state.
- 1.31 The Government of Brazil has expressed its interest in this program to the Bank in a letter dated January 19, 1996, underscoring the program's priority as well as the authorization given to the State of Rio Grande do Sul to arrange for the necessary loans from the IDB and the Export-Import Bank of Japan.

E. Experience of the IDB and other agencies

- 1.32 This would be the Bank's first direct loan to the State of Rio Grande do Sul for a transportation-sector project, although it has extensive and successful experience working with the Brazilian transportation sector overall: 21 state-level operations for a total of US\$1,219.3 million and 16 operations with the DNER for a

total of US\$1,138.5 million. While the first state-level projects focused on feeder roads and involved paving dirt or gravel-surfaced roadways, recent projects have seen a shift toward road restoration and maintenance and work to create structural transportation networks.

- 1.33 IDB-funded road projects in Brazil have been carried out successfully. Despite sporadic construction delays triggered by counterpart funds not being available when they were needed, virtually all the projects fulfilled their objectives and, in some cases, exceeded physical targets and even yielded benefits greater than those forecast by the ex ante economic analysis (e.g., the road programs in Ceará and Paraná).
- 1.34 The World Bank, too, has supported Brazil's transportation sector through a series of lending operations, including seven for developing the road system in Rio Grande do Sul. Recent operations have been aimed, fully or partly, at rehabilitating the most deteriorated sections of the federal network. Evaluations of these operations have indicated that the net benefits were greater than those predicted in the ex ante economic analysis.

F. Strategy and rationale for Bank participation

- 1.35 Brazil's federal government has set the following main objectives for its macroeconomic policy: institute a market economy in the country, redefine the role of the State, reform the civil service, bring down inflation, and rekindle social and economic development. In pursuit of these aims, a new approach was adopted for the transportation sector, spelling out the spheres of action and responsibilities of the federal, state, and municipal government. At the same time, private enterprise will be encouraged to take a more active part in service delivery and in the expansion, administration, and maintenance of transportation infrastructure.
- 1.36 The government intends to upgrade the safety and quality of road transportation facilities and lower the so-called "Brazil cost", through sustained reductions in vehicle operating costs, with measures to protect the environment. To that end, the government is expanding and improving the road network and is concessioning out to the private sector roads and bridges with vehicle flows that are high enough as to make them financially viable. The government is also looking to set up ongoing cost-recovery mechanisms (e.g., tolls or specific levies) to upgrade and conserve the entire national highway network.
- 1.37 The Bank's strategy and pipeline of operations for Brazil for the 1995-1997 period, as described in the February 1996 country paper, are fully in line with the government's focus on systematically eliminating poverty at its roots (alleviating also some of its social consequences) and the need to build a modern economy. The

core elements of the Bank's lending strategy seek to support the following areas both directly and by way of joint initiatives:

- a. **Modernization of the State.** Priority has been assigned to the goals of strengthening planning and management capacity, revamping public-sector operations, and implementing fiscal reform. The program proposed here includes several components to boost the sector's planning and management capacity as part of the process of modernization of the State, which is receiving assistance from the federal government, the Bank, and other multilateral agencies.
- b. **Productive infrastructure.** The Bank's strategy supports actions to open up the economy, advance regional integration, and promote the government's cost-reduction initiative (*Redução do Custo Brasil*) through priority investments in the transportation and energy sectors. The proposed program falls within this strategy since it calls for the paving of new roads, which will help to reduce transportation costs in the region, boost productive capacity, bring down production and distribution costs in Brazil, and open the way for fuller integration with other MERCOSUR countries.
- c. **Social sectors, basic sanitation, and the environment.** Program activity in these areas will focus on road safety and environmental protection measures that will be part of the individual project designs.

G. Road safety

- 1.38 Brazil has a National Highway Code that delegates specific responsibilities to state and municipal authorities; the code applies nationwide for all matters pertaining to traffic administration. The code, however, has several gaps and other shortcomings in its coverage of specific details, giving rise to institutional problems and a lack of standardization in traffic engineering projects. A new highway code is nearing completion and should solve some of these problems. One of the strong points of the new code is that it charges traffic authorities with setting up accident reduction and prevention programs, a feature that is only scantily addressed in the present code. In addition, the areas of responsibility of DAER/RS, the Federal Highway Police, and the municipalities around Porto Alegre are poorly demarcated with regard to signs, operation, and monitoring of urban sections, which complicates the task of guaranteeing safe road conditions.
- 1.39 Under legislation introduced recently, all revenue from fines is to be plowed back into road safety, for upkeep, maintenance, and signage, focusing on critical areas, as follows: 30% of fine revenue goes for equipment and 70% for signage and related activities. Once the legislation is fully implemented, the annual pool

of funds for this purpose is expected to be between US\$15 million and US\$30 million.

- 1.40 The first requirement for an effective and efficient accident reduction and prevention program is to have a full knowledge of the causes of accidents. The second requirement is to have a ranking of accidents by order of their seriousness: accidents involving fatalities are the most serious, followed by those that cause injuries. Neither of these requirements has received due attention by DAER/RS. Given the frequency of highway fatalities (one per day, on average), trained staff need to continue with in-depth research initiatives in order to identify clearly the contributing factors that affect drivers, vehicles, roads, and the temporal and geographical distribution of these factors. Work must be focused on this area if resources are to be assigned efficiently in the effort to reduce the frequency and seriousness of road accidents.

II. THE PROGRAM

A. Objectives

- 2.1 The program's general objective is to bring about a reduction in transportation costs in Rio Grande do Sul by upgrading road infrastructure, a measure that will also foster road network integration within MERCOSUR. In so doing, the program will help to make Brazilian products more competitive and boost economic productivity, in a setting of higher international trade flows. Specifically, the operation aims to improve all-weather driving conditions on roads falling under state jurisdiction, especially those used for hauling the state's agricultural output, with an eye to linking producing areas to the corridors of the national intermodal transportation system for the domestic and international markets.
- 2.2 The program will also promote economic activity in the targeted roads' service area, resulting in lower vehicle operating costs for the state as a whole.

B. Targets

- 2.3 The following targets will be achieved in stages, as the various program components become operational (see the logical framework in Annex II-1):

- a. By December 31, 2001, transportation costs over program roads will be below December 31, 1996, levels, as follows (figures are expressed in U.S. dollars per vehicle-kilometer):

	<u>1996</u>	<u>2001</u>
Automobiles	0.19	0.15
Buses	0.76	0.58
Trucks	0.81	0.58

- b. Roughness of program roads will drop from levels between 10 and 12, as measured on the International Roughness Index on December 31, 1996, to levels between 2.5 and 3, by December 31, 2001.

C. Program description

1. Components

- 2.4 This five-year program consists of upgrading and paving approximately 800 kilometers of state roadways that feed into paved

sections of federal or state roads and that are part of the government's action plan.

- 2.5 While the operation was being evaluated, it became clear that institutional and technical strengthening should be included for the executing agency, to help make sure that program objectives would be attained. Accordingly, the program contains a component that provides for strengthening of DAER/RS's Environment Unit, establishment of a highway research center, improvement of road safety, and implementation of a road planning system. Specialized consulting services will be hired for these activities, training programs will be conducted, new buildings will be constructed, and research equipment will be purchased.

2. Works projects

- 2.6 The work will consist basically of paving selected sections of roadway and will entail some earth-moving to raise or widen existing roadbeds; laying of subbase and base courses for the pavement, and paving the roads with double surface treatment or asphalt concrete to a thickness of at least five centimeters; installation of additional drainage structures, as necessary; related signage and safety devices; and measures to remedy environmental problems. Most of the work will follow existing road alignments, making minor adjustments as necessary to comply with the technical design standards for each section's specific features. Thirty-two sections of road, measuring roughly 25 kilometers each, are to be paved, for a total of approximately 800 kilometers of roadway.
- 2.7 The planned paving work will give the road sections a cross-section composed of a wearing course, made up of two 3.5-meter traveling lanes, with one-meter shoulders on either side. The sections comprising the program sample are indicated on the attached map.

D. Representative sample and selection criteria

- 2.8 Given the similarity of the various work projects to be carried out, the proposed program has been designed as a global multiple works program. During the analysis stage, a representative sample of projects that would be included in the program was examined, representing approximately 42% of the total road length and direct total cost of the program.
- 2.9 The following criteria were used to select the road sections that would be included in the program: (i) they had to be in the state road network inventory; (ii) they had to contribute to improving general traffic conditions in the region; (iii) they had to connect up with the existing paved network at some point; (iv) engineering designs and environmental and socioeconomic feasibility studies had to have been ready, including full plans for mitigating environmental impact and for environmental management, and compliance with

all public information requirements; and (v) they had to have an internal economic rate of return of over 12%.

- 2.10 The roads ultimately selected for the program included a number of sections for which work had already been contracted, since these sections were considered to be essential to the viability of other sections included in the sample. Analysis showed these sections to be viable with the costs as contracted, and it was felt they should be included in the program to ensure their completion within the timetable set for the other works projects. The work had been put out for tender according to Brazilian legislation, following procedures similar to those contained in the Bank's policy on local bidding processes, and will be paid for entirely out of the local counterpart.

E. Cost

1. Total cost

- 2.11 The program has a total estimated cost of US\$300 million equivalent, broken down by cost item and source of financing as follows:

Table II-1 Program costs (in thousands of U.S. dollars)						
	Bank	Counterpart			TOTAL	% OF TOTAL
		State	Cofinancing	Total		
1. Engineering and administration	14,580	2,220	0	2,220	16,800	5.6
2. Direct costs	132,057	33,540	75,000	108,540	240,597	80.2
3. Environmental mitigation	0	3,240	0	3,240	3,240	1.1
4. Institutional strengthening	1,863	639	0	639	2,502	0.8
5. Financial costs	1,500	35,361	0	35,361	36,861	12.3
GRAND TOTAL	150,000	75,000	75,000	150,000	300,000	100.0
Percentage of total financing	50	25	25	50	100	

2. Cost components

a. Engineering and administration (US\$16.8 million)

(i) Engineering studies (US\$4.6 million)

- 2.12 This heading includes costs necessary for preparing road designs, conducting environmental studies, and drafting the respective contract documents to the degree necessary in order to call for

bids. This amount was based on figures supplied by DAER/RS and is felt to be reasonable.

(ii) Supervision (US\$8.6 million)

- 2.13 This heading includes all costs for the supervision and technical oversight of program works, which will be performed by one or more consulting firms specializing in highway engineering. The total cost for supervision and technical oversight was based on data supplied by DAER/RS; at 4% of the estimated direct cost for construction, it is felt to be reasonable.

(iii) Administration (US\$3.6 million)

- 2.14 This heading includes: (i) US\$600,000 equivalent to defray the costs of DAER/RS staff that will be seconded on a full-time basis to the program coordinating unit, and (ii) US\$3 million equivalent for the consulting firm that will advise DAER/RS on program administration.

b. Direct costs (US\$240,597,000)

- 2.15 This category covers the direct costs of the planned paving work. For the representative sample, the costs were calculated from work quantities derived from the final engineering designs and unit prices from DAER/RS's August 1996 construction cost tables. All costs for environmental impact mitigation in the direct service area of each road were included as an integral part of the construction work. The cost for the 340-kilometer sample worked out to US\$88,838,000.

- 2.16 For the remaining sections (i.e., those not included in the sample), the initial cost estimate was based on the unit cost per kilometer of paved surface from the sample, adjusted to reflect variations and then multiplied by the total length of the non-sample roads (460 km).

c. Environmental impact mitigation (US\$3,240,000)

- 2.17 Funds under this heading will be used to defray the cost of implementing compensatory measures to mitigate the program's environmental impact, as agreed upon with environmental agencies, in the following areas: support for protected areas located in the direct service area of program roads, reclamation of degraded areas, erosion control, monitoring, and preservation of archaeological sites.

d. Institutional strengthening (US\$2,502,000)

(i) Environment Unit (US\$367,000)

- 2.18 This component, which will provide institutional and technical strengthening for DAER/RS's Environment Unit, will cover the following costs: (i) US\$75,000 equivalent for technical assistance; (ii) US\$72,000 for training; and (iii) approximately US\$60,000 for the purchase of environmental monitoring equipment. A further US\$160,000 will go toward supporting the state environmental authority's tasks of environmental review, and monitoring of road construction work under the program.

(ii) Highway Research Center (US\$1,280,000)

- 2.19 This component will strengthen DAER/RS's technical capacity to produce and monitor final engineering designs, mainly as regards paving activities. The following costs would be funded: (i) US\$70,000 for specialized consultants to provide technical assistance and training; (ii) US\$350,000 for civil engineering works (buildings and research laboratories); and (iii) US\$860,000 for the purchase of laboratory equipment.

(iii) Road planning system (US\$800,000)

- 2.20 Under this component, DAER/RS's Planning Office will receive institutional and technical strengthening by means of a new road management facility that will make it possible for action to be taken on the basis of constantly updated information and simulation models.

(iv) Road safety (US\$55,000)

- 2.21 Bearing in mind that some of the program road sections run between urban areas, motor and nonmotor vehicle traffic is expected to increase, as will pedestrian traffic and average driving speed, as a result of population growth and the paving of these sections. Accordingly, measures will need to be adopted to minimize traffic accidents.
- 2.22 The operation includes a component to strengthen DAER/RS's capacity to formulate and design road safety features for the various projects. For this, services will be hired to audit the road safety aspects of engineering designs.

e. Financial costs (US\$36,861,000)

- 2.23 This category includes: (i) interest accruing on the Bank loan during the program execution period (US\$20,129,000); (ii) credit fee (US\$3,888,000); and (iii) inspection and supervision fees (US\$1,500,000). It also includes the financial costs associated

with the cofinancing: interest (US\$9,964,000), credit fee (US\$1,305,000), and inspection and supervision (US\$75,000).

F. Financing

1. IDB funds

- 2.24 The Bank will contribute to the program by funding one half of the total program cost, in the form of a 20-year loan for US\$150 million equivalent, to be disbursed over five years in foreign exchange from the ordinary capital.
- 2.25 The proceeds of the Bank loan may be used to fund up to: (i) 90% of the costs for engineering studies; (ii) 90% of the costs for supervising construction work; (iii) 75% of program administration costs; (iv) 55% of direct construction costs; (v) 74% of institutional strengthening costs; and (vi) 100% of the Bank's inspection and supervision fee.

2. Local counterpart

- 2.26 The local counterpart funding of US\$150 million equivalent will be provided by the State of Rio Grande do Sul, with US\$75 million coming from the state's own coffers and US\$75 million from a loan that is currently being negotiated with the Export-Import Bank of Japan. The cofinancing would be used to fund 31% of the direct construction costs.
- 2.27 The State share of the local counterpart will go towards funding: (i) 10% of the costs for engineering studies; (ii) 10% of the costs for supervising construction work; (iii) 25% of program administration costs; (iv) 14% of direct construction costs; (v) 100% of the costs for compensatory measures to mitigate environmental impact; (vi) 26% of the institutional strengthening costs; and (vii) 100% of the interest and credit fee on the loans from the IDB and from the Export-Import Bank of Japan. The local counterpart would cover, in other words, 96% of the program's financial costs.

III. PROGRAM EXECUTION

A. Executing agency

- 3.1 The executing agency for this program will be the Rio Grande do Sul State Highway Department [Departamento Autônomo de Estradas de Rodagem do Rio Grande do Sul] (DAER/RS), an agency of the state's Transportation Secretariat.
- 3.2 DAER/RS will hire construction firms to carry out the program works. All such work will be supervised by DAER/RS and by specialized engineering firms hired specifically for this purpose, as explained below.
- 3.3 Program administration will follow the system used in several other Bank-financed state road programs in Brazil, which has proved to be satisfactory. The system is based on a program coordinating unit that receives advice from a consulting firm. For the program at hand, the unit will be called the IDB Program Coordinating Unit (CPBID) and it will be headed up by a DAER/RS engineer. The CPBID will fall under the Office for Special Program Supervision and Monitoring (SMPE), which reports directly to the executive office. Both the CPBID and the SMPE will have offices at DAER/RS's headquarters in Porto Alegre. The Bank has reviewed the proposed organizational structure and functions and has found them to be adequate for administration of this program.
- 3.4 DAER/RS will hire a consulting firm to advise the CPBID pursuant to Bank-approved terms of reference. The terms of reference will provide the basis for the contracts and are to indicate the minimum requirements as to staff, equipment, nature and frequency of administrative controls, and content and frequency of reports. The consulting contract will be awarded to an engineering firm following the procedures contained in the Bank's policy on international bidding processes (included as Annex C to the loan contract) and part of its cost may be defrayed with Bank funds. Before hiring any such services, the borrower - by way of the executing agency - is to inform the Bank and obtain its nonobjection with regard to the names of the selected firms, their qualifications, and the price of their services (Annex A to the contract).
- 3.5 The program administration arrangements have been examined by the Bank and were found to be consistent with the program's needs, the installed capacity of the executing agency, and implementation requirements. DAER/RS has taken the necessary steps to implement these arrangements.
- 3.6 As a condition for disbursement of the loan, it is being proposed that the borrower, through the executing agency, show that DAER/RS

has set up the CPBID and appointed a unit chief and other in-house staff, and has hired, within six months after the effective date of the loan contract, the necessary consulting services to support the CPBID in program administration.

- 3.7 Through an international call for proposals, DAER/RS will hire consulting firms specialized in highway engineering exclusively for the purpose of drafting the final engineering designs and environmental plans, and performing supervision and technical oversight of the quality of work done. It was agreed that the Bank would finance part of these costs, for which purpose the guidelines contained in Annex C to the contract will be followed.
- 3.8 The general guidelines for the final engineering designs, environmental plans, and supervisory work were discussed during the analysis mission and were found to be adequate. The final terms of reference, which are to be submitted for the Bank's approval before calling for any bids, will indicate the minimum requirements as to staff, technical laboratory and engineering equipment, nature and frequency of technical oversight and quality checks, and content and frequency of reports. Before hiring any such services, the borrower - by way of the executing agency - is to inform the Bank and obtain its nonobjection with regard to the names of the selected firms, their qualifications, and the price of their services (Annex A to the contract).

B. Engineering designs and construction plans

- 3.9 Among the documents at hand for this program are technical studies, final engineering designs, and detailed construction drawings for all paving works on the sample road sections. Surveys and hydrological, geological, geotechnical, environmental, and other studies required for the satisfactory execution of work such as that which is envisioned here are complete. The Bank has reviewed all the studies and technical documentation and has found them to be adequate and sufficient. The general and specific technical specifications for construction work and other documents required for the tendering and performance of the respective works are scheduled to be ready by the end of 1996 for the first package of works to be tendered.

C. Rights-of-way

- 3.10 Wherever possible, the engineering designs place the new paved carriageway within the right-of-way of the current roadway, since it satisfies the technical and environmental conditions and complies with the specified standards. For portions of some sections, however, additional right-of-way footage was required for detours and lateral widening, accesses to intermediate towns, and drainage structures. Under Brazilian law, the highway authority may take immediate possession of land required for rights-of-way, even before expropriation proceedings are completed. That

notwithstanding, prior to putting any program sections or elements out to tender, the borrower would have to demonstrate to the Bank that it was in legal possession of the land needed.

- 3.11 The paving and widening projects should affect homes or other structures in only a very few cases. Most of the work will be done within the existing right-of-way; for work involving alternate routings, the environmental impact studies showed no indication of homes being affected. Commercial buildings and warehouses will be affected in only a few cases involving interchanges in urban areas, in which case indemnification will be made pursuant to applicable law on expropriation for a public purpose.

D. Environmental protection measures

- 3.12 The environmental impact studies required by the state environmental authorities for most of the paving work on existing roadways were the environmental inspection reports [relatório técnico de vistoria ambiental] (RTVA), which were prepared on the basis of terms of reference agreed upon in advance with the Bank. For sections involving changes in the road alignment, more detailed environmental analysis was required, and the necessary environmental impact studies have been performed (EIAs and RIMAs). The evaluation reports, executive summaries, and environmental management plans have all been made public (through notices published in the local press) and have been submitted to the respective state environmental authorities for approval.
- 3.13 Advance environmental permits have been obtained for all the road sections in the sample. The start-up permits for first-year works have been applied for with the state environmental authority and, as one condition in the loan contract, they are to be presented to the Bank prior to the tender for the respective works.
- 3.14 The environmental impact studies for construction projects included in the sample outline a series of environmental recovery and mitigation measures that will be incorporated in the bid documents and the contract (e.g., technical specifications, financial costs, administrative and supervisory responsibility). These measures will be part of the environmental management plan, which is also to include actions to mitigate indirect and induced impacts, to be carried out and supervised under the responsibility of DAER/RS's Environment Unit or the state environmental authority Fundação Estadual de Proteção Ambiental (FEPAM).
- 3.15 The environmental management plan for each project is to define technical specifications, mitigation costs, institutional responsibility for execution and monitoring, and an implementation timetable that is synchronized with the construction and entry into service of each section of roadway. The prevention and mitigation measures are intended to ensure the projects' environmental quality, enhance their environmental sustainability, and prevent

- any negative impact in fragile areas, important natural ecosystems, and protected areas. Some environmental management plans propose, as a compensatory measure, strengthening the management of municipal parks and nature reserves located in the roadway's indirect service area (e.g., through activities involving demarcation, posting of signs, physical infrastructure, or lookout or ranger services).
- 3.16 The cost of these compensatory measures and all others that do not fall to the contractor are included in the total project cost and are the responsibility of the executing agency (DAER/RS). The loan contract is to include a condition whereby, within the six months following approval of the start-up permit, evidence is to be presented showing that cooperation agreements have been finalized between DAER/RS and the respective environmental authorities (FEPAM, DRNR) to carry out the compensatory and mitigation measures defined in the EIAs and RIMAs for the various program roads.
- 3.17 In sum, actions such as the following will be carried out as a result of the measures proposed in the environmental management plans: (i) dust and vehicle emissions control; (ii) erosion and sedimentation control; (iii) control of landslides; (iv) reclamation of degraded areas and improvement of the right-of-way; (v) afforestation and reestablishment of plant cover; (vi) appropriate management of work camps and labor safety measures; (vii) preservation and recovery of archaeological sites; and (viii) transfer of property and compensation to owners. The cost of measures to mitigate the program's direct impact is estimated at US\$2.12 million. The cost of compensatory and prevention measures for the program's indirect impact is estimated at an additional US\$1.12 million. The final budget will be determined during the process to obtain the necessary start-up permits prior to beginning construction work.
- 3.18 Included in the program's environment-related costs is a component for environmental monitoring and supervision. The program's executing unit will have environmental specialists on staff to help provide coordination and follow-up. DAER/RS's Environment Unit and FEPAM's Environmental Quality Unit will receive support from experts hired under the program. Tapping DAER/RS's and FEPAM's strengthened environmental management capacity, training will be provided for supervisory staff and contractors. It is suggested that the prospective loan contract stipulate that work is to have begun under the component to strengthen environmental management capacity within six months of the contract's effective date, by means of hiring qualified technical staff to provide environmental management support to: (a) FEPAM's Environmental Permit Office and (b) DAER/RS's Environment Unit. Prior to the first disbursement, the borrower is to present, to the Bank's satisfaction, terms of reference for environmental protection activities, which will be monitored by the firms hired to supervise construction work.

During the execution phase, the borrower pledges to verify these firms' ability to monitor environmental protection activities.

E. Road safety

- 3.19 The negative impact associated with road paving activities can be minimized by means of preventive traffic engineering work; driver and pedestrian information, training, and education programs; monitoring and enforcing driver and pedestrian behavior; and control of vehicle conditions.
- 3.20 DAER/RS is in a position to carry out and promote these tasks, given: the awareness of how serious the traffic accident problem is in Rio Grande do Sul; the work currently under way at critical areas on paved roads; the department's good working relationship with the State Highway Police and that agency's excellent record; and the introduction of new legislation that would earmark revenue from state traffic fines to be used for upgrading road safety.
- 3.21 Based on its review of the projects contained in the representative sample, the Bank has made a series of observations and recommendations aimed at making sure all the necessary road safety measures are included. To make certain that all the projects that are to be carried out as part of this program include appropriate features in this regard, it is proposed that a component be included to strengthen DAER/RS by hiring an experienced consultant who could monitor individual project formulation and design from a road safety standpoint. The loan contract should reflect the various commitments assumed by the borrower in this connection (see Annex III-4).

F. Implementation procedures

- 3.22 As a general rule, all services and work involving Bank funds will be procured following the procedures set forth in Annexes B and C to the loan contract. International competitive bidding will be required for consulting contracts over US\$200,000, for goods over US\$350,000, and for construction projects over US\$5 million, inasmuch as similar projects in Brazil have elicited foreign bidders only at or above these levels. Tenders for Bank-financed works and services in lesser amounts and those financed with the local counterpart will be governed by procedures in Brazilian legislation, which requires open tendering for construction projects valued at over US\$1.37 million equivalent. Construction work below that amount, and goods worth less than US\$350,000 equivalent, can be obtained using limited bidding or shopping. Program works will be carried out in accordance with the tender and prequalification procedures set forth in Annex B to the loan contract.
- 3.23 The program works have been divided into four bid packages. The first package comprises six sections of roadway from the

representative sample, totaling 121.7 km. This work has already been contracted out; less than 10% of its total cost was expected to have been executed as of the analysis mission (September 1996). The second package encompasses the other eight sections from the sample, totaling 218.3 km, and could be contracted out in mid-1997, with work beginning in the second half of that year. The third and fourth packages, which have yet to be specified, would cover total lengths of 216 km and 244 km and would begin work in 1998 and 1999, respectively. Annex III-2 gives a list and the estimated cost of all future tenders.

- 3.24 Under this program, international competitive bidding would be used for all road sections in the third and fourth packages. Bidding would be open to construction firms from Brazil and all other member countries of the Bank. The tender documents will allow bidders the option of tendering separate bids for one or more lots.
- 3.25 To expedite construction and attract the highest possible number of bidders, the tender documents will allow alternate bids for a contractor to carry out two or more lots simultaneously. The contract will be awarded to the lowest evaluated bid that substantially fulfills the conditions of the tender documents for the full set of lots. This procedure will enable both medium-sized and large firms from Brazil and abroad to participate. To be awarded more than one lot, though, a company needs to show - convincingly and with support documentation - that it has the staff, equipment, and financial resources to perform work on the road sections simultaneously and adhere to the construction timetable.
- 3.26 The work to be carried out under the program is normal road engineering work and, as such, does not require any specialized or leading-edge technology that is not available in Brazil. Accordingly, sufficient capacity is available locally as to ensure that there will not be any problems with program execution.

G. Tendering and advance contracting of works and services

- 3.27 So that program administration work could get under way, the project team gave its clearance for the borrower to begin the process to hire (with Bank funds) the firm that will advise the CPBID, prior to presentation of the operation to the Bank's Board of Executive Directors; it was felt that this would facilitate compliance with the respective condition precedent. The Bank also gave clearance, prior to the analysis mission, for the tender and contracting processes for the six road sections that are part of the local counterpart, i.e., the first package of works described above. This work, for a total of US\$33.5 million, represents 37.7% of the cost of the representative sample and 13.9% of the total direct cost of the program works. The project team reviewed the local bid documents and found them to be satisfactory.

H. Retroactive financing

- 3.28 Costs incurred for the six sections of road that have already been contracted out and on which work has already begun will be recognized back to January 19, 1996, the date of COFIEX's request to the Bank. In all, these costs are not expected to exceed US\$10.8 million (US\$1 million for consulting services for engineering designs, supervision, and administration and US\$9.8 million for contractors doing the paving work).
- 3.29 Costs associated with the executing unit and the consulting firm that will advise DAER/RS on program administration will be recognized against the local counterpart. There will also probably be advance costs that cannot be deferred until after the operation's approval in connection with the environmental measures and for the engineering firms that are doing the designs for sections that are to be paved.

I. Execution period and investment schedule

- 3.30 The program will have an execution period of five years as of the effective date of the loan contract. This time frame is consistent with the type and volume of work to be performed under the program, the planned construction procedures (which will maintain normal traffic flow), the executing agency's institutional capacity, and the state treasury's ability to provide the local counterpart. The deadline for physical start-up of work has been set at four years.
- 3.31 Each package of works is to be carried out within a 24-month period. The international tender for the first lot of program works to be financed by the Bank and the cofinancer (package II) will be initiated by DAER/RS during the first half of 1997, with contracts to be awarded during the second half of the year, the Bank's procedures on local and international publicity having been complied with.
- 3.32 First, though, it is essential that DAER/RS start the process to hire the engineering consulting firms that will assist it in supervising work in the field, since these firms will have to begin work before the contractors arrive on site. Annex III-2 contains a tentative bidding timetable for the various program road sections which was used as the basis for the investment schedule summarized below:

Table III-1 Summary investment schedule (in thousands of U.S. dollars)						
	1996-1997	1998	1999	2000	2001	TOTAL
IDB	11,339	26,913	41,272	33,117	37,359	150,000
Counterpart	23,659	35,138	30,083	29,196	31,924	150,000
Cofinancing	4,100	12,982	22,021	18,080	17,817	75,000
Government	19,559	22,156	8,062	11,116	14,107	75,000
TOTAL	34,998	62,051	71,355	62,313	69,283	300,000

J. Advance of funds

- 3.33 At the express request of the borrower, up to 10% of the loan proceeds could be advanced, in accordance with the construction timetable. This amount is felt to be sufficient for contractor mobilization and to ensure that work can proceed.

K. Road maintenance

- 3.34 The agency responsible for road operation and maintenance in Rio Grande do Sul is DAER/RS. In accordance with the department's policies, maintenance of the road network is performed by its 17 decentralized Maintenance Units which are located across the state. Although all maintenance activities have traditionally been performed on force account, a pilot program was recently launched to contract maintenance services out to private companies for 300 kilometers of roadway.
- 3.35 The World Bank is currently considering US\$80 million in financing for a US\$187.8-million state highway rehabilitation program having the following components: (i) rehabilitation of approximately 837 kilometers of roads (US\$49.8 million); (ii) resurfacing of approximately 1,864 kilometers (US\$77.9 million); (iii) engineering studies, supervisory services, and environmental studies (US\$13.8 million); (iv) institutional strengthening (US\$3.9 million); (v) physical and financial contingencies (US\$10.4 million); and (vi) routine maintenance of the paved state road network (including federal roads that are slated for transfer to the state) between 1997 and 2001 (US\$32 million).
- 3.36 The above-mentioned program's institutional-strengthening component calls for technical assistance and staff training for: (a) the preparation and monitoring of DAER/RS's annual budgets and programs; (b) implementation and monitoring of concessions and maintenance-under-contract programs; (c) planning and monitoring of the reorganization of DAER/RS; and (d) bolstering of DAER/RS's environmental management functions, and licensing arrangements and environmental supervision by FEPAM. The program also entails

strengthening DAER/RS's supervision of maintenance activities that have been contracted out.

- 3.37 Given the poor maintenance conditions on state roads, with some 2,700 kilometers in need of rehabilitation, it would not be appropriate to begin the program proposed herein without first having assurances that the necessary funds are available for the aforementioned rehabilitation plan. Accordingly, and pursuant to the Bank's policies in this area, it is proposed that the eventual loan contract stipulate as a condition for disbursement that the borrower present a plan, satisfactory to the Bank, for rehabilitating the state's paved road network, and demonstrate that it has secured the resources needed to carry through the plan.
- 3.38 The borrower, by way of the executing agency, will undertake to maintain the program works, equipment, and facilities in accordance with acceptable technical standards, and will present a satisfactory maintenance plan to the Bank before August 1997. In the first quarter of each year for 10 years, starting with the second year of the contract, DAER/RS is to provide the Bank with maintenance reports that include an evaluation of the results of maintenance done during the preceding year and the maintenance plan for the following fiscal year, accompanied by the respective proposed budget. Another loan-contract condition being proposed is that, once 30% of the loan proceeds have been committed, the borrower may only continue to commit funds from the Bank's loan when it has satisfied the Bank that measures to attain the agreed rehabilitation and upkeep objectives and outcomes have been adopted. To this end, the contract will set out benchmarks reflecting the targets to be achieved.
- 3.39 DAER/RS has two permanent weigh stations and ten mobile scales which it uses to check commercial vehicle weights, levying fines when infractions are detected; vehicle scales will be included in the transfer of federal roads to the state. DAER/RS does not produce any systematic reports on its vehicle weighing activities or on how the monies from fines are used. For roads having weigh stations, the borrower is also to present to the Bank, for a period of 10 years as of the loan contract's effective date, a yearly report containing the results from the previous year, including statistics on the number of freight vehicles weighed at each station, number and magnitude of excess loads documented, and fines levied.

L. Ex post evaluation

- 3.40 In order to assess the program's socioeconomic impact and the degree to which its objectives have been met, DAER/RS is to provide the Bank with an ex post evaluation of the program containing all the pertinent information at the end of the third year following the date of disbursement in full.

- 3.41 As of the second year and continuing until two years after disbursement in full, DAER/RS will collect, compile, and make this information available to the Bank each year. The information is to include, as a minimum, traffic counts by class of vehicle, farm and industrial output statistics, population data, state GDP, etc. During the first year of execution, DAER/RS is to present a report indicating the sources it will draw on for this information and the level of detail and processing for data presentation. The contents of the report will be specified in detail in Annex A to the loan contract.

IV. THE BORROWER AND THE EXECUTING AGENCY

A. The borrower and the executing agency

- 4.1 The borrower will be the State of Rio Grande do Sul, which will also furnish the local counterpart for the program. The executing agency will be the Rio Grande do Sul State Highway Department [Departamento Autônomo de Estradas de Rodagem] (DAER/RS), attached to the State Transportation Secretariat.

B. Legal status of the borrower

- 4.2 Under federal and state law, the State of Rio Grande do Sul has legal status and is empowered to enter into obligations and acquire rights. Before formalizing any obligation with an entity outside Brazil, the state's executive branch must seek approval from the local legislative assembly. Likewise, under the Brazilian Constitution, authorization for any external borrowing operation in the federal or a state interest requires authorization from the federal Senate. The Government Accounting Office is responsible for oversight and external audits of state government accounts.

C. Financial condition of the State of Rio Grande do Sul

- 4.3 State government spending in Rio Grande do Sul has averaged from 7% to 8% of state GDP. The state's GDP accounts for about 9% of national GDP, which ranks it fourth in the country in this respect, after São Paulo, Rio de Janeiro, and Minas Gerais. Public revenues in Rio Grande do Sul have largely followed the pattern of other Brazilian states, a salient feature being low tax yields. One important element here has been the effect of inflation on funds flows, pointing to serious tax administration problems.
- 4.4 The bulk of state spending has gone into two areas: (i) public service payrolls and (ii) debt service. Few inroads have been made toward addressing the first of these expenditure items, partly because of legal impediments and partly because few, if any, concrete measures have been taken to remedy the situation. The expenditure on debt service is to repay borrowings in the form of government securities issued by the State to fund public spending.
- 4.5 Figures for the main items of the state's finances from 1991 to 1995 show how the gap between expenditures and revenues gradually pushed up the state's debt. This was a result of substantial additional interest charges; when these were added to principal repayments owing, the state was unable to honor all its commitments. Hence, the state debt stock which in 1991 had stood at US\$2.134 billion had quadrupled to about US\$8.4 billion by July 1996. Table IV-1 summarizes the state's finances over this period.

<p align="center">Table IV-1 Rio Grande do Sul finances (in millions of constant <i>reals</i>)</p>					
	1991	1992	1993	1994	1995
I. Own revenues, net (*)	2,473	2,264	2,287	2,928	3,529
II. Operating expenses	2,271	2,646	2,437	2,487	3,515
III. Debt service	118	241	365	261	209
IV. Capital expenditure	371	595	433	377	346
V. Surplus (deficit)	(287)	(1,218)	(948)	(197)	(541)
Transportation sector spending as a percentage of total State spending (II+III+IV)	10	10	7	11	9

(*) Total revenues net of transfers to municipalities.

- 4.6 To contend with the state's financial difficulties, the current state administration decided to launch a sweeping state and fiscal reform program. Financing and technical support for the State as it pursues this strategy is being furnished by the World Bank, which is now processing a loan for US\$150 million, slated for submittal to its Executive Board shortly.
- 4.7 The World Bank loan would be disbursed after major reforms had been successfully implemented, including (i) an improvement in the state's primary surplus and reduction in annual debt-service charges; (ii) a reduction in force of state employees (including a recently concluded voluntary retirement program, a payroll audit, updating of state personnel requirements and eventual downsizing), and (iii) sales to and concession arrangements with private investors/operators, including the sale of a 35% stake in the state telecommunications company, sale of two electricity distribution companies, concession of nine road networks comprising 22% of the state paved road network, concession of six port facilities in Rio Grande and one storage facility at the port of Pelotas, and water production and distribution concessions in a number of municipalities.
- 4.8 The IDB, for its part, is processing a technical-cooperation operation (BR-0171) for US\$500 million to strengthen tax administration, for which all Brazilian states would be eligible. It would fund individual projects answering specific needs of states seeking to improve tax collection and compliance oversight and strengthen their tax administration. The State of Rio Grande do Sul has informed the federal government of its interest in taking part in that program.
- 4.9 The federal government, as Rio Grande do Sul's largest creditor, has a central role to play in the success of the reform process,

inasmuch as it is involved (through Caixa Econômica Federal) in a loan for R\$150 million granted to fund the reduction in force program – a loan which is tied to major state reform commitments. Likewise, the federal government has played a decisive role in executing agreements that paved the way for the State to renegotiate the terms of its debt to the national treasury.

- 4.10 Based on the agreements with Caixa Econômica Federal, funds-flow projections were done for the State. The figures in these forecasts show the outcome of state reform initiatives and efforts to adjust the State's finances and tax administration. The following table summarizes the main elements of the projections.

Table IV-2 State of Rio Grande do Sul – Financial projections (in millions of reais)						
	1996	1997	1998	1999	2000	2001
I. Own revenues, net (*)	3,922	4,174	4,306	4,601	4,741	4,882
II. Operating expenses	3,356	3,277	3,164	3,301	3,400	3,487
III. Debt service (accrual)	466	509	533	559	586	619
IV. Capital expenditure	424	427	589	696	699	733
V. Surplus (deficit)	(324)	(39)	20	45	56	43
Transportation spending as a percentage of I	2.4%	2.4%	2.5%	2.4%	2.4%	2.4%

(*) Total revenues net of transfers to municipalities.

- 4.11 The foregoing table reflects increases in the yield of the turnover tax (ICMS), on a par with the anticipated growth of the economy and after the rewriting of tax legislation and improvements in collection processes. The impact of these efforts is most evident in 1996, which posts an 11.4% year-on-year increase, but they will continue to be felt in lesser measure in the following years. The projection assumes 4% annual growth in federal government transfers through 1999, dropping to 3% annually thereafter.
- 4.12 On the expenditure side, and specifically in the area of personnel costs, due regard has been given to the legal requirement that total payroll expenditure in 1999 is not to exceed 60% of the state's net own revenues. Figures for capital spending through 1998 reflect agreements between the State and the national treasury; from 1999 onward, it was assumed that the State's total capital outlays must be held at 12% of its net internally generated revenues. The debt-service projections take into account agreements reached with the national treasury as to repayment terms (30 years), interest rate (6%), and annual payment ceilings of 11% of real net revenues. Targets used for aggregate capital invest-

ment through 1998 are those agreed upon with the national treasury. The agreements executed reflect the counterpart funding and borrowings needed for roads and highways programs to be implemented with IDB and World Bank funding.

- 4.13 The agreements signed with the World Bank for the State reform operation contain two important covenants regarding the State's financial management. The first is a minimum ratio that must be maintained between the State's primary surplus 1/ and its net internally generated revenues. The second is a maximum ratio of the State's total debt service to its net own revenues.
- 4.14 The measures the State has taken to shore up its fiscal situation and those coming out of agreements with the national treasury and World Bank bespeak a serious commitment and significant effort on its part. Hand in hand with this effort there needs to be a prudent capital investment program whereby the government can pursue its priorities for the coming years. The operation proposed herein, coupled with the maintenance program slated for World Bank funding, are part of that investment strategy. The financial projections show the expected impact of the aforementioned measures; if they are carried through as planned, the State's finances will gradually improve, and it will be in a position to operate its programs and perform its obligations.

D. The executing agency

1. Background

- 4.15 The Rio Grande do Sul State Highway Department (DAER/RS) is a decentralized state public agency, endowed with legal status since 1947, with administrative and financial autonomy. Headquartered in Porto Alegre, it has 17 regional technical offices throughout the state, and can set up temporary service units as necessary.
- 4.16 The chief functions of DAER/RS, as set out in its basic organizational law, are as follows: (i) prepare and periodically review the state's general highway and municipal roads plan; (ii) lend technical assistance to municipalities to help them develop road systems; (iii) plan and deliver essential engineering and administrative services relating to construction, rebuilding, upgrading, and upkeep of state roads; (iv) keep the map of the state road system up to date; and (v) coordinate information and statistics on

1/ The difference between the State's net internally raised revenues and its current expenditures, the latter encompassing payroll costs, other current expenses, and capital outlays using funds from the national treasury and borrowings from the IDB, World Bank, and BNDES. Payments of principal and interest on the debt are not classed as current expenditures.

state roads. DAER/RS also regulates and oversees mass transit services and terminal operations on state and municipal roads.

- 4.17 DAER/RS executes road programs on the basis of multiyear plans drawn up by the State Transportation Secretariat, which coordinates and supervises road-sector operations.

2. Organization

- 4.18 DAER/RS is headed by a Director General, appointed by the state governor, who sits on and reports to the Road Council. Other members of that body, which is chaired by an appointee of the governor, are contractors or other business owners and other road-sector representatives. Any decision that would ultimately require the state governor's approval must first be examined by the Council, which looks at such matters as amendments and revisions of the state road and highway plan, DAER/RS annual program plans and budgets, and preliminary drafts of state laws, decrees, and regulations governing the road system.
- 4.19 At the top of the DAER/RS organization structure is an Executive Board, which operates like a committee. It consists of the Director General, at the head, and DAER/RS officials that the Director General considers necessary, depending on the matters under discussion. Also assisting the Director General are an Oversight Committee and three operations departments - Planning, Administration, and Operations.
- 4.20 External audits of DAER/RS operations are conducted by the State Accounting Office of the State Finance Secretariat. Internal audits of DAER/RS financial operations are the responsibility of the above-mentioned Oversight Committee, made up of one representative of the State Audit Office, one from the State Accounting Office, and one from the State Transportation Secretariat. By law, opinions on DAER/RS monthly and annual financial statements are to be issued by that Committee; however, to avoid any delay in presentation of the financial statements that the Bank will be requiring for the proposed program, it was considered preferable that the department's statements be audited for this purpose by an independent auditing firm.

3. Information systems

- 4.21 DAER/RS has in place a budget, accounting, and financial information system instituted by the State Finance Secretariat. It is expected to have a modern, computerized, networked information system up and running in the very near future, which will give it sound tools for decision-making and improve its planning and oversight work.

4. Staffing

- 4.22 In 1996, as one element of the State reform program, DAER/RS brought in a voluntary retirement program, which helped reduce its staff numbers by over 20%. At this writing, it has 3,254 employees, with an average age of 44. Table IV-3 shows changes in the staff complement over the past 11 years.

Table IV-3 DAER/RS staff	
Year	Total staff
1985	6,459
1989	5,154
1993	4,341
1994	4,222
1995	4,111
1996	3,254

- 4.23 There are some weaknesses in the personnel area in DAER/RS, since under the policy currently in place the department has been unable to hire professional staff with the skills and experience needed for jobs that at present are being performed by underqualified personnel. For one thing, the last public competition to hire engineers was held in 1973, and DAER/RS has hired no engineers since 1983.
- 4.24 These constraints notwithstanding, DAER/RS does have the advantage of competitive salaries by local market standards, which will stand it in good stead as it sets out to bolster its human resources. In this regard, the authorities' strategy for rebuilding the department's professional cadre includes phased hiring of about 200 new engineers and technical officers and specialists. This will not increase total staff numbers, which will continue to decline in the next few years as current staff retires.

5. Reforms in the roads sector

- 4.25 As was noted in chapter I, the plan to restructure the state road sector will mean rewriting the current functions of DAER/RS, with a view to gradually turning over road operation and maintenance to private hands and helping the department perform its management, planning, and oversight work more efficiently. Prerequisites in this process will be a restatement of DAER/RS's mandate and a functional reorganization of the department.
- 4.26 As a first step in this direction, a bill to amend the DAER/RS Act is now before the state governor. New by-laws and position and function descriptions are being drafted for the department, as are compensation provisions, all of which will take effect when the amended DAER/RS law enters into force.

6. Institution-strengthening

- 4.27 In the course of the process of institutional reforms in the roads sector described in chapter I, it became necessary for the State to seek technical and financial assistance from multilateral lending agencies to address certain specific elements of the proposed reform package. Thus, the sector is already receiving

institutional support from the IDB, the World Bank, and the German government technical-assistance agency GTZ.

- 4.28 Through two operations now being processed, the World Bank will be providing partial funding for the State reform program and a highway rehabilitation program. This will help institute measures to contract road maintenance out to the private sector and to reconfigure DAER/RS and train its staff. Support also will be provided for the development of a road network management system, a contract management system, a program tracking system, and strengthening in environmental areas.
- 4.29 With technical assistance from the International Road Federation, GTZ, and ECLAC, DAER/RS is carrying through a pilot program in which maintenance of some 300 km of highways is being outsourced to the private sector under a management contract arrangement.
- 4.30 The IDB operation proposed herein would help strengthen road sector institutions by (i) setting up a road planning system, as an instrument available to DAER/RS to effectively manage the roads for which it is responsible, through interventions that would be based on continually updated information and simulation models representative of actual road conditions in the state; (ii) organizing a center for training and research in road matters, to serve Rio Grande do Sul and neighboring countries, to help develop and refine road pavement design and execution techniques using local materials and tailored to conditions in southern Brazil, Uruguay, and Argentina; and (iii) strengthening the environmental area, complementing the planned World Bank-funded activities.

7. DAER/RS finances

- 4.31 DAER/RS is funded almost entirely by the Rio Grande do Sul state treasury. Its authorized sources of revenue are state taxes, such as those it levies for road upkeep and driver's licenses; special tolls; betterment levies on property enhanced by state or federal roads; borrowings; bank interest; rentals; fines for infractions of the national traffic code; sales of state-owned property, goods and materials and of services to other public agencies or units or private parties; sale of advertising space along roads; and grants.
- 4.32 The proceeds of taxes and other levies paid by users of roads in the state of Rio Grande do Sul — among them the fuel tax, duties and taxes on imported transportation equipment and material, and vehicle registration fees and taxes — go into the state treasury, and therefore indirectly help recover road construction, rehabilitation, and maintenance costs. For the moment, toll systems are having little impact.
- 4.33 Paring the DAER/RS administrative and operational apparatus and encouraging the private sector to move into areas hitherto reserved to the State will unquestionably relieve the pressure for increased funding to meet the sector's needs.

V. FEASIBILITY OF THE PROGRAM

A. Technical feasibility

- 5.1 This program to pave roads in Rio Grande do Sul is consistent with the basic objectives of federal and state policy for the road subsector, namely, to upgrade levels of service and reduce the number of accidents with a view to bringing down vehicle operating costs.
- 5.2 Final engineering designs have been completed for the sample and include adequate technical solutions and reasonable construction costs as well as allowances for contingencies and price escalation during construction. The road sections not covered by the sample are similar enough that it was possible to make a reasonable estimate of their costs.
- 5.3 DAER/RS has extensive experience with road programs similar to the one proposed here. Arrangements for hiring advisory assistance to administer and coordinate work with the Bank and engineering services that will supervise work on site are tailor-made for the program's activities, and will help ensure their success.
- 5.4 Program works are expected to be maintained in keeping with acceptable technical standards, and the loan contract will include specific covenants in this regard. Worth recalling is the fact that a parallel operation is being considered by the World Bank for rehabilitation of the state's roads and institutional strengthening of the sector, aimed at enhancing maintenance management and gradually broadening participation by private enterprise.

B. Economic feasibility

1. Methodology

- 5.5 A socioeconomic evaluation was conducted for each of the projects in the representative sample, consisting of a comparison of the economic costs and benefits for the "with" and "without" road improvement scenarios. The benefits considered were the expected savings in vehicle operating costs, travel times, and maintenance costs.

2. Key data

- 5.6 A volumetric count was taken during July and August 1996 at strategically located sites in order to identify traffic volume and characteristics on program roads and vehicle flows in the service area of the sample (see map).

- 5.7 Using population data as well as each service area's GDP, annual growth rates were projected for traffic flows, factoring in elasticity measures from previous, similar studies. The calculations yielded growth rates between 5.1% and 2.9% for light vehicles, 1.9% and 0.25% for buses, and 3.1% and 1.9% for trucks.

3. Findings

- 5.8 The optimal alternatives for each road section were subjected to an economic appraisal based on the aforementioned costs and benefits. Economic internal rates of return (EIRR), net present value, and cost-benefit ratios were calculated for a 20-year period (post-construction). Allowances were added for road maintenance costs and the residual value of the construction work in year 20. A sensitivity analysis was conducted on each section and showed that, even if costs were 10% higher and benefits 10% lower, each section would have an EIRR of over 12%, which the Bank considers to be an acceptable economic return. The following table presents the figures for the various road sections.

Table V-1 Economic analysis of program sample						
Route	Section	Length (km)	Investment (US\$000/km)	EIRR (%)	NPV (US\$000)	EIRR with costs 10% higher and benefits 10% lower
122	Ipê - Samuel	43.4	284.4	32.9	23.9	27.8
470	C. Barbosa - S. Pedro Serra	17.7	387.9	18.4	5.5	15.2
324	Passo Fundo - Ronda Alta	68.9	213.0	22.7	16.4	18.8
168	R. Gonzalez - S. Paulo Miss.	24.6	256.7	23.8	7.3	19.7
342	Catuipe - Independência	50.0	241.2	20.9	11.8	17.2
522	Jóia - Augusto Pestana	22.6	228.9	22.2	5.5	18.4
377	M. Viana - São Fco. de Assis	38.7	248.8	21.1	9.5	17.4
377	Alegrete	38.4	294.9	23.2	12.8	19.2
471	Enc. do Sul - Boa Esperança	35.7	340.8	32.2	22.1	27.0
Total for sample		340.0	266.3	24.9	114.8	20.7

C. Financial feasibility

- 5.9 The analysis of the program's financial feasibility examined the state's ability to provide the necessary local counterpart funding. As indicated in chapter IV, the state authorities have launched a

major state and infrastructure reform and fiscal adjustment program, which is receiving financial and technical support from the national treasury, the IDB, and the World Bank. The road program proposed here and the World Bank's road maintenance operation are priority initiatives in the state's strategy and are included in the investment plans in agreements with the national treasury and the World Bank.

- 5.10 The state's financial projections indicate that sufficient funds will be available to cover program requirements, and it is worth noting that the annual effort the state would have to make in order to ensure counterpart availability on a timely basis would not be overly burdensome. The counterpart would be funded through US\$75 million in cofinancing and US\$75 million from the state's own funds. Approximately US\$38 million of the latter amount would go toward paying interest and financial costs during the construction phase and is fully guaranteed by the federal government. The Bank will recognize up to US\$10.8 million in previous outlays against the counterpart.
- 5.11 The reform and adjustment program that the state has embarked upon, coupled with the priority the government has assigned to this program and the relatively low annual impact of the local counterpart, all point to the program being financially feasible from the standpoint of the local contribution.
- 5.12 Since negotiations for cofinancing are still under way with the Export-Import Bank of Japan, it is recommended that the prospective loan contract specify as a condition for the first disbursement that the borrower demonstrate, to the Bank's satisfaction, that a commitment has been secured for that cofinancing or that other acceptable financing sources have been secured.
- 5.13 The foregoing notwithstanding, in order for the Bank to be kept properly informed of the state's financial position and any other circumstances that could affect the timely availability of the local counterpart, the loan contract should stipulate that during the execution period of the program, the borrower agrees to submit to the Bank, every six months, a report on the status of the state's finances that includes an analysis of progress made toward the targets agreed upon in the agreements entered into with the federal government, as evidenced in the contract signed by the borrower and Caixa Econômica Federal (CEF) on February 9, 1996.

D. Institutional feasibility

- 5.14 DAER/RS has embarked on a process of far-reaching institutional reform with an eye to meeting the transportation sector objectives contained in the state's institutional reform program. With the private sector gradually assuming a more active role in DAER/RS's traditional areas of activity, there will be a need to strengthen planning activities so as to ensure proper administration of the

road network and supervision of maintenance activities entrusted to the private sector.

- 5.15 To that end, the proposed program includes an institutional strengthening component that is intended to respond to needs in the planning area by means of an integrated road planning system. The World Bank program, for its part, will address the institutional strengthening needs associated with improving maintenance management.
- 5.16 The present program calls for hiring consulting services to support DAER/RS's Program Coordination Unit in managing and supervising work under the various projects. The proposed support is felt to be appropriate for the program's needs and the executing agency's installed capacity, and DAER/RS has already begun to take steps toward implementing these arrangements.

E. Environmental feasibility

- 5.17 The sample road sections were subjected to environmental impact studies (EIAs and RTVAs) conducted pursuant to the terms of reference agreed on with the project team. As a result of the analysis, executive summaries were drafted for the sample sections that (i) outline the project's environmental situation; (ii) assess direct and indirect impact; and (iii) define mitigation measures in terms of quantity of work, technical specifications, costs, timetables, and institutional responsibility for execution and supervision.
- 5.18 Generally speaking, the road improvement and paving work that will be carried out under the program does not entail any major environmental issues. Roadway designs have been adjusted, preventive and mitigation measures will be included in the bid documents and contracts, and activities have been identified and specified in the environmental management plans. Together, these measures well ensure the environmental soundness of the projects.
- 5.19 While the preventive and remedial measures that are included in the direct construction costs (e.g., slope stabilization, tree planting, reclamation of degraded areas, improvement of lateral and cross drainage) are aimed at prevention and mitigation of direct impacts, the activities specified in the environmental management plans are designed to avert indirect, secondary, or induced impact from program works. Examples of such activities whose cost is an integral part of the project but whose execution is not the responsibility of the construction firm but rather of the DAER/RS Environment Unit, the state environmental authority (FEPAM), or a nongovernmental organization are: (i) recovery of degraded areas by means of reforestation and reestablishment of plant cover; (ii) strengthening of environmental management in protected areas of local interest; (iii) assistance to municipalities and population centers to develop zoning plans and road sign programs

to prevent accidents; (iv) a hazardous-load contingency and accident prevention plan; and (v) an environmental monitoring program.

- 5.20 The program will also help to strengthen environmental management and monitoring capacity at DAER/RS and FEPAM. Under these headings, the program will allot R\$207,000 for training, outfitting, and technical assistance for the DAER/RS Environment Unit. It will also earmark R\$160,000 to support the state environmental authority (FEPAM) in its environmental review, and monitoring tasks for program road works.
- 5.21 In light of the findings of the environmental analysis of the sample, the institutional strengthening program as defined, and the methodology established for environmental analysis of all the program works, the program will be environmentally viable.

F. Impact on poverty

- 5.22 It was determined that, for purposes of the Eighth Replenishment document (document AB-1704), the proposed program cannot be classified as targeting low-income sectors, either geographically or in terms of its beneficiaries; nor does it include specific components targeting women.

G. Risks

- 5.23 The possibility that the state might not have all the counterpart funds available when they are needed prompted the recommendation that it seek cofinancing to make sure funds would be available to meet the program's investment needs on a timely basis. At this writing, the state government is negotiating with the Export-Import Bank of Japan to secure cofinancing for the program. The IDB is lending the necessary support to facilitate these negotiations.
- 5.24 If the above-mentioned cofinancing does not materialize, the state's share of the program would stand at US\$150 million, meaning that it would have to provide an additional US\$15 million each year over the five years of program execution. Although the financial projections indicate that the state would be in a position to make larger contributions (provided the underlying assumptions are borne out), it was felt prudent to make the first disbursement contingent upon the state's securing the cofinancing being sought.
- 5.25 It is also proposed that the prospective loan contract include stipulations relating to the status of the state's financial management. This would provide the Bank with the necessary control and monitoring elements to ensure that program objectives are met.

LOGICAL FRAMEWORK

RIO GRANDE DO SUL STATE ROADS PROGRAM
(BR-0251)

OBJECTIVES	INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS												
GOAL Help bring down road transport costs in the state of Rio Grande do Sul and expedite integration of transport of goods within MERCOSUR	<p>The following reductions in road transport costs as of January 1, 2001 (compared to December 31, 1996), expressed in U.S. cents/vehicle/km, on road sections included in the program:</p> <table><tr><td></td><td>1996</td><td>2001</td></tr><tr><td>cars</td><td>19</td><td>15</td></tr><tr><td>buses</td><td>76</td><td>58</td></tr><tr><td>trucks</td><td>81</td><td>58</td></tr></table>		1996	2001	cars	19	15	buses	76	58	trucks	81	58	Ex post evaluation of the program using the highway system mathematical model and HDM III	(Goal to Supertarget) Continued operation of a road maintenance system that ensures sustainability of the program
	1996	2001													
cars	19	15													
buses	76	58													
trucks	81	58													
PURPOSE All-weather driving conditions improved on sections of road included in the program, particularly on roads used to haul the state's agricultural output, ensuring that producing regions are connected to national intermodal transportation corridors serving domestic and international markets	1.1 Reduction in roughness indexes of road sections included in the program from December 31, 1996 range of 10-12 to a range of 2.5-3 by December 31, 2001	1.1 DAER/RS annual statistical reports on the road inventory and surface conditions	(Purpose to Goal) Adequate maintenance of the auxiliary (federal and state) road system in Rio Grande do Sul												
COMPONENT Paving and/or upgrading of a total of about 800 km of sections of state roads that are connected to other already-upgraded federal or state road sections and which are included in the government's action plan	1.1 By December 31, 2001, at least 800 km of state roads paved and/or upgraded	1.1 Periodic construction progress reports from the executing unit	(Outcome to Purpose)												
ACTIVITIES 1.1 Development of an institution-strengthening plan for the executing agency (DAER/RS) to ensure effective administration and supervision of the program 1.2 Development of a training program for DAER/RS staff, supplementing the institution-strengthening activities	Itemized annual budget for each expenditure category	1.1 Executing unit's accounting records of the program 1.2 Executing unit's accounting records of the program	(Activity to Outcome) 1. State of Rio Grande do Sul has secured a loan of at least US\$75 million from Eximbank of Japan to fund construction for this project 2. Timely supply of counterpart funds for the program by the State of Rio Grande do Sul												

OBJECTIVES	INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
<p>1.3 Preparation of bid documents for road sections to be put out to tender</p> <p>1.4 Hiring of consulting services to produce engineering studies for an assessment of new works to add to the program</p> <p>1.5 Calls for bids, sale of bid documents, examination of bids, awarding and execution of contracts</p> <p>1.6 Supervision of construction work done by contractors. Contract administration. Arrangements for disbursements from lending agencies and the State Finance Secretariat.</p>		<p>1.3 Executing unit's accounting records of the program</p> <p>1.4 Executing unit's accounting records of the program</p> <p>1.5 Executing unit's accounting records of the program</p> <p>1.6 Executing unit's accounting records of the program</p>	

TENTATIVE TENDERING PLAN

Table A-III-1-1 Rio Grande do Sul State Roads Program International calls for bids for program-funded works projects (**)			
Package	Length (km)	Direct cost (*) (US\$000)	Date of notice
I. Works projects in the sample (already under way)	121.7	33,540	-
II. Other works projects in the sample	218.3	55,299	Jan. 1997
III. Lot 1, supplementary list	216.0	64,536	Jan. 1998
IV. Lot 1, supplementary list	244.0	87,222	Jan. 1999
TOTAL	800.0	240,597	-

(*) At August 1996 prices (preliminary estimates).

(**) There will be a separate prequalification process in all calls for tenders for construction work to be financed by the Bank (packages II, III, and IV).

Table A-III-1-2 Rio Grande do Sul State Roads Program Calls for offers from consulting firms				
	Form of tendering	Prequalifica- tion	Notice date (quarter)	Amount (US\$000, Aug. 1996)
1. ENGINEERING AND ADMINISTRATION				16,200
1.1 Engineering studies	ICO	Yes	2nd-1997	4,600
1.2 Construction supervision	ICO	Yes	1st-1997	8,600
1.3 Program administration	ICO	Yes	4th-1996	3,000
4. INSTITUTION-STRENGTHENING				1,177
4.1.1 Technical assistance - environmental	LCO	No	2nd-1997	75
4.1.2 Training - environmental	LCO	No	1st-1998	72
4.1.3 Technical assistance - environmental monitoring (FEPAM)	LCO	No	1st-1997	160
4.2.1 Technical assistance - roads survey	LCO	No	2nd-1998	70
4.3.1 Road planning system	ICO	Yes	2nd-1997	800
TOTAL				17,377

ICO = international open call for offers, with IDB financing

LCO = local open call for offers, with counterpart financing

REQUIREMENTS REGARDING ROAD SAFETY

1. Calls for offers for consulting services to produce engineering designs must explicitly require bidders to include a road safety status diagnosis and, where applicable, build measures into the project designs to minimize the risk of accidents.
2. Establish and document the engineering and traffic sign and signal standards that are to be adopted in the projects, and so inform the consultants who are awarded the contracts.
3. When project-design contracts are signed with consultants, provide them with relevant current data on traffic accidents on the sections of road covered in their contracts.
4. Within 12 months after the effective date of the loan contract, institute a comparative log of traffic volumes and accidents involving vehicles, cyclists, and pedestrians, before and after each project in the program came on stream, to be able to gauge the effect of program interventions and identify prospective problem areas.
5. Within nine months after the effective date of the loan contract, present a plan for training the DAER/RS technical team in traffic engineering techniques that can prevent accidents and lower accident rates and, where possible, expedite similar training for engineers of the consulting firms which are helping with engineering designs, technical staff of municipalities traversed by the roads slated for paving, and staff of the Highway Police.
6. Within nine months after the effective date of the loan contract, demonstrate that a multidisciplinary team has been assembled in DAER/RS to set up and oversee an ongoing, broad, comprehensive road safety program. The team's first task will be to organize accident statistics to highlight accidents causing death or injury and begin a thorough investigation into their causes.
7. Within nine months after the effective date of the loan contract, demonstrate that the problem of unclear demarcation of jurisdiction for traffic signs and markings and operation and oversight of road sections in urban areas has been resolved.

PROPOSED RESOLUTION

BRAZIL. LOAN /OC-BR. TO THE STATE OF RIO GRANDE DO SUL
(Road Program for the State of
Rio Grande do Sul)

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 State of Rio Grande do Sul, as Borrower, and the Federative Republic of Brazil, as Guarantor, for the purpose of granting the former a financing to cooperate in the execution of the Road Program. Such financing will be for the amount of up to one hundred fifty million dollars of the United States of America (US\$150,000,000), from the Single Currency Facility of the Ordinary Capital resources of the Bank subject to the "Special Contractual Conditions" and the "Terms and Financial Conditions" set forth in the Executive Summary of the Loan Proposal.