

SANTA CRUZ-PUERTO SUÁREZ CORRIDOR PROJECT PHASE ONE

(BO-0036)

EXECUTIVE SUMMARY

Borrower and guarantor:	República de Bolivia	
Executing agency:	Servicio Nacional de Caminos (SNC)	
Amount and source:	IBD (FSO):	US\$ 75.0 million
	Local counterpart:	US\$ 15.0 million
	Total Phase 1:	US\$ 90.0 million
	IBD (FSO):	US\$ 70.0 million
	Local counterpart	US\$ 17.5 million
	Total Phase 2:	US\$ 87.5 million
	Total Project:	US\$177.5 million
Financial terms and conditions:	Amortization period:	40 years
	Period	
	Physical initiation of works:	2 years
	Disbursement period:	5 years
		not less than 3 years
	Grace period:	10 years
	Interest rate:	
	during the grace period	1%
	during following 30 years	2%
	Inspection and supervision:	1%
	Credit fee:	0.5%
	Currency:	Currencies of the Fund for Special Operations (FSO)
Objectives:	The goal of this Program is to improve Bolivia's integration with the region and international markets, while promoting economic efficiency in the various regions and production sectors by reducing transport costs and travel time, with improved highway conditions and traffic safety. The specific objectives of the Program are to: (i) lower transportation costs; (ii) reduce travel times; (iii) guarantee that the	

highway remains passable from the beginning of construction; and (iv) improve transportation safety for drivers and passengers, and their cargoes (paragraph 2.2).

Description:

The Program consists of the resurfacing and construction of various sections of highway in the Santa Cruz-Puerto Suárez corridor. The heavy construction work will include refurbishing the roadbed and paving of 571 km of highway in two phases, guaranteeing continuous serviceability throughout the corridor. Environmental strengthening and mitigating measures will be carried out at the same time under a separate program financed in its entirety by the Bank: *Environmental and Social Protection Project for the Santa Cruz–Puerto Suárez Corridor* (BO-0033). The second phase of the Program will be contingent upon fulfilling the conditions established in paragraph 2.15 through paragraph 2.17.

The Bank's country and sector strategy:

The Bank's strategy has as its principal elements: (i) economic growth and the creation of opportunity; (ii) development of human capital and access to basic social services; and (iii) good governance and consolidation of reforms. The project will help stimulate economic growth through greater investment in productive infrastructure to link Bolivia and increase competitiveness by reducing transportation costs. The provision of this infrastructure will make it possible for producers to participate more actively in both internal and international markets (paragraphs 2.6 and 2.18 of the Country Paper, May 1999).

The Project is also in line with the strategic component of the Bolivia Poverty Reduction Strategy (EBRP) to expand employment and income opportunities by making highway expansion feasible so as to link Bolivia with neighboring countries, and helps limit the impact of these investments on public finances by providing concessional resources.

Environmental and social review:

The Vice-Ministry of Environment, Natural Resources and Forestry Development (VMARNDF) has granted an environmental permit—Environmental Impact Statement (EIS)—authorizing the National Highway Service (SNC) to carry out construction works throughout the corridor. Given the magnitude and complexity of its direct and indirect effects, it was decided during project preparation that it would be best to deal with the social and environmental impact of the works separately. Accordingly, Project BO-0033 was devised in order to mitigate the Program's impact and ensure consistent application of rigorous criteria for environmental protection and mitigation of adverse effects throughout the corridor. Various, increasingly detailed environmental studies were carried out in the course of preparing the highway construction Program and the accompanying Project BO-0033: (i) an Environmental Impact Assessment Study (EIAS),

prepared in conjunction with the highway engineering studies; (ii) the Strategic Environmental Assessment (SEA), which reviewed and built upon the findings of the earlier EIAS; (iii) a special study on the system for regulating land ownership in the area; (iv) the Work Plan detailing activities under BO-0033; (v) Report from the Senior Advisory Panel; and (vi) a new EIAS based on the final plans for the highway and submitted by a private consortium. The conservation strategy adopted will work in several directions at once: (i) clarifying property rights and returning to the State large tracts of public land suitable for forest management; (ii) regularizing land settlement claims in the area; (iii) strengthening the management of protected areas, especially protection measures themselves; (iv) reinforcing surveillance in forested areas and controlling unlawful clearance of land; (v) promoting practices to encourage sustainable use of natural resources; and (vi) compensating the losses of persons directly affected by the corridor by improving their quality of life. The consolidated version of the SEAs and revised EIASs have been available since 4 August 2000, on the Bank's Web page at www.iadb.org/regions/re1/eia/bo0036/index.htm. The Report on Project BO-0033 was forwarded to the "*Public Information Center*" (PIC) on 4 March 2002, and approved by the Committee on Environment and Social Impact (CESI) on 19 February 2002 (see paragraph 4.14 through 4.24).

Benefits:

The benefits expected from the Program include: (i) reduction in transportation costs; (ii) improved access to transportation for passengers and for the shipment of agricultural production, livestock and manufactured goods; (iii) greater safety in the transporting of passengers and freight, lessening the risk of accidents, reducing travel time and improving routes; and (iv) lowering highway maintenance costs. The Program will benefit all residents of Bolivia, particularly those living in the Santa Cruz region. In addition, it will benefit the international flow of goods.

Risks:

The Program entails the following risks: (i) a complex financing and execution schedule which requires coordination among various donors with different disbursement periods, procedures and policies; (ii) a sector with a history of excessively long construction periods and cost overruns; (iii) failure to provide local counterpart contribution on time; (iv) the SNC has yet to complete its institutional reforms; (v) heavy demand on the resources of the Government of Bolivia; and (vi) highly complicated environmental picture due to the indirect effects of the Program.

Efforts to mitigate these risks are as follows: (i) financing for the first phase of the corridor is virtually assured; the SNC will apply consistent technical and environmental standards throughout the

corridor, and will have a Technical Support Group (TSG) to assist with details of the various contracting systems and the rendering of accounts vis-à-vis each financing source (paragraph 3.13); (ii) the SNC will apply criteria and procedures agreed to in advance with the Bank in the contracting and supervision of work, in order to minimize this risk; (iii) the SNC will create a local counterpart trust fund (the FAL) and Santa Cruz Departmental Prefecture (PSC) will make automatic contributions to the fund in a pre-established amount, thereby reducing uncertainty; (iv) the SNC is making systematic progress in the application of institutional reform measures; implementation of these measures is a condition of eligibility for a loan from the World Bank for the highway sector, and the WB is monitoring compliance in this area (paragraphs 1.46 and 3.10); (v) the Government of Bolivia has provided for the counterpart resources and virtually assured the financing for the first phase; however, the highway sector's share of public spending during the Program's execution period could result in a reduction of resources available for other sectors, creating tension over the level of indebtedness and public expenditures; and (vi) this operation is closely linked to progress under BO-0033; construction work on the corridor will not begin until that project is well under way (paragraph 4.14 through 4.24).

**Special
contractual
clauses:**

Special conditions precedent to the first disbursement: in addition to the standard conditions precedent to the first disbursement, the Borrower, acting through the Executing Agency, must present to the Bank's satisfaction evidence that:

1. Loan BO-0033 has been declared eligible for disbursements (paragraph 4.25);
2. The new SNC organizational structure and wage scale, which is part of the ARI, is in execution with at least 80% of the staff hired for the Department of Planning and Technological Development, the Socio-environmental Administration, the Maintenance Department, and Construction Department, as well as the necessary staff in other departments to support project execution (paragraph 3.9);
3. the Special Project Unit (SPU) has been established within the SNC's Construction Department, which will be responsible for managing the Program, and the unit has been supplied with the human, technical and logistical resources agreed to beforehand with the Bank (paragraph 3.6);
4. the consultants who will make up the Technical Support Group (TSG) have been hired and trained, and are ready to assist the SNC in managing the Program (paragraphs 3.13 and 3.14);
5. the Operating Regulations for the Local Counterpart Trust Fund (FAL) are in effect, and the conditions established in paragraph 3.38 and 3.41 have been fulfilled;

6. the Operating Regulations of the National Highway Maintenance Fund (CNCV) are in effect, the CNCV has been duly constituted and is receiving contributions from the Special Tax on Hydrocarbons and their Derivatives (IEHD) and road tolls, and the resources of the CNCV have been deposited by the Government of Bolivia as provided in Supreme Decree 26.487 (paragraph 1.16); and
7. a document has been forwarded to the Bank proposing toll policies to be applied in the basic highway system and, especially, in refurbished sections of the corridor; the proposal will include the details specified in paragraph 1.16.

Conditions precedent to awarding a contract for work on the Paraíso-El Tinto section: Prior to awarding a contract for this section, the Borrower acting through the Executing Agency, will submit the following to the satisfaction of the Bank:

1. a report on the execution of Project BO-0033, containing the evidence specified in paragraph 4.26;
2. proof that legal possession of the property where the works are to be constructed has been obtained, along with rights of way and other rights necessary for beginning of construction; and
3. evidence that the PSC is depositing local counterpart resources in the Program's sub-account in the FAL, in accordance with the financing schedules approved by the Bank (paragraph 3.41e).

Other contractual conditions:

1. The bidding conditions for construction companies and for the public call for proposals for supervision of the works, and their respective contracts, must include the obligation to adhere to and enforce the procedures for environmental management and control of the works established in the Operating Plan for Project BO-0033, and in accordance with the SNC Executive Resolution No. 10 of 10 March 2002. These requirements shall apply as well to the bidding conditions for the activities of maintenance and rehabilitation of the various gravel sections (paragraph 3.43). Before beginning highway construction works, the SNC shall present evidence that its Socio-environmental Administration and the Vice-Ministry of Environment, Natural Resources and Forestry Development (VMARNDF) of the Ministry of Sustainable Development and Planning has provided environmental training for the Socio-environmental Inspector, the Socio-environmental Supervisor, and the contractor who will be carrying out the work. This training will include both general

environmental protection information and project-specific instruction on topics indicated in the environmental permit. The pertinent bidding conditions will list these requirements (paragraph 3.49);

2. Work on the Paraíso-El Tinto section will not be put to tender until work has begun on the rehabilitation and maintenance of gravel roadways in the El Tinto-San José de Chiquitos, Roboré-El Carmen and El Carmen-Puerto Suárez sections (paragraph 2.18); and
3. With respect to the consulting services needed to conduct special studies, the Executing Agency must present the following to the Bank within the indicated deadline: (i) within 9 months, the TOR for hiring these consultants; (ii) within 24 months, evidence that the consultants have begun activities; and (iii) within 24 months, delivery of the final reports. All deadlines are reckoned from the date that the Loan Contract becomes effective (paragraph 2.23).

Targets for the second phase:

The primary conditions that will be evaluated, among others, in order to determine whether or not to continue on to the second phase are listed in paragraph 2.24 of the document. These conditions have to do with management of the highway system, progress in execution of the Program, highway maintenance, institutional reform and environmental protection. The degree to which they have been attained will be analyzed during the mid-term evaluation of the Program, which will be carried out within 30 months following the start of construction work on the Paraíso-El Tinto section. The Bank will receive a report by no later than June 2005 listing the evidence and documentation required for assessment of these conditions.

Poverty-targeting and social sector classification:

This operation does not qualify as a social equity enhancing project, as described in the indicative targets mandated by the Bank's Eighth Replenishment (document AB-1704). Furthermore, this operation does not qualify as a poverty-targeted investment (PTI).

Exceptions to Bank policy:

This Program will finance routine maintenance on the El Tinto-San José, Roboré-El Carmen and El Carmen-Puerto Suárez gravel-surfaced sections for a period of no more than 30 months, and up to the amount of US\$1.95 million (2.8% of the financing offered). An exception to policy OP-707 Maintenance and preservation of physical works and equipment is therefore requested.

Procurement:

The Bank's standard procedures will be applied for the execution of works and procurement of goods under the Program. International competitive bidding (ICB) procedures will be used whenever resources from the Bank's Loan are used for the acquisition of goods

valued at the equivalent of US\$350,000 or more, or the contracting of construction works valued at the equivalent of US\$3,000,000 or more. In addition, contracts for rehabilitation and maintenance works on gravel sections, as well as for the construction of minor bridges, may be let using the lump-sum system (paragraph 3.49 through 3.52).

The contracting of consulting services will be carried out according to the Bank's standard procedures for this purpose, and those indicated in Document GN-1679-3. International competitive bidding will be used for procurement of consulting services valued at US\$200,000 or more. For this Program, when selecting consulting firms using *Recruitment based on quality and on cost*, the relative weighting of price as a criterion for evaluation may not exceed 20%, and that of the technical element or quality of the offer may not be less than 80%.

I. FRAME OF REFERENCE

A. Socioeconomic background

- 1.1 Bolivia's social and economic development is dependent upon its geographic configuration, the uneven distribution of the country's population, lack of diversity in its economic base and difficulties in accessing international markets. Its efforts at economic adjustment and political and institutional reforms over the last 15 years have brought about economic stability and laid the foundation for sustained growth. However, the country's average annual growth rate of 1.7% in per capita gross domestic product (GDP) has not been sufficient to make a significant dent in poverty, nor to improve its social indicators which remain among the lowest in the region. For this reason, the Bank's strategy emphasizes support for the Government of Bolivia's poverty-reduction efforts, and promoting sustained growth through initiatives aimed at strengthening the country's production infrastructure, micro-enterprises and rural development.
- 1.2 Its Andean highlands, which account for only one-third of Bolivia's territory, are nevertheless home to approximately 70% of the country's population – this despite the rugged terrain and climate, and a lack of arable land. The remaining two-thirds of its territory is made up of tropical savannahs in the Amazon region, the lowlands of the Paraguay River basin, and the Chaco floodplains. Their vastness, moderate topography and variety of natural resources make these regions the natural choice for expansion that would alleviate the demographic pressure on the Andean zone, add new production activities to the national economy and consolidate the progress made to date. Santa Cruz, in particular, has the potential to become a major agricultural and industrial center that could help diversify the country's economic base, stimulate new industrial development and generate new employment opportunities. In the last decade alone population growth in this department has outstripped the national average, the amount of land under cultivation has grown steadily, and Santa Cruz has become the leading contributor to GDP among Bolivia's departments, currently accounting for over half of the country's agricultural production.
- 1.3 However, the lack of connecting routes, both within the region and between this department and other areas of the country as well as foreign markets, is one of the biggest single obstacles to the realization of its economic potential. Improving the Santa Cruz-Puerto Suárez corridor will significantly reduce transportation costs for passengers and freight alike, and avoid the long period of total isolation during the region's rainy season, as well as its partial isolation during the rest of the year. It will also give a boost to: (i) employment in the region's productive sector through more intensive and diversified agriculture and growth in the agribusiness sector aimed at export markets; (ii) the forestry sector including industrial processing and exportation of timber products; (iii) the mining of calciferous minerals and manufacture of cement (operators are already in production by lack reliable

transport to Santa Cruz intermediate towns); (iv) operations in the free zone that has been created in Puerto Suárez; and (v) existing tourist facilities in the Puerto Suárez region and others that could be developed around sites that UNESCO has classified as part of the cultural heritage of humanity.

- 1.4 In addition to linking the local economy, the highway forms part of an East-West corridor connecting countries on the Atlantic coast (primarily Brazil) with Chile and Peru. The corridor itself has been identified by IIRSA (Iniciativa de Integración Regional de Sudamérica) as a vital route with the greatest potential for regional integration, this highway being the final link and thus of great importance for completing the corridor. Specifically, it will strengthen Bolivia's links to MERCOSUR –especially Brazil and to a lesser degree Paraguay—and, via the Hidrovia Paraguay-Paraná (HPP), improve access to Argentina, Uruguay and the markets of Europe and North America. Given these considerations, upgrading this highway has a very high priority in the Government of Bolivia's development plans.

B. Gross Domestic Product (GDP), government spending and public investment

- 1.5 The Bolivian economy has recorded a low growth rate in recent years as measured by GDP. The Government of Bolivia hopes for a turnaround in this situation over the next decade and estimates that the cumulative average of 1.4% growth in the period 1998-2002 will be replaced by GDP growth in the order of 4.9% during the period 2003-2008. Expenditures on transport, which historically have accounted for 30% of public investment, will rise to above 35% thanks to the activities of the SNC which have till now represented around 18% of government spending but are scheduled to rise to more than 25%. The table below sets out historic (1998-2001) and projected values for the period covering construction of the corridor:

Transport sector's share of government spending (%)											
	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
GS/GDP	6.0	6.3	6.7	7.3	7.2	7.3	7.7	8.2	8.4	8.0	7.7
Itr/GS	30.3	30.2	31.1	31.7	31.1	37.1	38.0	37.2	30.2	31.3	28.4
ISNC/GS	15.1	18.5	21.1	17.0	21.2	27.7	29.0	27.2	20.2	20.9	17.7
ISNC/Itr	49.9	61.3	67.8	53.6	68.1	74.6	76.3	73.2	66.8	66.7	62.3
GDP= gross domestic product; GS: government spending; Itr= investment in transport; ISNC= investment by the SNC											

C. Highway transport infrastructure

- 1.6 The road system, and the motor vehicles that travel over it, are essential to a country's social and economic activities. It is the predominant means of transportation for moving goods and production inputs, and is particularly vital to the value added process. And from a people perspective, it is equally important as a means by which the population can access social services and public agencies.

- 1.7 Bolivia's road system consists of 56,500 km of roadways: 10,500 km belonging to the basic highway system (RVF), for which the Servicio Nacional de Caminos (SNC) is responsible; 4,200 km of feeder or secondary roads under the jurisdiction of the departmental prefectures; and 41,800 km of county roads, which are the responsibility of the municipalities. Most of this network of roadways is located in the Andean region and southwestern portion of the country. As of 2001, Bolivia's road system showed the following totals:

Length and maintenance status of roadways (km)					
Road system		good	average	poor	Total
basic highway system	paved	1,231	1,744	548	3,523
	unpaved	749	3,002	3,203	6,954
secondary or departmental	paved	23	32	15	70
	unpaved	499	957	2,707	4,163
county or municipal	paved	41	109	30	180
	unpaved	2,082	4,997	34,560	41,639

- 1.8 According to the Plan Maestro de Transporte for the year 2000, the main problems facing the country's road system are: "inadequate maintenance of roadways due to lack of budgetary resources and capacity among highway departments, resulting in poor driving conditions, higher costs for transport and the need for bridges on gravel and dirt roads"¹; the lack of an adequate system for planning and scheduling of public works; work projects that take too long to execute and incur serious cost overruns; lack of interconnectedness within the road system; and high incidence of traffic accidents², etc.
- 1.9 Low levels of motor vehicle ownership, combined with a difficult topography and lack of adequate infrastructure, make for a highway system characterized by low demand. Except for stretches near the larger cities, traffic levels on the main highway network fluctuates between 200 vehicles/day on unpaved roads, to around 1,000 vehicles/day on paved roadways.

D. Train traffic in the corridor

- 1.10 The corridor has a rail line which links the cities of Santa Cruz and Puerto Suárez, and, taking a southward branch from Santa Cruz, also links that city with the town of Yacuiba and the northern tip of Argentina. Proceeding west from Puerto Suárez, the rail line reaches the Brazilian town of Corumbá. Despite its international

¹ Plan Maestro de Transporte por Superficie. Final Report. Executive Summary. November 2000. Vice-Ministry of Transport, Communications and Civil Aeronautics.

² Idem.

connections, this railway primarily serves Bolivia's foreign trade sector by providing a link to the Hidrovía Paraguay-Paraná and, to a lesser extent, aiding trade with Brazil in particular. Built between 1948 and 1967, the railway has some 700 km of track within the corridor area and has been operated by a private company since 1996. Its passenger service plays an important role since it is the only form of transportation available to people living in smaller communities along the corridor in towns such as Roboré, San José de Chiquitos, etc., who benefit from cross-subsidization with its freight services.

- 1.11 The railroad is currently the primary mode of transportation in the corridor, hauling approximately 1.0 million tons of freight and carrying some 450,000 passengers per year. While volume has remained virtually constant, freight rates charged by the railway have declined sharply in recent years, dropping from US\$5.55 per ton/km in 1998, to 4.64 cents in 1999, 4.21 cents in 2000, and 4.09 cents in 2001. At the same time, the private operator has increased investment in infrastructure and equipment, making the railway more competitive with the trucking industry.
- 1.12 However, the railway cannot replace the highway system or match the services that this system provides, particularly in terms of personal mobility and the movement of goods produced or consumed in small-scale lots in towns along the corridor. These services are currently being provided by the railway at loss, tying up scarce resources (right of way, rolling stock and personnel) which could be applied elsewhere more efficiently. The railroad is a highly specialized mode of transport for moving very large-scale traffic which it is better equipped to handle (just four products currently account for 76% of the volume of the trade carried by train), especially where it moves these products from virtually one end of the line to the other (an average distance of 609 km in this case). All of which means that the railway is poorly equipped to meet the demand from existing communities along its route, much rather the requirements to which expanding agricultural production is expected to give rise. Consequently, the railway and highway system will have complementary, rather than competitive roles to play in providing new opportunities for local inhabitants and producers alike.

E. Highway maintenance

- 1.13 In the 1980s, having achieved a major expansion of the national highway system, the SNC faced the need to guarantee proper maintenance of that system or risk losing an important public asset, adding to the operating costs of vehicles, incurring higher accident rates, cargo losses, environmental damage, etc. At the same time, the SNC's effectiveness was severely undermined by the decentralization policy in effect from July 1996 through December 1998 which transferred personnel, equipment, facilities, yards, workshops and budget to the department prefectures, without giving them the institutional organization and technical capacity to deal with this challenge. The result was the dismantling of the highway maintenance system, which is only now beginning to recover.

- 1.14 The SNC uses three methods of contracting out maintenance works since it lacks the in-house capacity to carry out the work directly. First, it has signed maintenance contracts with private companies that began work in 1999 and, with a few exceptions, continue in force today. These contracts (29 in all) cover about 7,000 km of the road system at a total cost of US\$14.4 million in 2001, and an average of US\$2,055/km. However, budget difficulties and the poor condition of the highways have combined to produce less than expected results. The second method is to contract with microenterprises labor-intensive routine maintenance such as ground clearance, cleaning out of culverts and ditches, streambed maintenance, etc., at an average annual cost of US\$181/km. This method is still in the experimental stage. The third method is used for emergency maintenance work, even where part of this work is done under the maintenance contracts. The funds for emergency maintenance come from the United States government's PL-480 program, plus donations made by the Government of Japan. Given the geological characteristics of the area in which the bulk of the country's road system is located, expenditures under this heading have been considerable, totaling US\$38.3 million in the period 1999-2001.
- 1.15 The SNC has a Highway Maintenance Office and is in the process of creating 10 Regional Offices to be responsible for inspection, control and monitoring of the routine maintenance contracts, and providing support for specific projects. The creation of this organization will plug the most important gaps in the management of maintenance works. As part of the institutional and technical strengthening program financed by the Bank (Loan 1039/SF-BO, Ventilla-Tarapaya Highway and support for the transport sector), general specifications will be drawn up for highway construction, a new Maintenance Manual will be produced, and systems for administering and overseeing maintenance of paved roads and bridges will be developed. The goals of the Institutional Reform Program (PRI) include, among other things, implementing a plan for the restoration, preservation, conservation and enhancement of the RVF highway system as a vital public asset. Attaining this objective will require *inter alia* the following actions: (i) establishing policies and strategies for maintaining the RVF; (ii) devise an effective and sustainable plan for highway restoration and maintenance; (iii) draw up basic guidelines for highway maintenance (minimum structural and operating conditions), with associated costs and benefits; (iv) implement the Highway Administrators and Microenterprise Maintenance Program (PROVIAL Bolivia); (v) create a program for periodic rehabilitation and maintenance under performance contracts based on clear and precise indicators; and (vi) implement a system of preventive maintenance designed to minimize the need for emergency work.
- 1.16 One of the most important reasons for the lack of highway maintenance has been the failure to attach sufficient financial priority to this area. To correct this problem, the Government of Bolivia in devising the institutional framework of the SNC (Supreme Decree N° 26.336) established the National Highway Maintenance Fund (CNCV), which began operations in 2002, and is intended to "bring about direct

centralization of all resources allocated on a priority basis for routine highway maintenance and conservation” (Article 35). These resources will come principally from road tolls, a gradually rising percentage of the Special Tax on Hydrocarbons and their Derivatives (IEHD) until the share reaches 15% of revenues collected, and funds from the World Bank’s Second Highway Maintenance and Rehabilitation Project which is currently in preparation. Next, the Government of Bolivia issued Supreme Decree 26.487 authorizing the Ministry of Finance (MH) to make the transfers of these resources to the SNC. At present, the SNC is preparing the regulations that will guide the CNCV. Given the importance of the policy governing the road toll system and the placement in operation of the CNCV, the following will be made special conditions precedent to the first disbursement: (i) a document has been forwarded to the Bank in which the Ministry of Economic Development proposes toll policies to be applied in the basic highway system (RVF) and, especially, in refurbished sections of the corridor, which includes, among other considerations: (a) the policy and measures to be taken with respect to existing concessions in the collection of tolls; (b) determining and updating the amount of tolls; (c) allocation of revenues collected; (d) rules for collection of tolls; (e) specific provisions regarding the handling of toll revenues collected on the corridor; and (f) their relationship with the CNCV’s programs for maintenance in the corridor as section of the project are approved for transportation; and (ii) the Operating Regulations of the National Highway Maintenance Fund (CNCV) are in effect, the CNCV has been duly constituted and is receiving contributions from the IEHD.

- 1.17 The maintenance budget allotted has not been sufficient to properly maintain the road system. This shortfall is expected to end in 2002 when the CNCV comes on stream and the SNC becomes a fully funded institution. Its resources will total some US\$28 million, which represents US\$2,718/km. Below is a breakdown of spending on routine maintenance during the period 1992-2001, and on periodic maintenance in 1998–2001 (actual expenditures) and the projected budget for 2002 (in thousands of current dollars):

year	km	cost of routine maintenance		cost of emergency maintenance (contracts)	total cost	cost/km	periodic maint.
		direct labor	under contract				
1992	15,882	10,292			10,292	648	
1993	17,833	11,097	-	-	11,097	622	
1994	17,538	12,454	-	-	12,454	710	
1995	19,756	16,548	-	-	16,548	838	
1996	17,498	16,803	-	-	16,803	960	
1997	no data***						
1998	no data***						15,075
1999*	7,324		12,743	6,792	19,534	2,667	25,629
2000*	7,323		15,444	15,796	31,241	4,266	28,306
2001*	7,007		14,400	15,700	30,107	4,296	12,186
2002**	10,300		27,855	15,600	43,455	4,219	28,825
Works in 1992 – 1996 include main highways, secondary and county roads administered by SNC. (*) Data on main highway network. (**) Budget requested by the Maintenance Department in September 2001. (***) SNC does not have access to expenditures under the Prefectures.							

F. Controlling the weight and dimensions of vehicles

- 1.18 Vehicular weight and dimensions are subject to the limits set out in Supreme Decree 25.629 of 1999. The Weight Restriction Unit of the Highway Maintenance Office has the power to monitor and regulate the weight and dimensions of vehicles traveling over the RVF. In addition to imposing fines on carriers, the regulations authorize the application of penalties against the companies whose products are being shipped, which are required to own their own scales to help ensure compliance with maximum permissible weight per axle and total weight. In the event of a violation of these restrictions, the company that produced the cargo may be liable to a penalty equivalent to up to half of the fine imposed.
- 1.19 The system for collecting fines is very lax. Of the total amount fined, only approximately US\$5,000 has in fact been collected, notwithstanding the hiring of a private law firm for enforcement.
- 1.20 Vehicles are currently being weighed using portable static scales that were returned following the failed attempt at decentralization. These devices have had great deal of wear and tear which significantly reduces their usefulness for purposes of SNC inspections. Moreover, the Weight Restriction Unit recognizes that portable equipment does not stand up to permanent use and deteriorates with constant handling. At present the SNC has only 11 inspection stations, which are limited to the departamentos of La Paz, Oruro, Sucre, Santa Cruz, Tarija and Cochabamba. Only in the latter department is there a station for inspecting traffic in both directions. Finally, the SNC does not have enough staff to do justice to this important task, so that there is a clear need to revamp the current inspection system.

- 1.21 One of the essential components of its Institutional Reform Program (PRI) states that the SNC must be able to control the weight and dimensions of cargo vehicles traveling on the RVF in order to prevent premature wear or damage. Attaining this objective will require the following action: (i) plan, design and implement a system for monitoring and continuously assessing loads; (ii) define the process and procedures needed for administration and control of the system; (iii) work to get companies shipping their products to voluntarily check for compliance with weight restrictions; (iv) take steps to secure the financial resources needed to install weight stations; (v) study and carefully analyze the Freight Act and its regulations to ensure proper enforcement; and (vi) conduct education and awareness campaigns especially aimed at freight carriers.
- 1.22 To ensure effective control of vehicle weight and dimensions, both phases of the Project will include the construction of weight stations. In addition, as part of the requirements for activating finances under the second phase and ensuring a sustainable, long-term control system, the SNC must develop an efficient system for inspecting vehicles for their weight and dimensions.

G. Highway safety

- 1.23 Even though the number of motor vehicles in Bolivia is relatively small, about 1000 people die and nearly 6,000 are injured each year in traffic accidents. And Bolivian highway deaths have been growing at the alarming rate of 10% a year. Approximately 77% of these accidents occur in urban areas, almost 90% of them at intersections.
- 1.24 Among the principal deficiencies of Bolivia's highway safety system identified in a study financed by the Bank, the following were particularly notable: poor condition of roadways and lack of safety features; inadequate systems of information and recording of accidents; lack of manuals and regulations governing the design of traffic signals; little in the way of traffic controls and ineffective surveillance; inadequate driver training for authorities, professional drivers and motorists; poor engineering design characteristics and insufficient road capacity; lack of institutional capacity within the SNC; lack of coordination between responsible agencies; absence of highway safety policies and planning; obsolete traffic rules and transport regulations; and lack of appropriate transport legislation.
- 1.25 Given the lack of institutional means for combating this problem and the absence of tools, standards and technical manuals on highway safety, the Bank financed a Technical Cooperation (ATN/DC-6909-BO) in the year 2000 to establish a strategy for improving safety on Bolivia's highways. The main recommendations made in that study are now considered goals of the institution-building process. Thus the PRI proposes as one of its goals that the SNC should reduce the number of accidents and injuries on the RVF to the lowest possible number and devise a continuous action plan to promote highway safety. Actions aimed at attaining this

objective will include: (i) guaranteeing that roadways are in good condition and equipped with traffic safety features; (ii) developing manuals for highway design and signals; (iii) carry out roadway expansion programs and make other physical improvements; (iv) promote the creation of a national highway safety organization at the highest possible level; (v) work to update traffic regulations and transportation standards; (vi) take steps to ensure that the necessary resources are available to fund highways safety efforts; and (vii) carry out public information campaigns.

H. The major highway network and tolls

- 1.26 The charging of tolls is a widely accepted procedure on the RVF. Of the 10,477 km of roadways making up the system, 97% (10,194 km) are toll roads. The situation is similar in the secondary road system operated by prefectures, where tolls are charged for 3,752 km (89%) of its total length of 4,233 km. Even at the municipal level, all 180 km of paved routes require users to pay a road toll. However, these toll systems have been used as a revenue collection method only, not as a means of allocating resources for the operation and maintenance of roads. And since tolls are also levied on roads that are in very poor repair, the whole concept of tolls has been weakened and is strongly resisted by the people. In addition, tolls introduced in 1992 have not varied in amount since then, with the result that their value as a revenue collection method has declined to the point where the charge for use by a light vehicle is now equivalent to just 0.58 cents (US)/km, representing 56% of the toll's original value.
- 1.27 Making matters even worse, when administration of the RVF was turned over to the prefectures, these governments granted concessions for the collection of road tolls under contracts in which they lost control of the amounts collected in exchange for receiving a fixed sum from the concession-holder, removing any incentive for controls and efforts to maintain the real value of tolls. Some of these contracts are now expiring and one of the objectives of the SNC is to cancel all of these agreements and reorganize the collection system on a basis that will allocate toll revenues to cover a growing percentage of the costs for maintaining the RVF.
- 1.28 The allocation of toll revenues has undergone major changes in recent years: until 1998 all revenue from this source was allotted to the Prefectures; in 1999 all revenue went to the SNC; and beginning in 2000, 70% of the monies collection were allocated to the SNC, and the remaining 30% was paid directly to the Prefectures by concession-holders for use in covering maintenance costs.

I. Highway concessions

- 1.29 The policy on capitalization of public enterprises made possible the privatization of companies in the transport sector. Thus, in 1996 a contract was signed with Cruz Blanca Transportes (CBT) for the capitalization of the national railways, Empresa

Nacional de Ferrocarriles (ENFE). CBT then divided the rail system, transferring the Andean portion to the rail company Ferrocarril Antofagasta-Bolivia (FCAB), and focusing its own attention exclusively on the Eastern Railway System.

- 1.30 Then in 1997, when the privatization process had already been completed, the Ministry of Capitalization decided to call for tenders on the country's largest airports: La Paz, Santa Cruz and Cochabamba, which together handle 90% of the country's passenger traffic and 99% of its air freight. The legal framework for this process was highly questionable since it was not carried out under the legislation on capitalization, and the concession contract turned out in fact to be a contract for administration calling for virtually no initial investment. The concession was awarded to the SABSA group and is in effect for a period of 25 years.
- 1.31 Early in its administration the current government devised a new generation of reforms to attract the private sector, the goal being to privatize the construction, maintenance and operation of transport infrastructure such as airports, seaports, railways and the highway system. In 1998, the government enacted Law N° 1874 and approved its Organic Regulations under a Supreme Decree (DS). This enabled the administration in 1999 to consider four offers for concessions in the highway sector received from private enterprise, one of which was approved while two were rejected and, in the fourth case, the agency responsible, the Dirección General de Concesiones de Obras Públicas de Transporte (DGC), declared that the proposal was outside its mandate. In 2000 the first invitation to tender was issued under the title of "Bi-Oceanic Highway Corridors N° 3", for operation of the 125-km eastern access road to Santa Cruz. However, when the deadline for submission arrived no bids had been received and the call for tenders had to be cancelled. The reasons given for lack of interest were: (i) the minimum guaranteed income did not afford sufficient security for the financial backer since it was not accompanied by the State's guarantee of immediate execution; (ii) there was a lack of flexibility in allowing investments to be postponed to ensure higher returns for the project; and (iii) a recession occurred in the regional and the national economy.
- 1.32 In 2001 the Ministry of Economic Development (MDE) resumed work on the concession project, reformulating to include the following changes: (i) conversion to a public sector project, removing the 10% profit margin from the financial bid; (ii) adding additional toll sections to the original concession; (iii) delaying roadway expansion projects with an automatic activation clause; and (iv) postponing construction of the Banegas bridge by 15 years. The call for tenders went out in January 2002 and expressions of interest were received from more companies than in the previous competition. Bids are to be opened in April 2002.
- 1.33 The new concession calls for construction, improvement, maintenance, operation and commercial development of infrastructure, has a duration of 25 years, and follows a 249-km long circular route consisting of highways linking Santa Cruz, Cotoca, Pailón, Lorena, Los Troncos, Okinawa 1, Guabirá, Montero and Warnes,

before returning to Santa Cruz. The total investment is US\$28.0 million, which figure does not include the US\$7.3 million required to double the width of the 16-km long highway between Santa Cruz and Cotoca once the volume of traffic on that stretch exceeds 7,500 vehicles per day. Nor does it include the cost of building the Banegas bridge and its access roads, and the 33-km Okinawa–Los Troncos highway, a further investment of US\$38.9 million which has been delayed until year 15 of the concession.

- 1.34 The DGC, which is responsible for implementing an ambitious program of concessions, has an extremely limited structure that—even with the short-term support of outside consultants—restricts its capacity to push for technically adequate concessions.

J. Background to the construction of the corridor

- 1.35 The Santa Cruz-Puerto Suárez corridor has long been recognized as an important route for promoting regional and international economic integration. But there have always been problems, financial difficulties above all, that have delayed its construction. The European Commission, also interested in the corridor, financed construction of the paved stretches not included in the above-mentioned initiative. In June 2001, the Government of Bolivia received a proposal from a private sector consortium called Corredores Viales de Integración (CVI) which offered to build part of the corridor under the concession system, while the Government of Bolivia would complete the construction under its own public works division. Then the system as a whole could be operated by whoever is selected in a call for tenders on an eventual concession. The proposal submitted to the Government of Bolivia called for construction of the Paraíso-San José de Chiquitos section (206 km) as a public works project, and for its continuation from that point to Puerto Suárez (367 km) to be built through private investment. This proposal also included rehabilitation of the section from Puerto Suárez to Arroyo Concepción (14 km).
- 1.36 The Government of Bolivia studied the consortium's offer, concluding that: (i) it overestimated demand and was therefore overly optimistic; (ii) the projected tolls were much higher than current rates in Bolivia and above the usual rates charged in other, more developed Latin American countries with greater economic capacity, which cast doubt the ability of local motorists to pay; and (iii) the amount of investment was higher than in the estimates carried out by the SNC.
- 1.37 In addition to the above observations, the financing structure proposed involved a high degree of financial exposure on the part of the Government of Bolivia since it specified that the consortium was to receive: (i) a direct investment from the Government of Bolivia during the construction stage; (ii) a loan to be guaranteed by the royalties on gas exported to Brazil; and (iii) a loan from a multilateral institution, the Andean Development Corporation (CAF), to be guaranteed by the Government of Bolivia, i.e. through sovereign guarantees. The analysis of this

proposal concluded that, assuming moderate demand and income for the concession-holder, the guarantees requested were necessary to make the project viable, being payable during the highway construction period and the first years during operation of the corridor (a period of over 12 years), which means that the Government of Bolivia would be required to repay the debt in a much shorter period than if the construction were carried out as a public works project. These considerations led the Government of Bolivia to dismiss the option of building part of the corridor under the concession system.

- 1.38 As required under the Law on Concessions, the Vice-Ministry of Transport, Communications and Civil Aeronautics (VTC) issued administrative resolution number 11.657 of 26 November 2001 approving the proposal submitted by CVI, declaring it in the public interest, and recommending to the DGC that it continue the tendering process. The VTC also recognized CVI's right to reimbursement of the cost of technical studies carried out, in the amount of US\$5,589,597. Nevertheless, the Government of Bolivia subsequently decided that the best option for the country was to carry out the works with public funding only, with the support of the Bank, CAF, the EC, and OPEC.

K. Institutional framework

- 1.39 The governing institution for this sector is the Ministry of Economic Development (MDE), which includes the VTC and a specialized agency, the Servicio Nacional de Caminos (SNC), which manages the basic highway system. The departmental prefectures are responsible for the secondary or feeder road system, while the municipalities look after the nation's county roads.
- 1.40 In terms of administrative and financial aspects, the SNC's track record in carrying out projects is less than satisfactory. A recent example of this is the fact that the Service's Audited Financial Statements for the fiscal year ended on 31 December 2000, which were due for submission to the Bank by the contractual deadline of 30 April 2001, were not received until September and October 2001 – approximately six months late. Moreover, the external auditors expressed reservations concerning the fair presentation of financial information on aspects related to the valuation, analysis and reconciling of accounting records and supporting documents. In addition, they made a series of observations relating to the design and operation of the institution's internal financial control system.
- 1.41 The SNC's technical and institutional capacity is limited. The sector's policies have undergone substantial changes in recent years and its agencies have suffered important losses in their professional, technical and institutional resources. The SNC, in particular, began as a centralized institution with responsibility for the country's entire road system, then had all of its duties, personnel and equipment transferred to the prefectures in a poorly designed and short-lived decentralization process (1996), and finally had to recreate itself as a centralized institution with

jurisdiction over the basic highway system (1998) – but this time as a financially, technically and administratively autonomous agency.

- 1.42 In 1999, the Government of Bolivia launched a reform process aimed at modernizing the institutions of its public sector (Proyecto de Reforma Institucional or PRI), to ensure more efficient, effective and transparent management. Under the direction of the Office of the Vice-President of the Republic, a Technical Unit (TU) was created within the Comisión Nacional de Integridad (CNI) to oversee the process and distribute the financial resources allocated for reforms being carried out by participating institutions, one of which is the SNC. The objective of the PRI is to “help pilot agencies in the public sector develop institutional reform procedures by enabling them to carry out diagnostic studies and prepare strategic plans, implement performance-oriented public sector management systems, offer career path training to promising candidates and improve the quality of services”.
- 1.43 The SNC was selected for this program when it was discovered that the Service, the nation’s highway infrastructure and the vehicular transport sector in general all suffer from “five severe structural problems: (a) rampant political interference and corruption; (b) the lack of an official policy for development of the nation’s road system; (c) the absence of effective technical and administrative organization within the SNC; (d) insufficient, ill-timed and poorly distributed financial resources for managing the RVF; and (e) the deterioration and sad state of repair of the road system.” (Acuerdo de Reforma Institucional of the SNC, draft, January 2002).
- 1.44 As noted, the objectives of the PRI are to carry out diagnostic studies and prepare strategic plans, implement performance-oriented public sector management systems, offer career path training to promising candidates and improve the quality of services. As part of these tasks, the a Permanent Board of Directors of the SNC was appointed and began to work jointly with the TU on preparations for the signing of an Institutional Reform Agreement (ARI). These preparatory activities included designing a modern organizational structure, ensuring financial sustainability for the civil service program and announcing open competitions to fill vacancies in senior positions, all of which has now been completed. It is expected that the ARI will be signed by the SNC, the Ministry of Economic Development, the Ministry of Finance and the TU in the second half of 2002.
- 1.45 As part of the Agreement, the SNC is undertaking to carry out its institutional reforms, implement a new organizational model, adopt the career path system described in the Public Service Statutes, comply with the designated indicators and attain the specified targets. For its part, the TU will cover part of the costs for the new personnel structure, wage scales and other institutional adaptations. The new personnel structure will not be fully operational until June 2002. Recent changes in personnel and projected developments in the next few years, as well as associated costs and the source of financing are shown in the following table:

Wage Bill and Source of Financing (US\$ thousand)						
	2001	2002	2003	2004	2005	2006
Personnel						
Total	713	450	306	311	317	322
Career path	2	301	306	311	317	322
Old roster	713	300				
Wage Bill						
Base salaries	789	789	789	789	789	789
PRI		3,568	3,568	2,676	2,676	1,338
PGN		1,454	1,454	2,346	2,403	3,789
Total		5,810	5,811	5,811	5,888	5,916

- 1.46 To verify compliance with commitments the Committee for Support and Monitoring of the SNC's Institutional Reforms (CAS/SNC) has been created with the following members: the SNC, MH, MDE, TU, World Bank and the Donors Consultative Committee. To obtain an objective assessment, the ARI has detailed indicators and performance targets grouped into five categories: (i) administrative organization and administrative careers; (ii) technical standards and management systems; (iii) restoration, maintenance, and enhancement of the RVF; (iv) definition of policies and plans for roadway development; and (v) obtaining financial resources. Some of these indicators are included in the Logical Framework (Annex I) (paragraph 3.10)

L. The budgetary system of the prefectures

- 1.47 The federal budget (PGN) is governed by Law N° 2.042, which was passed in 1999. This Act applies without exception to every public sector entity in Bolivia (including the department prefectures) and, in part, to the municipalities. The budget sets maximum levels of expenditure and any subsequent modification must be approved by a Supreme Decree issued by the Executive Branch which, acting through the Ministry of Finance, is empowered to incorporate additional resources, provided these are obtained via royalties, donations ("*grants*") or foreign loans which were not included in the original budget and may be applied against current expenditures and capital costs.
- 1.48 The MH, through its Vice-Ministry for Budgets and Accounting (VPC), supervises, makes adjustments and transfers within and between institutions, and evaluates physical execution, financial performance and progress under the Annual Work Plans (AWPs). Also, at the close of each fiscal year, all public sector entities are required to report the physical and financial execution of that year's budget to the MH. This Ministry, through the VPC, forwards the results of its evaluation to the National Congress. External control of budgetary execution is the domain of the Controller General of the Republic.
- 1.49 The resources and expenditures of the prefectures are an integral part of the PGN. These resources include: (a) revenues from the federal level; (a1) royalties for the

utilization of natural resources (hydrocarbons, forestry and mineral resources); and (a2) allocation by the MH of revenues from the Special Tax on Hydrocarbons and their Derivatives (IEHD); (b) own ("prefectural") resources, which are those obtained from: (b1) provision of services to the community; (b2) payments made by concession-holders from toll collection beginning in 2000, as co-participation in the income from road tolls (30%) collected with the territory of each prefecture; and (b3) "recoveries", which in the case of Santa Cruz, means funds received from the sale of land in the Parque Industrial to recover investments made in FINDESA ("Financiera de Desarrollo S.A.M., currently "in bankruptcy"), the current balance of which is about US\$32 million, and through privatization of the enterprises that received investments made by CORDECRUZ (Corporación de Desarrollo de Santa Cruz); and (c) outside resources received through: (c1) donations ("*grants*") from various institutions; and (c2) foreign loan operations that the prefectures have arranged directly with financial institutions, and in which the Vice-Ministry of Public Investment and External Financing (VIPFE) has participated.

M. Counterpart contribution to investment loans

- 1.50 DS 25.134 of 1998 states that "...liabilities arising from loans for studies, construction works, roadway improvements or maintenance of the basic highway system ... shall be paid out of the Federal Treasury" and that "the local counterpart commitment shall be paid by the prefecture of the respective department out of revenues collected under the IEHD...". As well, this decree specifies that where said resources are not sufficient, they are to be supplemented out of revenues from departmental royalties or other alternative sources.
- 1.51 Subsequently, DS 26.336 of 2001 (Regulations governing the institutional framework of the SNC) created a local counterpart trust fund called Fideicomiso de Aportes Locales (FAL), which is administered by the SNC for the purpose of "ensuring the timely availability of local counterpart funding". The FAL is to be administered under approved Operating Regulations, and the prefectures must authorize the transfer of resources to the Fund, but assume no liability whatever for execution of those resources since the SNC, which is preparing the requisite mechanisms, is responsible for that aspect (paragraph 3.38)

N. The Bank's country strategy

- 1.52 The Bank's strategy for Bolivia as defined in its Country Document has as its primary objective to combat poverty with three lines of action intended to bring about: (i) economic growth and the creation of opportunity; (ii) development of human capital and access to basic social services; and (iii) democratic governance and consolidation of reforms. This strategy provides an adequate framework to support the country's actions identified in Bolivia's Poverty Reduction Strategy (EBRP), which was discussed with and approved by the World Bank, the International Monetary Fund, and the IDB in June 2001.

- 1.53 Project design reflects the emphasis that the Bank's strategy and the EBRP place on overcoming obstacles to economic growth in Bolivia, and the lack of highway infrastructure is a significant obstacle. Because of its geographical position, Bolivia requires a highway transportation system which will unite the country and facilitate international economic integration, particularly with the MERCOSUR countries and the Andean Community. Presently, the country's high transportation costs are an obstacle to competitiveness and to the development of areas of high export potential.
- 1.54 In this respect, the project is in line with the strategic component of the Bolivia Poverty Reduction Strategy to expand employment and income opportunities by making highway expansion feasible so as to link Bolivia with neighboring countries, and helps limit the impact of these investments on public finances by providing concessional resources.
- 1.55 In addition, the Bank's actions in the field of transport are intended to improve integration among the different regions which make up the national territory. In this respect, the Bank is supporting the country through projects to expand and improve the national highway system, financing initiatives that aid in the development of lower level road systems and providing technical assistance to help the municipalities draw up plans for improving their urban transport systems.

O. The experience of the Bank and other financial institutions

- 1.56 Against the backdrop of the operating and institutional problems noted above, the Bank's financing of work on the road system in Bolivia has not always achieved the desired results. Since 1990, the Bank has approved four loans (these are cited below) while two more were still being executed³. These loans, for an average amount of US\$51.4 million, have generated US\$158.9 million in disbursements over the period 1994-2000.
- 1.57 From 1990 to the present, the Bank has approved a total of 15 technical cooperation operations for the transport sector worth an aggregate total of US\$4.4 million, all of which has gone into the highway sector: (i) geographic information systems (3 TCs, US\$788,000); (ii) environmental activities in support of the Santa Cruz–Puerto Suárez highway (5 TCs, US\$1,260,000); (iii) institutional strengthening, including for highway concessions (6 TCs, US\$2,325,000); and (iv) tunnel study (1 TC, US\$45,000).
- 1.58 The loans approved during the decade of the 1990s are as follows:

³ Loan 527/OC-BO Cochabamba–Santa Cruz Highway, US\$77.0 million, 1987; and Loan 549/OC-BO Caihuasi–Confital Highway, US\$33.2 million, 1988.

- a. BO-0106, Loan 840/SF-BO, Patacamaya–Tambo Quemado Highway, US\$50.9 million, 1990; totally disbursed between 1994 and 2001. Improved connection with Chile through construction of 188-km roadway and border complex (1993-1996);
- b. BO-0090, loan 698/OC-BO, Beni–La Paz Peruvian Border Corridor, US\$55 million, 1992; 76% disbursed; loan 893/SF-BO, Beni–La Paz Peruvian Border, US\$40.0 million, 1992; 93% disbursed; date of last disbursement: April 2003. Eighty percent (80%) of its resources are for construction of the 50-km Cotapata–Santa Bárbara highway (date for completion has been extended to March 2003), and the remaining 20% is for improving the 95-km Río Seco–Desaguadero highway which connects La Paz to the Peruvian border (finished); and
- c. BO-0098; loan 1039/SF-BO, Ventilla–Tarapaya Highway and support for the highway sector, US\$52.0 million, 1999. Eligibility in December 2000; a total of US\$5.4 million disbursed to date. Its objectives are to pave the Ventilla–Tarapaya section and rehabilitate the Tarapaya–Potosí section, and it also includes a major institutional strengthening component.

P. Lessons learned

- 1.59 The problems encountered during execution of successive projects in the highways sector have been many and varied. Among these are a number of traditionally recurring problems such as: (i) institutional weakness which results in delays in contracting and executing projects; (ii) inadequate or low-quality engineering designs which translate into cost overruns and construction delays; (iii) insufficient or untimely allocation of counterpart resources; (iv) institutional weakness among agencies handling environmental and social problems; (v) lack of an adequate system for operation and maintenance of roads, making it impossible to keep them in service for their designated useful life; (vi) inconsistent execution of institutional strengthening activities; (vii) little importance paid to sectoral policies, planning and scheduling of works; (viii) poor economic evaluation of works as a result of the limited amount of information available; (ix) difficulties in the management and financing of maintenance; and (x) inadequate distribution of duties among the various jurisdictions in play.
- 1.60 Recognizing and correcting these problems in the new operations within this sector will require hard work and consistent dedication. The recent institutional changes, shifting of jurisdictional responsibilities for the counterpart contribution, and loss of trained personnel, among other things, will not make it any easier to solve the above-mentioned problems. To help find solutions, the Bank is working in two areas: (i) with regard to sectoral policies, by (a) overhauling its sectoral strategy; (b) coordinating efforts in the institutions and institutional strengthening area with other donors; (c) analyzing the short- and medium-term financial capacity of the

prefectures responsible for making counterpart contributions; and (d) studying the financial aspects of the sector to ensure the sustainability of investments there; and (ii) with regard to preparation and execution of projects, by: (a) requiring more rigorous technical and environmental standards for authorization of tender calls; and (b) conducting a more stringent economic analysis.

II. THE PROGRAM

A. Objective

- 2.1 The overall objective of the Program is to improve economic integration of Bolivia's eastern region and support development of the production sector through better communication with domestic and international markets.
- 2.2 The Program's specific objectives are to: (i) lower transportation costs; (ii) reduce travel times; (iii) guarantee that the highway remains passable from the beginning of construction; and (iv) improve highway safety for passengers and trucking.

B. Description

1. The corridor, the program, and the project

- 2.3 The Santa Cruz-Puerto Suárez corridor extends some 632 km and links the country's fastest growing area – in terms of economic and demographic growth alike—with the largest domestic consumer centers and with export markets. Its construction, however, is no easy task. The first obstacle to be overcome is its very size, continuous nature, importance and cost. Past studies demonstrate that construction of the highway is feasible throughout its length, and that demand would be relatively high, requiring a paved highway built to technical standards. This, in turn, increases costs to a point where the funding required represents several years of the SNC's investment budget.
- 2.4 The Program consists of building the corridor. To make a project of this size feasible, the Government of Bolivia has attracted the interest not only of the Bank, but also of other donors (e.g. the European Comisión, EC) and bilateral and/or multilateral financing institutions (the Organization of Petroleum Exporting Countries (OPEC), the Andean Development Corporation (CAF). However, construction of this magnitude takes time, so that a system has been designed for carrying out the work in two phases. The Bank, the EC, and the CAF will participate in the first phase, while only the Bank, OPEC, and the CAF have offered financing for an eventual second phase. The funding formula adopted is that of parallel financing, with sections of the highway distributed among participants according to each one's financing capacity and periods for approval and contracting of construction works, all of which will be carried out in accordance with the same set of technical and environmental standards defined by the SNC and agreed upon by the Bank during preparation of the operation.
- 2.5 The first phase of the Program calls for paving the Paraiso-San José de Chiquitos–Roboré (346 km) section; rehabilitating the gravel-surfaced Roboré-El Carmen (139 km) section on the existing route; and carrying out maintenance work on the

various gravel sections (88 km). The second phase will complete paving of the entire corridor through construction of the Roboré-El Carmen-Puerto Suárez (227 km) section on the new roadbed, and performing routine maintenance on the sections built in the first phase until completion of the corridor.

- 2.6 The Project is the combination of works and activities that the Bank will partially finance. Its first phase will include construction of the Paraíso-El Tinto section, rehabilitation of the gravel-surfaced Roboré-El Carmen section and routine maintenance on the El Tinto-San José de Chiquitos and Roboré-El Carmen-Puerto Suárez sections until paving work can be carried out on them. The second phase will finance construction of the Roboré-El Carmen section and providing post-construction maintenance on the sections already paved. The Project will also include technical supervision of execution of the sections for which the Bank is responsible, as well as technical and management support for execution of the Program, three special studies, and the outside auditing.

2. The various sections, their construction and financing

- 2.7 The Government of Bolivia, acting through the MDE, has structured the highway construction work in the following way:
- a. *Santa Cruz-Pailón-Paraíso section* (61 km): this section, which is paved throughout, is part of the corridor covered by this Project but will not be the site of any construction work. To ensure its rehabilitation and subsequent maintenance, the MDE plans to grant a concession to the private sector for operation of this section as a toll road, forming part of a 249-km circuit which will link Santa Cruz to Cotoca – Pailón – Lorena - Los Troncos – Okinawa 1 – Guabirá – Montero – Warnes and back to Santa Cruz. The call for tenders was issued in January 2002, and bids are to be opened in April 2002;
 - b. *Pailas Bridge*: a new 1,404-m bridge over the Grande River and its access roads, forms part of the Santa Cruz-Pailón section. Motor vehicle traffic currently uses the railway bridge, sharing that structure with trains and having to halt traffic in alternate directions to allow a single lane to cross, causing major delays and conflict with the railway, which is the principal mode of transportation in the corridor at present. The new bridge will be built with a loan (already approved) from the Economic Development Fund administered by EXIMBANK of Korea for (US\$23.0 million) and a counterpart contribution of US\$4.6 million⁴;

⁴ No final engineering studies have been prepared for construction of this bridge and the SNC lacks the resources to hire consultants to carry out these studies; for this reason, the SNC has requested that the donor allow contingency funds to be allocated to the supervisor of the works and applied for this purpose. The SNC is preparing the bid documents and will be conducting the selective bidding procedure to award the contract for the studies. The winning firm will have five months to revise and improve upon the existing design.

- c. *Paraíso–El Tinto section* (124 km): part of the Paraíso–San José de Chiquitos section (207 km), this section will be financed by the Bank . This is the section with the highest demand since it moves through an agricultural area of consolidated landholdings and great potential for expansion. It also serves a major livestock-raising area which produces for the consumer market in Santa Cruz;
 - d. *El Tinto–San José de Chiquitos section* (82 km): together with the foregoing section this stretch completes the connection to the rural center of San José de Chiquitos. The financing for this operation comes via a donation from the EC (US\$47.5 million). This section will receive routine maintenance services paid for with resources from the Bank until work begins on construction, which is expected to occur in mid-2004;
 - e. *San José–Roboré section* (140 km): part of the San José–Puerto Suárez stretch, the longest and least used section of the corridor. Together with the last two sections, this completes the portion to be improved to the pavement level during the first phase. The financing for this will be handled by the CAF;
 - f. *Roboré–El Carmen section* (139 km): using the Bank’s resources, improvements will be made to the gravel surface and in routine maintenance performed on this section during the first phase to ensure continuous access and serviceability in all kinds of weather. During the first phase as well, all major bridges will be built on the new route for this section, using resources from the EC. This section is scheduled for paving in the second phase; and
 - g. *El Carmen–Puerto Suárez section* (88 km): recently rehabilitated according to gravel roadway standards, this section provided adequate service for passenger vehicles and trucks. Routine maintenance services will be provided with the Bank’s resources in the first phase. Further rehabilitation and full paving is scheduled for the second phase.
- 2.8 Financing has been arranged for both phases of the Program. Funding for the first phase includes resources from various donors and multilateral institutions who are providing a combination of grants and concessional or commercial financing. The second phase will be financed mainly by the Bank, OPEC, and the CAF, under terms to be established during negotiation of that phase, but which in the case of the Bank has been identified as coming primarily from FSO resources. The main source of financing for the first phase will be the CAF, which will provide a maximum of US\$100 million under commercial terms and conditions; the next most important contributors are the Bank, with US\$75 million, and the EC, with a maximum equivalent to US\$47.5 million to be provided in the form of a grant. Completing the financial picture are the local counterpart resources, which are the responsibility of the Borrower, and to which the Prefecture of Santa Cruz will contribute.

- 2.9 The following table summarizes the main contributions of the various financial backers, according to information provided by the VIPFE:

		IBD	CAF	EC
Amount	US\$	75,000,000	90,000,000	47,500,000
interest rate	%	yrs 1-10: 1% yrs 11-40: 2%	Libor + 3.5%	n. a.
grace period	years	10	2	n. a.
amortization period	years	40	12	n. a.
inspection & supervision	%	1		n. a.
credit fee	%	0.5	0.75	n. a.
date of request			25/JAN/2002	26/OCT/2001
approval		pending	21/MAR/2002	pending
starting date of works		JAN/2003	AUG/2002	JAN/2004
counterpart required	%	10	not required	20

- 2.10 The financing table for the first phase shows that, taken as a whole, funding of this phase is on a generally concessional basis, although with some components that are on commercial terms.
- 2.11 The execution of the Project is closely related to that of BO-0033. In effect, its activities are dependent upon showing that significant progress has been made in the various activities designed to mitigate the direct and indirect effects produced by the operation. The Program, which involves other financial agencies, has a more distant relationship to BO-0033. However, under Resolution No. 10 adopted by its Board of Directors on 10 March 2002, the SNC ordered that certain measures be applied to the Program, i.e. in all of the sections where construction works would be carried out, regardless of the source of financing. These measures have to do mainly with the effort to mitigate direct effects on the environment (environmental cleanup and regularization of encroachments on the ROW), the responsibilities of the works supervisor and contractor vis-à-vis the environment, and the environmental monitoring capacity of the SNC and the VMARNDF.
- 2.12 There are five reasons why there has been no physical execution of construction works, and hence no disbursements, in 2002: (i) the need to complete the engineering designs; (ii) the time it takes to complete bid documents and issue a call for tenders on the works and supervision of construction; (iii) the period required to clean up the ROW and clear the sections where construction will be carried out; (iv) possible delays within the SNC as it readies itself for upcoming institutional changes; and (v) the general political situation with elections and a change in administration.
- 2.13 The works schedule of phase I of the program is as follows:

First Phase	2002		2003		2004		2005		2006		2007	
Quarter	I	II	I	I	I	II	I	II	I	II	I	II
Construction on Pailón - El Tinto												
Construction on El Tinto – Quimome												
Construction on Quimome - San José												
Construction on San José – Taperas												
Construction on Taperas – Roboré												
Rehabilitation of Roboré - El Carmen												
Maintenance on El Tinto - San José												
Maintenance on Roboré – El Carmen												
Maintenance on El Carmen – Pto. Suárez												
Bridges on Roboré - El Carmen												
Toll stations for Phase I												
Weight stations for Phase I												

- 2.14 Nevertheless, the fast tracking of the CAF loan approved in March 2002 with financing for an essential section in the first phase of the Program, along with the Government of Bolivia's decision to initiate work as quickly as possible, suggests that non-concessional disbursements in the current year of 2002 may yet be possible.

3. Execution by phases

- 2.15 Dividing the execution into two phases has been proposed primarily because of the time it will take to complete the corridor, the need to ensure that the route remains serviceable throughout, and the necessity for developing highway management mechanisms to ensure that the corridor is left with a suitable operating and maintenance (O&M) system, since this investment is too important to be allowed to deteriorate. Possible delays in lining up other financial donors and existing restrictions regarding availability of resources for the Fund for Special Operations (FSO), provide additional justification.
- 2.16 Since the economic and operational logic of the corridor depends on its being fully finished end-to-end, the execution and financing mechanisms must be designed to demonstrate that this objective will be achieved from the very beginning of planning for the operation. Consequently, the design of the first phase has been based on the following criteria: (i) keeping the corridor in operation from the start, ensuring permanent accessibility and continuous serviceability to all types of vehicles and regardless of weather conditions; while some areas may be only marginally passable at first, with the advance of construction the quality of service will gradually improve; (ii) starting with sections where demand is highest and there are important operational, economic and commercial reasons for linking their end-points; (iii) beginning the collection of updated tolls on those sections that are

open to traffic and surpass certain quality standards, thereby obtaining resources to reduce the fiscal burden on the Government of Bolivia and pay for maintenance on sections already built; (iv) developing mechanisms for hiring contractors to perform maintenance services on finished sections of the corridor; and (v) supporting activities to improve management of the highway system.

- 2.17 The second phase will finish construction of the corridor and, once that has been accomplished, ensure that proper operation and maintenance services are in place and that the highway will remain in service for its full lifespan. Accordingly, the transition from first to second phase will take place when the corridor has met certain serviceability goals and construction work on the sections financed with resources from the first phase have progressed to a designated point. The main targets that must be reached in order to commence the second phase are: (i) satisfactory progress in the execution of BO-0033; (ii) significant advances in institutional consolidation of the SNC and the DGC; (iii) completed development of systems for the execution and financing of maintenance services under contracts for maintenance by objectives; (iv) adjustments made to road toll rates so that they are consistent with the maintenance needs of the basic highway system and the payment capacity of motorists; (v) satisfactory monitoring of demand established on the various sections of the corridor; (vi) mechanisms developed to ensure the sustainability of the highway by guaranteeing that the necessary resources will be available for future repair of pavement; and (vii) tenders called for medium-term contracts for maintenance by objectives on finished sections. The specific conditions for these targets are described in paragraph 2.24. It is estimated that the first phase will take five years, and three years for the second phase, with a period of approximately one year between the phases.

4. The Program and the components of the first phase

a. Civil Works

- 2.18 The Program is the sum total of activities to be carried out under both phases, without regard to source of funding; by contrast, the Project is the activities that will be financed with resources from the Bank. The construction activities corresponding to the first phase of the Program include the paving of the Paraíso-El Tinto (using Bank resources), El Tinto-San José (EC) and San José-Roboré (CAF) sections; the rehabilitation and routine maintenance of gravel surfaces⁵ on the El Tinto-San José and Roboré-El Carmen sections; and routine maintenance for the gravel-topped El Carmen-Puerto Suárez section (IDB). The contract for work on

⁵ The rehabilitation and maintenance of the gravel-topped sections are essential to the operation of the corridor during the first phase. These activities cannot be subject to the financial availability of the CNCV, which will only begin operations in 2003, and must respond to the immense needs of the RVF; to that end, the Project is fully funded. Likewise, the importance that these activities should keep pace with paving operations means that the Bank's non-objection to the relevant bidding documents and rehabilitation and maintenance contracts is a contractual condition.

the Paraíso-El Tinto section will not be let until rehabilitation and routine maintenance has started on the gravel-topped El Tinto-San José de Chiquitos, Roboré-El Carmen and El Carmen-Puerto Suárez sections.

- 2.19 This work will be enhanced by technical and environmental supervision of all activities carried out in the first phase, as well as those included in the execution of BO-0033 and essential for adequate mitigation of the environmental and social effects of construction works and operation of the corridor.

b. Institutional Strengthening

- 2.20 The Project incorporates two institutional strengthening activities. The first of these requires the creation of a Technical Support Group (TSG) to assist the SNC with the technical management, administration and execution tasks (paragraphs 3.13 and 3.14) required during construction of the corridor, whatever the section or source of funding involved. The second activity calls for the contracting out of three special studies to strengthen management in the highway sector, as described below.
- 2.21 During preparation of the operation, three areas were identified which would require fundamental support for improvement of highway management, and which were not adequately covered under other operations in the sector. It is worth noting at this point that the SNC has a loan in execution at present (1039/SF-BO), another which is about to be approved by the World Bank, and a grant from the EC. Loan 1039/SF-BO provides support for various highway planning activities (inventories, vehicular surveys, etc.) and technical aspects (design standards, maintenance manual, etc.), while the new WB operation support institutional modernization of the SNC (administrative and financial procedures, among others), and the EC is supporting efforts to improve road toll policies, standards and procedures.
- 2.22 With this as background, the above-mentioned three special studies mentioned among the components of this Program were identified. A brief description of each study follows:
- a. *Recovery of ROW and standards for its management*: The Project will provide support for: (i) identification of a section of highway whose ROW has been infringed by unlawful settlements and inappropriate use, and development of a pilot case for recovering said rights: proposing measures, identifying costs and establishing deadlines for recovery of ROW; (ii) updating of the rules of managing ROW, particularly those referencing permitted uses within the ROW, access to same, activities that mar visual aspects of the ROW, even though they occur outside the right-of-way, and permissible uses and the fees for such usage; (iii) the role of the SNC as the agency responsible for protection ROW, and participation by law enforcement agency in its protection; (iv) activities within the ROW by agencies other than the SNC; (v) system of applicable fines and penalties, among other things.

- b. *Rules and procedures for monitoring of weights and dimensions of trucks.* Under this study, efforts will be made to modernize the applicable system, beginning with the regulatory framework and system of penalties. This system will endeavor to: (i) make carriers and both shippers and receivers also responsible (joint and several liability); (ii) accept trade documents (bills of lading, international waybills or other documents) as proof of an infraction; (iii) empower the applicable authority to monitor and inspect the equipment (scales) of private sector shippers and receiving agents, and to use their documentation as proof for purposes of imposing penalties, among other things;
 - c. *traffic safety program for city streets and highways:* This study will identify measures for improvement of highway safety which are applicable to other sections of the RVF, and which are to be implemented during the second phase of the Program.
- 2.23 Before letting contracts for these studies the Executing Agency must present to the Bank (as reckoned from the date of entry into force of the Loan Contract): (i) within a period of 9 months, the TOR for the respective consultant; (ii) within a period of 15 months, evidence of having begun work; and (iii) within a period of 24 months, the respective final reports.

5. The Program and targets for initiating the second phase

- 2.24 The second phase will begin as soon as significant progress has been made in aspects of institutional organization, engineering, environmental protection, technical designs, contracting and financing of maintenance services, road toll policy, etc. To this end the Bank will receive, no later than June 2005, a report containing the evidence and documentation required to show that the following conditions have been met:
- a. In the area of highway management: (i) the rules for protection of ROW have been updated, including the relevant environmental measures; (ii) a pilot plan for restoration of ROW is ready for implementation; (iii) the new toll collection policies have been implemented to finance maintenance of the basic network and, in particular, the toll level collected in the corridor, supported by the other resources allocated for this purpose, is sufficient to ensure sustainable operation and maintenance of the corridor; (iv) an efficient system for inspecting the weights and dimensions of heavy vehicles has been placed in operation in accordance with terms and conditions agreed to with the Bank in advance; and (v) a traffic safety program for city streets and highways has been placed in operation in accordance with terms and conditions agreed to with the Bank in advance;
 - b. With respect to execution: (i) updated engineering designs for the sections to be built during the second phase. In case of substantial change in the initial designs,

the designs must include an updating of the means for mitigating the direct environmental impact of construction on those sections; (ii) satisfactory progress has been made in the works carried out with resources from other co-financing agencies, in accordance with the schedule agreed upon with the Bank, with a maximum delay of six (6) months, including the application of measures to prevent or mitigate adverse environmental effects of those works; and (iii) a financial plan has been submitted which shows that sufficient resources are available—either own or outside resource—to complete the construction of the corridor, plus audited financial statements have been submitted as required and any recommendations from the independent auditor or the Bank have been implemented;

- c. Concerning highway maintenance: (i) mechanisms are available to ensure the financial sustainability of highway maintenance services within the corridor based on the CNCV, such as the preparation of multi-year O&M plans with assured financing; and (ii) a call for tenders has been issued for medium-term contracts to provide O&M works on sections with finished pavement, based on bid documents and model contracts agreed to in advance by the Bank;
- d. Regarding institutional aspects: the goals and actions established in the ARI have been fulfilled with respect to institutional consolidation of the SNC, in compliance with the indicators in the Logical Framework of this project as previously agreed upon with the Bank (paragraph 3.10);
- e. With respect to environmental matters: (i) all of the land in the municipalities of Pailón, San José de Chiquitos, Roboré, El Carmen Rivero Torres, Puerto Suárez and Puerto Quijarro, as well as the entire surface of the protected areas of San Matías, Otuquis and Kaa-Iya which are part of the Area of Indirect Influence (AII) of the highway, have been registered in the Real Property Registry (DDRR), whether as public or private lands and except for cases currently in litigation; (ii) all payments of monetary compensation, the replacement of housing and socioeconomic rehabilitation of all properties and families affected by the claiming of ROW throughout the entire length of the highway have been completed, except in the case of expropriation through legal proceedings; (iii) the mitigation measures have been completed and compensation provided for environmental impact on communities, and the operation has been transferred to municipalities and/or communities as appropriate; (iv) Land Management Plans (PLOT) have been completed for the municipalities of Pailón, San José de Chiquitos, Roboré, El Carmen Rivero Torres, Puerto Suárez and Puerto Quijarro; (v) the Original Peoples Land Management Plan (TCO) has been drawn up; (vi) at least 6,000 urban lots have been registered with the Land Registry in the six capital districts of Pailón, San José de Chiquitos, Roboré, El Carmen Rivero Torres, Puerto Suárez and Puerto Quijarro; (vii) the consulting firm hired to prepare the Global Proposal for Regional Development has begun work; (viii) SERNAP has successfully completed the activities set out in the

Annual Work Plans (AWPs), according to the reports of the Socio-environmental Auditor; (ix) the Forestry Superintendency (SIF) has successfully completed the activities set out in the AWP, according to the reports of the Socio-environmental Auditor; (x) the Environmental Supervision Office of the SNC has performed in accordance with the Operating Plan for BO-0033 and been an effective presence at the work site, and the environmental management procedures have been complied with by the parties during the work; (xi) the Socio-Environmental Inspection Office of the VMARNDF has performed in accordance with the laws of Bolivia and the commitments agreed to with the Bank, according to the reports of the Socio-environmental Auditor; and (xii) the Socio-Environmental Auditor has issued reports on the degree of environmental impact and nonconformity in the execution of the works, approving them.

- 2.25 The indicators for verifying progress on environmental issues are presented in the Logical Framework of Project BO-0033. These include, by way of example: (i) the number of hectares in each of the six municipalities and the three protected areas that are part of the area of indirect influence of the highway have actually been titled and registered in the DDRR; (ii) the number of hectares in the three protected areas that are kept from illegal deforestation and outside incursion; and (iii) the number of individuals actually compensated and paid.
- 2.26 To present the evidence and documentation required to demonstrate fulfillment of the conditions established as targets for the second phase, (paragraph 2.24), the SNC, in coordination with the Ministry of Sustainable Development and Planning, must implement information and monitoring systems on the use and status of the corridor that will make it possible to analyze the issues underlying these conditions. Likewise, the SNC undertakes to develop vehicle counting systems by class and systems to evaluate the number, nature, and seriousness of accidents and the environmental conditions of the projects. To ascertain fulfillment of these conditions, a midterm evaluation will be conducted by the Bank within 30 days after initiation of the works on the Paraíso-El Tinto stretch. The SNC will submit a report to the Bank no later than June 2005, containing information on fulfillment of the targets to trigger the second phase of the project. The Bank will perform this evaluation by means of an ad hoc mission. The same information and monitoring systems are needed to conduct the ex post evaluation of the first phase (paragraph 3.55).

C. Table of Project costs

- 2.27 The Project will have six main components: (i) construction and supervision of the Paraíso-El Tinto section, 124 km in length. Construction costs will total US\$66.4 million, while supervision will represent a further US\$4.0 million; (ii) rehabilitation of gravel surfacing on the Roboré-El Carmen section, 139 km, US\$3.5 million; (iii) routine maintenance of gravel surfacing on the El Tinto-San José de Chiquitos (82 km) and Roboré-El Carmen-Puerto Suárez (237 km)

sections, US\$2.0 million; (iv) project management under contract with the Technical Support Group (TSG) which will oversee the SNC's work relating to the project in terms of its technical, socio-environmental, legal, and administrative aspects (paragraph 3.14) for the entire corridor, regardless of the source of financing used for construction of the section (US\$2.3 million); (v) three special studies (US\$2.0 million), described in (paragraph 2.22); and (vi) external auditing (US\$300,000). When the first disbursement of the loan is made, the Bank will use up to US\$1.5 million equivalent from the proceeds of the financing, plus the respective interest and fees, the amount corresponding to the Borrower under Loan 1065/SF-BO, which will be transferred back to Line of Credit FAPEP/007-BO.

Categories	Bank	Local counterpart	Total
(US\$ thousands)			
1. Engineering and administration	5,112	688	5,800
Construction supervision	3,360	640	4,000
External auditing	252	48	300
FAPEP 1065/SF-BO	1,500		1,500
2. Direct costs	63,924	12,177	76,101
2.1 Construction	60,315	11,489	71,804
Construction Paraiso-El Tinto	55,763	10,622	66,385
Rehabilitation Roboré-El Carmen	2,912	555	3,467
Maintenance El Tinto-San José	242	46	288
Maintenance Roboré-El Carmen	684	130	814
Maintenance El Carmen-Puerto Suárez	714	136	850
2.2 Institutional strengthening	3,609	688	4,297
Project management (TSG)	1,929	368	2,297
Special studies	1,680	320	2,000
3. Associated costs	3,898	1,481	5,379
Compensation		1,427	1,427
Contingencies	3,898	54	3,952
4. Financial costs	2,066	655	2,720
Inspection and supervision	750		750
Commitment fee		655	655
Interest	1,316		1,316
Total	75,000	15,000	90,000

- 2.28 This Project will not include a specific institutional strengthening component since Loan 1039/SF-BO already covers this need (paragraph 3.12) and no aspects were identified for inclusion in the Project. In addition, institution-building efforts are also covered by the new loan from the World Bank or the grant from the EC.
- 2.29 The total estimated cost of the Program is US\$239.5 million for the first phase and US\$144.5 million for the second phase. Of this, US\$201.9 million and US\$126.8 million will be for new construction; the first phase will include

US\$10.8 million for rehabilitation and construction of bridges on the Roboré–El Carmen section, and US\$5.4 million for rehabilitation and maintenance of the gravel-topped sections to ensure year-round serviceability of the corridor. The cost of the first phase includes supervision of the works (US\$10.9 million) and financing for the TSG (US\$2.3 million).

- 2.30 Expenses for measures to mitigate the direct environmental impact of building the corridor are covered by BO-0033, so that the Project's associated costs cover what is required for acquisition of ROW and other related compensation. Most of the counterpart contribution will be applied in the works component and for supervision of same.

III. EXECUTION OF THE PROGRAM

A. Borrower, executing agency, and authority responsible for local counterpart

- 3.1 The Borrower will be the Republic of Bolivia. The Executing Agency is the Servicio Nacional de Caminos (SNC), an autonomous agency that reports to the Ministry of Economic Development.
- 3.2 The resources of the local counterpart will be the responsibility of the Borrower and will be provided by same. However, the counterpart will also include resources from the Prefecture of Santa Cruz and from other cofinancing institutions. The prefecture will make use of the mechanism described in Supreme Decree (DS) 26.336 for its contributions, which will guarantee a continuous flow of sufficient counterpart resources.

B. The Executing Agency

- 3.3 The SNC is an independent government agency with corporate status as a juristic person, its own capitalization, and full autonomy in conducting its technical, administrative, economic, financial and legal affairs and pursuing its institutional mission (DS 26.336). The SNC under the direction of the Ministry of Economic Development (MDE), and reports to that institution's Vice-Ministry of Transport, Communications and Civil Aeronautics. "Under the direction" is understood to mean that the SNC is responsible to the Ministry for compliance with its policies, standards, mission statement and institutional objectives, as well as the goals and results set out in its Annual Operating Program. The SNC is the agency responsible for preservation of Bolivia's Basic Highway System (RVF) and administration of the National Highway Conservation Fund (CNCV).
- 3.4 The SNC limits its jurisdiction to the RVF as required by DS 25.131, administering that system through a central body, with regional offices throughout the country. It is the duty of the SNC to: (i) direct planning of the RVF based on the MDE's Plan Maestro de Transporte; (ii) oversee conservation, maintenance, rehabilitation, repairs, improvements and construction works, and monitor consulting services and works supervision; (iii) exercise control over legal and regulatory provisions related to vehicular traffic on the RVF; (iv) submit proposals to the MDE on the following: (a) the area served by RVF; (b) standards on weights and dimensions of vehicles; (c) rules governing road tolls; (d) design characteristics and specifications for the country's highway system; and (e) highway safety rules; (v) prepare standards, specification and technical manuals, and help implement these and supervise their application in the RVF; (vi) prevent, mitigate or correct any adverse impact on the environment caused by the execution of highway works projects; (vii) provide effective management to preserve and maintain the nation's roadways through contracts with the private sector; (viii) cooperate with the prefectures and

municipalities in developing their highway systems; (ix) collect, oversee and administer road toll revenues on the RVF; and (x) manage the CNCV.

C. Institutional framework

- 3.5 The SNC is governed by a Board of Directors consisting of a Chairman and four Directors. The Chairman also serves as Chief Executive Officer of the agency. Internal financial control and coordination is provided by an Internal Audits Office, the General Secretariat and the Management Quality Office. Administration is divided into six departments: Planning and Development, the Socio-environmental, Maintenance, Construction, Administrative and Financial, and Legal Departments.
- 3.6 The SNC has a flat organizational structure in that there are no other levels of authority below the departments listed above and the managers of regional offices. Special Project Units (SPUs) reporting to the Construction Department will be created to carry out the projects proposed in this document, and although staffed with qualified personnel these units will not be part of the institutional hierarchy.
- 3.7 Creation of the SNC was mandated in Law N° 2.064 (Ley de Reactivación Económico) and its regulations enacted by Supreme Decree (DS) N° 26.336 of September 2001, and began with the appointment of its Board of Directors for a five-years term of office. Once in office, the Board of Directors organized an open competition for selection of candidates for positions in the organization, beginning with the Directors of the SNC's six departments – a task they completed on 4 January 2002. The process of formation is currently entering the final stage with the restructuring of the SNC's administrative staff and another competition, this time to hire the necessary technical personnel. Given the importance of these actions, a certain amount of stress has been created within the institution, affecting its ability to function.
- 3.8 SNC personnel are subject to the Public Service Statutes which introduced the career path system approved by Supreme Decree 26.336 and requiring that all hiring, appointment and promotion of personnel must be based on the merit principle. The selection of the new personnel has been based on application of typical private-sector criteria of excellence, and the process itself has been implemented with support from the UNDP and a specialized consulting firm hired for this purpose. The six recently appointed managers were chosen using this process. In keeping with the provisions of the civil service statute and the regulations issued pursuant to DS 25.749, between 60 and 70 managers with more than six years of service will be selected to be approved and will be moved into the new administrative track automatically, thus ensuring that the SNC will maintain its institutional memory and continuity of operations. The Civil Service Administration has already begun the approval and validation process.

- 3.9 In accordance with the ARI, the SNC has established a new salary structure, already counting on the budgetary resources allocated for 2002. To ensure the excellence of the managerial and professional personnel, the salary level has been increased with respect to pre-ARI levels, and is competitive with private-sector salaries. The new salary structure will enter into effect gradually, as the SNC continues to renew and appoint its personnel, which will occur no later than September 2002 in accordance with the needs of the new organizational structure. As a special condition precedent to the first disbursement, the new personnel and salary structure, which is part of the ARI, must be in execution, with at least 80% of the staff hired for the Department of Planning and Technological Development, the Socio-environmental Administration, the Maintenance Department, and Construction Department, as well as the necessary staff in other departments to support project execution.
- 3.10 To measure fulfillment of the commitments made in the ARI, given the impact that the institutionalization process may have on the proper functioning of project execution, the Logical Framework (Annex I) contains six performance indicators drawn from the ARI (paragraph 1.46): (i) total personnel in the administrative track; (ii) personnel hired through competition; (iii) percentage of professional personnel hired under the new system; (iv) percentage increase in financial resources of the CNCV with respect to the first year; (v) percentage of execution of outside financial resources from loans and grants; and (vi) good condition of the RVF as a percentage of the total length of the network.
- 3.11 With its ongoing restructuring process and relatively new administrative and technical structure, the SNC not only has an institutional structure that has yet to be tested in practice, but will not be fully consolidated until that process has been completed in the next few months. The Banks' analysis and the performance of the SNC itself, both during preparation of this operation and in carrying out its duties since that time, demonstrate that the agency will need a great deal of institutional support in performing its tasks, and in particular those that the Program requires. This support will come from several sources: political support will come from the Government of Bolivia whose authorities have given their backing; institutional and financial support will come via the PRI and loans either already approved by the Bank (1039/SF-BO) or being processed (World Bank); and technical support will be provided with the creation of the TSG.
- 3.12 Loan 1039/SF-BO contains a component entitled "Support for the transportation Sector", with a budget of US\$34 million, and a series of subcomponents that address various needs, including: (i) training and consulting for the SNC; (ii) implementation of a program to restore the SNC's capacity to gather basic information and transportation statistics; (iii) development of the project management system; (iv) strengthening the Socio-environmental Administration of the SNC; and (v) procurement of hardware and equipment for engineering, vehicle weighing, highway safety, computing, and communications.

- 3.13 As with earlier loans intended to improve the basic highway system, the Project will be executed by the technical and administrative staff of the SNC. Coordination will be provided by Planning and Development, while the various technical tasks themselves will be under the responsibility and direct supervision of the respective departments, particularly the Construction, Maintenance and Socio-environmental Departments. To ensure adequate program execution, and in light of the transition period that the SNC will undergo, the Construction Department and other agencies involved will be assisted by a Technical Support Group (TSG) – the terms of reference for which will be drawn up by the SNC and submitted to the Bank for its nonobjection– whose duties will include assisting with all technical and administrative tasks relating to the execution of the Program. The hiring of the individual consultants who will make up the TSG and providing them with training in the specific details of the Program, will be special conditions precedent to the first disbursement.
- 3.14 In order to help manage the Project and the Program, the TSG will include consultants in highway engineering, soil, geotechnical issues and paving, structural engineering, socio-environmental engineering, law, finance, and administration, since the main functions of the TSG include: (i) reviewing plans, designs, and technical specifications; (ii) contract administration; (iii) evaluation, monitoring, and control of technical and environmental supervision work, including the review of work schedules and site visits; (iv) verification of compliance with schedule and conditions by construction contractors and supervisors; (v) controlling contract costs; (vi) settlement of construction certificates; (vii) implementation of procurement systems and financial and accounting records, and preparation of financial statements; (viii) technical consulting for the Construction Department on issues relating to the specialty of the respective consultants; and (ix) other technical support for the Department's professional personnel. The support of the TSG is for execution of the entire corridor, regardless of the source of funding for each section.

D. Human resources

- 3.15 The staff of the SNC will undergo profound changes as a result of the restructuring process, with a modification in the number of employees in the organization. The increase in salaries paid by the agency to bring them in line with the private sector means a significant increase in the SNC's operating expenses. The PRI is being carried out with support from a World Bank operation currently in preparation (the *Second road maintenance and rehabilitation project*) whose resources will be used to cover the cost of the reform program in 2002 and 2003, after which they will be gradually replaced by contributions from the TSG, disappearing altogether in 2006.

E. Technical capacity

- 3.16 The technical sustainability of the SNC's performance is assured by:

- a. *technical standards*: the SNC's standards and procedures have gradually become outdated. For this reason, the establishment of modern highway standards for Bolivia has been made part of the institutional reform process. The objective is to provide the SNC with the specifications, standards and technical manuals necessary for effective quality control and improvement of highway engineering services in Bolivia. To this end, the ARI has included among its indicators and performance goals a requirement for updating general construction and maintenance specifications, as well as the standards and specifications for testing and materials. In addition, new technical manuals will be prepared for all key areas; and
- b. *highway maintenance*: Bolivia's highway systems has not received proper maintenance in the last few years. For this reason, the creation of a Maintenance Department as one of the main division of the SNC played a fundamental part in the institutional reform process. The mandate of that department is to develop effective systems for managing and ensuring proper maintenance for paved roads and bridges as quickly as possible, since the existing systems are now obsolete. The good news is that recent creation of the CNCV will shortly provide the budgetary resources for carrying out maintenance plans.

F. Financial analysis of the SNC

1. Historical development

- 3.17 The SNC receives resources directly from the National Treasury (TGN) through the federal budget and is therefore subject to the provisions governing that document. Budget performance by the agency has been gradually improving of late: in 1998, it was just 64.4%, but has grown each year since then: 1999 (87.4%), 2000 (88,0%) and 2001 (95.3%).
- 3.18 The SNC is highly dependent on external resources. In the period 1998-2001, local resources represented 42% of its budget, versus 58% for external resources. There has also been a noticeable influx in resources obtained via local counterpart contributions, the result of the prefectures' financial participation in RVF projects co-financed with foreign resources and executed by the SNC. Resources from this source over the same period totaled the equivalent of US\$128 million (27% the total resources). Road toll revenues are a growing source of funds as well, beginning in 1999 when the total annual collection was some US\$16 million. The largest single source of foreign resources has been the CAF, which provided about 30% of the total, followed by the Bank (10%) and the World Bank (8%). The remaining 50% came from a variety of other sources (KfW, JBIC/Government of Japan, Nordic Fund, etc.). These resources fluctuate between US\$55.6 million (1998) and US\$85.7 (2000), depending on the rate at which the work these funds finance is carried out.

- 3.19 Investment absorbed 94% of outlays, while –at 56%– new construction was the largest single use to which these resources were put. Some 38% of the total went for routine and periodic maintenance, rehabilitation and upgrading of roads, and emergency repairs. Current expenditures, which covers the administrative operations of the SNC, remained virtually constant between 1998 and 2000. Beginning in 2001, however, the PRI will come into operation with reforms that tend to reduce the number of personnel, raise salaries and improve organization, doubling the effect in this category.
- 3.20 The performance figures for 1998-2001 demonstrate that: (i) the trend has been upward, with a very high level of performance achieved in 2001; (ii) construction activity has remained relatively stable in absolute terms, at around US\$66 million; (iii) 94% of outlays were directly related to construction and maintenance of highway infrastructure, and the remaining 6% was used for preinvestment studies and current expenditures; (iv) in order to finance this level of activity, the SNC has depended and continues to depend upon resources from foreign sources (which make up anywhere from 50% to 67% of total available resources); (v) the local financial effort has grown steadily, rising from US\$28 million in 1998 to US\$67 million in 2001; and (vi) based on availability of internal and external resources, activity in the highway sector has grown from US\$79 million in 1998 to US\$137 million in 2001.

2. Projections

- 3.21 Execution of this Program will require great financial effort on the part of the Government of Bolivia in general, and the SNC in particular. While total annual income in the four-year period 1998-2001 was US\$120 million, for the period 2002-2005 (critical years for the Program) the budget estimates total annual resources of US\$247 million, a growth rate of 105%. Meanwhile, investment will climb from US\$66 million to US\$156 million, an even greater increase of 135%. According to projections made by the SNC and the VIPFE, the sources and uses for SNC funds will show the following changes (values shown for 2002 are those in the actual budget which has been approved; all figure in thousands of US\$):

	2002	2003	2004	2005	2006	2007	2008
Revenues							
TGN	12.036	18.828	19.686	20.430	22.327	16.048	17.439
Other counterpart	50.346	20.998	19.305	19.931	18.316	4.222	5.940
Counterpart for corridor		3.143	8.577	10.867	12.847	5.721	5.721
Tolls	11.400	12.000	12.800	14.500	15.000	15.500	17.000
Other	23.316	37.356	32.195	29.117	26.989	20.915	21.475
Total internal resources	97.098	92.325	92.563	94.845	95.479	62.406	67.575
Loans outstanding	85.507	101.315	90.349	56.399	29.727		
Loans in process		19.360	37.120	53.560	57.440	28.080	15.600
Corridor SC/PS		14.040	61.153	98.990	56.616	76.723	26.977
Total external resources	85.507	134.715	188.622	208.949	143.783	104.803	42.577
Total revenues	182.605	227.040	281.185	303.794	239.262	167.209	110.152
Outlays							
Studies	3.652	7.160	7.270	6.250	2.200		
Construction	89.823	121.723	179.200	214.557	173.263	112.588	64.698
Other works	42.378	57.400	53.710	44.279	23.360	20.000	10.570
Maintenance	20.600	24.160	21.830	19.700	20.010	20.010	20.010
Operations	11.235	8.597	9.675	10.008	11.629	14.611	14.874
Other outlays	14.917	8.000	9.500	9.000	8.800		
Total outlays	182.605	227.040	281.185	303.794	239.262	167.209	110.152
Other works includes periodic maintenance, rehabilitation and improvements, and emergency repairs							

- 3.22 These projections show, on the one hand, the necessary resources for the projects that are already being executed or for which a firm commitment exists; and on the other hand, the amounts corresponding to projects that are in the pipeline and are being considered for the necessary funding. The revenues expected by way of the 70% share of road tolls collected by concession-holders represent a conservative estimate, in line with actual receipts the last few years. The figure for counterpart funds, which are provided mainly by the prefectures, reflects contractual commitments for operations with external financing and those that Bolivia will be assuming for execution of the corridor. The figure for "other" includes resources from the CNCV to cover periodic and routine maintenance. The CNCV is funded by its share from the IEHD (5% of amounts collected in 2002, 10% in 2003 and 15% from then on), all of the revenues from tolls the correspond to the SNC, plus US\$21 million from the World Bank. This heading also includes resources expected from various national funds (e.g. the Fondo de Desarrollo Regional)

which will be used to complete the counterpart contribution from the prefectures if the amount received via the IEHD is not sufficient.

- 3.23 Investment in new works, and rehabilitation and maintenance of existing sections, anticipates increased activity in keeping with the expected resources, whereas the other headings remain reasonably close to historic levels. The increase in operating costs is due to expenditures generated by the PRI as a result of compensation paid to personnel let go in the reform process, plus the increase in the salaries of those who remain with the SNC.
- 3.24 The figures shown above reflect a noticeable increase in activity in the highway sector, with respect to recent years. The SNC's revenues will rise from a mean of US\$120 million for the four-year period 1998-2001, to a mean of US\$247 million in 2002-2006, an increase of 106%. Investment in construction will rise from US\$66 million to US\$156 million (an increase of 136%) over the same two periods, reflecting the large impact that the Program will have on the SNC's performance. These activities must take place at the same time as maintenance on the RVF is being improved, hence the rise in its financing as well, in this case going from US\$9 million to US\$21 million for an increase of 130%. All of this will put added pressure on the financing for the highway sector due to the increase in its share of the nation's public spending .

G. Financial analysis of the PSC

1. Historical development

- 3.25 Just as in the case of Bolivia's other prefectures, the resources and expenditures of the Prefecture of Santa Cruz are an integral part of the federal budget, and their general characteristics have already been described (see paragraphs 1.47 and 1.48). The PSC's budget performance has varied greatly, from a high of 99.8% (2001) to a low of 64.6% (1999).
- 3.26 The PSC's principal (recurrent) source of income is the royalties paid to it directly by companies with contracts for production of hydrocarbons, a heading which has seen significant growth since the year 2000. Revenues received via transfers from the federal government have also increased substantially, rising in the four-year period 1998-2001 to 46% of the prefecture's total revenues, versus 29% from own resources. However, the latter has experienced a steep decline thanks to a drop in the privatization of enterprises and the sale of land in the Industrial Park, and changes in the policy governing the distribution of road toll revenues.
- 3.27 With respect to outlays, the main heading is "own investments" which accounts for 42% of expenditures in the period, followed by transfers (22%), almost all of which represents counterpart contributions under highway projects for which the SNC is

responsible, debt servicing (a hefty 20%), and current expenditures which totaled 14%.

- 3.28 The growth in royalties was due primarily to a gradual rise in deliveries of gas to Brazil, reaching an average of 205 million cubic feet (mcf) per day in 2000. Resources from the IEHD have accounted for between 11% and 17% of total revenues. These amounts are less than enough to cover the required counterpart contribution, however, so that the proceeds from this tax, which is the main source used by the PSC to meet its obligations vis-à-vis the SNC, must be supplemented with other incoming royalties in order to fully satisfy those obligations.
- 3.29 External resources received in the form of grants, or under agreements with various Bolivian and international agencies, play a fairly important part. Among the most important donor organizations are the Government of Japan's JICA and the Agency for International Development. And agencies making direct loans to the PSC include OPEC, KfW and FONPLATA.
- 3.30 Under outlays: current expenditures have been dropping gradually; debt payments reflect amortization and interest on loans received; investments reflect construction activities in PSC works projects, including irrigation works, infrastructure in general (highways, health and agricultural facilities, etc.); and Regional Services include maintenance costs for the departmental highways, an activity that was incorporated together with the change in the distribution of toll revenues. Maintenance requires more resources than can be covered by road tolls. For the most part, the transfers shown represent amounts paid out in local counterpart funding, and other relatively small amounts awarded as subsidies or allowances to various cultural and educational institutions.
- 3.31 Over 50% of the PSC's current financial capacity depends upon federal resources over which the prefecture has no control, such as the royalties it receives (primarily from hydrocarbons) and the IEDH. The variation in own resources is due to decisions taken by the Departmental Council of Santa Cruz regarding the transfer of resources from Financiera de Desarrollo SAM for use in the execution of works projects, since the other departmental resources have been reasonably stable. External resources are directly linked to the rate at which the activities are proceeding for which PSC received the respective grants or direct foreign loans.
- 3.32 With respect to execution of approved budgets it can be seen that, with the exception of 1999 in which it only managed to execute 65% of outlays, the PSC has recorded reasonable rates. In that year, its overall performance was 43%, due primarily to the fact that the external resources obtained reached only 26% the programmed level. Concerning internal resources, the execution for investments was 72% of the programmed amount. This percentage reflects the decision to give priority to debt payments which in some cases had been postponed during

preceding actions. These two aspects combined to ensure that the public investment budget would have a relatively low execution rate.

- 3.33 In summary, it can be seen that the bulk of the PSC's revenues and outlays have been determined in advance: (i) the amount received and to be received via royalties and from the IEHD depend on factors beyond its control; (ii) the amount of revenues from road tolls is likewise beyond its control; (iii) resources flowing from grants and direct loans are received according to the rate of progress in the activities for which they are earmarked; (iv) payments on debt are determined by the amortization plans specified for each contractual operation; and (v) the amount of resources (transfers) that it must contribute periodically by way of counterpart contributions for works carried out by the SNC and financed with external resources, are determined by the SNC.
- 3.34 By contrast, the PSC administers the resources and outlays from: (i) provision of services to the community; (ii) investments in the development of works projects using its own resources; and (iii) maintenance work on the department road system. Revenues from recoveries are largely random since they depend upon the decisions of the Departmental Council.

2. Projections

- 3.35 The fiscal capacity of the PSC appears to be sufficient to meet the requirements of its own operations over the next few years, while also satisfying requests for local counterpart contributions to the highway infrastructure projects for which the SNC is responsible. Its revenues are assured by: (i) royalties on hydrocarbons, which are expected to rise or fall based on fuel price performance on crude oil, compressed natural gas and LP-gas in international markets, plus expected volume of production⁶; the royalty continues to be assessed at 11% of estimated monetary value; (ii) a share of the IEHD, which assumes an increase of 4% per year in products sold on the domestic market (resulting in an average growth rate of 1.68%); and (iii) to a lesser extent, grants and loans received; the latter includes resources to be received from FONPLATA (whose contract has yet to be signed) since these are earmarked as additional financing for projects in progress, thus freeing up the PSC's own resources in the short term.
- 3.36 With regard to outlays, current expenditures remain at stable levels, debt payments reflect amortization of loans under signed contracts and investments made with funds from grants, loans and own resources, with execution proceeding at the expected rate for works in progress. The counterpart contributions for highway projects being executed by the SNC demonstrate the amounts that the PSC will

⁶ Prices are based on a "basket of crudes" and have been established by OPEC in a range of between US\$22 and US\$28 per barrel (and for gas, between US\$1.30 and US\$1.45 per mcf), with projected growth of from 6% to 8% in the market.

have to provide, based on the expected rate at which the works are carried out. Maintenance costs, which are higher than toll revenues, remain near their historic levels.

- 3.37 Application of this scenario shows that the PSC will have the financial capacity to meet its counterpart obligations for a total of US\$40.2 million throughout the period of construction of the corridor, and will generate additional resources as well in the amount of US\$87.5 million that can be allocated to other works between 2002 and 2008. The following table presents the main headings for revenues and outlays, and shows their development during the period for construction of the corridor (figures in equivalent US\$ thousand). The values shown for 2002 are taken from the approved budget:

	2002	2003	2004	2005	2006	2007	2008
revenues							
royalties on hydrocarbons	23,946	25,659	26,875	26,878	27,119	27,117	28,350
other royalties	1,291	1,275	1,265	1,258	1,255	1,255	1,311
IEHD	6,826	6,745	6,686	6,652	6,635	6,635	6,937
total transfers	32,063	33,679	34,826	34,788	35,009	35,007	36,598
own revenues	7,832	5,678	5,630	5,601	5,586	5,586	5,839
grants	4,871	4,855	1,356	246	234	223	153
loans	3,802	3,699	2,548				
FONPLATA	5,000	6,300	4,700				
total resources	53,568	54,211	49,060	40,635	40,829	40,816	42,590

outlays							
current outlays	6,658	5,955	6,132	6,133	6,174	6,185	6,476
debt service	6,931	6,499	6,065	6,704	4,652	3,742	3,530
investments	17,377	14,084	6,508	246	234	223	153
counterpart in execution	7,617	8,622	9,400	8,371	3,870	1,963	
other	4,852	4,794	4,754	4,728	4,716	4,716	4,930
total outlays	43,435	39,954	32,859	26,182	19,646	16,829	15,089
surplus/deficit	10,133	14,257	16,201	14,453	21,183	23,987	27,501
counterpart for corridor		2,739	4,825	11,059	9,393	10,509	1,675
surplus after corridor	10,133	11,518	11,376	3,394	11,790	13,478	25,826

H. Counterpart contributions and the Local Counterpart Trust Fund (FAL)

- 3.38 Counterpart contributions will be made in accordance with the principles established in Supreme Decree (DS) 26.336 which orders (Article 34) the creation of a Local Counterpart Trust (FAL). This instrument requires regulations to govern its operations, and in the case of the Program it was agreed that: (i) the FAL will be duly constituted; (ii) the FAL will be funded directly through automatic contributions from a revenue generating source authorized by the PSC⁷; (iii) the local counterpart to be provided by the PSC will come from resources drawn from

⁷ These contributions will come via the TGN, in the case of IEHD, and from oil and gas producers in the case of royalties on hydrocarbon concessions.

the IEHD and royalties on hydrocarbons (RH); (iv) these contributions have a pre-established ceiling equivalent to the estimated costs of the Program, plus an additional 25%; (v) the counterpart required by the Bank's loan is 10%, while that required by the grant from the EC is 20%; and (vi) the CAF's loan will not require local counterpart contributions. The SNC reported that the regulations for the FAL will be drawn up by 30 June, and that copies would be forwarded to the Bank at that time. The conditions precedent to the first disbursement will include evidence of: (i) entry into force of the FAL's operating regulations with terms and conditions agreed to in advance by the Bank; (ii) creation of the FAL and the opening of a sub-account for the Project in the Trust with a deposit in an amount equivalent to at least US\$1 million, to cover the initial costs of compensation for payment for land, improvements, installations, and houses affected by the creation of the right of way; and (iii) entry into force of the interagency agreement between the Ministry of Finance, the SNC and the PSC.

- 3.39 The PSC's largest counterpart contribution will come in the first phase of the Program, totaling US\$18.75 million (this amount includes sums for investment, financing costs, contingencies and a reserve for additions amounting to 25% of the value of the counterpart). If the Government of Bolivia is able to negotiate additional resources for the counterpart from any other cofinancing entity, it will – as a condition precedent to the first disbursement – present evidence that the Borrower has alternative financing resources for this purpose. Those resources must be specified in an agreement between the Republic of Bolivia and the cofinancing entity.
- 3.40 The estimated flow of revenues derived from the IEHD (and allocated by law for use as local counterpart contributions) and from royalties on hydrocarbons (used by the PSC as supplementary resources for meeting its counterpart obligation) are likely to continue rising slowly over coming years. Yet the need for these resources will increase rapidly in the first years of the Program's execution period, which could cause conflict over their use for local counterpart versus other needs of the PSC. Revenue from the IEHD will cover around two-thirds of the need for counterpart funding, so that the PSC will be required to supplement that revenue with RH resources which are not legally earmarked for this purpose. Consequently, a device (described below) by which the PSC will automatically allocate sufficient resources from the RH is essential for avoiding delays in execution owing to a lack of local counterpart, and thus repeating the experience from earlier operations. To avoid discrepancies between the PSC's counterpart capacity (financial availability) and project needs, the Government of Bolivia has ordered that the flow of counterpart contributions will follow closely the flow of revenues from the PSC's portions of IEHD and RH, or in linear fashion (choice to be determined), during the Program's execution period, until completing its commitment.
- 3.41 The procedures for effecting these contributions will have the following features, or others which produce similar results. This procedure will be indicated, among other

aspects, in the Operating Regulations of the FAL, the preparation of which will be a condition precedent to the first disbursement:

- a. The SNC will create the Fideicomiso de Aportes Locales (FAL), as established in Article 34 of DS 26336;
- b. The FAL will be administered in accordance with Operating Regulations which have been drawn up as established in Article 34(ii) and must be placed in effect as a condition precedent to the first disbursement;
- c. The FAL will have an account for the prefecture Santa Cruz and sub-accounts for each financial entity;
- d. The PSC's contribution to the Project, in the form of counterpart for the Bank's loan and the loan from the other financing institutions, will be made on the basis of the financial timetable and total amount agreed to between the PSC, MH and SNC. To this end, these agencies will sign an interagency agreement detailing their responsibilities and duties (placing this agreement in effect will be a condition precedent to the first disbursement);
- e. The resources in the FAL earmarked for the Project will be deposited automatically in the pertinent sub-account. To ensure this, the PSC will request that the Ministry of Finance deposit the resources of the IEHD and the royalties on hydrocarbons into the FAL account. This request will form part of the interagency agreement referred to in the foregoing paragraph;
- f. The resources deposited in the sub-account have no time limit, and their only use will be to finance the activities of the Project and make payments to contractors, suppliers, consultants, etc., which will be done by the SNC;
- g. The SNC will render accounts to the PSC at intervals reporting the use made of these resources;
- h. The PSC may not restrict the flow of funds except where grounds for doing so have been agreed to in advance and specified in the interagency agreement;
- i. The PSC's financial commitment shall end when its contributions have reached the established total amount;
- j. Any balance in favor of the PSC that remains at the conclusion of the Project will be returned to the prefecture; and
- k. Subject to certain standards, the FAL may pay interest on its accounts; these will be the property of the PSC.

I. State of preparation of the Program

1. Works

- 3.42 The Government of Bolivia has complete and updated technical studies which were carried out by CVI, the consortium that submitted a proposal for the granting of a concession to the private sector, and which will be used by the SNC for the construction works, following evaluation and adjustment. As required by law, the Government of Bolivia will compensate the consortium that prepared the documentation and plans so that the copyright on this information will belong to the State. The Bank issued clear guidelines concerning the information required to complete the plans. Among the matters still pending are incorporation of the new pavement thicknesses, adjusting the grade requirements for the project and the calculation of earthmoving needs, updating information sources, incorporation of the details on minor drains, including connecting culverts and longitudinal drainage channels and slope footing. During finalization of the designs, the Bank will oversee the work of the SNC to ensure that plans are completed on time and with the quality required for execution.
- 3.43 The SNC must also complete the bid documents for maintenance, rehabilitation and construction work on the various sections specified in the project. These documents must be accompanied by the respective technical specifications. The tasks in this area will also form part of the proposed contractual conditions.

2. Environmental matters

- 3.44 The Vice-Ministry of Environment, Natural Resources and Forestry Development granted the environmental permit (EIS) authorizing the SNC to carry out construction works throughout the corridor. Given the magnitude and complexity of its direct and indirect effects, it was decided during project preparation that it would be best to deal with all social and environmental aspects of the Project separately. Accordingly, the Environmental and Social Protection Project for the Santa Cruz–Puerto Suárez Corridor (BO-0033) was devised in order to mitigate the Program's impact and ensure consistent application of rigorous criteria for environmental protection and mitigation of adverse environmental effects, no matter who is chosen to work on a given section.
- 3.45 Various, increasingly detailed environmental studies were carried out in the course of preparing the highway construction program and the present Project: (i) an initial Environmental Impact Assessment Study (EIAS), prepared in conjunction with the highway engineering studies; (ii) a Strategic Environmental Assessment (SEA), which reviewed and built upon the findings of the earlier EIAS; (iii) a special study on the system for regulating land ownership in the area; (iv) the Work Plan detailing activities under the Project; (v) Report from the Senior Advisory Panel;

and (vi) a new EIAS based on the final plans for the highway and submitted by a private consortium.

- 3.46 The mitigation strategy adopted will work in several directions at once: (i) clarifying property rights and returning to the State large tracts of public land suitable for forest management; (ii) regularizing land settlement claims in the area; (iii) strengthening the management of protected areas, especially protection measures themselves; (iv) reinforcing surveillance in forested areas and controlling unlawful clearance of land; (v) promoting practices to encourage sustainable use of natural resources; and (vi) compensating the losses of persons directly affected by the highway project by improving their quality of life. The Report on Project BO-0036 was studied by CESI on 15 March 2002; and the Report on Project BO-0033 was taken up on 19 February 2002.

3. Bidding competitions

- 3.47 The SNC has not yet published the General Procurement Notice in the United Nations journal "*Development Business*", nor has it obtained confirmation of conformity with model bid documents for international competitive bidding on the works of the proposed operation. Contracts for all construction and paving works will be let by means of international competitive bidding (ICB), as will works involving rehabilitation of gravel-topped roads. Given their amounts, contracts for maintenance will be let through local competitive bidding (LCB). Contracts for supervision and special studies will be let by international call for proposals (ICP). The SNC is currently preparing the terms of reference for the hiring of supervision personnel, and these TORs, together with the respective contracts and bid documents, and those corresponding to works projects to be carried out on gravel-topped roads, must be forwarded to the Bank for its nonobjection.

4. Right of way

- 3.48 All works under the Program are to be executed within the existing right-of-way (ROW) held by the SNC, which extends not less than 50 meters in each direction from the axis of the corridor (the sole exception occurring at crossings within urban areas) and is virtually free of human occupation. The SNC has begun the process of regularization and clearing of the ROW in all sections to be paved. Before beginning execution of the works, and where there are public services that will be affected during construction, the SNC must obtain their commitment to cooperate wherever necessary to facilitate the project.

J. Procurement of goods and services

- 3.49 The works are to be carried out by private construction companies; specialized independent consultants will be hired to supervise the works, conduct studies and provide technical assistance services. Contracting for construction work, purchase

of goods and hiring of consultants with the Bank's resources will be carried out in accordance with the standard procurement policies of the Bank. Before beginning highway construction works, the SNC will present evidence that its Socio-environmental Administration and the Vice-Ministry of Environment, Natural Resources and Forestry Development (VMARNDF) have provided training for the Socio-environmental Inspector, the Socio-environmental Supervisor, and the contractor will be carrying out the work. This training will include both general concepts regarding environmental protection and specific information on the particular works project as set out in the environmental permit. The bid documents will include this requirement.

- 3.50 The SNC will assume responsibility for administration of these contracts and supervision of the services provided by consulting firms. Its capacity and experience, together with the assistance of the TSG will be sufficient for the SNC to carry out this function. The bulk of the acquisitions will require international competitive bidding. The *Procurement schedule* is set out in Annex 2. The Bank's standard procedures will be applied for the acquisition of goods and execution of works under this Project. International competitive bidding will be used wherever resources from the Bank's loan are used for the purchase of goods valued at the equivalent of US\$350,000 or more, or for the contracting of construction works whose value is equal to or greater than the equivalent of US\$3,000,000.
- 3.51 The recruitment of consulting services will be carried out in accordance with the Bank's standard procedures for this purpose, and the procedures indicated in Document GN-1679-3. An international call for proposals will be used for the recruitment of consulting services valued at US\$200,000 or above. For this Project, where Selection Based on Quality and Cost is used for recruitment of consulting firms, the weighting of price as an evaluation criterion shall not exceed 20%, and that of the technical element or quality of the offer may not be less than 80%.
- 3.52 The lump-sum system may be used in letting contracts for rehabilitation and maintenance works on gravel topped-roads, as well as for the construction of bridges for the purposes of the project, "lump sum contracts" will be understood to mean contracts for works, the price of which is set at a given lump sum and therefore requires that the works be as invariable as the price. The terms and conditions for this type of contracting must be previously agreed upon with the Bank.

K. Execution period and disbursement schedule

- 3.53 The period for execution and disbursement of the loan proceeds will be five years reckoned from the date on which the Loan Contract

	2003	2004	2005	2006	2007	total
IDB	8.703	18.884	25.913	16.338	5.163	75.000
Local Counterpart	2.890	3.668	4.731	2.870	841	15.000
Total	11.593	22.552	30.644	19.208	6.003	90.000

takes effect, and said proceeds may not be disbursed in less than three years. The deadline for commencing the physical works and special studies shall be two years. The disbursement schedule is shown in the attached table (figures in US\$ thousand).

L. Monitoring and evaluation

- 3.54 Monitoring shall be carried out through: (i) annual project performance reviews to be submitted to the Bank within the first quarter of each calendar year, and containing the results obtained in the project based on the performance indicators established in the Logical Framework of the Project (Annex I). These reviews will also include the following information: (i) progress made in relation to the execution indicators and schedule of disbursements agreed upon for this Project; (ii) updated execution and disbursement schedules in relation to the rest of the Program; (iii) a work schedule and detailed action plan for the two following quarters; (iv) annual monitoring and evaluation mission to be held following submission of the first semi-annual report each year; and (v) presentation of the report on progress in the execution of Project BO-0033 will trigger an administration mission from the Bank for this Project and for the BO-0033 Project; the CAF, EC, and other cofinancing entities may take part in this mission.

M. Ex post evaluation

- 3.55 In accordance with the Bank's policies, the Government of Bolivia was consulted and agreed to perform its own ex post evaluation of the first phase. At the end of the third year counting from the date of the last disbursement of financing resources for this project, the Government of Bolivia and the SNC will present to the Bank an ex post evaluation report on project results, in compliance with the guidelines and methods agreed upon with the Bank. The ex post evaluation will be performed using a method similar to the one used for the ex ante analysis of the Project, and will include a detailed report of: (a) the cost-benefit; (b) distributive impact; and (c) other socio-cultural effects. For purposes of this evaluation, the information and monitoring systems set up for the midterm evaluation (paragraph 2.26) will be used, with respect to fulfillment of the second phase targets (paragraph 2.24). The ex post evaluation will not be required for financing the second phase.

N. Accounting, financial and auditing performance

1. Disbursements and accounting-financial controls

- 3.56 The SNC will be responsible to the Bank for: (i) implementing and maintaining suitable systems for administration of contracts, accounting and financial administration, and internal controls for managing the Project's resources in accordance with the provisions of clause 7.01 of the general standards on loan contracts; (ii) submitting requests for disbursements and substantiation of

expenditures in accordance with the Bank's requirements; (iii) presenting semi-annual reports on the Revolving Fund within 60 (sixty) days following the close of each six-month period; (iv) preparing and submitting consolidated financial reports on the Project and the Executing Agency, and any other financial reports required by the Bank; and (v) maintaining exclusive and separate bank accounts for managing proceeds of the loan in Banco Central de Bolivia and in commercial banks, for other financial backers and local counterpart contributions.

2. External auditing

- 3.57 The SNC must present to the Bank annually, and within 120 (one hundred twenty) days following the close of each fiscal year, annual financial reports on the Project and the SNC as executing agency, audited by an independent private auditing firm in accordance with the Bank's requirements. In addition, the SNC will present to the Bank within 60 (sixty) days following the close of each six-month period, a semi-annual report on the operational and financial audit of the Project, including a specific report on the examination of disbursement requests submitted to the Bank and another report on the revolving fund. The terms of reference for audit must be approved in advance by the Bank.
- 3.58 The Bank's procedures for competitive bidding in the recruitment of auditors shall be used for the selection and contracting of the auditing firm. It is recommended that an auditor's contract be for no less than three years, subject to a clause for termination of the contract in the event of inadequate performance. This same auditor will be responsible for the external audit works, and the auditing costs shall be financed with recourses from the Bank's loan.

3. Revolving fund

- 3.59 In complete conformity with current practices, the revolving fund for the Project will total 5% of the amount of the loan, i.e. US\$3.5 million.

O. Maintenance

- 3.60 Given the importance of maintenance to ensure the benefits of completed construction works, the Borrower will undertake to maintain all of the corridor works, and to do so in accordance with generally accepted standards. In addition, the Borrower undertakes to present to the Bank, beginning with the second year of the execution period and continuing for 5 (five) years after the last disbursement of the loan's resources, an annual maintenance report on country's basic system.
- 3.61 In addition to information on maintenance of the basic system, this report, which is to be submitted in the first quarter of each year, shall contain information of a general nature on the SNC and the organization structure and way in which the maintenance is carried out (number and type of contracts, amount paid, portion of the network covered, expected results, etc.), an inventory of the RVF and its

condition, an evaluation of maintenance work carried out during the previous year and the maintenance plan for the year in progress, information on traffic accidents, results from controlling weights and dimensions of vehicles, and if traffic counts have been conducted on the corridor roads and highways, the results of these surveys and comparison with projections. In particular, the report will provide available information on the operations and financing of the CNCV.

- 3.62 If the Bank ascertains, based on the inspections that have taken place, that the maintenance carried out on the corridor is not up to acceptable technical levels, the Borrower will take the necessary measures to correct these deficiencies.

IV. FEASIBILITY AND RISKS

A. Benefits

- 4.1 The benefits expected from the Program include: (i) reduction in transportation costs; (ii) improved access to transportation for passengers and for the shipment of agricultural production, livestock and manufactured goods; (iii) greater safety in the transporting of passengers and freight, lessening the risk of accidents, reducing travel time and improving routes; and (iv) lowering highway maintenance costs. The Program will benefit all residents of Bolivia, particularly those living in the Santa Cruz region. In addition, it will benefit the international flow of goods.

B. Institutional feasibility

- 4.2 This Program will be carried out by the SNC which possesses ample experience in executing programs with multilateral lending institutions, and in particular with the Bank. While difficulties have been encountered in executing earlier loans, these had less to do with institutional problems and more with restrictions affecting counterpart contributions. The financial study carried out in preparation for this operation confirm that these events should not repeat themselves.
- 4.3 In addition, in 2001 the Government of Bolivia began a restructuring of the SNC with strong political will and social consensus concerning the importance of this process and the need for the corridor. At the same time, the World Bank is preparing a project designed to strengthen the government's capacity to manage the national highway system, the activities of which will help reinforce the action being taken by the IDB to strengthen the sector by means of Loan 1039/SF-BO (paragraph 3.12). To verify fulfillment of the commitments undertaken by the Government of Bolivia through the ARI, a committee (CAS/SNC) has been established to monitor the process, which includes the World Bank and a Donors Consultative Committee. Objective assessment of the ARI's level of fulfillment will be achieved through detailed and readily measured performance indicators and targets, with annual performance targets. Owing to the impact that the institutionalization process may have on Project execution, six ARI indicators have been incorporated into the Project's Logical Framework (Annex I) to verify fulfillment of these commitments (paragraph 3.10).

C. Technical feasibility

- 4.4 The Government of Bolivia has a series of updated engineering designs and studies prepared by CVI as part of a proposal for the granting of a concession to the private sector. After evaluation and updating by the SNC, these designs will be used for construction works under this project. The studies prepared by CVI were carried out using modern methods and criteria, and are based on internationally accepted

engineering standards. The unit prices have been reviewed and adjusted based on SNC's costing system which is updated regularly. And finally, the SNC has conducted field studies to verify the quality and availability of materials, confirming that the costs of the program are reasonable.

- 4.5 The technical standard adopted in the engineering plans is based on moderate demand and calls for the appropriate level of asphalt paving. Within technically acceptable limits, this design reduced the technical specifications of the highway, without lowering the level of service it will provide to motorists nor shortening its useful life. The underlying assumption is that if actual demand exceeds the projections, the engineering design adopted will make it possible to reinforce the pavement and thereby extend its useful life.
- 4.6 The engineering plan is relatively simple to execute, so that any difficulties are more likely to result from the volume of the task being undertaken rather than complications in its technical characteristics. Therefore, this highway projects has nothing to mar its technical feasibility.

D. Economic feasibility

- 4.7 The studies carried out identify the corridor as a route with relatively high potential demand despite the fact that in its present condition it cannot be used year-round. For most of its length, and for all practical purposes, this project involves new construction and like other greenfield projects required detailed analysis to establish possible demand scenarios.
- 4.8 As part of its evaluation, the possibility of developing the corridor as a mixed public and private sector undertaking was examined. However, the analysis showed that while this scheme would maintain its economic feasibility, the same could not be said for its financial viability – which led the Government of Bolivia to discard the idea. Another theoretical alternative was to use public funds to improve the railroad. Again, this option was rejected since this mode of transportation could not provide the services sought by the public even if very large sums were invested in the railway line. The conclusion was that the highway system could offer services that were both complementary to and competitive with the railroad (paragraph 1.12).

- 4.9 Using a basic demand scenario with net present value (NPV) of US\$119 million and internal rate of return (IRR) of 19%, the economic

Sensitivity analysis at differing costs and benefits (in US\$ million and percentages)				
scenario	Variable		Indicator	
	Cost of Investment	Benefits	NPV (12%)	IRR
Basic (without toll)	+20%		\$75.9	15.9
	-20%		\$162.6	23.3
		+20%	\$196.5	22.8
		-20%	\$42.0	14.7
International toll (US\$0.0122/km)	+20%		\$55.6	14.9
	-20%		\$142.2	22.2
		+20%	\$172.1	21.8

feasibility of the project is positive. This feasibility result reflects the soundness of the strategy chosen in this case, namely that of making a gradual investment, concentrating initially on sections with the greatest traffic and ensuring that the whole corridor remains passable at all times. In considering elasticity of demand with respect to the charging of tolls, even in the most critical scenario with the NPV down to US\$99 million and the IRR at 18%, the project retains solid profitability. The attached table summarizes the results of the sensitivity analysis of the projects profitability under varying costs and benefits. The project remains at acceptable levels of profitability in all scenarios.

- 4.10 Current daily average traffic volume will rise from the present rate of 80-120 vehicles per day, to 976 (Paraíso–El Tinto), 697 (El Tinto–San José), 464 (San José–Roboré) and 678 (Roboré–Puerto Suárez) vehicles per day when the corridor has been completed in 2008. And by the year 2024, these same sections are expected to be carrying 1,977, 1,598, 1,106 and 1,536 vehicles per day, respectively. The following table summarizes the TPDA for the main project sections throughout the useful life of the highway, considering scenarios with and without tolls. It is also important to note that the percentage of heavy vehicles throughout the corridor fluctuates around the 50% mark, demonstrating the importance of the corridor for improving productivity in the Santa Cruz region and Bolivia in general. The growth rates in traffic volume that result from this analysis of demand differ according to the section. In general terms, the four year period following completion of the corridor will see strong growth as a result of expansion of the agricultural zone, plus new traffic attracted to and generated by the corridor. After that, growth becomes moderate, ranging between 2% and 3% per year.

Traffic projections on main sections of the Paraíso – Puerto Suárez highway								
TPDA Basic scenario – Without toll					TPDA Scenario with road toll US\$0.012/km			
YEAR	1: PARAISO - EL TINTO	2: EL TINTO - SAN JOSE	3: SAN JOSE – ROBORE	4: ROBORE – PTO SUAREZ	1: PARAISO - EL TINTO	2: EL TINTO - SAN JOSE	3: SAN JOSE – ROBORE	4: ROBORE – PTO SUAREZ
2002	87	55	28	24	87	55	28	24
2003	190	72	43	39	190	72	43	39
2004	293	192	44	43	293	192	44	43
2005	361	212	53	189	361	212	53	189
2006	496	336	256	319	496	336	241	319
2007	816	563	373	547	766	529	350	547
2008	976	697	464	678	917	655	435	678
2009	1.203	895	616	866	1.130	840	578	813
2010	1.396	1.052	727	1.013	1.310	988	682	951
2015	1.707	1.296	906	1.239	1.602	1.216	850	1.162
2020	1.850	1.454	1.009	1.386	1.739	1.366	948	1.303
2024	1.977	1.598	1.106	1.536	1.861	1.504	1.041	1.445

- 4.11 A constant concern of the Government of Bolivia and the Bank during development of this project has been the question of the willingness and ability of motorists to pay road tolls in view of the fact that it has been years since local rates for such tolls were adjusted for inflation. This program seeks to direct the revenues collected from road tolls into paying for the operation and maintenance of highways, as a means of ensuring the sustainability of the system. In the feasibility study, three scenarios were considered which reflect the possible elasticity of demand with respect to the rates charged for tolls. In all scenarios, the effect of a contraction of demand due to the amount of the road toll was not very significant. Indeed, in the most critical scenario the caused economic profitability to drop by a scant 1%, with respect to the IRR without tolls. This confirms the viability of having motorist contribute to the maintenance and operation of the corridor.

E. Financial feasibility

- 4.12 This two-phase program is extremely important owing to the amount of investment involved and the weight that the highway sector has in overall public spending. With a total investment of

Selected Macroeconomic Variables (%)			
variable	total	critical period	critical year
	2003-2008	2004-2007	2005
GDP	0.5	0.7	1.0
PS	0.8	1.0	1.4
PI	6.7	8.7	11.9
ISNC	28.7	36.0	43.6
GDP= gross domestic product; PS = public spending; IP: public investment; ISNC= investment of the SNC			

- over US\$376 million, including construction works, supervision and related activities, the corridor will have a substantial impact on the country's main economic variables. The numbers are significant, as shown in the table with headings for the construction period (2003-2008), the critical period (2004-2007), and the year of greatest impact on the fiscal accounts (2005). The above-mentioned figures indicate the importance of the corridor in terms of the country's GDP, government spending and the budget of the SNC. Also, as demonstrated in the budget analysis of the SNC and the PSC, these conditions are achievable with the support of the Bank and other financial institutions.
- 4.13 The local counterpart for the Program, which will be covered with resources from the PSC, totals US\$27 million. The prefectures budgetary revenues, including own resources and transfers, total US\$50.3 million, US\$62.4 million and US\$53.6 million for the years 2000, 2001 and 2002, respectively. If revenues stay at these levels, which is a conservative scenario in any case, the PSC's contribution to the Program will be less than 15.5% of average revenues for the three-year period. Analysis of the finances of the PSC and the SNC show that they have the financial capacity to meet their obligations and at the same time make timely delivery of the financial resources needed to honor their commitments to this Program.

F. Social and environmental feasibility and recommendations

1. Expected effects

- 4.14 Given the nature of this project (virtually a greenfield operation), with a highway to be built over a very broad geographical area which is highly vulnerable, both socially and environmentally, has only a very basic level of development with little consolidation, yet also enjoys enormous economic potential, the preparation of this initiative has had to take account of both its direct and indirect impact, and its cumulative and long-term effects.
- 4.15 Given the magnitude and technical/institutional complexity of its indirect effects, it was decided during project preparation that it would be best to separate the financing of its construction works from efforts to mitigate its environmental impact, by preparing an independent project to deal with the latter. Thus the Bank is in the process of approving the *Environmental and Social Protection Project for the Santa Cruz–Puerto Suárez Corridor* (BO-0033), which covers direct and indirect effects in virtually the entire corridor and ensures consistent application of rigorous criteria for environmental protection and mitigation of adverse effects, no matter who is doing the work on that section. BO-0033 has made the full versions of the Strategic Environmental Assessment (SEA) and the Environmental Impact Assessment Study (EIAS) available to the public on the Bank's Web page at <http://www.iadb.org/regions/rel/eia/bo0036/index.htm> since 4 August 2000. Project Report BO-0033 was sent to the Public Information Center (PIC) on 4 March 2002, and approved by CESI on 19 February 2002. That report describes the environmental programs in detail. The following paragraph provide a summary of these aspects.
- 4.16 The construction and upgrading of the Santa Cruz-Puerto Suárez corridor will lead to a major expansion of the agricultural frontier and the forestry sector. These and other effects can only be seen as positive developments when adverse social and environmental effects are controlled and mitigated. This is what BO-0033 is designed for, and for this reason it is essential that the programs set out in BO-0033 be implemented on the dates and in the form described. BO-0033 includes all of the environmental mitigation activities, and covers the corresponding costs, for mitigation of the indirect effects (Plan of Action) caused by improvements made to the corridor. With regard to direct effects (the PPM-PASA program), BO-0033 includes environmental mitigation activities, and covers the costs corresponding to the first phase of the Highway Project. Mitigation of direct effects during the second phase will have to be financed by BO-0036, following criteria consistent with those adopted for this Project.
- 4.17 The cost of mitigating environmental impact is an integral part of the budget for construction of each section, and includes the measures and works required by in the Highway Project's EIA, in accordance with environmental technical standards

and the Code of Conduct of the workers. The BO-0033 Environmental Supervision staff will require construction contractors to comply with those measures.

- 4.18 To deal with indirect effects, the Plan of Action for BO-0033 calls for developing the following programs: (i) regularization, titling and registering of land; (ii) indigenous program; (iii) environmental conservation (managing protected areas and protection of forests); (iv) institutional strengthening and sustainable development for municipalities; and (v) communications. BO-0033 calls for the investment of US\$15.4 million.
- 4.19 To deal with the direct effects, the PPM-PASA of BO-0033 will develop the following programs and activities: (i) replacement of losses (replacement of housing, economic compensation and socioeconomic rehabilitation of the affected population, mitigation and compensation for the socioeconomic impact of construction on neighboring communities); (ii) protection and rescue of cultural and architectural heritage; (iii) information and social interaction; (iv) supervision and socio-environmental monitoring of the work; and (v) socio-environmental inspection of the competent environmental authority. The PPM-PASA calls for an investment of US\$5.0 million. Compensation for expropriations and payments for improvements in the right of way will be financed by BO-0036.
- 4.20 The Vice-Ministry of Environment, Natural Resources and Forestry Development granted an environmental permit (EIS) authorizing the SNC to carry out work throughout the highway corridor.
- 4.21 BO-0033 was widely discussed with the various social sectors and there is general support for it to be carried out. In fact, both the highway and the proposed socio-environmental measures tap into longstanding demands by the region's inhabitants. The degree of consensus achieved and the consultation methods used lend legitimacy to BO-0033 and its programs and pave the way for execution of the Project.
- 4.22 The Bank's policy provision OP710 was considered in the design of BO-0033 which includes the necessary procedure for resettlement of low-income families. Of the 52 families that will be affected by imposition of the ROW, 48 will be relocated on the same property, and 4 will be resettled on different lots, all in upgraded housing units compared to their present accommodations.
- 4.23 In order to standardize the environmental criteria and parameters to be used in the construction of sections of the corridor, and to ensure that these are developed in a sustainable manner, the Government of Bolivia has agreed with the Bank to make compliance with the environmental control measures specified in this report and in the Operating Plan of BO-0033 obligatory, regardless of the source of funding.

- 4.24 To ensure adequate implementation of the necessary environmental measures, it is recommended that the Loan Contract include the following contractual clauses:
- 4.25 **Requirement for the first disbursement:** BO-0033 eligible for disbursements.
- 4.26 **Condition precedent to awarding a contract for work on the Paraíso-El Tinto section:** the Borrower, acting through the Executing Agency, must present to the Bank's satisfaction a report describing the progress made in executing BO-0033. This report will give rise to a joint administration mission by the Project Teams of BO-0033 and BO-0036, and the Country Office (representatives from CAF, the EC, and other financing entities may also be invited on this mission). This report must include, among other aspects, evidence:
- a. That clearance of the ROW of the Paraíso-El Tinto section has been completed, for which: (i) the replacement, payment of compensation or total indemnification of losses of land, improvements and facilities affected by creation of the ROW, and, in the case of housing, that the replacement of same has been finalized or, for those where the process has not concluded, that such persons be deemed to be in "protected"⁸ status; and (ii) socioeconomic rehabilitation has been initiated for the land, families and individuals affected by the authorization of the ROW⁹;
 - b. That the individual consultants have been hired for the Socio-environmental Supervision of the SNC, and the consultants for Socio-environmental Inspection under the VMARNDF and the Socio-environmental Auditor have been hired; and that they have received training in the topics and environmental characteristics of the Program, particularly matters referred to mitigation of direct effects and the responsibilities of the contractor and works supervisor vis-à-vis the environment;
 - c. That the activities of the Social Action and Management of the Loss Replacement Program are being carried out;
 - d. That the Ministry of Sustainable Development and Planning has disbursed the resources for establishing the three Trust Funds administered by the Fondo para el Desarrollo de los Pueblos Indígenas de América Latina y el Caribe (Fondo Indígena), Fundación para el Desarrollo del Sistema Nacional de Áreas Protegidas (FUNDESNAP), and Fundación Protección y Uso Sostenible de Medio Ambiente (Fundación PUMA);

⁸ For purposes of this Project, "protected housing" is defined as housing located within the section to be built that has not had its situation regularized. For such housing, the executing agency will establish a protection zone of no less than 500 meters on every side of the housing in question.

⁹ In the few cases where vulnerable rural inhabitants are affected, the BO-0033 Project arranges for rehabilitation to be carried out within the remaining portion of the property, or for the resettlement of any small landowners that are displaced.

- e. That the regularization, titling and registration of land activities are under way in the municipalities of Pailón, San José de Chiquitos, Roboré, El Carmen Rivero Torres, Puerto Suárez and Puerto Quijarro, and in the Protected Areas of San Matías and Otuquis, under the direction of the specialized firms hired for this purpose.

4.27 With respect to clearing the ROW, BO-0033 specifies the following objectives: (i) clear the areas of the ROW required for improvements or construction of the highway as soon as possible; (ii) replace or provide adequate compensation for the loss of land, improvements, housing and facilities affected by the creation of the ROW; (iii) mitigate and compensate the various socioeconomic effects that construction, or the presence and operation of the highway will have on neighboring communities; and (iv) ensure that socioeconomic rehabilitation is provided for the affected population (BO-0033, paragraph 2.33 of the loan proposal).

4.28 **Other contractual conditions:** the bid documents of construction companies and open invitations to submit proposals for supervision of engineering works, as well as the respective contracts for the section financed by the Bank must include an obligation to comply and enforce compliance with: (i) environmental technical specifications; (ii) the procedures established in the Operating Plan of BO-0033 for control and management of the works environment, and to act in accordance with the Resolution of the SNC's Board of Directors.

G. Social equity and poverty

4.29 Although the Project crosses depressed areas whose population is generally part of the low-income social strata, its expected benefits will accrue primarily to merchants, agricultural producers and manufacturers in Santa Cruz and Puerto Suárez. The Project is not directly aimed at alleviating poverty nor do its benefits go mainly to low-income groups. If the objectives of development are achieved, however, these groups should reap a substantial portion of the benefits. For the reasons set out above, this operation does not qualify as a project promoting social equity as set out in the key objectives for the Bank's activities contained in the Report of the Eighth General Replenishment (Document AB-1704). Nor does it qualify as a poverty-reduction project (PTI).

H. Risks

4.30 The benefits of the highway will only materialize if it is completed in its entirety. The main risks identified are:

- a. *Execution and financing scheme:* the participation of a great variety of donors with very different administrative, technical and contracting procedures adds a

level of complexity to the contracting of construction works at a time which the SNC is going through an internal reorganization;

- b. *construction*: Bolivia's experience with complex and high-cost construction works is unsatisfactory. Delays in bidding competitions, changes in the nature of the work, extension of deadlines and cost overruns have been all too common. Changes in bid documents and contracts for works and supervision, and improvement of procedures prior to the beginning of work, and analysis of these changes with the SNC should go a long way toward mitigating this risk; in addition, it will receive the support of the TSG (paragraph 3.13) to facilitate project management.
- c. *counterpart*: the PSC will be responsible for the local counterpart contribution; the Bank's experience is that failure by prefectures to provide this contribution has caused delays in many operations. The PSC will meet its commitment by earmarking transfers for this specific purpose, in amount in excess of its obligation. It has the capacity to meet new obligations if these are established in advance and adjusted to its revenue flows. Moreover, creation of the FAL will mitigate this risk;
- d. *institutional*: the Government of Bolivia has recently initiated a process by which it is restructuring the SNC; completing this task will require a substantial effort from the institution and the political authorities alike. While the SNC consolidates its organization, its ability to act may cause delays in contracting activities. The political commitment of the Government of Bolivia, the social consensus concerning the importance of the corridor, and the presence of the Bank and the World Bank will mitigate this risk. In addition, there is a system of indicators and targets for annual verification of compliance with the commitments made in the ARI, which will make it possible to take corrective measures in a timely manner (paragraphs 1.46 and 3.10);
- e. *fiscal*: the Government of Bolivia will assume financial obligations from the start of construction on the corridor. The capacity of its treasury to provide the necessary contributions is essential for fulfillment of the construction goals and crucial to the success of the operation. The assured financial design of the first phase of the operation does much to mitigate this risk. However, the macroeconomic impact of the corridor project and the highway sector's growing share of public investment during the Program's execution period will cause pressure on the government's remaining investment resources as other sectors become concerned over the level and allocation of scarce investment resources in the public sector; and
- f. *environmental*: the Project presents a high degree of environmental complexity owing to the indirect effects that it will generate. Adequate measures are taken under the *Environmental and Social Protection Project for the Santa Cruz–Puerto Suárez Corridor* (BO-0033) to offset those effect.

BOLIVIA
SANTA CRUZ – PUERTO SUÁREZ CORRIDOR PROJECT (BO-0036)
LOGICAL FRAMEWORK

Objective	Indicators	Means of Verification	Assumptions
economic integration of the various productions sectors of Bolivia, among and with neighboring countries.	<ul style="list-style-type: none"> National and Regional GDP Bilateral trade statistics Brazil-Bolivia 	<ul style="list-style-type: none"> Reports of the Planning Secretariat of Bolivia Instituto Nacional de Estadística. 	<ul style="list-style-type: none"> Satisfactory development of macroeconomic conditions in Bolivia and Brazil.
motorists using the Santa Cruz highway and international freight carriers safer and more economical operating conditions (lower costs and reduced travel times). free motorists using the Santa Cruz highway system and international freight a reliable alternative for transporting passengers and cargo.	<p>Upon completion of the program (within 7 years) the following goals will have been met:</p> <ul style="list-style-type: none"> The cost of operating vehicles in the corridor will be reduced by 80%. Average travel time for heavy vehicles to go end-to end on the corridor will be reduced from 7 days to 20 hours. There will be 10 times more private vehicular traffic, and 12 times as many commercial vehicles on the road. The railway and highway system will be providing complementary services. Accident rates will be less than the average in the national highway system. The financial resources of the CNCV have increased by 20% in 2005 and by 30% in 2006, over 2002 levels. 	<ul style="list-style-type: none"> SNC technical studies based on application of HDM. SNC traffic measurement. Program performance reports. Railway freight records. Reports of the ARI Consultative Committee. 	<ul style="list-style-type: none"> The development of macroeconomic conditions and the transport market satisfactory. The SNC and the Prefecture of Santa Cruz continue to perform proper maintenance of the highway system in their jurisdiction. The SNC's restructuring process continuing with sufficient resources and adequately paid personnel.

Objective	Indicators	Means of Verification	Assumptions
	<ul style="list-style-type: none"> The percentage of execution of external financial resources from loans and grants has increased by 87% in 2004 and 95% in 2006. The percentage of the highway network in good condition has increased to 30% in 2004 and 50% in 2006. 		
<p>anta Cruz-Puerto Suárez corridor is able year-round. The Paraíso–San José has been paved and the other sections stated, and all are receiving adequate maintenance.</p>	<p>1.1 Within 5 years, the program will have paved 125 km of highway.</p> <p>1.2 Within 2 years the program will have rehabilitated 139 km of roadways.</p> <p>1.3 Within 2 years the program will have performed maintenance on 308 km of roadways.</p> <p>1.4 Within 2 years the program will have upgraded and paved 139 km of roadways.</p> <p>1.5 Within 2 years the program will have performed maintenance on 344 km of roadways.</p>	1.1 Reports of the SNC and Supervision.	<p>1.1 Work on the sections financed by EC has been carried out without interruption.</p> <p>1.2 The weight stations for Phase I have been built with financing from the EC.</p> <p>1.3 The PSC has met its obligations with the respective counterpart countries.</p> <p>1.4 The environmental protection projects of Project BO-0033 have been carried out satisfactorily.</p>
Personal strengthening	<p>2.1 The total number of SNC personnel in the administrative track has decreased by 698 in 2001 to 301 in 2003.</p> <p>2.2 Competitively hired personnel remains at 301 starting in 2003.</p> <p>2.3 The percentage of professional personnel hired under the new salary system stands at 70% in 2002 and 100% in 2003.</p>	2.1 Reports of the ARI Consultative Committee.	2.1 The SNC's restructuring process is continuing with sufficient resources to adequately pay personnel.
Cost of compensation to those affected by the W	<p>Phase I</p> <p>US\$1.427 million</p>	1.1 Accounting records for the Program	1.1 No lawsuits have been brought forward to pay compensation.

Objective	Indicators	Means of Verification	Assumptions
<p>ing</p> <p>struction Paraiso–San José. 125 km</p> <p>abilitation of Roboré–El Carmen section. km</p> <p>aintenance El Tinto–San José. 81 km</p> <p>aintenance Roboré–El Carmen. 139 km</p> <p>aintenance El Carmen–Puerto Suárez km</p> <p>ervision</p> <p>cial studies</p> <p>inistration and management (TSG)</p>	<p>US\$66.4 million</p> <p>US\$3.5 million</p> <p>US\$0.3 million</p> <p>US\$0.8 million</p> <p>US\$0.9 million</p> <p>US\$4 million</p> <p>US\$2 million</p> <p>US\$3 million</p>	<p>2.1 Accounting records for the Program</p> <p>2.2 Independent financial auditing</p> <p>2.3 Periodic follow-up meetings on the Program</p>	<p>2.1 The San José–Roboré section is financed by the CAF.</p> <p>2.2 The El Tinto–San José section is financed by the CE.</p> <p>2.3 The finances of the central government and the Prefecture of Santa Cruz have developed satisfactorily and contributions have been provided.</p>

BOLIVIA: Santa Cruz-Puerto Suárez Corridor Project (BO-0036)
Procurement Schedule

cost category	financing (%)			method	prequalification YES/NO	publication		
	TOTAL	IBD	Local counterpart			GNP	S	
						prior YES/NO	half/year	
Paraiso-El Tinto section	66,385	55,763	10,622	ICB	YES	YES	II/2002	
f Roboré-El Carmen section	3,467	2,912	555	ICB	NO	YES	II/2002	
n El Tinto-San José section	288	242	46	LCB	NO	YES	II/2002	
n Roboré-El Carmen section	814	684	130	LCB	NO	YES	II/2002	
n El Carmen-Puerto Suárez section	850	714	136	LCB	NO	YES	II/2002	
services								
	2,000	1,680	320	ICB	YES	YES	II/2003	
works	4,000	3,360	640	ICB	YES	YES	II/2002	
ement	2,297	1,929	368	LCB	NO	YES	II/2002	
TOTAL	80,101	67,284	12,817					

onal competitive bidding
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for proposals

PROPOSED RESOLUTION

BOLIVIA. LOAN /SF-BO TO THE REPUBLICA DE BOLIVIA PROJECT INTEGRATION CORRIDOR SANTA CRUZ-PUERTO SUAREZ, PHASE I

The Board of Executive Directors

RESOLVES:

1. That the President of the Bank, or such representative as he shall designate, is authorized, in the name and on behalf of the Bank, to enter into such contract or contracts as may be necessary with the República de Bolivia, as Borrower, for the purpose of granting it a financing to cooperate in the execution of the Project Integration Corridor Santa Cruz – Puerto Suarez, Phase I. Such financing will be for the amount of up to US\$75.000.000, or its equivalent in other currencies, except that of Bolivia, which are part of the resources of the Bank's Fund for Special Operations, hereinafter "FOE", and will be subject to the "Special Contractual Conditions" and the "Financial Terms and Conditions" of the Executive Summary of the Loan Proposal.

2. This resolution will take effect only when the Board of Executive Directors has approved the reallocation of available FSO resources for 2002 and determined the availability of FSO resources to cover the financing authorized in Paragraph 1 of this resolution.