

BRAZIL
STATE OF BAHIA HIGHWAY CORRIDOR PROGRAM
(BR-0196)

CONTENTS

	<u>Page</u>
SOCIOECONOMIC DATA	
EXECUTIVE SUMMARY	
I. FRAME OF REFERENCE	1
A. The state of Bahia	1
B. The transportation sector in Bahia	2
1. Rail transport	2
2. Air transport	2
3. Maritime transport	2
4. Highway transport	3
C. Program rationale and Brazil's and the Bank's strategy in the country's transportation sector	10
D. Bank operations in Brazil's highway subsector	10
E. The Bank's experience in other state-level operations	11
II. THE PROGRAM, ITS COST AND FINANCING	12
A. Objectives	12
B. Description	12
1. Features of the operation	12
2. Program design and scale	12
3. Components of the program	15
C. Program costs and an itemization of its components	17
1. Total cost of the program	17
2. Components of the total cost	18
3. Terms and conditions of the loan	20
4. Local contribution	21
III. PROGRAM EXECUTION	22
A. Executing agency	22
B. Status of program preparation	22
C. Eligibility criteria	23
D. Execution	24
1. Program administration	24
2. Additional studies and designs	24
3. Road construction and maintenance	25
4. Supervision of work	26
5. Institutional strengthening	27
6. Procurement of goods and services	27

E.	Right-of-way	28
F.	Execution period and investment schedule	28
	1. Execution period	28
	2. Investment schedule	28
G.	Recognition of expenditures and retroactive financing . .	29
H.	Advances	29
I.	Environmental considerations	30
J.	Ex post evaluation	31
IV.	THE BORROWER AND THE EXECUTING AGENCY	32
A.	Institutional analysis	32
	1. The borrower	32
	2. The executing agency - the Bahia State Highway Department	32
B.	Financial review	36
	1. State of Bahia	36
	2. The Bahia State Highway Department (DER/BA)	44
V.	PROGRAM FEASIBILITY	47
A.	Technical feasibility	47
B.	Economic feasibility	47
	1. Economic analysis	47
	2. Distributive impact	49
	3. Impact of the projects on transport costs	50
C.	Financial feasibility	51
	1. Financial projections for the state of Bahia	51
	2. Financial projections for the DER/BA	56
	3. Feasibility of the local contribution	56
D.	Institutional capacity	58
E.	Environmental viability	59
F.	Risks	59
G.	Risk of natural disaster	59

LIST OF ANNEXES

- II-1 List of Possible Projects
- II-2 Costs Table - Construction Subprograms
- II-3 Costs Table - Maintenance Subprograms

- III-1 Schedule of Bidding and Contracting of Works

LIST OF APPENDICES

- I Proposed resolution (OC)
- II Recommendations
- III Annex A to the loan contract

TECHNICAL DATA AVAILABLE IN PROGRAM FILES

- Detailed cost table: coordinating unit
- Detailed cost table: studies and designs
- Detailed cost table: supervision of work
- Detailed cost table: technical assistance for institutional strengthening
- List of vehicles, machinery and equipment to be procured
- Terms of reference for advisory services
- Terms of reference for additional studies
- Terms of reference for supervision of work
- Terms of reference for strengthening of the DER/BA
- DER/BA organization chart
- Socioeconomic evaluation of projects included in the sample
- Basic premises used in financial projections

ACRONYMS AND ABBREVIATIONS

AADT	annual average daily traffic
BA	State of Bahia
CEPRAM	Conselho Estadual de Proteção Ambiental [State Environmental Protection Council]
CPE	Comissão de Planejamento Econômico [Economic Planning Commission]
CRA	Centro de Recursos Ambientais [Environmental Resource Center]
CTGA	comissão técnica de garantia ambiental [technical environmental protection committee]
DCM	Divisão de Conservação e Melhoramento [Highway Maintenance and Improvement Division]
DCT	Dust control treatment
DER/BA	Departamento de Estradas de Rodagem da Bahia [Bahia State Highway Department]
DETRAN/BA	Departamento de Trânsito da Bahia [Bahia Transit Authority]
DNER	Departamento Nacional de Estrada de Rodagem [National Highway Department]
EIA	environmental impact assessment
EIRR	economic internal rate of return
EMBASA	Empresa Baiana de Saneamento Ambiental [Bahia Environmental Sanitation Company]
FPE	Fundo de Participação dos Estados [State Revenue Sharing Fund]
FYB	first-year benefit
HDM-3	Highway Design and Maintenance Model (World Bank)
ICM	Imposto sobre Circulação de Mercadorias [general sales tax]

ICMS	Imposto sobre Circulação de Mercadorias e Serviços [sales and services tax]
IPVA	Imposto sobre Propriedade de Veículos Automóveis [Vehicle Tax]
NAMA	núcleo de assessoramento de meio ambiente [environmental advisory services unit]
NPV	net present value
PCU	program coordinating unit
PETROBRÁS	Petróleo Brasileiro S.A. [Brazilian Petroleum Corporation]
PMT	Plan Multimodal de Transporte [Multimodal Transport Plan]
RCM	Residência de Conservação e Melhoramento [Maintenance and Improvement Resident Engineer's Office]
RIMA	relatório de impacto do meio ambiente [environmental impact report]
SAC	Sistema de Administração de Manutenção [Contract Management System]
SAM	Sistema de Administración del Mantenimiento [Maintenance Management System]
SEARA	Sistema Estadual de Administração dos Recursos Ambientais [State Environmental Resource Management System]
SEPLAN	Secretaria de Planificação [Secretariat for Planning]
SETC	Secretaria de Energia, Transportes e Comunicações [Secretariat for Energy, Transportation and Communications]
SGP	Sistema de Gerência de Pavimentos [Pavement Management System]
SUS	Sistema Unificado de Salud [Unified Health System]
TSS	Pavimento Asfáltico de Bajo Costo [Low-cost Asphalt Pavement]

BRAZIL

Basic Socio-Economic Data
Statistics and Quantitative Analysis
Economic and Social Development Department

Executive Summary

Social Statistics

Land Area (Km2)	1992	8,456,508
Population (Thousands)	1992	154,105
Population (Average Annual Growth Rate)	1983-1992	2.0
Rural (Percent)	1992	22.7
Density (Population per Km2)	1992	18.2
Vital Statistics		
Crude Birth (Rate per 1,000 Population)	1991	24.0
Infant Mortality (Rate per 1,000 Live Births)	1991	58.0
Crude Death (Rate per 1,000 Population)	1991	7.5
Life Expectancy at Birth (Years)	1991	66.0
Illiteracy (Percent)	1990	18.9
Primary School Enrollment Ratio	1990	108.0

Economic Statistics

Market Exchange Rate (Cruzeiros/US\$)	5-1993	37,040.3
GDP per Capita (Average Annual Growth Rate)	1983-1992	-0.1
Labor Force (Thousands)	1990	55,026
Unemployment Rate (Percent)	1992	5.9
Consumer Prices (Twelve Month Variation)	4-1993	1,423.1
NF Public Sector Operational Balance (% of GDP)	1991	-1.3
Domestic Credit (% of GDP)	1992	21.1
Balance of Payments (Millions of US\$)		
Current Account Balance	1992	6,300
Trade Balance	1992	15,700
Capital Account Balance	1992	8,800
Change in Reserves (- Increase)	1992	-15,100
Total External Debt (Millions of US\$)	1992	120,679
Total Debt Service (Millions of US\$)	1992	10,300
Debt to GDP Ratio (Percent)	1992	35.0
Debt Service Ratio (Percent)	1992	25.1

16 August 1993

BRAZIL

Basic Socio-Economic Data

1. Exchange Rates

Cruzeiros/US\$, End of Period
Index 1980 = 100

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Market Rate	0.0	0.0	0.0	0.0	0.1	0.8	11.4	177.1	1068.8	12387.5
Real Effective Index	130.1	134.6	138.6	147.8	147.7	136.9	109.8	93.5	116.5	129.8

2. Prices

Average Annual Growth Rates in Percent

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Consumer Price Index	142.0	196.7	226.9	145.3	229.7	682.3	1287.0	2938.0	440.8	1000.0
Wholesale Price Index	200.0	233.3	233.3	140.3	206.9	697.1	1284.1	2710.0	401.1	...

3. International Liquidity

Millions of US\$

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Reserves	4562	11996	11609	6761	7458	8116	8729	9176	8764	23268
Reserves minus Gold	4355	11508	10605	5803	6299	6972	7535	7441	8033	22521
Special Drawing Rights (SDRs)	0	1	1	0	0	0	...	11	13	1
Reserve Position in the IMF	...	...	...	...	...	...	...	...	...	...
Foreign Exchange	4355	11507	10604	5803	6299	6971	7535	7430	8020	22520
Gold (National Valuation)	207	488	1004	958	1159	1144	1194	1735	731	747

4. National Accounts

Millions of 1988 US\$
1988 US\$

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Gross Domestic Product	267318	281184	302978	326788	337755	337301	348050	332791	335283	331534
GDP Per Capita	2058	2118	2235	2362	2394	2346	2377	2233	2212	2151

Annual Growth Rates in Percent - Constant Prices

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
GDP Per Capita	-5.6	3.0	5.7	5.5	1.6	-2.0	1.4	-6.1	-0.8	-2.5
GDP by Type of Expenditure (MP)	-3.5	5.2	7.9	7.6	3.6	-0.1	3.3	-4.4	0.9	-0.9
Consumption	-2.9	2.2	2.8	12.5	1.7	-1.4	4.0	-1.9	2.0	-2.3
Gross Domestic Investment	-22.6	3.7	31.1	9.6	-1.3	-4.8	1.2	-8.1	-4.1	-0.7
Exports of Goods and Services	14.3	22.0	7.0	-10.6	19.2	13.1	5.1	-4.9	6.6	5.2
Imports of Goods and Services	-17.4	-2.9	0.0	28.7	-2.9	-1.1	8.9	10.1	10.1	-1.6
GDP by Sector of Origin (FC)										
Agriculture, Forestry and Fishing	-0.6	3.3	10.0	-8.0	15.0	0.8	2.9	-3.7	2.5	6.0
Mining and Quarrying	15.9	30.7	11.5	3.6	-0.9	0.4	3.9	2.9	0.3	-4.1
Manufacturing	-5.8	6.2	8.3	11.3	0.9	-3.4	2.9	-9.5	-0.5	-0.3
Electricity, Gas and Water	7.5	12.4	10.0	8.5	3.2	5.9	1.6	1.8	4.3	1.9
Construction	-13.9	0.8	6.0	18.5	1.0	-2.8	3.2	-8.4	-4.0	-4.4
Wholesale and Retail Trade	-3.9	3.9	7.4	7.8	2.6	-2.6	3.1	-6.4	1.4	-3.2
Transport and Communications	1.0	6.7	9.8	13.8	6.0	6.4	8.7	1.6	6.5	3.2
Financial Services	5.6	7.7	10.0	-1.8	-4.7	0.3	1.3	-3.1	-8.0	-4.6
Government	2.0	1.9	1.9	2.0	1.9	1.9	2.0	1.9	1.9	1.9
Other Services	-55.9	-27.4	-33.0	371.8	62.1	14.0	9.0	6.4	27.6	-9.5

BRAZIL

Basic Socio-Economic Data

4. National Accounts (cont.)

Composition in Percent - Current Prices

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
GDP by Type of Expenditure (MP)										
Consumption	80.4	77.7	75.7	78.5	74.5	72.1	72.0	76.8	79.1	...
Gross Domestic Investment	17.2	16.5	19.1	19.1	22.2	22.7	24.8	21.5	18.9	...
Exports of Goods and Services	11.7	14.2	12.2	8.8	9.4	10.9	8.2	7.2	8.5	...
Imports of Goods and Services	9.3	8.3	7.1	6.3	6.2	5.7	5.0	5.5	6.5	...
GDP by Sector of Origin (FC)										
Agriculture, Forestry and Fishing	11.9	12.9	11.8	11.5	10.3	10.5	8.9	10.4	10.8	...
Mining and Quarrying	1.9	3.0	3.2	2.7	2.2	1.9	1.6	1.6	1.7	...
Manufacturing	31.6	31.8	33.6	32.9	31.8	31.0	29.6	26.3	25.0	...
Electricity, Gas and Water	2.2	2.4	2.3	2.3	3.3	2.8	2.4	2.8	3.6	...
Construction	6.6	6.2	6.0	7.1	8.4	8.0	9.2	7.8	7.1	...
Wholesale and Retail Trade	10.1	9.4	9.1	8.7	8.0	8.1	7.8	7.3	7.1	...
Transport and Communications	5.8	5.6	5.3	5.1	5.2	5.4	5.5	5.5	5.5	...
Financial Services	9.9	10.2	9.3	10.0	10.6	11.4	11.7	14.2	15.8	...
Government	7.6	6.5	7.6	8.2	8.6	8.7	10.6	11.8	9.9	...
Other Services	12.2	11.9	11.7	11.7	11.5	12.2	12.8	12.2	13.6	...

5. Non-Financial Public Sector

As a Percent of GDP

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Borrowing Requirements	-21.7	-24.2	-28.5	-11.2	-32.2	-52.8	-82.7	-29.3	-25.8	...
Operational Balance (- Deficit)	-4.4	-2.7	-4.4	-3.6	-5.7	-4.8	-6.8	1.3	-1.3	...

6. Monetary Survey

As a Percent of GDP

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Domestic Credit	40.3	33.9	31.9	33.3	31.3	22.6	13.7	22.5	20.4	21.1
Public Sector	10.5	9.2	9.3	9.4	9.9	6.4	3.9	7.0	6.4	6.0
Private Sector	29.8	24.7	22.6	23.9	21.4	16.2	9.8	15.6	14.0	15.1
Money (M1)	5.1	3.5	3.2	9.1	4.1	2.1	1.2	3.7	2.7	1.4

7. External Trade

Direction in Percent Index 1980 = 100

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Exports of Goods (fob)										
Developed Countries	63.3	64.3	64.4	66.7	65.9	65.2	67.9	68.0	63.4	58.7
Developing Countries	36.7	35.7	35.6	33.3	34.1	34.8	32.1	32.0	36.6	41.3
Latin America	10.3	11.3	9.6	12.3	12.3	11.9	11.8	11.3	16.5	22.2
Imports of Goods (cif)										
Developed Countries	38.4	39.8	45.3	59.2	56.0	57.5	55.8	54.9	59.3	60.2
Developing Countries	61.6	60.2	54.7	40.8	44.0	42.5	44.2	45.1	40.7	39.8
Latin America	14.4	15.6	12.3	13.1	12.1	12.8	18.3	17.1	18.0	16.5
Terms of Trade Index	77.9	85.8	83.5	97.9	87.1	96.8	88.9	83.8	91.7	90.0

BRAZIL

Basic Socio-Economic Data

7. External Trade (cont.)

Composition in Percent

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Exports of Goods (fob)										
All Food	40.9	39.2	37.2	34.7	32.5	29.6	27.5	28.0	25.0	...
Agricultural Raw Materials	4.1	3.1	2.6	2.8	3.6	3.4	3.5	3.5	3.5	...
Fuels	5.4	6.8	6.4	3.2	3.6	2.7	2.5	2.2	1.5	...
Ores and Metals	17.4	17.2	18.1	19.8	17.9	23.3	25.1	25.3	27.7	...
Manufactured Goods	32.3	33.7	35.7	39.5	42.3	41.0	41.4	41.0	42.3	...
Chemicals	5.8	6.4	6.6	5.7	6.2	6.5	6.0	6.4	6.4	...
Machinery and Transport Equipment	14.0	12.6	15.4	17.4	20.5	19.0	20.1	18.7	18.8	...
Other Manufactured Goods	12.5	14.6	13.7	16.4	15.7	15.5	15.3	15.9	17.1	...
Imports of Goods (cif)										
Capital Goods	12.2	9.6	11.2	13.9	16.0	17.6	15.6	17.6	...	...
Consumption Goods	4.1	3.0	4.2	11.8	6.7	5.1	10.4	11.4	...	...
Intermediate Goods	83.4	87.2	84.3	74.0	77.3	77.2	73.9	70.7	...	...
Fuels	...	...	...	...	...	...	...	...	...	...
Other	0.4	0.3	0.3	0.2	0.1	...	0.1	0.3	...	...

8. Balance of Payments

Millions of US\$

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Current Account Balance	-6837	42	-273	-5304	-1450	4159	1025	-3788	-1408	6300
Trade Balance	6469	13086	12466	8304	11158	19168	16112	10747	10578	15700
Exports of Goods (fob)	21898	27002	25634	22348	26210	33773	34375	31408	31619	36200
Imports of Goods (fob)	15429	13916	13168	14044	15052	14605	18263	20661	21041	20500
Service Balance	-13414	-13215	-12894	-13695	-12678	-15103	-15331	-15369	-13542	-11400
Freight and Insurance	403	453	514	34	152	235	143	-50	-156	-250
Travel	-392	-153	-375	-509	-184	-588	474	-122	-212	-50
Investment Income	-11008	-11470	-11192	-11127	-10319	-12084	-12547	-11613	-9652	-9135
Other Services	-1109	-832	-972	-1219	-1357	-1369	-1766	-1944	-1965	-1965
Unrequited Transfers	108	171	155	87	70	94	244	834	1556	2000
Private	106	161	139	89	113	107	226	813	...	...
Official	2	10	16	-2	-43	-13	18	21	...	...
Capital Account Balance	5532	4928	292	2006	4417	-1621	1495	5330	753	8800
Non-Monetary Sector	7760	5331	3528	4960	6194	493	4201	8317	3724	11700
Private Sector	-126	-4010	-2393	-4233	-6840	-6482	-3887	1047	3598	12600
Direct Investment	1373	1556	1267	177	1087	2794	744	236	-42	...
Portfolio Investment	-286	-272	-237	-450	-428	-498	-421	575	3808	...
Other Long-Term	-848	-1391	-2421	-4135	-7471	-7272	-3670	-232	-1077	...
Other Short-Term	-365	-3903	-1002	175	-28	-1506	-540	468	909	...
Government Sector	7886	9341	5921	9193	13034	6975	8088	7270	126	-900
Long-Term	9274	11283	6325	8818	7995	7947	2737	-3584	-3416	...
Short-Term	-1388	-1942	-404	375	5039	-972	5351	10854	3542	...
Monetary Sector	-2228	-403	-3236	-2954	-1777	-2114	-2706	-2987	-2971	-2900
Long-Term	-1519	-1404	-2643	-3647	-2178	-2520	-2415	-1354	...	...
Short-Term	-709	1001	-593	693	401	406	-291	-1633	-2355	...
Change in Reserves (- Increase)	1891	-5369	511	3232	-2165	-1711	-1701	-1246	-221	-15100
Errors and Omissions	-586	399	-530	66	-802	-827	-819	-296	876	...

BRAZIL
Basic Socio-Economic Data

9. External Debt

	Millions of US\$ Ratios in Percent									
	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Total Debt	98367	105424	106147	113735	123864	115726	111378	116417	116514	120679
Long-Term Debt	81368	90113	91915	99550	106227	101477	90375	90431	95129	97898
Public and Publicly Guaranteed	59856	70809	74738	84909	91793	89963	84368	83760	87476	90070
Bilateral	5021	6859	8176	10542	12867	13028	13354	15469	14779	14761
Multilateral	5122	5622	7358	10027	12311	11413	11088	11386	11068	10343
Bond Holders	2231	1698	1816	1787	1516	1546	2183	2339	9150	11330
Banks	41199	50750	50107	54000	55839	55833	49949	46185	44041	45201
Suppliers	2636	2590	3117	3614	3684	3028	2605	2585	2745	2699
Other Creditors	3647	3290	4164	4939	5576	5115	5189	5796	5693	5736
Private Non-Guaranteed	21512	19304	17177	14641	14434	11514	6007	6671	7653	7828
Use of IMF Credit	2644	4185	4619	4501	3976	3333	2422	1821	1238	1045
Short-Term Debt	14355	11126	9613	9684	13661	10916	18581	24165	20147	21736
Interest Arrears on Debt	151	178	344	398	3431	593	3755	9240	4352	5673
Total Debt Service	13416	13989	11309	11809	12043	17740	13425	8041	10754	10300
Public and Publicly Guaranteed	7528	8026	7042	7568	7889	13059	8752	5577	7603	7306
Bilateral	769	919	684	1122	955	591	1321	1079	1532	1910
Multilateral	708	890	1084	1522	1980	2132	1911	2494	2451	2577
Private Non-Guaranteed	4224	4137	2427	2172	1860	2225	2504	1468	1090	1436
IMF Repurchases and Charges	68	204	402	978	1455	1179	1069	996	717	493
Short-Term Debt (Interest only)	1596	1622	1438	1091	839	1277	1100	0	1344	1065
Debt to GDP Ratio	43	43	37	36	36	34	31	37	34	35
Debt Service Ratio	55	46	39	47	42	48	35	22	30	25

... Not Available

0.0 Indicates that the amount is nil or negligible

BRAZIL
Basic Socio-Economic Data

Sources and Notes

Executive Summary

Social Statistics:

Land Area: Organization of American States (OAS), América en Cifras 1974.

Population: IDB estimates based on data from Latin America Demographic Center (CELADE) and United Nations Population Division.

Vital Statistics:

World Bank, Social Indicators of Development - 1993 Edition and Economic Commission for Latin America and the Caribbean (ECLAC), Statistical Yearbook - 1992 Edition.

Economic Statistics:

Labor Force: World Bank, Social Indicators of Development - 1993 Edition.

Unemployment: Programa Regional del Empleo para América Latina y El Caribe (PREALC).

1. Exchange Rates:

International Monetary Fund (IMF), International Financial Statistics (IFS).

Real Effective Index: IDB estimates based on data from the IMF.

2. Prices:

IMF, IFS. Annual figures are expressed as average annual growth rates; monthly figures as a twelve month variation.

3. International Liquidity:

IMF, IFS.

4. National Accounts:

GDP in 1988 US Dollars: IDB estimates.

GDP by Type of Expenditure and Sector of Origin: Fundação Instituto Brasileiro de Geografia e Estatística, Departamento de Contas Nacionais. Consumption includes changes in inventories from 1985.

5. Non-Financial Public Sector:

Banco Central do Brasil, Departamento Econômico. Operational Balance excludes monetary and exchange correction on the domestic debt.

6. Monetary Survey:

Domestic Credit: Banco Central do Brasil, Relatório Anual, various issues (geometric mean of year-end stocks).

Money Supply: Ibidem (mid-year observations).

7. External Trade:

Trade by Direction: IMF, Direction of Trade Statistics (magnetic tapes).

Terms of Trade: ECLAC, Balance Preliminar de la Economía de América Latina y el Caribe, 1992.

Export Composition: United Nations Statistical Division (UNSTAT) Commodity Trade (COMTRADE) Data Base; Exports include Re-Exports.

Import Composition: ECLAC. Fuels and Lubricants and Passenger Automobiles are included in Other.

8. Balance of Payments:

Banco Central do Brasil and IMF, Balance of Payments Statistics (magnetic tapes).

9. External Debt:

World Bank, World Debt Tables (magnetic tapes).

BRAZIL
OPERATIONS DEPARTMENT
OPS/IRO

IDB LOANS

APPROVED AS OF JUNE 30, 1993

	US\$Thousand	Percentage
TOTAL APPROVED *	8,858,689	100.0%
DISBURSED	6,888,015	77.8%
CANCELLATIONS	1,144,593	12.9%
UNDISBURSED BALANCE	1,970,674	22.2%
PRINCIPAL COLLECTED	3,548,951	40.1%
APPROVED BY FUND		
ORDINARY CAPITAL	7,253,992	81.9%
FUND FOR SPECIAL OPERATIONS	1,473,176	16.6%
SOCIAL PROGRESS TRUST FUND	61,510	0.7%
VENEZUELAN TRUST FUND	51,721	0.6%
OTHER FUNDS	18,290	0.2%
APPROVED BY SECTOR		
AGRICULTURE AND FISHERY	960,232	10.8%
INDUSTRY AND MINING	1,551,333	17.5%
TOURISM AND MICROENTERPRISE	0	0.0%
ENERGY	1,919,908	21.7%
TRANSPORTATION AND COMMUNICATIONS	1,640,695	18.5%
EDUCATION SCIENCE AND TECHNOLOGY	509,473	5.8%
PUBLIC AND ENVIRONMENTAL HEALTH	1,442,727	16.3%
URBAN DEVELOPMENT	491,741	5.6%
PLANNING AND REFORM	0	0.0%
EXPORT FINANCING	266,477	3.0%
PREINVESTMENT AND OTHER	76,103	0.9%

* Net of cancellations with monetary adjustments and export financing loan collections.

B R A Z I L

Tentative Program 1993-1994

1 9 9 3			
Number	Sector	Name	Amount in US\$ millions
BR-0072	OS	Clean-up of Guanabara Bay	405
BR-0073	OS	Clean-up of Gualba Bay	116
BR-0162	TR	Modernization Highway Fernão Dias	267
BR-0196	TR	Transportation Bahia	147
BR-0194	VR	Sectoral Debt Reduction	400
Subtotal			1.335
1 9 9 4			
BR-0192	OS	Sanitation Igarapés Manaus	98
BR-0204	TU	Development of Potential for Tourism in the Northeast	200
BR-0203	OS	Sanitation Bahia Todos os Santos	216
BR-0159	OS	Drainage São Paulo II	319
BR-0150	TR	São Paulo-Florianópolis Highway	200
BR-0166	VR	Strengthening Integration Mechanisms	10
BR-0163	TR	Urban Transportation São Paulo-Metro	400
BR-0164	CYT	Science and Technology FINEP II	160
Subtotal			1.603
TOTAL			2.938

STATE OF BAHIA HIGHWAY CORRIDOR PROGRAM

(BR-0196)

EXECUTIVE SUMMARY

BORROWER: The State of Bahia

GUARANTOR: The Federative Republic of Brazil

EXECUTING AGENCY: The Bahia State Highway Department [Departamento de Estradas de Rodagem da Bahia] (DER/BA)

AMOUNT AND SOURCE:

IDB:	US\$147 million (OC)
Local counterpart funding:	US\$147 million
Total:	US\$294 million

TERMS AND CONDITIONS:

Amortization period:	20 years
Disbursement period:	4 years
Interest rate:	variable
Inspection and supervision:	1%
Credit fee:	0.75%

OBJECTIVES:

The overall program objectives are: (i) to support economic development in the area served by the main highway corridor in the state of Bahia and (ii) to preserve the existing road network.

The specific program objectives are: (i) to lower transport costs along the state's main corridors and (ii) to strengthen the institutional capability to plan, manage and perform highway maintenance activities.

DESCRIPTION:

To accomplish these objectives, a global multiple works program has been designed consisting of four subprograms to: (i) upgrade and pave approximately 750 kilometers of existing roads; (ii) rehabilitate some 600 kilometers of roads; (iii) maintain some 6,150 kilometers of roads; and (iv) institutionally strengthen the DER/BA. The program will be carried out over a four-year period.

ENVIRONMENTAL CLASSIFICATION:

The Environmental Management Committee, at its meeting of November 16, 1992, classified this as a Category III operation and approved the program's environmental summary without changing its classification at a meeting held on May 18, 1993.

BENEFITS:

The program will lower transportation costs and maintenance expenses along the state's main highway corridor, which is federal highway BR-242 and its feeder roads. With the institutional strengthening component, the DER/BA will be better prepared to plan and maintain the state's highway system and thus preserve the state's enormous investments there.

The program will improve road service along the state's main corridor by increasing the amount of paved road surface by 16%. By rehabilitating 600 kilometers of roads that are presently in bad condition, 13% of the state network road will be restored to its original condition.

RISKS:

The DER/BA may show some weakness in the management and supervision of the program, especially as concerns the maintenance component, since this is Bahia's first operation with the Bank in the transportation sector. This could lead to problems that might make it difficult to achieve the physical goals agreed upon with the Bank. To minimize this risk, provision has been made to hire a consulting firm to assist the DER/BA with program execution.

SPECIAL ASPECTS:

No exceptions to Bank rules and policies are foreseen during program execution. The schedule proposed by the executing agency, however, requests that expenses up to US\$650,000 equivalent be recognized against the local counterpart contribution for engineering designs and feasibility studies for the supplemental projects that are not part of the representative sample. These services have been contracted for under the procedures set forth in local legislation, which are acceptable to the Bank.

**THE BANK'S
COUNTRY
STRATEGY:**

The proposed program is consistent with the lines of action, objectives and programming guidelines that were assigned priority in the Bank's Seventh Replenishment and with the 1992-1993 strategy agreed on with Brazil for the transportation sector. In this exercise, the Bank and Brazilian authorities agreed on the definition of "main highway corridors" so as to prioritize the federal and state projects that the Bank will examine.

The selection criteria used in examining highway projects emphasized programs that recondition existing roads and that fit into the national investment plan, while stimulating competition among productive sectors and connecting the main centers of

production with the principal centers of domestic consumption and ports that focus on exports. The proposed program is consistent with the priorities agreed upon with the country and is a top priority for both the federal government and the Government of the State of Bahia.

I. FRAME OF REFERENCE

A. The state of Bahia

- 1.1 Located in northeastern Brazil, the state of Bahia, with its 561,000 square kilometers, represents 6% of the country's surface area, and its 11.8 million inhabitants represent 7.7% of Brazil's overall population. 1/ Some 44% of Bahia's population lives in rural areas and the remaining 56% in urban areas. Settlement of this part of Brazil was a gradual process that paralleled economic expansion, spreading inward from the coast.
- 1.2 Until 1950, Bahia's was a predominantly agricultural economy based on such export crops as sugar, tobacco, cotton and cacao. At that point, however, its economy began to undergo structural changes as part of a diversification process that emphasized industrial production. Industry became even stronger in the 1970s and has since been an important source of revenue for the state, through the Camaçari petrochemical center, the Aratu industrial center and other industrial districts in the state's interior.
- 1.3 The chief economic activity in Bahia's primary sector is agriculture. Cacao ranks first among the 43 commercial crops that are raised, with Bahia generating approximately 80% of the country's output. The main products exploited for industrial purposes are coffee, sugar, soybeans, cotton, rubber and tobacco. In the livestock sector, cattle raising and milk production are the most important activities. The primary sector's contribution to the state's GDP has declined over the years (30% in 1975, 21% in 1980 and 20% in 1985) and now stands at only 13%.
- 1.4 For the last 15 years, industry has been the most vigorous part of the secondary sector and the one that best demonstrates the state's economic development. The main industrial activities are petrochemicals, metallurgy, nonmetallic minerals, food processing and production. The chief petrochemical products are ethane, propane, benzene and polyvinyl chlorate, while the chief metal products are refined copper, iron, silicon and magnesite. Evidence of the industrial sector's vigor and of its impact on the state economy is its increasing share of GDP, which went from 15% in 1975 to 21.6% in 1980 and is now at 23%, where it has been for the last five years.
- 1.5 Consisting mainly of business activities and services, the tertiary sector has grown in importance over the years and now generates some 64% of the state's GDP. This sector has been responsible for

1/ The states in Brazil's northeastern region are: Alagoas, Bahia, Ceará, Paraíba, Pernambuco, Piauí, Rio Grande do Norte, Sergipe and Maranhão.

creating jobs in urban areas and now employs 46% of the active population, as opposed to 37% in 1985.

- 1.6 The state of Bahia accounts for approximately 5.1% of the country's GDP and 5% of total exports. Although Bahia has only 27.4% of the population in Brazil's northeastern region, it produces around 50% of the region's exports.

B. The transportation sector in Bahia

- 1.7 The various modes of transportation in the state of Bahia have developed to meet the growing demand for transport that the evolution and expansion of productive sectors have generated. The state now has an overland system of highways and railroads, and air and waterborne transportation services. The bulk of these services are concentrated in or lead to Salvador, the state's most important center and its capital.

1. Rail transport

- 1.8 The state of Bahia has approximately 1,853 kilometers of railways that are owned by Rede Ferroviária Federal S.A. (RFFSA). This network comprises the Salvador Regional System (RS-7) which links the country's southern and northeastern regions, passing through Salvador; at its westernmost extreme, the system connects Bahia with the state of Pernambuco. There are three main lines in Bahia: (i) the northern line, which connects Salvador with the city of Propriá in the state of Sergipe; (ii) the southern line, which begins in Maple and ends in Monte Azul in the state of Minas Gerais; and (iii) the central line, which begins in Alagoinhas-Bahia and ends in Petrolina in the state of Pernambuco. The Salvador Regional System operates 96 stations along its three main lines; of these, 50 are in operation around the clock, 27 run on set timetables and 19 are closed.

2. Air transport

- 1.9 Bahia's domestic and international air traffic is handled at Dois de Julho airport in Salvador; for other domestic and local flights, it has 85 airports and airstrips located throughout the state, whose capacity and quality of service vary. Apart from the Dois de Julho airport, only the airport in Ilhéus is authorized to handle commercial flights; it is classified as a second-level airport under Brazil's classification system. Some of Bahia's other more important airports and airstrips are located in Paulo Afonso, Caravelas, Barreiras, Prado, Porto Seguro, Itabuna, Vitória da Conquista, Guanambi and Bom Jesus.

3. Maritime transport

- 1.10 Bahia has a long coastline and its ports are some of the most important in the nation's port and harbor system. Maritime

transport is concentrated in the cities of Salvador, Aratu and Ilhéus, where the state's three most important ports are located. The principal ports are Salvador and Aratu. Salvador handles general cargo and has terminals that can accommodate large container ships, while Aratu handles smaller-capacity solid, liquid and gaseous bulk cargo vessels - there is, however, room for expansion. The port of Ilhéus moves chiefly exports of cacao and its by-products. The ports of Aratu and Salvador are strategically located in that they serve the Northeast's most economically dynamic region, which is why access to them is so important.

4. Highway transport

a. The state's policy in the transportation sector

- 1.11 The state's policy is embodied in its Multimodal Transport Plan [Plano Multimodal de Transporte] (PMT) developed in 1990. This plan emphasizes highway corridors that run through areas having good development potential but insufficient means to get their products to consumer markets. The PMT consists of several studies grouped into three modules: (i) economic issues; (ii) planning; and (iii) computerized data management.
- 1.12 The economic module covers the socioeconomic studies undertaken to measure present and future demand on the state's transportation system, factoring in alternative scenarios with a 20-year horizon. The planning module identifies and evaluates the sector's needs by comparing the supply of and demand for transportation. It pinpoints bottlenecks, identifies the alternatives for meeting that demand and, using a simulation model, selects the best solutions. The computerized data management module maintains an up-to-date databank on the sector.
- 1.13 From the PMT's analysis and selection of alternatives, the Secretariat for Energy, Transportation and Communications [Secretaria de Energia, Transportes e Comunicações] (SETC) identified several investments vital to improving transportation in the state of Bahia. In the highway subsector, the network of state roads clearly needs to be improved, rehabilitated and maintained. In the railway subsector, investments to recondition the following stretches are important: Alagoinhas-Dias d'Ávila on the northern line, Maple-Araújo on the southern line and Juazeiro-Alagoinhas on the central line. Finally, the priorities in the waterborne and maritime transport subsector are to modernize and add to existing facilities.
- 1.14 The PMT's transportation sector development program assigns priority to the highway subsector. Specifically, the goal is to restore and improve service along the main highway corridors and to make road maintenance more efficient. For the medium term, then, there are no plans to invest in the construction of new roads. The

Bahia State Highway Department [Departamento de Estradas de Rodagem da Bahia] (DER/BA) will focus instead on the areas mentioned above.

b. The road system

- 1.15 As in the rest of Brazil, roads are the principal mode of transportation in the state of Bahia. They carry approximately 75% of the long-haul cargo and 95% of long-distance passengers. Bahia's highway system is composed of federal, state and municipal roads totaling 121,842 kilometers. The following table gives a breakdown of the road system by jurisdiction and type of road surface.

THE BAHIA STATE ROAD NETWORK (December 1992)					
JURISDICTION	TYPE OF SURFACE			TOTAL (km)	PERCENT
	PAVED	DCT *	UNPAVED		
Federal	3,704	-----	750	4,454	3.7
Assigned Federal	955	695	980	2,630	2.2
State	3,637	2,620	8,895	15,152	12.4
Municipal	228	-----	99,378	99,606	81.7
TOTAL	8,524	3,315	110,003	121,842	100.0
Percent	7.0	3.0	90.0	100.0	

* Dust control treatment.

- 1.16 As the preceding table shows, only 8,524 kilometers (7%) of the state's roads are paved. This is primarily because until only a few years ago this was a predominantly agricultural economy, in addition to the fact that all the major industrial centers are located along the coast. Many portions of the service area of certain corridors are currently undergoing rapid and intensive development, as in the case of the east-west corridor that this program addresses, and such a low percentage of paved roads is not sufficient to meet their needs.

c. The road system under the Bahia State Highway Department

- 1.17 The road system for which the DER/BA is responsible consists of state highways and roads as well as some stretches of federal highway that Brazil's National Highway Department [Departamento Nacional de Estradas de Rodagem] (DNER) has assigned to it.
- 1.18 This network totals some 17,780 kilometers, which are classified by surface type - paved, treated for dust control, unpaved - defined as follows:

- (i) paved roads: covered with a superior-grade asphalt base, a cold asphalt mixture, single surface treatment or double surface treatment;
- (ii) roads with dust control treatment: roads that have been sprayed with a bitumen to lessen the wear and tear caused by traffic, prevent granular material in the wearing course from crumbling, and control the erosion caused by natural agents; and
- (iii) unpaved roads: roads with a dirt or gravel wearing course.

1.19 The road system operated by the DER/BA is shown below, classified according to road conditions as of December 1992:

STATUS OF THE DER/BA HIGHWAY SYSTEM (kilometers per surface type)				
SURFACE TYPE	CONDITION			
	GOOD	AVERAGE	POOR	TOTAL
PAVED	3,602 (78%)	694 (15%)	295 (7%)	4,591 (100%)
DUST CONTROLE TREAT.	1,880 (56%)	690 (21%)	745 (23%)	3,315 (100%)
GRAVEL/DIRT	2,812 (28%)	3,838 (39%)	3,226 (33%)	9,876 (100%)
TOTAL	8,294 (47%)	5,222 (29%)	4,266 (24%)	17,782 (100%)

1.20 Over 50% of the system's roads are in either average or poor condition and are getting worse. The steps taken in the last two years to improve the system's overall condition have still not managed to reverse deteriorating road conditions, which have taken their toll in the form of capital losses and higher vehicle operation costs. To provide satisfactory service conditions for highway transport and to preserve the existing highway infrastructure, the Government of the State of Bahia has requested partial financing from the Bank for a program to improve and restore the state highway system.

d. Principal highway corridors

1.21 Bahia's principal highway corridors consist of federal (identified by the initials BR) and state (identified by the initials BA) highways and their respective feeder roads. These carry a considerable volume of interstate and interregional traffic and pass through cities of both national and regional importance,

connecting centers of production with centers of final consumption and ports that focus on exports. They represent almost the entire network of paved roads in the state.

- 1.22 There are three main corridors within the state highway system. Two, whose trunk routes are highways BR-101 and BR-116, run from north to south, while the third, whose trunk route is highway BR-242, runs from east to west. These main corridors connect up with four less important corridors: BR-324, BR-407, BR-110 and BA-052 (see map on the following page).
- 1.23 The north corridor runs from the city of Salvador to the neighboring states of Sergipe and Pernambuco. It is made up of federal highways BR-101 and BR-116 and the primary and secondary state roads that feed into them. These roads carry medium- and long-distance traffic that begins in the northern sector of Bahia and heads either to Salvador or to the borders with the states of Sergipe and Pernambuco. This corridor provides reasonably adequate service for the region's productive areas and, in the medium term, will not require any major expansion or improvements.
- 1.24 The southern corridor runs from Salvador to the borders with Espírito Santo and Minas Gerais, paralleling the coastline. It, too, consists of BR-101 and BR-116 and their feeder roads. This corridor is a relatively well developed system. Its roads, which were designed according to solid technical specifications and are in relatively good condition, provide access to production areas that were established many years ago. Hence, there is no great demand for expanding or improving this network.
- 1.25 The east-west corridor, consisting basically of BR-242 and its feeder roads, is regarded as the most crucial corridor to the state's development and integration since it connects areas of great productive and economic potential in western Bahia with the major marketing and consumption centers on the coast. This corridor has played a leading role in the process of settling and expanding the agricultural frontier west of the São Francisco River and is the overland route to Bahia's coastal resorts from the states of Tocantins and Piauí and even from Brasília.

- 1.26 Unlike the north-south corridors, the east-west corridor is in need of construction work to improve and expand service. The roads in the east-west corridor carry large volumes of exportable agricultural commodities, whose market prices could be more competitive if the condition of the corridor were improved, as this would reduce shipping costs. For that reason, the construction works planned under the program concentrate on stretches of road in the east-west corridor.

e. Maintenance of Bahia's highway network

- 1.27 The DER/BA maintains the state's highway infrastructure through its Maintenance and Improvement Division [Divisão de Conservação e Melhoramento] (DCM) which, with certain limitations, performs routine and periodic maintenance on all the roads under its jurisdiction. This division has 20 strategically located resident engineer offices that are outfitted with equipment, staff and resources appropriated in the state budget.
- 1.28 At present, the DCM does not have a maintenance management system that measures needs, prioritizes activities and determines what resources it will require to function efficiently. Nor does it have any system to assess pavement conditions, predict pavement wear or schedule the best technical and economical combination of maintenance and reconditioning work. In general, the work now being done is not planned according to technical specifications and is limited by a preset budget. In most cases, crises or the staff's experience with its assigned network determines the priorities.
- 1.29 In spite of these limitations, in recent years the DER/BA has made an effort to take better care of the state highway system with the result that the percentage of roads in poor condition fell from 43% in 1990 to 24% by mid-1992. This is partly due to changes in the modus operandi, since private firms are now being engaged to perform functions that the DCM had been performing on force account. The proposed program will allow the state to prioritize maintenance work, plan it better and thus ensure better quality service.
- 1.30 Except for certain stretches assigned to the DER/BA, the DNER is responsible for maintaining federal highways in Bahia; these are the trunk highways of the state's corridors. The DNER is now carrying out a program to rehabilitate highway BR-242, using resources from a World Bank sector loan granted to the federal government. Covering 478 kilometers of roads, the work got underway in May 1993 and is to be completed within a year and a half. Since this is the main highway of the east-west corridor and thus important for the program to be financed by the Bank, steps have been taken to coordinate with the World Bank to make certain that those works are completed on time.

f. Road construction and maintenance work needed

- 1.31 Although the state of Bahia produces a wide variety of products and accounts for a significant percentage (over 50%) of all exports from Brazil's Northeast region, its highway density is only 0.2 km/km². Large areas still do not have the roads they need and consequently remain relatively underdeveloped. This situation is most critical in areas west of the São Francisco River. Hence, in devising this program, priority has been given to improvements and paving along the east-west corridor.
- 1.32 Whereas over 50% of the roads are paved in such states as Espírito Santo, Paraná and Pernambuco, barely 26% of the roads in the DER/BA's jurisdiction are paved, and more than half the state's roads are in either average or poor condition. The means have to be found to restore the road system to a satisfactory service level and maintain it.
- 1.33 These requirements were identified taking into account: (i) the guidelines set forth in the current Multimodal Transport Plan, which assigns priority to investments earmarked to improve, rehabilitate and maintain the existing highway infrastructure; (ii) the economic and social impact of better travel conditions along the state's main highway corridors; and (iii) the present condition of the DER/BA's highway system.

g. Monitoring vehicle weight and size

- 1.34 Bahia does not yet have a system to control vehicle weight on a per-axle basis. Since no statistical data are available, it is impossible to determine what percentage of freight vehicles are over the legal weight limits. Also there is no federal vehicle weight enforcement system, so establishing such systems on a state-by-state basis has been difficult. Nevertheless, to assist the DER/BA with the early stages of a program to correct the excess vehicle weight problem, the proposed program will contribute toward financing the purchase of five movable scales. The necessary resources will be included under the equipment procurement component.
- 1.35 In addition, the program's institution strengthening activities include technical assistance to introduce the maintenance management system [Sistema de Administração de Manutenção] (SAM) and the pavement management system [Sistema de Gerência de Pavimentos] (SGP), part of which involves plans to examine the requirements and technical, economic and legal factors that have to be considered in order to introduce the system to monitor vehicle weight.

h. Recovery of road investment and maintenance costs

- 1.36 In Bahia, road maintenance and investment costs are recovered indirectly in the form of contributions from users in the transportation sector, as described below in chapter IV. Alternative ways to recover costs such as tolls are not used in the state, even though the 1988 Federal Constitution authorizes them, subject to the enactment of special legislation. One of the institution strengthening activities planned under the program is a study to determine whether the system currently in place in Bahia is economically efficient and to ensure an equitable contribution from users.

C. Program rationale and Brazil's and the Bank's strategy in the country's transportation sector

- 1.37 The lending program that the Bank and the Federal Republic of Brazil have agreed upon for the 1992-1993 period stipulates that investments in the transportation sector must make Brazilian products more competitive on foreign markets by reducing shipping costs and facilitating distribution of products and inputs in greatest demand on domestic markets. They must also strengthen regional integration. The strategy to accomplish these objectives prioritizes activities to rehabilitate and improve infrastructure along the corridors that carry the highest volume of freight and passengers.
- 1.38 The proposed program is consistent with these guidelines, with national objectives and with the plans of the Bahia state government. Specifically, with this program the state will be helped toward its goal of a more efficient network of main roads to facilitate the flow of goods bound for export and domestic markets, improving the competitive position of the productive sectors by reducing shipping costs.

D. Bank operations in Brazil's highway subsector

- 1.39 The Bank has had an active role in financing investments in Brazil's highway sector for a total of US\$1,493 million in 22 projects involving both federal and state programs. At the federal level, the Bank has financed seven projects totalling US\$296 million. The most recent project was the Porto Velho-Rio Branco program, financed in part with loans 150/IC and 503/OC for the sum of US\$58.5 million. Approved in 1985 and now in its final stage, this operation is in the process of implementing an environmental control plan. The Bank is currently examining a program to modernize and expand federal highway BR-381, Fernão Dias, which will be instrumental in linking the states of Minas Gerais and São Paulo.
- 1.40 At the state level, the Bank has partially financed 15 programs in eight states, for a total of US\$1,197 million. The two most recent

operations were approved in 1992 for the states of Paraná and Santa Catarina for a combined total of US\$199 million. At present, highway improvement and rehabilitation programs are in progress in the states of Goiás (1987), Minas Gerais (1989), Ceará (1989), Espírito Santo (1991) and Pernambuco (1991).

- 1.41 It is worthwhile recalling that this will be the Bank's first operation in the transportation sector in the state of Bahia. In the last five years, four of the eight neighboring states (Espírito Santo, Pernambuco, Minas Gerais and Goiás) have received Bank loans to upgrade their highway infrastructure, thereby promoting the region's physical integration. The present program will help to consolidate the integration process.

E. The Bank's experience in other state-level operations

- 1.42 In recent years, the Bank's financing for state highway programs in Brazil has gone directly to the states, with a view to strengthening their technical and administrative capacities and ensuring that the highway infrastructure will be properly operated and maintained. The Bank's experience has been that these programs have improved service standards in those states' highway systems, while stimulating the development of their productive sectors and facilitating the socioeconomic integration of the various regions.
- 1.43 The state governments' participation in carrying out these programs has been a factor in their success, because these governments have had an interest in honoring the commitments undertaken to accomplish the established objectives and goals. On the whole, the programs have been carried out within the anticipated time frames and cost ranges and the terms of the contracts have been satisfactorily fulfilled. The plan of execution used in these programs has proven to be effective, which is why a similar mechanism is being used in the program proposed for the state of Bahia.

II. THE PROGRAM, ITS COST AND FINANCING 2/

A. Objectives

- 2.1 The program's general objectives are to: (i) support economic development in the area served by the main highway corridor in the state of Bahia and (ii) preserve the existing road network.
- 2.2 The specific objectives are to: (i) lower transport costs along the state's main corridors and (ii) strengthen the institutional capacity to plan, manage and perform highway maintenance activities.

B. Description

1. Features of the operation

- 2.3 Designed as a global multiple works operation, the program consists of four subprograms: (i) upgrading and paving approximately 750 kilometers of existing roads; (ii) rehabilitating approximately 600 kilometers of roads; (iii) maintaining some 6,150 kilometers of roads; and (iv) institutionally strengthening the DER/BA.

2. Program design and scale

a. Road works

- 2.4 In selecting road works for inclusion in the program, consideration was given to those roads that are part of the state's main corridor, i.e. the east-west corridor, are directly linked to it, or link it with other major corridors in the state and are in need of repairs because of their present condition. Using these criteria, a list of possible projects was assembled involving 25 stretches totalling 2,260 kilometers and representing the universe of projects that could potentially be included in the road works subprograms. The location of these stretches is indicated on the map in chapter I. While these stretches carry the heaviest volumes of medium- and long-distance traffic, their technical specifications are not adequate to handle the traffic anticipated in the years ahead. As investments, they have a satisfactory internal rates of return.
- 2.5 Given the financial and physical resources available for execution of road works during the 1994-1997 period, a program was devised that covers approximately 60% of the investments in road works

2/ Supporting documentation (see list of annexes at the beginning of this proposal) for chapters II through V are available in the program's technical files.

identified on that list, i.e., a total of 1,350 kilometers. The road works to be executed were classified into two subprograms: (i) an upgrading and paving subprogram, involving approximately 750 kilometers of dirt or gravel roads, and (ii) the rehabilitation subprogram, involving some 600 kilometers of roads whose low-cost pavement is now badly deteriorated.

- 2.6 A sample was put together from both programs, representing approximately 30% of their entire length. To make certain that the sample was representative, the stretches were selected to reflect: (i) the various functions that the roads perform within Bahia's road network; (ii) the various types of socioeconomic activity predominant in their service area; (iii) significant variations in annual average daily traffic (AADT); and (iv) differences among the various regions of the state in terms of topography, geology, the environment and availability of materials.
- 2.7 Using these criteria, nine stretches were selected: four from the upgrading and paving subprogram for a total of approximately 240 kilometers, and five from the rehabilitation subprogram for a total of 170 kilometers. The following table lists those stretches and their major features.

REPRESENTATIVE SAMPLE FOR THE UPGRADING AND PAVING SUBPROGRAM				
ROAD	STRETCH	LENGTH (km)	TRAFFIC (AADT)	PRESENT SURFACE
BA-n/n	From the BA-825 junction to Cotia	87.6	130	Dirt
BA-225	From the BR-135 junction to Coaceral	78.4	125	Gravel
BR-242	From the BA-825 junction to Mimoso	18.7	270	Gravel
BA-825	From the BR-242 junction to the Tocantins state line	55.1	215	Gravel
SAMPLE TOTAL		239.8 km (approximately 32% of the subprogram)		

REPRESENTATIVE SAMPLE FOR THE REHABILITATION SUBPROGRAM				
ROAD	STRETCH	LENGTH (km)	TRAFFIC (AADT)	PRESENT SURFACE
BA-220/374	From Senhor do Bonfim to Campo Formoso	25.9	1,320	sand/ asphalt
BR-407	From Mairi to the BA-052 junction	29.7	505	DCT/PBS*
BR-407	From the BA-052 junction to the BA-421 junction	42.1	340	DCT/PBS*
BR-407	From the BA-421 junction to Rui Barbosa-Zuca	39.1	325	DCT/PBS*
BA-515	From the BR-342 junction to the BR-101 junction	32.6	470	DCT/PBS*
SAMPLE TOTAL		169.4 km (approximately 28.2% of the subprogram)		

* DCT/PBS = Dust control treatment/primary bituminous surfacing

- 2.8 With the aid of consultants, the DER/BA is presently prioritizing those stretches in the project universe that are not covered in the representative sample, to select those that will be incorporated into the program in the future. This selection will be made on the basis of prefeasibility studies.

b. Maintenance of the highway system

- 2.9 Using the data available as of December 31, 1992, DER/BA technical staff and the Bank's project team established preliminary objectives for highway improvements and maintenance during the 1994-1997 period, taking into account the operational limitations and finances of the DER/BA. The specific tasks that the annual maintenance plans will involve will be determined using the SAM and the SGP that the program will introduce. The DER/BA and the Bank must agree upon the plans for the first year within 60 days of the effective date of the prospective loan contract. Preliminary agreement has been reached on the overall physical goals, based on the evaluation of highway conditions as of December 1992, as shown in the table following.

PHYSICAL HIGHWAY MAINTENANCE GOALS, 1994-1997 (kilometers)					
ACTIVITY	1994	1995	1996	1997	TOTAL
I. MAIN PAVED ROADS					
1. Periodic maintenance	500	500	600	600	2,200
2. Routine maintenance	3,950	4,350	4,600	5,000	17,900
II. SECONDARY ROADS					
A. SURFACE TREATED FOR DUST CONTROL					
1. Restoration	150	150	150	200	650
2. Periodic maintenance	400	400	400	600	1,800
3. Routine maintenance	2,550	2,520	2,510	2,420	10,000
B. DIRT/GRAVEL SURFACE					
1. Restoration	375	375	375	375	1,500
2. Periodic maintenance	1,100	1,100	1,100	1,100	4,400
3. Routine maintenance	6,890	6,730	6,570	6,410	26,600
TOTAL KILOMETERS	15,915	16,125	16,305	16,705	65,050

2.10 This maintenance plan is expected to do much to restore the physical condition of the state highway system and lay the groundwork for establishing a technology-based system for preserving the existing road infrastructure and maintaining it in satisfactory condition, while ensuring that state authorities appropriate resources for timely maintenance of the state highway system.

3. Components of the program

a. Upgrading and paving subprogram

2.11 The upgrading and paving subprogram involves rebuilding and paving some 750 kilometers of dirt and gravel roads that are not in condition to provide safe, economical and efficient year-round vehicular travel.

2.12 The work will basically involve: (i) earthworks to widen the existing roadway and improve the vertical and horizontal alignment; (ii) drainage works to control run-off of surface and ground water so as to prevent the erosion and seepage that weaken the stability of the road and adjacent areas; (iii) construction of bridges and other engineering works across major rivers and streams or to protect banks; (iv) construction of low-cost bituminous pavement suited to the anticipated traffic demand; and (v) traffic signals, road signs and other elements to make the roads safe for users.

b. Rehabilitation subprogram

- 2.13 This subprogram will rehabilitate 600 kilometers of secondary roads originally built to substandard specifications and paved with a granular surface protected by a bituminous coating (dust control treatment) or some other type of low-cost pavement. Because of traffic levels and the nature of the load these roads carry, their features need to be upgraded and new pavement laid.
- 2.14 The proposed improvements will include: (i) adapting their geometric features to the new traffic requirements; (ii) expanding and adding to the drainage work; (iii) strengthening or modifying certain structures; (iv) laying new pavement; and (v) installing traffic signals, signs and other highway safety elements.

c. Maintenance subprogram

- 2.15 This subprogram will involve the following maintenance activities:

(i) Restoration

- 2.16 On roads paved with low-cost asphalt pavement (single surface treatment) or treated for dust control, major maintenance will involve patching holes, sealing cracks and a partial or total bituminous-spray treatment to protect or restore the existing surface. The program's planned physical goal is some 650 kilometers.
- 2.17 On dirt or gravel roads, major maintenance will involve leveling the surface in places where there are sizable potholes or strains; replacing excessively damp or inadequate subgrade material; partial or total replacement of granular material on the road surface; and regrading and packing down the wearing course. Under the present program, some 1,500 kilometers of roads will be restored.
- 2.18 In all cases, restoration activities will also include: repairing drainage works, walls and gabions; rebuilding eroded embankments and road drainage works; and replacing and/or adding road signs and other safety features.

(ii) Periodic maintenance

- 2.19 On roads with bituminous pavement (of any type), periodic maintenance will involve resurfacing - after correcting any minor problems there might be - with any of the following procedures: priming; slurry seal; a single asphalt surface treatment; or thin bituminous coating (1" maximum). According to the plan, 2,200 kilometers of roads in the network of main paved roads will get periodic maintenance, as will 1,800 kilometers of secondary roads having either a surface asphalt treatment or dust control treatment.

d. Procurement of equipment

- 2.20 This covers: (i) road maintenance equipment, and (ii) equipment and instruments needed to support the work of assessing pavement management and weight control. The maintenance equipment will consist of machinery and vehicles for replacing obsolete units that are beyond repair, for use in maintenance work that cannot be hired out, or for handling emergency situations.

e. Institutional strengthening subprogram

- 2.21 Under this subprogram, the SAM and SGP will be developed and introduced with a view to rationalizing the use of resources earmarked to improve the highway infrastructure under the DER/BA's jurisdiction and maintain it in satisfactory condition. This system includes the study of alternatives for recovering road maintenance and investment costs as well as those related to an axle-based weight control system. Specialized consulting services will be retained for that purpose and to identify possible adjustments that could be made to the DER/BA's structure to enable it to run those systems efficiently, as the process of privatizing maintenance activities progresses. The consultants are also to design and launch a contract management system [sistema de administração de contratos] (SAC) which will make highway maintenance and pavement management part of the inspection and accounting systems. With this, the DER/BA will have the structure it needs to plan, regulate and manage efficiently as a modern government should.
- 2.22 This component also includes financial resources to train DER/BA staff how to compile the basic data for those systems, how to use the equipment and instruments, and how to run the programs either acquired or developed during the implementation phase. The DER/BA's works inspectors will receive training in how to check to see that the environmental measures required for each type of work are being carried out.

C. Program costs and an itemization of its components

1. Total cost of the program

- 2.23 The total cost of the program has been estimated at the equivalent of US\$294 million. Of that amount, 50% (US\$147 million) will be supplied by the Bank from its ordinary capital resources; the remaining 50% will represent the Bahian state government's participation.
- 2.24 The following table outlines the program's costs.

TABLE OF PROGRAM COSTS (in thousands of US\$)				
CATEGORY	BANK	GOVERNMENT	TOTAL	(%)
1. ENGINEERING AND ADMINISTRATION		10,700	10,700	3.6
1.1 Program Coordinating Unit (PCU)		1,300	1,300	0.4
1.2 Studies and Designs		3,600	3,600	1.2
1.3 Supervision of work		5,800	5,800	2.0
2. DIRECT COSTS (*)	145,530	107,470	253,000	86.1
2.1 Upgrading and paving	66,630	35,880	102,510	34.9
2.2 Rehabilitation	47,730	25,700	73,430	25.0
2.3 Maintenance	28,780	44,870	73,660	25.1
2.4 Procurement of equipment	2,380	1,020	3,400	1.1
3. ASSOCIATED COSTS	--	1,510	1,510	0.5
3.1 Institutional strengthening	--	1,510	1,510	0.5
4. FINANCE CHARGES	1,470	27,320	28,790	9.8
4.1 Interest		25,485	25,485	8.7
4.2 Credit fee		1,835	1,835	0.6
4.3 IDB inspection fee	1,470		1,470	0.5
TOTAL	147,000	147,000	294,000	100.0
(%)	50.0	50.0	100.0	

(*) Escalation of prices and contingencies included.

2. Components of the total cost

a. Engineering and administration (US\$10,700,000)

(i) Program coordinating unit (US\$1,300,000)

- 2.25 This subcategory includes the salaries of the additional staff and operating expenses that the DER/BA will incur in order to operate the program coordinating unit (US\$337,200). It also includes the cost of retaining a specialized consulting firm to advise and assist that unit in managing and monitoring program execution (US\$962,800). The borrower will cover the full cost of the consulting services and the DER/BA's incremental expenses.

(ii) Studies and designs (US\$3,600,000)

- 2.26 This covers the cost of the environmental studies and of the final engineering designs for road upgrading and paving projects and road rehabilitation projects that are not part of the representative sample but will be added to the program. This cost was based on the average per-kilometer cost obtained in similar contracts at the national level and will be financed with resources provided by the borrower.

(iii) Supervision of works (US\$5,800,000)

- 2.27 This includes the cost of supervision and technical control of the works, calculated on the basis of the staff, salary levels, and costs of leasing vehicles and engineering equipment that are routinely involved in this type of consulting services. The figure is approximately 5% of the direct costs of the works to be supervised, which is reasonable. These services will be financed in full by the borrower.

b. Direct costs (US\$253,000,000)

(i) Road upgrading and paving (US\$102,510,000)

- 2.28 This covers the upgrading and paving costs for some 750 kilometers of road. The amount was figured on the basis of the itemized budget for the four projects in the representative sample and includes: (i) direct costs for the labor, equipment and materials used to construct the works, and (ii) the contractors' mobilization, logistical support, administrative, financial and other general expenses and payments.
- 2.29 The total cost of this subcategory takes into account the price escalations likely to occur during the execution period and 10% of the direct costs to cover possible variations in the volume of work, compensation to the owners of property adjacent to the works and other unforeseen expenses. The Bank will finance up to 65% of the cost of the road upgrading and paving works contracted. Annex II-2 includes an itemization of these costs.

(ii) Road rehabilitation (US\$73,430,000)

- 2.30 This includes the direct cost of rehabilitation 600 kilometers of roads. The cost was arrived at by using the average per-kilometer cost taken from the five projects in the representative sample, which was the equivalent of US\$103,379. Price escalations and contingencies were also factored in. The Bank's financing will cover up to 65% of the cost of the road works contracted. Annex II-2 includes an itemization of these costs.

(iii) Highway maintenance (US\$73.660.000)

- 2.31 This covers all direct maintenance costs, including restoration of approximately 2,350 kilometers of secondary roads and periodic maintenance of approximately 4,000 kilometers of main and secondary roads. The cost was computed using the DER/BA's average costs for various types of maintenance work (restoration, periodic maintenance and routine maintenance) on various types of roads (paved, treated for dust control, and gravel or dirt roads).
- 2.32 Drawing from reports on production and costs of activities done on force account and certain contracts recently let by the DER/BA, unit prices were obtained and were then applied to the physical highway maintenance goals for the 1994-1997 period, which gave the total cost of the subprogram. The Bank will finance up to 40% of the cost of the maintenance work done by contract. Annex II-3 contains a breakdown of these costs.

(iv) Procurement of equipment (US\$3.400.000)

- 2.33 The costs of procuring equipment and vehicles were calculated on the basis of price quotations and list prices either in Brazil or on international markets, depending upon whether the purchases are to be made locally or abroad. The Bank will finance up to 70% of the cost of procurement.

c. Associated costs (US\$1.510.000)

(i) Institutional strengthening (US\$1.510.000)

- 2.34 These costs are for the consulting services that will help introduce the SAM, the SGP and the SAC. Also included is the cost of courses to train DER/BA works inspectors how to check to ensure that the environmental measures required for each type of work in the program are being carried out. The full cost of all consulting services and training will be defrayed by the borrower.

3. Terms and conditions of the loan

- 2.35 The Bank's financial contribution will be made in foreign currency, drawn on the ordinary capital, under the following terms and conditions:

TERMS AND CONDITIONS OF THE LOAN	
Amount and source of funds	US\$147 million (OC)
Interest rate	Variable
Amortisation period	20 years
Grace period	4 years
Period of disbursement	4 years
Period for initiation of work	2 ½ years
Credit fee	0.75%
Bank inspection fee	1%

4. Local contribution

- 2.36 The amounts corresponding to "engineering and administration" and "associated costs" will be financed entirely through the local contribution, since Brazil is felt to have enough consulting firms with the requisite technical capabilities and fields of specialization to provide the necessary quality of service at competitive prices.

III. PROGRAM EXECUTION

A. Executing agency

- 3.1 The DER/BA will be in charge of executing the program through the program coordinating unit (PCU) set up within the Bahia State Highway Department for the purpose of coordinating all activities involved in managing the program and to serve as a liaison with the Bank.
- 3.2 The PCU will set up lines of communication with all DER/BA offices in order to expedite the process of contracting for the works and services to carry out the various program components. This unit will also track all loan-related activities to make certain that all the terms agreed upon are duly performed with an eye to ensuring achievement of the operation's objectives.

B. Status of program preparation

- 3.3 The DER/BA has completed the economic feasibility studies, construction designs and environmental assessments for the nine projects in the program's representative sample, as well as the documents necessary to invite bids. It also has drawn up a preliminary list of other roads that might be considered for Bank financing, provided they meet the eligibility criteria defined in the following sections.
- 3.4 Given the environmental features of the areas in which the projects will be located and the nature of the construction work to be done, this program was classified as a Category III operation and the environmental summary was approved at the May 18, 1993 meeting of the Environmental Management Committee. The recommendations made in that report have been incorporated into the construction designs and specifications of the projects in the representative sample and will be taken into account when preparing all other projects eventually included in the program.
- 3.5 The technical documents necessary to begin the bidding procedures for works in the sample projects have been completed, and general criteria have been developed for the terms of reference to be used in selecting the consulting firms that will advise and assist the PCU and in retaining the consulting services needed to supervise the works and develop other technical assistance components. Consequently, the project team has given its consent for publication of the general procurement notice for this operation.

C. Eligibility criteria

3.6 Considering the program's objectives, an agreement was reached with the DER/BA that any project to be included in the program must meet the following eligibility criteria:

- (i) The stretch of road must be part of the main corridor targeted under the program or have access to that corridor either directly or by way of a road whose features are either equal to or better than the stretch of road being proposed and at least one end of the road must be connected to the paved network.
- (ii) The stretch of road will be selected on the basis of its priority as established by means of an economic evaluation at the prefeasibility level.
- (iii) The features of the work to be carried out along the proposed stretch and the status of the final design must be such that the construction work can get under way within 30 months of the date on which the loan contract is signed and be completed within the four-year time frame established for the overall program.
- (iv) The socioeconomic evaluation of the stretch in question must demonstrate a rate of return equal to or higher than 12%, by the same method used to calculate the return on projects in the representative sample.
- (v) The stretch of road selected must have an environmental permit issued by the proper government agency.

3.7 As for the highway maintenance subprogram, the following criteria will be used to determine the eligibility and priority of the roads and to decide whether they will be included in the restoration or periodic maintenance work plans:

- (i) The highway maintenance work to be done each year must be part of a multiyear plan updated each year. The major and periodic maintenance work needed throughout the DER/BA highway system will be established by selecting the best combination of alternatives and ranking planned activities in order of priority.
- (ii) The restoration and periodic maintenance work is to be determined by an evaluation of the service condition of the roads and their volume of traffic, and the best technical and economic solutions are to be adopted.

D. Execution

1. Program administration

- 3.8 The PCU will have the following functions: (i) coordinate and permanently monitor the bidding and contracting process; (ii) prepare the technical and administrative documents for competitive bidding to select the consulting firms that will supervise those works and provide other technical assistance; (iii) select other projects to upgrade, pave or rehabilitate priority stretches of road that are part of Bahia's main highway corridor and oversee the technical, economic and environmental studies needed to demonstrate their viability; (iv) ensure that the road maintenance plan agreed on by the Bank and the borrower is carried out and participate in an annual review of that plan; (v) supervise development of the institutional strengthening component and take an active part in approving and implementing the recommendations that emanate therefrom; and (vi) remain in contact with and work with the Bank at all times and prepare all technical, economic and financial reports and other documents that program administration may require.
- 3.9 To advise the PCU and provide it with technical and administrative support in the many tasks for which it will be responsible, a consulting firm experienced in services of this type will be retained. Specialists on the team detailed by that consulting firm will also assist with technology transfer and DER/BA staff training.
- 3.10 These consulting services are to be retained before the Bank authorizes the first disbursement from the loan, ^{3/} in accordance with the procedures required under Brazilian law. The cost of these services will be covered with resources from the local contribution, and they will be retained for the duration of the program execution period, unless otherwise agreed with the Bank.

2. Additional studies and designs

- 3.11 The technical, economic and environmental studies and engineering designs for the construction work in the representative sample of the program cover a total of some 410 kilometers. This means that similar studies must still be conducted for another 940 kilometers, to look at the viability of other projects and prepare the final designs for those that will be included in the program to complete the goal of 1,350 kilometers of roads.
- 3.12 Specialized consulting firms will be commissioned to perform the technical and environmental studies for projects not in the sample,

^{3/} See proposed resolution, Appendix I.

following the procedures established under Brazilian law. Here, too, their costs will be covered by the local contribution. Some of these contracts have been signed already; all the remaining services must be contracted for within six months of the date of signature of the loan contract. 4/ All of this is to ensure that the bidding formalities on the works involved will be completed and the contracts let within 30 months of the effective date of the loan.

- 3.13 The economic viability studies for the projects not in the representative sample will be conducted by the executing agency, which has staff qualified to conduct those studies punctually.
- 3.14 Estimates are that in principle each consulting contract will cover approximately 200 kilometers of roads, although this will depend on how widely scattered the projects are and how difficult it is to inspect the services.

3. Road construction and maintenance

a. Construction work

- 3.15 Private contractors will do all road construction work under the program. Bidding will follow Bank standards and procedures, using the method of international public bidding. All road works for the stretches in the representative sample will be put up for bid simultaneously, except when otherwise agreed with the Bank. Subsequent calls for tenders will follow the tentative bidding and letting timetable that appears later in this document.
- 3.16 Bidders must tender separate bids for stretches that go up for bids simultaneously. However, they may also include alternatives that presuppose their being awarded two or more stretches, provided those offers do not exceed their financial means and performance capacity.
- 3.17 The construction work to be carried out under the subprograms in question is neither complex nor large enough for the Bank to require prequalification of bidders. However, since Brazilian law so stipulates, the bidding process will include prequalification.
- 3.18 In general, the road works that each project involves will be completed within 18 months; therefore, it is recommended that the deadline for physical startup of all construction work included in the program be two and a half years from the effective date of the loan contract. 5/

4/ See Recommendations, Appendix II.

5/ See proposed resolution, Appendix I.

- 3.19 The DER/BA asked the project team for authorization to begin the bidding and contracting process for the construction work involved in the program's representative sample so that startup could get under way as soon as the operation was approved. The project team reviewed the bidding specifications and found them to be adequate. Accordingly, the DER/BA has opened the bidding process by publishing the general procurement notices and notifying the embassies pursuant to applicable Bank procedure and policy.

b. Highway maintenance

- 3.20 Road maintenance work eligible for Bank financing will be done by contracting firms selected according to the Bank's standards and procedures. In these cases, the Bank will contribute the equivalent of 40% of the contract amounts.
- 3.21 In August of each year starting as of the effective date of the loan contract, the Bank and the borrower will meet to draw up a detailed maintenance plan for the DER/BA road system for the following year, which will include the activities eligible for Bank financing as well as those that will be financed exclusively by the Government of Bahia. That meeting will be used as an opportunity to evaluate execution of the previous year's plan and to decide what measures are needed to make adjustments or correct any deviations from the established goals. 6/
- 3.22 Starting in the program's second year, the consultants in charge of implementing the SAM and the SGP will be providing the technical input needed to develop the plan and monitor its execution.

4. Supervision of work

- 3.23 Specialized consulting firms will be engaged to supervise all work performed. They will be selected according to the procedures established under Brazilian law and their costs will be covered by the local counterpart resources. The contracts with these firms must be signed before the bids are awarded for the work they will supervise. 7/ Hence, the competitions will have to be scheduled to fit in with the timetable proposed for inviting tenders and letting contracts.
- 3.24 It is felt that each supervisory firm should be able to oversee technical quality and management of a group of projects whose total length does not exceed 200 kilometers. Based on that assumption, six calls for bids will be needed in order to select the consulting firms that will supervise the work on the 1,350 kilometers of road under the program.

6/ See Recommendations, Appendix II.

7/ See Recommendations, Appendix II.

- 3.25 The services performed by the supervisors will include though not be limited to the following: (i) reviewing designs to ensure that they are compatible with conditions at the site and preparing detailed construction plans to show any modifications and corrections that are to be introduced; (ii) making certain that contractors honor the terms of their contracts and work to the projects' technical specifications; (iii) checking to ensure that all protective measures and recommendations intended to eliminate or mitigate possible negative environmental effects are carried out; (iv) taking the measurements and doing the price analyses needed to prepare the monthly payment vouchers for contractors, based on the volume of construction executed; and (v) preparing all documents and reports that have to be presented periodically to the PCU so that it may present them to the Bank promptly.
- 3.26 The supervisory firms will be contracted for the period of time required to execute the work they will supervise, plus another 45 days for preparing the certificates of completion of work and the final report.

5. Institutional strengthening

- 3.27 All the consulting services required for implementing the SAM, SGP and SAC systems and for the DER/BA's institutional strengthening will be contracted within four months of the effective date of the contract, and will observe applicable Brazilian legislation. 8/

6. Procurement of goods and services

- 3.28 All construction or service contracting and procurement of equipment and materials planned under this program, except for the consulting services to be financed in full with the borrower's resources, are to be carried out according to Bank procedures. When the work for which bids are being invited exceeds the equivalent of US\$1 million and when the amount of the goods or services to be procured exceeds US\$250,000, the bidding and/or competitions shall be at the international level. These procedures will be part of the loan contract.
- 3.29 During the analysis mission for this operation, the project team advised DER/BA authorities on the Bank's procurement procedures and related rules, so that they can be taken into account when preparing the bidding conditions and the announcements calling for tenders. The table in Annex III-1 shows the calendar for bidding competitions and contracting.

8/ See Recommendations, Appendix II.

E. Right-of-way

- 3.30 The analysis of the representative sample confirmed the fact that the right-of-way will not have to be widened to accommodate the road works under this program and properties fronting on the roads in question will not be significantly affected. While no problems of this nature are anticipated, the "contingencies" item listed under the direct costs category includes a sum equivalent to approximately US\$700,000 to cover possible compensations to property owners, to be paid out of resources contributed by the borrower.
- 3.31 Before the Bank can authorize the calls for tenders, the borrower must present evidence that it has legal possession of the land upon which the road works will be built. 2/

F. Execution period and investment schedule

1. Execution period

- 3.32 The program will have an execution period of four years as of the effective date of the loan contract.

2. Investment schedule

- 3.33 The schedule of disbursements was prepared on the basis of the timetable for program execution and is summarized in the following table:

SCHEDULE OF DISBURSEMENTS, BY SUBPROGRAM (US\$000)						
Item	1994	1995	1996	1997	TOTAL	(%)
1. ENGINEERING AND ADMINISTRATION	4,400	2,800	1,800	1,500	10,700	3.6
1.1 Program coordinating unit	400	300	300	300	1,300	0.4
1.2 Studies and designs	2,500	1,100	0	0	3,600	1.2
1.3 Supervision of works	1,500	1,500	1,500	1,300	5,800	2.0
2. DIRECT COSTS (*)	87,232	89,896	71,941	43,931	253,000	86.1
2.1 Upgrading and paving	25,182	30,663	31,069	15,596	102,510	34.9
2.2 Rehabilitation	21,680	22,006	22,294	7,450	73,430	25.0
2.3 Maintenance	16,970	17,227	18,578	20,885	73,660	25.1
2.4 Procurement of equipment	3,400	0	0	0	3,400	1.1
3. ASSOCIATED COSTS	750	710	50	0	1,510	0.5
3.1 Institutional strengthening	750	710	50	0	1,510	0.5
4. FINANCE CHARGES	2,737	5,844	8,893	11,316	28,790	9.8
4.1 Interest	1,594	4,837	8,194	10,860	25,485	8.7
4.2 Credit fee	778	639	332	88	1,835	0.6
4.3 IDB inspection fee	367	368	367	368	1,470	0.5
Annual total	75,119	79,850	82,884	56,847	294,000	100.0
ANNUAL ADVANCE %	25.55	26.99	28.12	19.34	100.0	

(*) Price escalations and contingencies included.

G. Recognition of expenditures and retroactive financing

- 3.34 According to the timetable for program execution, the only costs to be recognized against the local counterpart contribution would be those incurred in the engineering designs and environmental studies for projects not in the representative sample, up to a total of US\$650,000 equivalent.

H. Advances

- 3.35 So that the borrower might have financial resources with which to give consultants and contractors advances at the start of the program, it is recommended that once the conditions precedent to

the first disbursement have been met and if and when the competent authorities of Bahia's state government so request, an advance of up to the equivalent of 10% of the total amount of the loan be authorized.

I. Environmental considerations

- 3.36 The state of Bahia has spelled out the basic principles governing environmental matters in Law 3858 of 1980. That law institutes the State Environmental Resource Management System [Sistema Estadual de Administração dos Recursos Ambientais] (SEARA) which consists of two agencies: the State Environmental Protection Council [Conselho Estadual de Proteção Ambiental] (CEPRAM) and the Environmental Resource Center [Centro de Recursos Ambientais] (CRA). The CEPRAM is the system's deliberative and legislative body, while the CRA carries out its directives and enforces its rules.
- 3.37 In 1989, through State Decree 2303, the institutional apparatus for environmental issues was strengthened with the creation of environmental advisory services units [núcleo de assessoramento de meio ambiente] (NAMA) in each secretariat of state. With Resolution 51/89, a NAMA was set up within the Secretariat for Energy, Transportation and Communications (SETC). More recently, the CEPRAM has started to require that technical environmental protection committees [comissões técnicas de garantia ambiental] (CTGA) be in place before the preliminary permit is issued, as another way to ensure that environmental control measures will be taken during the execution of physical works of the kind that this program involves.
- 3.38 The project team found the SEARA's institutional structure to be adequate and capable of properly monitoring and controlling the state's environmental affairs. For the present program, the CRA decided that because the works involved are to upgrade and repave existing roads, no environmental impact assessment (EIA) or environmental impact report (RIMA) need be done. Nevertheless, at that agency's request, an environmental impact study was done for the program. This study identified the direct and indirect potential negative impacts and proposed mitigative measures which are considered satisfactory.
- 3.39 Given the existing institutional setup, two CTGAs will have to be created for each stretch of road or group of roads included in the program before work on those stretches can begin. One of the committees will consist of officials from the SETC and the DER/BA designated to serve on that committee. The other committee will consist of the works contractor, by agreement of its board of directors, which must be legally registered. Both CTGAs will inspect and monitor any preventive or mitigative measures taken, prepare reports and handle the general administration of environmental matters in the physical area encompassed by their assigned project. Any coordination needed with the CRA to enable

the CTGAs to perform their functions will be handled through the NAMA at the SETC.

- 3.40 Since neither the SETC nor the DER/BA has environmental specialists on their professional staff, specialized consultants need to be on hand to advise the CTGAs. The technical staff that checks to ensure that environmental protection measures are carried out must also be properly trained. For these reasons, resources for technical assistance and training in those areas have been included in the program.
- 3.41 It is further recommended that the following conditions be included in the loan contract: (i) the DER/BA is to set up the respective CTGAs before the physical startup of work for each stretch or package of stretches; and (ii) before awarding contracts for works in the Chapadões Ocidentais region, the DER/BA is to submit evidence to the Bank that the CRA has assigned an agrotoxins specialist and a water management specialist for that area. These experts must have proven experience and skill and will provide support for staff at the CRA's regional office in Barreiras, since this is an agricultural area that practices modern, high-technology, high-yield farming. 10/

J. Ex post evaluation

- 3.42 In keeping with current policy (memorandum from the Comptroller dated March 26, 1993), the state of Bahia was consulted and subsequently indicated that it was interested in doing an ex post evaluation of the program. The method that will be used is similar to the one used in recent highway programs carried out in Brazil with Bank support. 11/

10/ See Recommendations, Appendix II.

11/ See Annex A, Appendix III.

IV. THE BORROWER AND THE EXECUTING AGENCY

A. Institutional analysis

1. The borrower

- 4.1 The borrower in the highway corridor program will be the State of Bahia, with the Federative Republic of Brazil providing a joint and several guarantee for the financing being recommended in this document.

2. The executing agency - the Bahia State Highway Department

a. Nature, functions and organizational structure of the executing agency

- 4.2 In Bahia, the Secretariat for Energy, Transportation and Communications (SETC) formulates and applies policies in the transportation sector, while the Bahia State Highway Department (DER/BA) is responsible for carrying out programs in the highway subsector. Created in 1946, the DER/BA is a decentralized government agency affiliated with the SETC, with legal status and administrative and financial autonomy.
- 4.3 Its functions are specified in its bylaws, most recently revised in 1985, and consist primarily of carrying out highway studies and projects, maintaining and improving state roads and monitoring and inspecting traffic on those roads.
- 4.4 To achieve its basic objectives, the DER/BA has adopted a structure that is consistent with its bylaws. While this structure has allowed the agency to perform its basic functions, there is still room for improvement. The view is that its planning, execution and supervision of activities need to be strengthened, particularly maintenance which to a large extent has been done on force account. Maintenance resident engineer offices have not been performing their functions systematically, generally because resources are limited; often they confine themselves to emergency situations.
- 4.5 Given these circumstances, the director general created a permanent advisory group to make recommendations on ways to improve the department's efficiency and effectiveness. Based on the group's findings, administrative improvement measures were identified. First, staff could be trimmed by retiring persons with low productivity either by enforcing the legal retirement age or by offering incentives. Secondly, the organization needs to be modernized by developing new techniques such as the maintenance management system, pavement management system and contract management system. The program under study will help to launch these systems and ensure that environmental considerations are included when planning and managing highways. Third, it was

recommended that more of the services traditionally performed by the DER/BA be contracted out to the private sector, which can provide them more efficiently. Hence, the program's maintenance component makes allowance for periodic maintenance and restoration work eligible for Bank financing to be contracted with specialized firms.

b. Personnel

- 4.6 The Personnel Unit of the Administrative Services Office manages the DER/BA's human resources. The agency has no recruitment, selection, compensation, promotion, or training policies; instead, it adopted the existing general guidelines for state government personnel. A government directive still in effect prohibits additional hiring and thereby limits the agency's latitude in managing its human resources.
- 4.7 The following table shows the DER/BA staff in active service as of January 31, 1993.
- 4.8 Because of the restriction on hiring new staff, the DER/BA's age profile and average length of service are relatively high. This is especially true of the field staff at the resident engineer offices, who account for approximately 70% of the staff. On the whole, DER/BA staff perform their assigned functions satisfactorily.

Active DER/BA - Staff as of January 31, 1993		
Unit	Number	%
Office of the Director General	50	1.3
Programming and Budget Office	15	0.4
Legal Department	21	0.6
Auditing Office	15	0.4
Administration	223	6.0
Financial management	39	1.0
Industrial mechanics	139	3.7
Technological research	32	0.9
Studies and Projects Division	89	2.4
Construction Division	169	4.5
Road Maintenance and Upgrading Division	2,952	78.8
Total	3,744	100.0

c. Budgetary, accounting and financial management

- 4.9 The Office of Financial Management is in charge of executing the budget, recording budgetary and financial transactions and effecting and controlling disbursements. The Programming and Budget Office formulates the budget proposal and then programs it through a quarterly plan previously agreed upon with the Planning Secretariat [Secretaria de Planejamento] (SEPLAN). This plan is computerized so that it can be monitored and supervised.
- 4.10 The DER/BA's accounts are part of the accounting system and are integrated with the state planning system. These subsystems are all interconnected in the state financial system, which is suitably designed and computerized for all government offices. The staff in charge of these functions are reasonably familiar with the procedures and perform their functions satisfactorily. Finally, administration of the program involves accounting and financial functions and requires personnel with the skills to perform them.

d. Internal control

- 4.11 The Internal Auditing Office evaluates the DER/BA's management of itself and is directly answerable to the director general. On the whole, the basic functions stipulated in the agency's bylaws are performed satisfactorily, the exception being the general planning functions and how they are interpreted.
- 4.12 The unit chief supervises a group of professional accountants, economists and engineers whose auditing experience is limited to DER/BA internal auditing. These professionals do not participate in training courses. Their functions include visiting the resident engineer offices and reviewing procedures for bidding, financial management and general services, all according to a draft auditing manual. The data processing area, however, is not checked. Moreover, the independence so essential for this evaluation and control activity is compromised by the fact that staff from the internal auditing office perform line functions, checking a disbursement's supporting documents before checks are issued.
- 4.13 With this in mind and to enable the unit to function more effectively, it is recommended that the loan contract include a clause to the effect that the borrower, through the executing agency, shall reorganize the functions of the DER/BA's internal auditing office within 12 months of the effective date of the loan contract to introduce the following functions or adjustments: (a) planning activities for the following year; (b) examining the data processing work and the proposed program's technical and financial execution; (c) providing professional training to the unit's staff; (d) preparing the final version of the auditing manual and periodically updating it; and (e) eliminating all line functions that should be subject to a *posteriori* review exclusively. Within 24 months of the effective date of the loan contract, the borrower

is to demonstrate that the reorganization has been satisfactorily completed. 12/

e. External control

- 4.14 External control of the DER/BA is currently performed under a system whereby a statement of all transactions effected is presented each year to the state auditing office.
- 4.15 In addition to its review of these annual statements, the state auditing office makes several periodic visits during each fiscal period to check the legality and legitimacy of the DER/BA's activities and transactions. The Office of the State Comptroller General, part of the executive branch of the state government, also audits the department and reviews its budgets and accounts. Similarly, but with different authority, officials from the SETC, the Secretariat of the National Treasury, and SEPLAN also have a role. This control system is reasonable and effective.
- 4.16 It is recommended that the present program's financial statements be submitted each year for the duration of the program, to be certified by a firm of independent public accountants, 13/ which will operate under the supervision of the Secretariat of the National Treasury of the Ministry of the Treasury and in accordance with the Bank's requirements in this area. The first financial statements shall be for the year in which the program begins. 14/

f. Maintenance

- 4.17 Maintenance is functionally assigned to the Highway Maintenance and Improvement Division, which performs these activities through 20 maintenance and improvement resident engineer offices, each under the supervision of a resident engineer. The DER/BA's institutional maintenance setup reflects the functional departmentalization typical of highway agencies in Brazil. The Division is thus organized into technical coordination offices for maintenance and improvement, for traffic safety, and for equipment operation.
- 4.18 Two technical coordination offices for highway maintenance have been set up (Region I and II), each one with 10 resident engineer offices. They direct and supervise maintenance and improvement services in the rights-of-way, put down the bituminous surface and pavement, build drainage works and other structures and install

12/ See Recommendations, Appendix II.

13/ The authorities of the State of Bahia have requested that these functions be performed by the state auditing office. The specialized unit of the Bank presently has that request under study.

14/ See Recommendations, Appendix II.

road signs and signals. The traffic safety office compiles traffic statistics and looks for vehicles with excess or hazardous cargo. The equipment operation office maintains, repairs and schedules the use of highway equipment.

- 4.19 The institutional structure described above and the respective decision-making processes involve considerable formalities and are centralized with the technical units at headquarters. Nevertheless, a budgetary and financial decentralization process is under way, and, as a result, the resident engineer offices are beginning to handle bidding procedures that are based on letters of invitation, a procedure used for contracts that, taken separately, are not in excess of US\$50,000. Moreover, implementation of the SAM, the SGP and the SAC included under the program will make highway maintenance better and more economical and allow better monitoring of services provided by third parties. 15/

B. Financial review 16/ 17/

1. State of Bahia

a. State resources

- 4.20 Using the State of Bahia's balance sheets, a consolidated table of resources for the 1988-1992 period was prepared and appears below.

15/ These and other aspects of highway maintenance are also discussed in Chapter III, while maintenance costs are discussed under the section titled Financial Review, below.

16/ The following criteria have been used for the financial review: (1) current monetary values have been expressed in currency values as of the end of December 1992; (2) the resulting amounts were converted into United States dollars at the exchange rate of Cr\$12,387 = US\$1.00, the last quoted rate for December 1992.

17/ This review and analysis covers income and expenditures exclusively for direct state administration, except for the "personnel expenses" category, which includes amounts transferred to pay salaries and wages of agencies under the indirect administration system for work not done by the force account method.

GOVERNO DO ESTADO DA BAHIA
SECRETARIA DA FAZENDA - DEPAT

BUDGETARY EXECUTION OF STATE REVENUE 1988-1993
US\$ Thousand 1/

ITEMS	1988	1989	1990	1991	1992	Total Actual 1988-1992
	Actual	Actual	Actual	Actual	Actual	
CURRENT REVENUE	1,957,897	1,832,098	1,798,412	1,892,231	2,182,138	9,172,804
*Tax Revenue	908,167	928,486	971,842	1,058,544	1,070,573	4,937,220
- Taxes	908,517	934,447	988,734	1,088,785	1,088,670	4,951,128
IR	0	0	7,244	9,048	6,340	16,633
ITBI / ITD	10,503	1,551	483	1,284	1,472	18,288
ICMS	888,432	918,279	954,377	1,078,534	1,053,768	4,892,411
IPVA	9,351	4,916	4,891	2,591	5,098	23,620
- Fisco	1,690	2,047	4,507	2,098	3,903	14,284
*Investment Income	229,598	288,537	102,888	317,217	542,703	1,481,224
*Service Income	283	0	0	10,442	27,746	38,441
*Current Transfers	388,770	248,738	852,285	515,306	487,130	2,213,209
*Other Current Revenue	40,008	168,988	181,807	80,423	43,985	473,861
CAPITAL REVENUE	488,387	478,388	248,085	91,148	147,548	1,428,454
*Sale of Goods and Property	0	3	4,325	258	1,207	5793
*Capital Transfers	148,182	158,828	18,008	17,749	13,888	355,650
*Other Capital Transfers	16,910	6,800	7,712	9,143	0	40,565
*Borrowings	288,581	314,855	218,040	83,998	132,473	1,028,848
- Domestic	285,774	314,756	218,040	83,228	131,880	1,021,457
- External	3,807	99	0	770	813	5,489
Totals	2,033,033	2,110,344	2,044,497	2,083,379	2,329,684	10,600,858

Sources: SECRETARIA DA FAZENDA - BALANCOS GERAIS DO ESTADO

1/ Exchange rate: Cr\$12387 = US\$1.00

- 4.21 Total state resources rose as a result of the increase in current revenue from 77% of the state's total resources in 1988 to 94% in 1992. The reasons for this increase can be summarized as follows: (a) the 1988 tax reform expanded the base of the general sales tax [imposto sobre circulação de mercadorias] (ICM) which, as of 1989, included several services as well [imposto sobre circulação de mercadorias e serviços] (ICMS); (b) several items previously listed under "capital transfers from the Federal Government" have been shifted so that they now appear under the "current" category and the state's percentage share in several federal capital transfers also rose; (c) borrowings fell from 15% of total revenue in 1988 to just 6% in 1992.
- 4.22 In the category "tax and fee revenue", tax revenue predominates, especially the ICMS, which averaged over 46% of the state's total revenue for the period in question. Revenue from the ICMS has been increasing, except for a slight drop in 1992; the cumulative annual rate for the period as a whole was 4.4%. An important factor here was the tax reform and higher tax revenue brought about by better auditing of taxpayers to curtail tax evasion.
- 4.23 Investment income refers to revenue from the state's investments on the open market. This revenue represented 14% of the total, which indicates that the high return on capital in Brazil's very inflationary economy was used to good advantage. The 1990 drop is a function of the change of government that occurred the following year, which is normally attended by increased spending by the outgoing administration; a change of administration also sometimes means that state coffers are temporarily short on resources for investments.
- 4.24 The increase in current transfers and the offsetting decrease in capital transfers was the result of new budgetary procedures, including Federal Government transfers to the state of its respective share under the State Revenue Sharing Fund and transfers to the Unified Health System. The overall increase was also due to the fact that the new criteria for distributing these shares favored states in the north, northeast and central-west regions of the country, and other amounts that were long past due were also finally released.
- 4.25 Financings, which averaged 10% of total state treasury revenue, are domestic loans for the most part negotiated with the Caixa Econômica Federal (CEF). In 1990, Bahia, and several other states, declared a moratorium on balances owed to the CEF, with the result that income from that source decreased in the years that followed. As a rule, operations were confined to two-year renewals and, starting in 1992, three-year renewals of 88% of matured government bonds with the remaining 12% being paid off. As for foreign loans, the moratorium declared by the Federal Government in 1990 meant that no new contracts were signed.

b. State expenditures

- 4.26 The state's balance sheets for the 1988-1992 period have been consolidated by spending category and are shown in the following table.
- 4.27 Actual total outlays increased during the period by 10%, equal to a cumulative annual rate of 2.4%. Current expenditures accounted for 70% of the total, while personnel costs represented 27%. As of 1991, wages and salaries were estimated to have lost 20% of their purchasing power. That was the new administration's first year in office and as usually happens at the start of each administration, an effort was made to clean up public finances by reducing spending and setting savings aside for the years ahead. Thus, in 1992 salaries rebounded 3% over the previous year.
- 4.28 The "personnel" category item increased in 1993 not because of an increase in the payroll, but - by federal law - the data on the fiscal balance sheet must be presented differently. Wages and salaries pertaining to work contracted out, which heretofore had been entered under current transfers, are now included under the "personnel" category for the force account system. Consequently, current transfers show a decline, including the 25% share of the revenue from the ICMS and export fund and the 50% share of the vehicle property tax that go to the municipalities, as required under the state constitution.
- 4.29 Capital expenditures, which represented 30% of total expenditures, include physical and financial investments, transfers for investments made by state enterprises, and amortization of the public debt. Capital transfers were the most significant item in that group, accounting for 13% of total expenditures. In 1991, with the start of a new administration, capital expenditures slowed down, but then picked up again in fiscal year 1992. For the immediate future, investment priorities will focus on several programs receiving partial Bank financing.
- 4.30 Approximately 12% of treasury revenue went toward servicing the debt: 4% for finance charges and 8% for paying back the principal owed on both domestic and external debt. The highest finance charges paid on the domestic debt were in 1989 and 1990, when new contracts were signed with the CEF, although the moratorium declared in late 1990 triggered a gradual decline in that item. Something similar occurred with payments of principal, which increased in 1992 because of the payments made to reschedule the debt with the Banco Nacional and Bamerindus. Decisions made by the Central Bank were behind the variations in payments on the external debt.

GOVERNO DO ESTADO DA BAHIA
SECRETARIA DA FAZENDA - DEPAT

Budgetary Execution of State Expenditures 1988 - 1992
US\$ Thousands^{1/}

ITEMS	1988 Actual	1989 Actual	1990 Actual	1991 Actual	1992 Actual	Total Actual, 88/92
Current Expenses	1,549,914	1,583,525	1,345,975	1,459,035	1,568,935	7,507,384
*Payroll and benefits	628,653	601,745	660,885	502,373	517,006	2,910,662
*Current Transfers	636,456	662,465	420,478	700,351	775,828	3,195,578
*Financial Expenses	64,085	129,870	98,577	53,107	54,598	400,238
Domestic Debt	41,051	114,887	90,790	41,796	39,162	327,686
External Debt	23,035	14,983	7,787	11,312	15,436	72,552
*Other Current Expenses	220,720	189,445	166,035	203,204	221,503	1,000,906
Capital Expenditures	666,362	446,526	848,955	330,717	864,312	3,156,872
*Investment	174,120	127,890	120,160	60,240	151,774	634,185
*Financial Investment	35,898	27,391	223,741	18,582	51,386	356,998
*Capital Transfers	221,664	172,629	347,306	137,737	453,212	1,332,548
*Debt Amortization	234,680	118,616	157,748	114,158	207,940	833,142
Domestic Debt	179,420	88,487	154,625	104,983	197,972	725,487
External Debt	55,259	30,130	3,123	9,175	9,968	107,655
Reserve for Contingencies	0	0	0	0	0	0
Totals	2,216,276	2,030,051	2,194,930	1,789,752	2,433,247	10,664,256
Total Revenue	2,033,053	2,110,344	2,044,497	2,083,379	2,329,684	10,600,957
Difference Revenue/Expenditures	(183,223)	80,293	(150,433)	293,627	(103,563)	(63,299)

SOURCE: SECRETARIA DA FAZENDA - BALANCOS GERAIS DO ESTADO

1/ Exchange Rate: Cr\$12387 = US\$1.00

- 4.31 Examining the performance of the state budget in the 1988-1990 period, one finds that the State of Bahia generated sufficient current revenue to cover its operating expenses. Therefore, the deficits that occurred in 1988, 1990 and 1992, equivalent to 9%, 7.4% and 4.4% of total resources, respectively, were the result of its investment policy and not an operating deficit. In 1992, it was financed by borrowing against the 1991 surplus. In the other two years, the budget category "balances payable" was used whenever necessary, thereby deferring until the following year repayment of debts incurred the previous year.

c. State public debt

- 4.32 The borrowing position of the State of Bahia as of December 31, 1992 is illustrated in the following table.

Public Debt of the State of Bahia as of December 31, 1992 (US\$000)					
Type of debt	Current amount	Balance Due		Total	%
		Principal	Interest		
DOMESTIC	1,407,639	104,013	127,858	1,639,510	87
Loans	1,177,882	104,013	127,858	1,409,753	75
Bonds	222,318	0	0	222,318	12
Guarantees	7,439	0	0	7,439	-
EXTERNAL	164,668	73,911	7,071	245,650	13
Loans	164,668	73,911	7,071	245,650	13
Total	1,572,307	177,924	134,929	1,885,160	100

- 4.33 The state is up to date on 83% of its debt. Of the portion due and payable, 12% is on the domestic debt and the remaining 5% on the external debt. The domestic debt includes the overdue balances with the CEF, the Central Bank and the Banco do Nordeste do Brasil - all federal government institutions - and with DESEMBANCO - a state institution. Expectations are that the amounts overdue will be rescheduled once a bill now before Congress has been passed.
- 4.34 Up to 1988, the external debt was being paid regularly. Toward the end of 1989, however, monetary authorities ordered the suspension of payments. At the present time, the external debt includes principal and interest owed to private banking institutions. None of the principal is being repaid, and only 50% of the interest owed is being repaid, although at one time that figure was as low as 30%. Payments will be resumed once the national authorities come to an agreement with their foreign creditors and, it is hoped, on terms similar to those agreed upon for the Federal Government.

- 4.35 From the evidence presented to the Bank, the State of Bahia presently has borrowing capacity and the capacity to repay its debts, including the loan from the Bank, since it meets the requirements established by the Federal Senate (Resolution 36 of June 1992). The State, therefore, is eligible to request the authorization needed to negotiate new loans.

d. Tax and fee-based revenue associated with highway transport

- 4.36 Revenue from this source for the period between 1988 and 1992 is shown in the table below.
- 4.37 Until just a few years ago, there were several taxes that were used to fund the National Highway Fund, which was divided between the federal and state governments. Economic policy decisions at the federal level later merged that fund with the National Development Fund with the result that the highway sector gradually lost its chief source of funding.
- 4.38 In place of one of those taxes, a general vehicle tax was created in 1986. Later, with the enactment of the 1988 Constitution, more fiscal revenue was shared with the states and municipalities when the sales tax base was expanded. Under the federal and state constitutions, the municipalities are to receive 25% of the revenue from the sales and services tax and 50% of the revenues from the vehicle tax, under the principle of revenue sharing.
- 4.39 At present, revenue from these taxes is not linked to any specific government program, either state or municipal, since that is prohibited under the Constitution. Nevertheless, the 1988 Constitution is slated for review shortly and that prohibition may be repealed. Moreover, approximately 75% of the outlays for the DER/BA's highway maintenance and construction programs are paid out of revenue generated by taxes on users of the state's transportation services, which is an acceptable figure.

VERNO DO ESTADO DA BAHIA
 CRETARIA DA FAZENDA - DEPAT

FISCAL REVENUE GENERATED BY THE TRANSPORT SECTOR
 US\$ Thousand 1/

TAX OR LEVY	1988	1989	1990	1991	1992
ULCLG	28,180	3,008	-	-	-
CNP (share)	4,420	1,813	-	-	-
IPVA	8,881	4,818	4,881	2,881	5,081
ICMS	-	90,424	221,781	199,828	208,081
1 PETRO-CHEMICAL INDUSTRIES	-	41,451	129,030	122,874	140,781
2 TRANSPORT SERVICES	-	30,992	52,273	48,872	38,411
3 TAXES ON WHOLESALE FUEL AND LUBRICANTS	-	17,085	35,205	24,114	23,081
4 TAXES ON RETAIL FUEL AND LUBRICANTS	-	1,288	5,271	5,888	8,831
TOTAL	37,101	99,882	225,445	228,815	215,115

SOURCE: BALANCOS GERAIS DO ESTADO, BALANCOS DO DERBA E GEARC-Gerencia de Arrecadacao da SECRETARIA DA FAZENDA

2. The Bahia State Highway Department (DER/BA)

- 4.40 The following summary table shows that between 1988 and 1992 around 42% of the DER/BA's income was current income, while the remaining 58% was noncurrent. There were no toll increases.

BUDGET PERFORMANCE 1988-1992 REVENUE BAHIA - DER/BA (US\$000)		
Current revenue	202,839	42.4
Transfers	195,219	40.8
Agreements	853	0.2
Non-linked revenue	186,439	39.0
Linked revenue	7,927	1.7
Other current revenue	7,620	1.6
Noncurrent revenue	275,386	57.6
Transfers	271,591	56.8
Agreements	11,249	2.4
Non-linked revenue	220,291	46.1
Linked revenue	38,029	8.3
Other noncurrent revenue	3,785	0.8
Total	478,225	100.0

- 4.41 There was a drop in the so-called "linked revenue", which represents transfers of revenue collected by the Federal Government - when there was a National Highway Fund - for highway programs. As explained earlier, Brazil's 1988 Constitution decentralized that responsibility to the states. Now, with the exception of certain minor revenue from agreements, fines, the sale of bid specifications and other similar sources, revenue is basically not linked. This means that it comes from the state treasury in the form of transfers. At the present time, such transfers account for almost all of the DER/BA's resources.
- 4.42 The table below shows the department's outlays by program. Two thirds of its resources were spent on construction work, which does not include restoration. The remaining third was earmarked for road restoration (14%), equipment purchases (1%) and road maintenance (18%). Periodic and routine maintenance absorbed 8% and 10%, respectively. Those functions have been performed primarily on force account, although often the resident engineer

DERBA - DEPARTAMENTO DE ESTRADAS DE RODAGEM DA BAHIA
S A F - SERVICO DE ADMINISTRACAO FINANCEIRA
US\$ Thousand 1/

	ITEMS	CIVIL WORKS	REST.	EQUIP.	PERIODIC MAINTEN.	ROUTINE MAINTEN.	GENERAL EXPENSES	TOTAL
1	WAGES	0	0	0	0	0	18,070	18,070
	SUPPLIES	0	0	0	0	1,567	2,913	4,479
9	THIRD PARTY SERVICES	0	0	0	0	831	1,180	1,811
	EQUIPMENT	0	0	831	0	0	0	831
8	CONTRACTS	18,887	0	0	13,383	0	0	30,080
	OTHER OUTLAYS	0	0	0	0	0	16,323	16,323
8	MISCELLANEOUS	0	0	0	0	0	180	180
	TOTAL	18,887	0	831	13,383	2,188	38,885	71,874
	ITEMS	CIVIL WORKS	REST.	EQUIP.	PERIODIC MAINTEN.	ROUTINE MAINTEN.	GENERAL EXPENSES	TOTAL
1	WAGES	0	0	0	0	0	22,821	22,821
	SUPPLIES	0	0	0	0	1,447	2,171	3,618
9	THIRD PARTY SERVICES	0	0	0	0	798	1,186	1,986
	EQUIPMENT	0	0	1,488	0	0	0	1,488
8	CONTRACTS	28,807	14,287	0	3,575	0	0	44,879
	OTHER OUTLAYS	0	0	0	0	0	6,797	6,797
9	MISCELLANEOUS	0	0	0	0	0	188	188
	TOTAL	28,807	14,287	1,488	3,575	2,248	33,275	81,667
	ITEMS	CIVIL WORKS	REST.	EQUIP.	PERIODIC MAINTEN.	ROUTINE MAINTEN.	GENERAL EXPENSES	TOTAL
1	WAGES	0	0	0	0	19,382	13,509	32,891
	SUPPLIES	0	0	0	0	6,863	1,139	7,802
9	THIRD PARTY SERVICES	0	0	0	0	3,872	1,131	5,003
	EQUIPMENT	0	0	401	0	0	0	401
9	CONTRACTS	183,118	39,847	0	180	0	0	203,125
	OTHER OUTLAYS	0	0	0	0	0	2,242	2,242
0	MISCELLANEOUS	0	0	0	0	0	712	712
	TOTAL	183,118	39,847	401	180	29,917	18,733	252,175
	ITEMS	CIVIL WORKS	REST.	EQUIP.	PERIODIC MAINTEN.	ROUTINE MAINTEN.	GENERAL EXPENSES	TOTAL
1	WAGES	0	0	0	0	0	20,847	20,847
	SUPPLIES	0	0	0	29	5,313	174	5,518
9	THIRD PARTY SERVICES	0	0	0	0	721	0	721
	EQUIPMENT	0	0	212	0	0	39	251
9	CONTRACTS	10,843	0	0	8,727	0	1,588	21,158
	OTHER OUTLAYS	0	0	0	0	0	4,199	4,199
1	MISCELLANEOUS	0	0	0	0	0	14	14
	TOTAL	10,843	0	212	8,757	6,034	26,661	52,508
	ITEMS	CIVIL WORKS	REST.	EQUIP.	PERIODIC MAINTEN.	ROUTINE MAINTEN.	GENERAL EXPENSES	TOTAL
1	WAGES	0	0	0	0	0	18,084	18,084
	SUPPLIES	0	0	0	6,247	2,786	329	9,361
9	THIRD PARTY SERVICES	0	0	0	679	411	193	1,284
	EQUIPMENT	0	0	1,283	0	0	86	1,369
9	CONTRACTS	80,890	11,187	0	2,839	3,014	1,420	99,131
	OTHER OUTLAYS	0	0	0	0	0	16	16
2	MISCELLANEOUS	4,245	0	0	0	0	0	4,245
	TOTAL	85,135	11,187	1,283	9,565	6,211	20,129	133,480

1/ Exchange Rate: Cr\$12387 = US\$1.00

offices have contracted for periodic routine and maintenance services by soliciting bids by letter of invitation when the contract amount does not exceed the approximate equivalent of US\$50,000.

- 4.43 The resources appropriated in the past was not sufficient to maintain the state highway system in proper condition. In fact, the present government describes the system's condition as critical and has made its physical rehabilitation a priority. Measures to expand the system can only be undertaken once the physical reconditioning has been completed, within a strategy of regional articulation and intermodal integration.
- 4.44 The corrective measures currently scheduled were planned on the basis of the techniques used by the resident engineer offices and available budget funds. The DER/BA has not yet developed a maintenance system that measures needs or prioritizes activities while determining the level of resources needed. Moreover, the DER/BA does not have a system that determines maintenance needs and evaluates performance on the basis of technical and economic criteria. To correct this situation, an agreement was reached with state government and DER/BA officials to have the program under study include a component to introduce maintenance, pavement, and contract management systems with the features and scope described in chapter III ("Program Execution").

V. PROGRAM FEASIBILITY

A. Technical feasibility

- 5.1 The final engineering designs and technical specifications for the work planned on the nine stretches in the representative sample for the highway upgrading and paving subprogram and the rehabilitation subprogram have been reviewed and are considered satisfactory. The technical solutions that the designs involve are adequate, fairly simple and do not require sophisticated construction techniques. They are consistent with the best engineering practices used in the country. In computing figures, the methods used allow for sufficient accuracy, while to figure construction budgets the analyses of unit prices have been done using market prices and normal average return rates in the state of Bahia. There are also allowances for possible price escalations and other unforeseen expenditures.
- 5.2 For the geometric design, the drainage works have been scaled and the type and structural composition of the pavements has been selected according to Bahia state standards which are commensurate with those used by the federal highway authority (DNER). The geometric features selected were based on traffic projections with a 20-year horizon, and load excesses on cargo vehicles now travelling Bahia's highways and roads were factored into the pavement design.
- 5.3 Bahia has sufficient experience with projects and works similar to those included in the proposed program, so no technical difficulties in accomplishing the established goals are anticipated.
- 5.4 With the help of the project team, using the data available as of December 1992, the DER/BA established preliminary annual highway maintenance goals that served as the basis for the maintenance subprogram. This plan will be gradually corrected and modified as inventories are completed and the databases are installed to operate the maintenance management system (SAM) and the pavement management system (SGP). The greater technical and administrative effort required to carry out the plan is adequately covered by the technical assistance that the DER/BA will receive through this program.

B. Economic feasibility

1. Economic analysis

- 5.5 To establish the program's economic feasibility, a socioeconomic evaluation was done of each project in the representative sample. The investments made under the program will mainly reduce vehicle operating costs and, to a lesser extent, annual road maintenance

costs and user travel time. These savings constitute the bulk of the benefits, evaluated according to the standard method used by the Bank, which is based on the social surplus approach.

- 5.6 The evaluations were based on 24-hour traffic counts taken at each road for a three-day period and on surveys to determine the origin and destination of the traffic. For the economic evaluations, equations were used from the World Bank's "Highway Design and Maintenance Standards Model" (HDM-3), which make it possible to evaluate vehicle operating costs with and without the project.
- 5.7 The information on traffic volume, along the stretches in the sample is summarized in the following table:

Traffic volume (AADT) in the year the road stretch opens				
Stretch	Light-weight vehicles	Buses	Trucks	Total
Senhor do Bonfim-Campo Formoso	910	58	352	1,320
Mairi - BA-052	241	37	227	505
BA-052 - BA-421	230	19	91	340
BA-421 - BR-242	240	12	72	325
BA-324 - BR-101	225	25	220	470
BA-827 - Cotia	68	2	60	130
BR-135 - Coaceral	49	1	75	125
Mimoso - BA-825	110	7	153	270
BR-242 - Tocantins state line	70	8	137	215

- 5.8 The project costs include the investment (initial investment and the repaving costs that will have to be incurred over the 20-year period covered by the analysis) as well as routine and periodic annual maintenance costs. An analysis comparing alternative types of pavement was done to make certain that the alternative selected is the best one.
- 5.9 The analyses done show that the economic internal rate of return (EIRR) for individual projects varies from 21% to 49%, with the average return being 32%. The main findings of the economic evaluations are shown in the following table. A first-year benefit (FYB) ratio of over 12% indicates that any delay in the project is inadvisable.

Results of the economic evaluation of the projects in the sample			
Road stretch	NPV a/	BIRR	FYB
Senhor do Bonfim - Campo Formoso	14,342	40%	25%
Mairi - BA-052	14,138	41%	28%
BA-052 - BA-421	7,634	23%	15%
BA-421 - BR-242	5,791	23%	15%
BA-324 - BR-101	14,100	26%	16%
BA-827 - Cotia	18,010	21%	17%
BR-135 - Coaceral	40,749	32%	18%
Mimoso - BA-825	11,773	49%	49%
BR-242 - Tocantins state line	27,364	34%	31%
a/ Net present value in millions of Cr\$			

5.10 The sensitivity analysis done shows that there is very little risk that the projects in the sample will not produce an economic return.

2. Distributive impact

5.11 Distributive impact was measured by the Bank's normal method, which is to figure the benefits that accrue to low-income groups as a percentage of all benefits to the private sector as a whole. The benefits and costs of the projects in the sample are spread among the various groups as illustrated below:

Present value of net economic benefits by beneficiary group (in millions of Cr\$)				
	Private Sector		Public Sector	Economic NPV
	Low-income	Others		
COSTS				
Investment	+3,617		-97,656	-94,039
BENEFITS				
Maintenance			+9,057	+9,057
Light-weight vehicles		+41,175	-9,882	+31,293
Buses	+2,605	+2,605	-1,146	+4,064
Trucks	+84,705	+157,310	-53,243	+188,772
Time	+885	+13,869		+14,754
TOTAL	+91,813	+214,959	-152,871	+153,901

5.12 This distribution yields a distributive impact coefficient of 30% ^{18/}, which is largely due to the fact that in the state of Bahia, and particularly in this program's service area, 81% of the population is in the low-income group. Because of the overlap between the cargo shipping sector and the passenger transport sector, a considerable portion of the decreases in vehicle operating costs can be passed on to users because there will be significant reductions in freight rates. A 30% decrease is expected in the surcharge on the usual rate charged by carriers on roads that are in very bad physical condition. Also, the benefits in the case of light-weight vehicles, which affect the higher-income groups more, are relatively low.

3. Impact of the projects on transport costs

5.13 The truck shipping sector in the state of Bahia is one in which carriers compete freely and their rates are based on supply and demand. Because of this free market competition, the decreases in truck operating costs that the program will bring about should be passed on to users in the form of lower shipping charges. Agricultural producers and cooperatives that have trucks of their own for their transportation needs will see a direct benefit in the form of lower vehicle operating costs. Several surveys conducted in the service area of the projects in the sample show that

$$\text{18/ Coefficient} = \frac{91,813}{91,813 + 214,959} = 0.30$$

truckers add a considerable surcharge, ranging anywhere from 30% to 50% of the base rate, to haul loads over bad roads. This surcharge will disappear on the roads included in the program. In other words, users of the roads included in the program will see a direct benefit in the form of lower highway transport costs. This decrease will be quite substantial, as the following paragraph explains.

- 5.14 The computations done for the economic evaluation show that the investments planned under the program will reduce the trucks' operating costs on improved stretches by an average of 50%. This represents a savings of US\$0.58/kilometer, which will be passed on to users - be they producers or middlemen - in the form of reduced rates. To ship six metric tons (the average load carried) over a distance of 90 kilometers (average length of the individual stretches in the program), the user will save US\$8.70 per ton in shipping costs. The savings is significant when compared with the value of the products being shipped. For example, in relative terms this decrease represents 6% of the market value of rice, 11% of the market value of corn, and 7% of the market value of soybeans, the three products most representative of the products shipped via the main corridor in the program.

C. Financial feasibility

- 5.15 The total cost of the proposed program has been estimated to be the equivalent of US\$294 million, to be financed in equal parts by a loan from the Bank and by the State of Bahia. Therefore, the state treasury's financial capacity to make matching contributions of US\$147 million and to service the debt that loan represents must be determined.

1. Financial projections for the state of Bahia 19/

a. State resources

- 5.16 The projections of fiscal revenue for 1993-2002, shown below, were premised on the general and specific assumptions discussed below. Should those assumptions materialize, the Treasury's financial performance will be as follows.

19/ For the financial projections, December 1992 constant currency was used, expressed in United States dollars at an exchange rate of Cr\$12387 = US\$1.00, which was the last quotation for December 1992. Apart from the price escalations in the program's estimated costs, no allowance was made for any variations in price levels.

Projected Revenue 1993-2002
US\$ Thousand 1/

MEM

ITEMS / YEAR	ACTUAL 1992	PROJECTED									
		1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Current Revenue	2,182,136	2,076,855	1,925,855	2,116,923	2,158,585	2,191,197	2,177,861	2,340,607	2,416,005	2,465,476	2,485,513
Excise Revenue	1,070,573	1,127,861	1,180,340	1,223,991	1,254,639	1,311,080	1,351,267	1,390,553	1,426,787	1,469,238	1,510,882
Excise	1,068,670	1,124,864	1,177,304	1,220,894	1,251,479	1,307,857	1,347,979	1,387,200	1,425,367	1,466,750	1,507,304
IR	6,340	6,685	6,996	7,253	7,433	7,786	8,002	8,232	8,456	8,663	8,937
IR / ITD	1,472	1,472	1,472	1,472	1,472	1,472	1,472	1,472	1,472	1,472	1,472
CMS	1,053,789	1,111,115	1,162,671	1,205,457	1,235,352	1,290,698	1,329,933	1,366,235	1,405,451	1,444,604	1,485,259
PVA	5,069	5,612	6,166	6,712	7,223	7,923	8,572	9,260	9,988	10,781	11,637
Excise	3,903	2,977	3,037	3,096	3,160	3,223	3,267	3,353	3,420	3,486	3,558
Investment Income	542,703	360,536	157,792	246,598	217,310	169,900	87,660	181,476	187,321	193,479	106,077
Service Income	27,745	27,745	27,745	27,745	27,745	27,745	27,745	27,745	27,745	27,745	27,745
Current Transfers	487,180	516,577	535,691	557,906	584,491	610,747	639,904	670,442	702,426	735,946	771,071
Other Current Revenue	43,955	44,134	44,317	58,662	72,400	71,725	71,055	70,369	69,726	69,066	69,758
Capital Revenue	147,549	81,736	54,631	229,570	182,453	104,822	172,585	66,666	15,076	114,964	60,503
Sale of Goods and Property	1,207	1,207	1,207	1,207	1,207	1,207	1,207	1,207	1,207	1,207	1,207
Capital Transfers	13,869	13,869	13,869	13,869	13,869	13,869	13,869	13,869	13,869	13,869	13,869
Borrowings	132,473	66,660	39,555	214,494	167,377	89,746	157,509	51,622	0	99,886	45,427
Domestic	131,660	66,660	0	126,966	56,661	0	113,509	51,622	0	99,886	45,427
External	813	0	39,555	85,508	108,716	89,746	44,000	0	0	0	0
DB under Study	0	0	39,555	41,506	42,716	23,746	0	0	0	0	0
DB EMBASA	0	0	0	44,000	66,000	66,000	44,000	0	0	0	0
Other	813	0	0	0	0	0	0	0	0	0	0
TOTAL	2,329,684	2,158,591	1,980,486	2,346,492	2,339,036	2,296,019	2,350,446	2,407,304	2,431,081	2,610,441	2,546,016

- 5.17 Given the correlation between tax revenue and the level of economic activity in the state, one of the logical parameters to use to predict tax revenue is the expected growth in the state's gross domestic product (GDP) according to recent estimates by the Economic Planning Commission [Comissão de Planejamento Econômico] (CPE). To provide a more conservative projection, a 20% deflator on annual GDP rates has been factored in.
- 5.18 Accordingly - and despite a systematic effort to increase tax revenue from the ICMS - an increase in tax revenue was not considered in the projection to keep it on the conservative side. Therefore, the ICMS will increase at an average of 3.5%, less than the 4.4% annual growth it achieved between 1988 and 1992 (see chapter IV).
- 5.19 The income tax surcharge created by the Federal Constitution goes directly to the Federal Treasury. It is charged on capital gains and is calculated at a rate of 5% over the income tax due. Because it, too, is closely correlated with economic activity, the rate of increase applied in the case of this surcharge was similar to rate applied for the ICMS. The vehicle tax (IPVA) was figured on the basis of data supplied by Bahia State Transit Authority (DETRAN/BA). Since currently only 50% of all vehicles have been registered for tax purposes, it was assumed that all the remaining vehicles would be registered by the end of the project period, which is equivalent to an increase of nearly 10% per annum in the number of units subject to taxes. Nevertheless, the decision was made to use only half the anticipated growth rate, which - when combined with the GDP effect - represents an average annual rate of 8.5%.
- 5.20 Investment revenue consists of the return on the Treasury's placements of temporary financial surpluses. The high return on investments in a highly inflationary scenario has been, as pointed out in chapter IV, one of the prominent features in the recent experience of the country and of the state. Given the anticipated real growth of the economy, interest rates are expected to move down gradually although they should continue to produce significant real returns.
- 5.21 Current transfers will account for 21% of the state's total resources, a share that is largely attributable to the items those transfers include: the state revenue-sharing fund (FPE), the exports fund (which compensates states for the tax exemption on exports of industrialized products), the education salary, the unified health system and similar systems. The forecast of their future performance takes into account the anticipated growth rates for both Brazil's and Bahia's GDPs, both with a 20% deflator factored in, as well as the individual distribution criteria set by applicable legislation. Their combined impact of 4.5% per annum is considered acceptable. "Other current revenue" includes royalties from oil drilling in Bahia; these have been assigned an annual

growth rate of 2%, which is below PETROBRÁS's projections. Also included were EMBASA's payments to service the debt on a prospective Bank loan to that sanitation company.

- 5.22 Under "noncurrent revenue", borrowings both present and future include the loan recommended in this document and the prospective EMBASA loan. All such operations are intended to cover investment needs that exceed the current savings to be generated. There are also plans to renew loans already negotiated.

b. State expenditures

- 5.23 The state's projected expenditures are summarized in the following table.
- 5.24 The table shows "personnel" as the largest spending category. Because of the policy of reducing payroll's share in state spending, the 1993 budget was held constant. The increase noted that year is because the category was expanded to include wages and salaries under both the direct and indirect administration systems, with an offsetting decrease under current transfers. Current transfers include the transfers to the municipalities as required under the Constitution, which stipulates that they are to receive 25% of the revenue from the ICMS and the Export Fund, and 50% of the revenue from the IPVA. "Other current expenditures" represent operating expenses, except for the personnel needed for the operation of the state bureaucracy; since this structure is relatively rigid, the expenditures do not vary with time.
- 5.25 Investments reflect works in progress and works to be carried out under state-run programs. This heading was limited to the highest priority programs that are part of the multiyear plan for 1992-1995, which covers the term of office of the present administration. In the projections, investments associated with the highway corridors program and the EMBASA program are shown separately under capital transfers and financial investments, according to their schedule of execution. Since new investment programs after 1995 will address needs identified by other administrations, the surplus funds from any current savings and noncurrent revenue not used for debt service or other obligations have been lumped together under that heading.
- 5.26 These projections reflect service on existing debt and on debt to be incurred, including the two prospective Bank loans mentioned in the preceding paragraph, in keeping with the state's debt profile which makes allowance for any effect that the state's rescheduling of its debt with the Federal Government and with foreign private creditors would have. Repayments and finance charges would absorb approximately 11% of the funds, a percentage similar to the one observed for the last five years.

GOVERNO DO ESTADO DA BAHIA
SECRETARIA DA FAZENDA - DEPAT

Projected Expenditures 1993 - 2002
US\$ Thousand 1/

ITEMS	ACTUAL		PROJECTED										TOTAL
	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002		
Current Expenditures	1,568,935	1,611,773	1,656,722	1,675,031	1,686,077	1,700,959	1,708,784	1,718,230	1,722,691	1,730,099	1,735,633	16,851,008	
• Payroll and Benefits	517,008	954,000	954,000	954,000	954,000	954,000	954,000	954,000	954,000	954,000	954,000	9,540,000	
• Current Transfers	776,828	371,895	365,799	397,252	405,327	420,182	431,054	441,739	452,167	463,193	474,544	4,243,161	
Transfers to Municipalities	263,320	292,999	308,279	317,710	325,781	340,543	351,100	361,432	371,801	382,190	392,195	3,442,180	
Export Fund - PI	11,355	12,528	12,528	12,899	13,512	13,639	14,311	14,743	15,144	15,600	16,004	140,300	
ICMS	285,210	277,779	280,899	301,344	308,638	322,674	332,483	342,099	351,363	361,201	371,315	3,289,743	
PIVA	4,512	2,800	3,083	3,359	3,612	3,862	4,206	4,630	4,994	5,381	5,819	41,837	
Other	2,544	2,544	2,544	2,544	2,544	2,544	2,544	2,544	2,544	2,544	2,544	25,438	
DEPSA	73,888	17,100	17,143	17,166	17,229	17,272	17,317	17,370	17,423	17,476	17,529	19,481	
IDB under study	0	0	0	0	0	0	0	0	0	0	0	0	
IDB PROG. - Local Funds	0	0	0	0	0	0	0	0	0	0	0	0	
Other Transf. DEPSA	73,888	17,100	17,143	17,166	17,229	17,272	17,317	17,370	17,423	17,476	17,529	17,811	
Other	418,511	62,337	62,337	62,337	62,337	62,337	62,337	62,337	62,337	62,337	62,337	623,370	
• Financial Expenses	54,588	63,257	114,115	116,894	120,847	115,448	110,202	108,769	99,331	92,098	83,390	1,040,821	
Domestic Debt	26,182	79,880	85,943	82,829	88,741	84,927	80,407	76,453	71,841	67,022	62,168	800,041	
External Debt	16,436	4,367	18,572	24,065	31,808	30,521	29,795	28,316	26,490	25,066	21,222	240,800	
IDB under study	0	0	5,883	11,364	11,364	11,364	11,364	10,400	10,370	9,802	9,294	91,485	
IDB EMBASA	0	0	0	8,679	16,707	15,638	14,571	14,103	13,235	12,367	11,498	107,400	
Other	16,436	4,367	12,889	4,022	3,526	3,848	3,460	3,273	3,065	2,897	2,699	41,865	
• Other Current Expenses	221,503	202,522	204,846	207,106	208,103	211,359	213,539	215,722	218,163	220,536	222,899	2,129,529	
Capital Expenditures	864,512	492,462	383,434	684,253	680,327	594,040	641,783	669,725	708,390	860,342	810,283	6,514,140	
• Investments	151,774	57,842	57,871	103,184	109,292	109,396	154,884	368,202	473,912	530,084	554,229	2,733,008	
• Financial Investments	51,399	20,529	20,793	56,793	62,529	42,000	26,000	0	0	0	0	242,844	
IDB EMBASA	0	0	0	28,000	42,000	42,000	26,000	0	0	0	0	140,000	
BRD EMBASA	0	20,529	20,793	28,793	20,529	0	0	0	0	0	0	102,844	
Other	51,399	0	0	0	0	0	0	0	0	0	0	0	
• Capital Transfers	493,212	277,215	237,881	221,482	279,314	271,278	209,216	146,103	134,439	134,439	125,989	2,043,536	
DEPSA	99,592	146,740	103,862	108,862	108,364	76,705	22,611	23,064	23,535	23,986	24,476	660,443	
IDB under study	0	0	59,595	41,808	42,718	23,748	0	0	0	0	0	147,522	
IDB PROG. - Local Funds	0	0	35,902	57,703	58,748	32,791	0	0	0	0	0	145,745	
Other Transfers DEPSA	59,592	146,740	25,595	28,773	25,860	22,198	22,611	23,064	23,535	23,986	24,476	367,178	
IDB EMBASA	0	0	0	44,000	86,000	66,000	44,000	0	0	0	0	220,000	
Other	393,620	131,475	114,878	80,815	83,731	107,801	165,216	149,103	134,439	134,439	125,989	1,200,884	
• Debt Amortization	207,940	136,776	57,408	220,794	146,792	84,366	219,683	153,421	100,039	215,619	157,285	1,494,354	
Domestic Debt	187,972	132,203	52,839	210,794	133,182	66,826	200,438	130,469	77,117	182,897	134,343	1,333,071	
External Debt	9,968	4,570	4,570	10,070	15,570	15,570	18,245	22,922	22,922	22,922	22,922	181,283	
IDB under study	0	0	0	0	0	0	3,675	7,352	7,352	7,352	7,352	33,083	
IDB EMBASA	0	0	0	5,500	11,000	11,000	11,000	11,000	11,000	11,000	11,000	62,000	
Other	9,968	4,570	4,570	4,570	4,570	4,570	4,570	4,570	4,570	4,570	4,570	45,700	
TOTAL	2,433,246	2,104,285	2,042,156	2,339,284	2,339,404	2,294,999	2,350,577	2,408,956	2,431,051	2,410,441	2,348,515	23,485,145	
Total Revenue	232,984	215,559	198,046	234,482	238,036	228,019	235,046	240,304	243,051	241,041	240,018	2,465,914	
Difference Revenue/Expenditures	-103,662	-54,356	-18,170	7,208	-398	1,020	-131	348	765	795	795	795	
Accumulated total	-103,662	-54,356	-73,14	-108	-472	548	417	765	795	795	795	795	

SOURCE: SECRETARIA DA FAZENDA - DEPARTAMENTO DO TESOURO
1/ Exchange Rate: C\$1/287 = US\$1.00

- 5.27 The projected balances indicate that there would be temporary deficits which, as in recent years, will be financed by borrowing against excess surpluses from previous years or by means of either the "balances payable" mechanism (deferment of payment of obligations until the new fiscal period) or short-term banks loans.

2. Financial projections for the DER/BA

- 5.28 These projections were prepared for the 1993-1997 period and therefore cover the period during which the program under study would be carried out.
- 5.29 The income structure will continue to be similar to the one described in chapter IV. Also included are disbursements from the possible Bank loan and the matching resources contributed by the state treasury, following the program's timetable and disbursement schedule.
- 5.30 The DER/BA's expenditures during program execution are shown in the following table. The item "payroll and benefits" shows the annual cost of staff at headquarters personnel; other staff is included under the unit costs for the various technical operations. Other costs, such as third-party services and consumer materials, have been treated the same way.
- 5.31 The 1993 fiscal year includes the completion of construction work begun in previous fiscal periods, mainly 1992. After that, there is an item to cover sporadic small-scale works. Outside the program, the DER/BA will be reconditioning roads and doing routine maintenance on both the main network and the secondary network.
- 5.32 "Capital expenditures" go toward upgrading, paving and rehabilitating road surfaces (with dust control treatment) on a number of stretches in the state highway system. These investments, like those for restoration and periodic maintenance work - except for periodic maintenance of gravel/dirt roads - are part of the program, and their timetable and financing are described in the chapter on program execution. The remaining investment categories are also listed along with their annual costs.

3. Feasibility of the local contribution

- 5.33 The financial projections anticipate that the matching funds will come from the Bahia state treasury and are feasible provided the assumptions upon which they are based materialize reasonably well. Those assumptions include positive economic performance generated by acceptable growth in both Bahia's and Brazil's GDPs, at a rate considered to be feasible although less than the rate predicted by the state planing agency.

DEPARTAMENTO DE ESTRADAS DE RODAGEM DE BAHIA DER-BA
Financial Projections 1993-1997
US\$ Thousand 1/

Item	1993	1994	1995	1996	1997	Tot.93/97
Current Expenses	17100	17143	17185	17229	17272	85929
Payroll and Benefits	6300	6300	6300	6300	6300	31500
Third Party Services	2800	2828	2856	2885	2914	14283
Supplies	2900	2914	2929	2944	2958	14646
Miscellaneous	5100	5100	5100	5100	5100	25500
Capital Expenditures	145740	103992	105982	108354	78705	542773
Investments	145740	92718	96539	97605	65771	498373
Construction	106500	7500	7500	7500	7500	136500
Rehabilitation	3840	11460	9250	8240	5600	38390
Paved Roads	2640	5860	3650	2640	0	14790
Unpaved Network	1200	5600	5600	5600	5600	23600
Restauration and Paving	24000	25183	30675	31077	15575	126510
Unpaved Network	24000	25183	30675	31077	15575	126510
Upgrading and Repaving	0	21680	22006	22294	7450	73430
Secondary Roads ADT	0	21680	22006	22294	7450	73430
Maintenance	11400	26895	27108	28494	29646	123543
Restauration	0	0	0	0	0	0
Secondary Network ADT	0	3285	3334	3357	4491	14467
Unpaved Network	0	6131	6224	6267	6288	24910
Periodic	5400	12395	12508	13794	14946	59043
Paved Roads	2400	5803	5890	7163	7186	28442
Secondary Roads ADT	3000	1752	1778	1791	2920	11241
Unpaved Network	0	4840	4840	4840	4840	19360
Routine	6000	14500	14600	14700	14700	64500
Paved Roads	1500	3500	3800	4100	4400	17300
Secondary Roads ADT	1200	2700	2700	2700	2600	11900
Unpaved Network	3300	8300	8100	7900	7700	35300
Other Capital Expenditures	0	11274	9443	10749	12934	44400
IDB under study	0	0	0	0	0	0
Admin.& Instituc. Strengthen.	0	5150	3610	1850	1600	12210
Financial Expenses	0	2724	5833	8899	11334	28790
Equipment	0	3400	0	0	0	3400
Totals	162840	121135	123167	125583	95977	628702

1/ Exchange Rate: CR\$12.387 = US\$1.00

- 5.34 These projections are also based on the expectation that tax and fee revenue will be sufficient to cover anticipated spending levels, even if the revenue is not as high as expected. This will be done by reducing outlays to compensate for inflation, keeping spending in line with revenue, or adopting fiscal policy measures that preserve the purchasing power of the treasury's revenues. Should the basic assumptions materialize, including the expected rescheduling of financial obligations with the Federal Government and with foreign creditors, the State of Bahia will have the resources it needs to honor its financial commitments on schedule, which include its contributions for program execution and repayment of the Bank loan.
- 5.35 There is, moreover, a pool of resources that - although officially earmarked for investment projects in the 1992-1995 government plan - could eventually be reallocated to supplement the funds that might be needed to execute the proposed program. These resources are shown under the headings "investments" and "other capital transfers." During program execution, they would total the equivalent of US\$900 million. Finally, coupled with these guarantees of sufficient resources for the program is the political determination of the State of Bahia and the Federative Republic of Brazil, which have made this program one of their top priorities.

D. Institutional capacity

- 5.36 Because of the state's growing population, the increase in productive activities and the need to provide better and safer conditions for user and cargo access to consumption centers and ports, the Government of the State of Bahia decided to review its highway policy, the structure of the agency that executes that policy and the manner in which that agency provides its services.
- 5.37 The proposed program was designed to meet the state's new transportation objectives, which are to recondition the existing roads, provide adequate maintenance, reduce transportation costs and have the private sector do more of the maintenance work that was traditionally done on force account. To consolidate the program's benefits and extend its impact after its physical completion, activities were included for the DER/BA's institutional strengthening. Maintenance management, pavement management and contract management systems will be introduced and staff will be trained to run them. At the same time, more road maintenance work will be contracted out to third parties, with up to 70% being done by the private sector. As part of the state's institutional system for environmental protection, the program provides for the creation of environmental protection committees whose responsibilities and functions are considered adequate for their purpose. All these activities will facilitate functional and organizational adjustments in the DER/BA and will improve its technical and administrative capacity to carry out projects.

- 5.38 To give the executing agency added support, consulting firms will be contracted to advise it on the program's administration and on supervising and controlling the quality of work performed. For this reason and for the reasons explained earlier, the physical and institutional goals of the proposed program are expected to be achieved on schedule.

E. Environmental viability

- 5.39 The Bahia highway corridors program will not have any significant negative environmental effects, since it focuses on upgrading, paving and rehabilitating existing roads; any significant negative environmental effects were caused when those roads were originally built. The program's only negative environmental impact will be the immediate effect caused by road work within the right-of-way. These effects are localized, temporary and easily reversible. To keep them at a minimum, however, contracts with construction firms will require that they take the environmental protection measures required by the respective environmental permits. 20/

F. Risks

- 5.40 The program's only risk is that the DER/BA may show some weakness in the administration and supervision of the program, especially as concerns the maintenance component, since this is the Bank's first operation in this state's transportation sector. Since this weakness could make it difficult to accomplish the physical goals agreed upon with the Bank, plans have been made to bolster this area by hiring a consulting firm to assist the program's executing unit for the duration of program execution.

G. Risk of natural disaster

- 5.41 There is nothing in the history of the area that would lead one to suppose that the stretches of road in the proposed program would be exposed to any risk of natural disaster. Their geographic location and the area's seismic history and hydrographic statistics indicate that the work to be carried out will not be exposed to any seismic activity capable of causing damage. Furthermore, there are design features to prevent or control landslides and minimize damage from floods or other natural phenomena that might seriously jeopardize the stability of the works constructed. In preparing the drainage designs and calculating the stability of embankments and selecting pavement designs, appropriate parameters were factored in to cover the effect of the heavy rains experienced in the area in the last 50 years.

20/ See Recommendations, Appendix II and Annex A, Appendix III.

LIST OF POSSIBLE PROJECTS

Rank	Number	Road Stretch	Length (km)
		<u>Representative sample</u>	
1	S/C	BA-825 - Cotia	87.57
2	BA-225	Junction BR-135 - Coaceral	78.43
3	BR-242	Mimoso - Junction BA-825	18.69
4	BA-825	Junction BR-242 - Tocantins state line	55.07
5	BA-515	BR-342 - Teodoro Sampaio - BR-101	32.58
6	BR-407	Mairi - Junction BA-052 (Baixa Grande)	29.70
7	BR-407	Junction BR-052 - Macajuba - Junction BA-421	42.13
8	BR-407	Junction BA-421 - Rui Barbosa - BR-242	33.11
9	BR-220/374	Senhor do Bonfim - Antonio Gonçalves - Campo Formoso	25.93
		SUBTOTAL	409.21
		<u>Other Projects</u>	
10	BR-135	Monte Alegre/Formosa do Rio Preto - Piauí state line	70.00
11	BA-172	BR-242/S.M. da Vitória - Coribe/Cócos	285.00
12	BR-349	S.M. da Vitória - B. Jesus Lapa	86.00
13	BA-349	S.M. da Vitória - Correntina	48.00
14	BA-046/142	BR-242 - Utinga - Morro Chapéu	110.00
15	BA-142	BR-242/Mucugê/Tanhaçu	220.00
16	BR-122/BA-432	Santo Soares/Segredo/Irecê	99.00
17	BA-084	Conceição Jacuípe - Ipirá	41.00
18	BA-502	Feira de Santana - BR-101	30.00
19	BA-421	Jacobina/M. Calmon/BA-052	80.00
20	BR-242	BR-101 - C. Alves/BR-111	57.00
21	BR-135	São Desidério - Correntina	124.00
22	S/C	São Desidério - Roda Velha	200.00
23	BA-245/BA-046	Itacê - Iaçã - Itaberaba	140.00
24	S/C	Correntina - BR-020	200.00
25	BA-451	BR-135/Sta. Rita de Cássia	60.00
		SUBTOTAL	1.850.00
		GRAND TOTAL	2.259.21

COSTS TABLE - HIGHWAY WORKS SUBPROGRAMS

REPRESENTATIVE SAMPLE FOR UPGRADING AND PAVING				
HIGHWAY	STRETCH	LENGTH (km)	TOTAL COST (US\$)	COST/KM (US\$)
BA-n/n	Junction BA-825 - Cotia	87.6	12,197,294	139,238
BA-225	Junction BR-135 - Coaceral	78.4	9,331,500	119,024
BA-242	Mimoso - Junction BA-825	18.7	1,503,477	80,400
BA-825	Junction BR-242 - Tocantins state line	55.1	6,409,089	116,317
TOTAL REPRESENTATIVE SAMPLE (2.1)		239.8	29,441,360	122,775

REPRESENTATIVE SAMPLE FOR REHABILITATION				
HIGHWAY	STRETCH	LENGTH (km)	TOTAL COST (US\$)	COST/KM (US\$)
BA-220/374	Senhor do Bonfim - C. Formoso	25.9	2,689,546	103,843
BR-407	MAIRI - Junction BA-052	29.7	2,936,516	98,873
BR-407	Junction BA-052 - Junction BA-421	42.1	4,147,623	98,518
BR-407	Junction BA-421 - Zuca	39.1	3,202,393	81,903
BA-515	Junction BR-342 - Junction BR-101	32.6	5,552,698	170,328
TOTAL REPRESENTATIVE SAMPLE (2.2)		169.4	18,528,777	109,379

COMPUTATION OF COSTS OF HIGHWAY WORKS SUBPROGRAMS						
SUBPROGRAMS	LENGTH (km)	COST/KM (US\$)	SUBTOTAL (US\$)	CONTINGENCIES (US\$)	ESCALATION (US\$)	TOTAL (US\$)
Upgrading and Paving	750	122,775	92,081,250	5,480,000	4,848,750	102,510,000
Rehabilitation	600	109,379	65,627,400	3,932,000	3,870,600	73,430,000
TOTAL HIGHWAY WORKS	1,350		157,708,650	9,412,000	8,819,350	175,940,000

COMPUTATION OF COSTS OF THE HIGHWAY MAINTENANCE SUBPROGRAM

ACTIVITIES	LENGTH	COST PER KM	TOTAL COST
HIGHWAY MAINTENANCE	(KM)	(US\$)	(US\$)
MAIN NETWORK:			
Periodic maintenance	2,200	12,000	26,400,000
SECONDARY NETWORK (DCT)			
Major maintenance	650	23,000	14,956,000
Periodic maintenance	1,800	4,700	8,460,000
SECONDARY NETWORK (GRAVEL/DIRT)			
Major maintenance	1,500	15,000	22,500,000
CLASSIFIED EXPENDITURES			
Contingencies			1,350,000
TOTAL AMOUNT/MAINTENANCE	6,150		73,660,000

[illegible]

PROPOSED RESOLUTION¹

BRAZIL. LOAN /OC- TO THE STATE OF BAHIA
STATE OF BAHIA HIGHWAY TRANSPORT PROGRAM

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 Bahia of Brazil, as Borrower, and with the Federative Republic of Brazil, as Guarantor, for the purpose of granting the former financing to cooperate in the execution of a highway transport program for the State of Bahia, hereinafter called the "Program". This financing shall be subject to substantially the following provisions:

1. Amount and currencies: Up to US\$147,000,000 or the equivalent in other currencies (except that of the Federative Republic of Brazil) which are part of the ordinary capital resources of the Bank, to pay for goods and services acquired by international bidding in the member countries of the Bank and for such other purposes as may be specified in the loan contract. Payments of amortization and interest shall be made in the currency or currencies specified by the Bank, in a quantity equivalent to the corresponding amount owed, calculated in units of account in terms of dollars of the United States of America, in accordance with provisions to be included in the loan contract.
2. Source of funds: The ordinary capital resources of the Bank.
3. Guarantee: The joint and several guarantee of the Federative Republic of Brazil.
4. Credit fee: 0.75% per annum on the undisbursed portion of the financing, commencing to accrue 60 days after the date of the loan contract and payable in dollars of the United States of America on the same dates as the interest.

¹ The provisions contained in this Appendix I and in Appendices II and III will not become final until the Board of Executive Directors has approved the loan proposal.

5. Amortization: The Borrower shall amortize the loan in a period of 20 years from the date of the loan contract, by means of semiannual, consecutive and, insofar as possible, equal installments. The first installment shall be paid on the first interest payment date, six months after the date scheduled for the final disbursement.
6. Interest: The Borrower shall pay interest semiannually on the outstanding daily balances of the loan. The first payment shall be made six months after the date of the loan contract. The Bank shall determine the rates of interest to be applied for the life of the loan, in accordance with the policy of the Bank on interest rates.
7. Physical initiation and disbursement: The term for physical initiation of all the Program works shall expire 30 months after the effective date of the loan contract, and the term for disbursement of the financing shall expire 4 years after the same date.
8. Special conditions:
 - (a) The Program shall be executed and the loan proceeds utilized in their entirety by the Borrower, through the Highway Department of the State of Bahia (hereinafter called the "Executing Agency" or "DER/BA"), through an Coordinating Unit.
 - (b) The proceeds of the loan shall be used to participate in the financing of a Program estimated at the equivalent of US\$294,000,000. Consequently, the loan contract and the guarantee contract shall contain appropriate provisions to ensure that such resources as may be necessary, in addition to those of the loan, for the complete execution of the Program shall be duly provided, in accordance with an investment schedule acceptable to the Bank, in an amount estimated at the equivalent of US\$147,000,000.
 - (c) Prior to the disbursement of the financing, the Borrower shall, through the Executing Agency, present to the satisfaction of the Bank evidence of the hiring of a consulting firm to provide technical and administrative support to the Coordinating Unit of the Executing Agency in the implementation of the Program.
 - (d) In the acquisition of machinery, equipment, and other materials for the Program, and in the awarding of construction contracts, the system of public bids shall be followed in each case in which the value of such acquisitions exceeds the equivalent of US\$250,000 or the value of such construction contracts exceeds the

equivalent of US\$1,000,000. The bidding shall be subject to the procedures to be appended as an annex to the loan contract.

- (e) The Bank shall establish such inspection procedures as it deems necessary to assure the satisfactory execution of the Program, and the Borrower shall extend all cooperation which is required for the most effective accomplishment of this purpose. From the amount of the financing the sum of US\$1,470,000 shall be allocated for credit to the accounts of the Bank to meet expenses of general inspection and supervision.

RECOMMENDATIONS:

- A. It is recommended that the following conditions, to be met to the Bank's satisfaction, be included in the loan contract and the guarantee contract, as appropriate, in addition to the conditions set forth in the proposed resolution:
1. Unless otherwise agreed by the parties, before initiating each public call for bids or, if a call for bids is not to be issued, before the acquisition of the goods or initiation of the works, the Borrower shall, through the Executing Agency, present to the Bank for consideration:
 - (a) the general plans, specifications, budgets, and other documents required for acquisition or construction, and, where applicable, the specific bidding conditions and other documents necessary for the call for bids; and
 - (b) in the case of construction projects, evidence that it is in legal possession of the land on which construction for the program is to take place or holds easements or other pertinent rights thereupon.
 2. The Bank may recognize up to the equivalent of US\$650.000 as part of the local counterpart contribution to the Program for expenditures relating to the financing of studies and projects not included in the representative sample, where such expenses were incurred before (date of Resolution) but after (18 months prior to the date of Resolution), provided that requirements substantially similar to those of the Resolution and the loan contract have been fulfilled and that the expenditures are acceptable to the Bank.
 3. Before awarding the bids for works or groups of works, the Borrower shall, through the Executing Agency, present evidence to the Bank that it has hired a consulting firm for the technical monitoring and supervision of the execution thereof.
 4. Before awarding the bids for the works to be executed in the Chapadões Ocidentais area, the Borrower shall, through the Executing Agency, present evidence to the Bank that the regional unit of the Environmental Resources Center in that area has assigned: (i) a technician trained in the control and use of agricultural chemicals and toxic substances; and (ii) a technician trained in monitoring the appropriate use of water resources, with special emphasis on irrigation systems.

5. Before the physical initiation of the works of each section or group of sections of highway, the Borrower shall, through the Executing Agency, set up the necessary Technical Environmental Quality Commissions.
6. Prior to the physical initiation of each work or group of works, the Borrower shall, through the Executing Agency, present evidence to the Bank that such work or groups of works have obtained the appropriate environmental clearance.
7. The Borrower shall, through the Executing Agency, present to the Bank: (a) within the first four months after the effective date of the loan contract, evidence that contracts have been signed with consulting firms to develop and implement the Highway Maintenance Administration System "SAM", the Surfacing Management Service (SGP), and the Contract Administration Service (SAC); and (b) within two months after the effective date of the loan contract, the maintenance plan for the first year of execution of the Program.
8. The Borrower shall, through the Executing Agency, present to the Bank: (a) within the first six months after the effective date of the loan contract, evidence that contracts have been signed with all specialized firms to conduct the studies and the projects that are not included in the representative sample; and (b) within the second year after the effective date of the loan contract, the final results of the studies mentioned in subsection (a) above and of the economic feasibility studies for the projects not included in the representative sample.
9. The Borrower shall include, in the reports required under Article 7.03(1) of the General Conditions, a chapter containing specific information on the application of the proposed environmental measures, indicating the concrete results obtained and the financial and institutional corrective measures that have been or are to be taken.
10. Within the first year after the effective date of the loan contract, the Borrower shall, through the Executing Agency, complete the reorganization of the internal auditing functions of the Executing Agency in such a way that such functions include: (a) planning of activities for the following year; (b) an examination of tasks in connection with data processing and Program execution; (c) training of the Executing Unit staff; (d) formal preparation and periodic updating of the auditing procedures manual; and (e) elimination of all line activities, which shall be subject to a posteriori review.
11. Within two years after the effective date of the loan contract, the Borrower shall, through the Executing Agency, demonstrate

to the Bank that the reorganization referred to in paragraph 10, above, has been carried out satisfactorily.

12. The Borrower undertakes to meet with the Bank in August of each year commencing from the effective date of the loan contract, in order to define and program in detail the transport highway maintenance plan for the following year, including both activities eligible for Bank financing and those to be financed exclusively with the Borrower's counterpart funds. At each such meeting, with the exception of the first, compliance with the scheduled maintenance plan for the previous year shall be assessed, and measures identified to make any necessary adjustments or correct any shortcomings in the goals set.
 13. The Borrower undertakes, through the Executing Agency, to: (a) carry out a maintenance plan for the entire highway system under its jurisdiction, observing generally accepted technical standards; and (b) present to the Bank by August 31 of each year an annual report drawn up in accordance with Section VII of Appendix III, for a period of 10 years after the effective date of the loan contract. If the inspections conducted by the Bank or the reports received by the Bank should indicate that maintenance is being carried out to a lesser standard than that agreed upon, the Borrower and the Executing Agency shall take the necessary steps to see that any shortcomings are fully remedied.
 14. Within three years after the final disbursement of the financing, the Borrower shall, through the Executing Agency, present to the Bank an ex post evaluation report on the results of the Program, based on the methodology and guidelines set forth in Appendix III, Section VIII.
 15. The financial statements of the Program shall be presented annually to the Bank throughout Program execution, accompanied by an opinion drawn up by an independent firm of auditors of recognized professional expertise and acceptable to the Bank, which shall conduct the audit under the supervision of the National Treasury Department.
- B. The loan contract shall include an annex of substantially the same content as Appendix III hereto, "The Program".

THE PROGRAM

(Annex A to the Loan Contract)

I. PURPOSE

- 1.1 The general objectives of the Program are: (i) to support economic development in the service area of the main highway corridor of the State of Bahia (BR-242/020); and (ii) to contribute to the effort to preserve the public asset represented by the existing highway system.
- 1.2 The specific objectives of the Program are: (i) to lower transport costs in the main highway corridor of the State of Bahia and its feeder highways; and (ii) to strengthen institutional capacity to plan, administer and execute maintenance activities.

II. DESCRIPTION

- 2.1 The Program consists of the following subprograms:
 - (a) a subprogram for the upgrading and paving of approximately 750 km of highway currently surfaced with dirt and gravel;
 - (b) a subprogram for the rehabilitation of approximately 600 km of highways currently with asphalt surface;
 - (c) a subprogram for highway maintenance, including scheduled maintenance and restoration for paved and unpaved roads under DER/BA, in accordance with the multi-year goals agreed upon with the Bank; and
 - (d) a subprogram for the institutional strengthening of DER/BA through technical assistance services and acquisition of equipments to improve its managerial and operational capacity.

III. PROGRAM COST AND FINANCING PLAN

- 3.1 The estimated cost of the Program is the equivalent of US\$294,000,000, itemized by source of financing and investment category as follows:

PROGRAM COST AND FINANCING (US\$ thousands)				
INVESTMENT CATEGORY	IDB LOAN	LOCAL CONTRIB.	TOTAL	(%)
1. <u>Engineering and administration</u>	-	10,700	10,700	3.6
1.1 Executing Unit	-	1,300	1,300	0.4
1.2 Studies and Designs	-	3,600	3,600	1.2
1.3 Works Supervision	-	5,800	5,800	2.0
2. <u>Direct Costs</u>	145,530	107,470	253,000	86.1
2.1 Upgrading and paving	66,630	35,880	102,510	34.9
2.2 Rehabilitation	47,730	25,700	73,430	25.0
2.3 Highway maintenance	28,790	44,870	73,660	25.1
2.4 Equipment purchase	2,380	1,020	3,400	1.1
3. <u>Concurrent costs</u>		1,510	1,510	0.5
3.1 Institutional strengthening		1,510	1,510	0.5
4. <u>Financial costs</u>	1,470	27,320	28,790	9.8
3.1 Interest	-	25,485	25,485	8.7
3.2 Credit fee	-	1,835	1,835	0.6
3.3 IDB inspection	1,470	-	1,470	0.5
<u>TOTAL</u>	147,000	147,000	294,000	
Percentages	50.0	50.0	100.0	100.0

IV. PROCUREMENT

- 4.1 When goods to be procured or services to be contracted for the Program, including those related to any form of transportation or insurance, are to be financed in whole or in part with foreign exchange from the financing, the procedures and specific requirements for the bidding or other forms of contracting shall permit the unrestricted participation of goods and services from member countries of the Bank. Consequently, no conditions that

would prevent or restrict the offer of goods or the participation of contractors from such countries shall be established in such procedures or specific requirements.

V. CONSULTING SERVICES

5.1 For consulting services to be financed with the local counterpart funds:

- (a) before initiating a call for bids for such consulting services, the Borrower shall, through the Executing Agency, reach an agreement with the Bank on the terms of reference for such services;
- (b) before hiring such services, the Borrower shall, through the Executing Agency, inform the Bank as to the names and background of the firms selected and the cost involved.

VI. SELECTION CRITERIA

6.1 In order to be eligible for inclusion in the Program, a section of highway must meet all of the criteria set forth below:

- (a) it must be part of the main corridor that is the object of the Program or have access to it, either directly or through a highway having features identical to or better than the proposed section, and must link up to the paved system at one of its ends at least;
- (b) it must be chosen on the basis of relative priority as determined by an economic evaluation at the prefeasibility stage;
- (c) the features of the works to be executed on the section and the degree of preparation of the final designs must be such that:
 - (i) it will be possible to initiate the construction works within 30 months after the effective date of the loan contract;
 - and (ii) the works can be concluded within four years after the effective date of the loan contract;
- (d) the socioeconomic evaluation of the section must show a rate of return of at least 12% or greater, using the same methodology that was applied to calculate the return on the projects in the representative sample; and
- (e) the works to be executed on the section: (i) must have been issued an environmental clearance by the Centro de Estudos Ambientais (CRA), and have complied with the provisions

thereof; and (ii) must not affect any national park or indigenous reserve.

6.2 From the second year after the effective date of the loan contract, any activity must meet all of the criteria set forth below in order to be included in the scheduled maintenance or restoration component:

- (a) The activity must be identified as a result of a selection of works to be performed each year, and as a result of a multi-year program determining annual needs in terms of scheduled maintenance and restoration on each highway in the system, based on a selection of the best alternative in terms of works maintenance and priority; and
- (b) The activity must be justified by an evaluation of the condition of service of the highways and the volume of traffic, and represent the best technical and economic alternative.

VII. MAINTENANCE

7.1 The purpose of the maintenance component is to keep the highways in the road system at a standard that is consistent with the service they are to provide.

7.2 The annual maintenance report mentioned in recommendation 12 shall include the following:

- (a) general information, including: (i) the organizational structure of the agency in charge of maintenance, and its designated responsibilities; (ii) classification, number and distribution of staff in the maintenance districts or divisions, as well as the type, number, location and operating condition of the equipment designated for highway maintenance; and (iii) maintenance contracts in effect and their time frames, scope of coverage, and degree of execution;
- (b) an updated inventory of the state highway system with a detailed indication of the condition of the various sections of highway in the system;
- (c) an evaluation of execution of the maintenance plan during the previous year, including: (i) a comparison of current conditions on the various sections of highway with those described in the inventory from the previous year; (ii) statistics on activities carried out, volumes of work done and physical and monetary resources used, both in activities by force account and those contracted out; and (iii) the degree of

execution of the plan and its effectiveness, and any adjustments that should be made; and

- (d) the highway maintenance plan for the following fiscal year, with justification of the priorities to be applied, the activities to be carried out, and the timetable for execution. The plan is also to indicate both the physical resources required and the proposed budget of the executing agency, broken down as appropriate.

VIII. EX POST EVALUATION

- 8.1 The purpose of the ex post evaluation report referred to in paragraph 14 of Appendix II will be to assess the Program's socioeconomic impact and the extent to which its objectives have been achieved, and shall include all necessary information to that end.
- 8.2 The report shall contain:
 - (a) a socioeconomic evaluation, using the same methodology as applied in the ex ante evaluation of a representative sample of projects under the Program, representing 30% of the total program in terms of cost;
 - (b) an explanation of the data used and a breakdown of any substantial change in the projects, delay in execution of the works or variation from the costs originally envisaged. The report is also to furnish explanations for any discrepancy between the results of the ex post evaluation and the ex ante evaluation;
 - (c) An evaluation of the economic and social impact of the improvements made, as well as of the technical solutions implemented, with recommendations based on experience and results obtained, in order to improve, to the extent possible, the quality and comprehensiveness of the studies, administrative procedures and methodologies for the project and construction of the works; and
 - (d) an evaluation of the monitoring of environmental aspects of the works executed.