

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

PANAMA

**PROGRAM FOR THE IMPROVEMENT OF THE PUEBLA-PANAMA
PLAN'S PACIFIC CORRIDOR
(DIVISA-SANTIAGO-EL PAJAL SECTION)**

(PN-0159)

LOAN PROPOSAL

This document was prepared by the project team consisting of: Carlos Trujillo, Project Team Leader; Javier Jiménez (LEG/OPR); Rolando Yon-Siu (COF/CPN); Rodrigo Coloane (COF/CPN); and Luis Hidalgo (consultant). Maria Fernanda Mariel (RE2/FI2) assisted in the production of the document.

CONTENTS

MAP

EXECUTIVE SUMMARY

I.	FRAME OF REFERENCE.....	1
A.	The Puebla-Panama Plan	1
B.	The Pacific integration corridor and the proposed program	2
C.	The road transportation sector in Panama.....	4
1.	The road system and sector institutions	4
2.	Financial situation in the road subsector	5
3.	Road maintenance and sustainability	6
4.	Road safety and traffic	8
D.	Bank experience and coordination with other agencies	10
E.	Consistency with the Bank's country and regional strategy	11
II.	THE PROGRAM	12
A.	Objectives and description.....	12
B.	Program structure	12
1.	Rehabilitation and upgrading of the Divisa-Santiago section.....	12
2.	Rehabilitation and upgrading of the Santiago-El Pajal section.....	13
C.	Cost and financing	13
III.	PROGRAM EXECUTION.....	15
A.	Borrower and executing agency	15
B.	Program execution and administration	15
C.	Procurement of goods and services	16
D.	Execution period and disbursement timetable	17
E.	Follow-up and evaluation	18
1.	Bank supervision	18
2.	Annual reports on road maintenance.....	18
3.	External auditing	18
4.	Final and ex post evaluations.....	19
IV.	FEASIBILITY AND RISKS	20
A.	Technical and economic feasibility	20
B.	Institutional and financial feasibility.....	23
C.	Environmental and social management proposal	24
D.	Benefits and impact on development	28
E.	Risks	28

ANNEXES

Annex II-1	Logical framework
Annex III-1	Procurement plan

BASIC SOCIOECONOMIC DATA

For basic socioeconomic data on Panama, please refer to the following address:

<http://www.iadb.org/RES/index.cfm?fuseaction=externallinks.countrydata>

ABBREVIATIONS

AADT	annual average daily traffic
ANAM	Autoridad Nacional del Medio Ambiente [National Environment Authority]
ATTT	Autoridad de Tránsito y Transporte Terrestre [Traffic and Ground Transportation Authority]
CABEI	Central American Bank for Economic Integration
CAF	Corporación Andina de Fomento [Andean Development Corporation]
CCAD	Comisión Centroamericana de Ambiente y Desarrollo [Central American Environment and Development Commission]
EIA	environmental impact assessment
FFD	Fondo Fiduciario para el Desarrollo [Development Trust Fund]
FONVIAL	Fondo de Mantenimiento Vial [Road Maintenance Fund]
HCM	Highway Capacity Manual
IRR	internal rate of return
MEF	Ministerio de Economía y Finanzas [Ministry of Economic Affairs and Finance]
MINSA	Ministerio de Salud [Ministry of Health]
MOP	Ministerio de Obras Públicas [Ministry of Public Works]
NVP	net present value
PPP	Puebla-Panama Plan
RICAM	Red Internacional de Carreteras Mesoamericanas [Mesoamerican international highway system]
SAVIAL	road administration system
SIECA	Secretaría de Integración Económica Centroamericana [Secretariat of the General Treaty on Central American Economic Integration]
UECP	Unidad Especial Coordinadora de Programas [Special Program Coordination Unit]
UNDP	United Nations Development Programme
USAID	United States Agency for International Development
VHD	vehicle hours of delay

Programa de Mejoramiento Corredor Pacífico del PPP

Tramo Divisa - Santiago - El Pajal

(PN-0159)



Este mapa, preparado por el Banco Interamericano de Desarrollo, no ha sido autorizado por ningún órgano competente y su inclusión en el documento de préstamo tiene por objeto exclusivo indicar el área de influencia del Proyecto que se propone financiar.

ITS/GSV (5/03)



PANAMA

IDB LOANS

APPROVED AS OF MAY 31, 2003

	US\$Thousand	Percent
TOTAL APPROVED	2,014,834	
DISBURSED	1,572,291	78.03 %
UNDISBURSED BALANCE	442,543	21.96 %
CANCELATIONS	398,470	19.77 %
PRINCIPAL COLLECTED	745,525	37.00 %
APPROVED BY FUND		
ORDINARY CAPITAL	1,688,817	83.81 %
FUND FOR SPECIAL OPERATIONS	280,023	13.89 %
OTHER FUNDS	45,994	2.28 %
OUTSTANDING DEBT BALANCE	826,766	
ORDINARY CAPITAL	754,856	91.30 %
FUND FOR SPECIAL OPERATIONS	71,910	8.69 %
OTHER FUNDS	0	0.00 %
APPROVED BY SECTOR		
AGRICULTURE AND FISHERY	205,821	10.21 %
INDUSTRY, TOURISM, SCIENCE AND TECHNOLOGY	74,682	3.70 %
ENERGY	392,727	19.49 %
TRANSPORTATION AND COMMUNICATIONS	435,091	21.59 %
EDUCATION	127,176	6.31 %
HEALTH AND SANITATION	131,987	6.55 %
ENVIRONMENT	103,380	5.13 %
URBAN DEVELOPMENT	67,231	3.33 %
SOCIAL INVESTMENT AND MICROENTERPRISE	88,046	4.36 %
REFORM AND PUBLIC SECTOR MODERNIZATION	354,287	17.58 %
EXPORT FINANCING	0	0.00 %
PREINVESTMENT AND OTHER	34,406	1.70 %

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



Inter-American Development Bank
Regional Operations Support Office
Operational Information Unit

Panama

Tentative Lending Program

2003

Project Number	Project Name	IDB US\$ Millions	Status
PN0159	Improvement Road Integration Corridor PPP	37.0	
PN0143	Multiphase Program of Municipal Development and Strengthening	8.0	
PN0139	Priority Activities Hydrografic Basin Panama Canal	5.0	
PN0144	Urban Poverty Colon	8.0	
Total - A : 4 Projects		58.0	
PN0141	Program for a Regional Territorial Economic Development (PROTIERRA)	18.0	
* PN0154	Colon International Airport	35.0	
* PN0155	Bonyic Hydroelectric Project	10.0	
Total - B : 3 Projects		63.0	
TOTAL 2003 : 7 Projects		121.0	

2004

Project Number	Project Name	IDB US\$ Millions	Status
PN0062	Panama City Sanitation Project	100.0	
Total - A : 1 Projects		100.0	
PN0158	Stabilization of the National System of Innovation	8.0	
PN0150	Rural Eletrification	30.0	
PN0152	Coast Zone Sustainable Management	5.0	
PN0157	Justice Program II	20.0	
Total - B : 4 Projects		63.0	
TOTAL - 2004 : 5 Projects		163.0	
Total Private Sector 2003 - 2004		45.0	
Total Regular Program 2003 - 2004		239.0	

* Private Sector Project



PANAMA

STATUS OF LOANS IN EXECUTION

AS OF MAY 31, 2003

(Amount in US\$ thousands)

APPROVAL PERIOD	NUMBER OF PROYECTS	AMOUNT APPROVED*	AMOUNT DISBURSED	% DISBURSED
<u>REGULAR PROGRAM</u>				
Before 1997	2	53,624	37,140	69.26 %
1997 - 1998	10	413,056	178,712	43.27 %
1999 - 2000	3	67,950	21,647	31.86 %
2001 - 2002	8	145,987	3,381	2.32 %
TOTAL	23	\$680,617	\$240,880	35.39 %

* Net of cancellations. Excludes export financing loans.

**PROGRAM FOR THE IMPROVEMENT OF THE PUEBLA-PANAMA PLAN'S
PACIFIC CORRIDOR(DIVISA-SANTIAGO-EL PAJAL SECTION)**

(PN-0159)

EXECUTIVE SUMMARY

Borrower:	Republic of Panama	
Executing agency:	Ministry of Public Works (MOP)	
Amount and source:	IDB (OC):	US\$37 million
	Local:	<u>US\$10 million</u>
	Total:	US\$47 million
Financial terms and conditions:	Amortization period:	20 years
	Grace period:	4 years
	Disbursement period:	4 years
	Interest rate:	Adjustable
	Inspection and supervision:	1%
	Credit fee:	0.75%
	Currency:	Single Currency Facility, U.S. dollar
Objectives:	<p>The general objective is to promote physical integration and connectivity in the Mesoamerican region, reducing transportation costs, facilitating the movement of passengers and freight, and improving safety on the Divisa-Santiago-El Pajal section of the Puebla-Panama Plan's Pacific integration corridor. This will make for faster and safer communications from the western part of the country to the border with Costa Rica and the nation's capital. The program has the specific objective of rehabilitating and upgrading the Divisa-Santiago-El Pajal section (92 km), by adapting its operating characteristics to those agreed on in the Memorandum of Understanding on the Mesoamerican international highway system (RICAM).</p>	
Description:	<p>The program includes two components: (i) the project to rehabilitate and upgrade the Divisa-Santiago section; and (ii) the project to rehabilitate and upgrade the Santiago-El Pajal section. The Divisa-Santiago section (39 km) will be widened to four lanes, which will involve rehabilitating the two existing lanes, upgrading their specifications, shoulders and drains, and building two additional lanes, three bridges for vehicles and 12 footbridges. The Santiago-El Pajal section (53 km) is located in rolling topography and is extremely deteriorated and lacks shoulders. The section will be repaired by</p>	

replacing the concrete slabs and upgrading specifications, shoulders and drainage.

**The Bank's
country and
sector strategy:**

The proposed program is consistent with the Bank's strategies and policies. In particular, it will contribute to execution of the Puebla-Panama Plan (PPP) which, coupled with other initiatives, forms part of the support the Bank has been providing for a new integrationist concept of the region, with a view to turning the high potential for complementarity among the countries into a reality and improving their competitiveness and that of the region as a whole.

The program is consistent with the Bank's general strategy for supporting Panama, which is organized into the following four priority areas: (i) a frontal attack on poverty and an improvement in equity; (ii) economic reforms to boost competitiveness and growth; (iii) consolidation of sustainable growth; and (iv) institutional reforms to improve governance and transparency. The proposed operation will mainly support an improvement in competitiveness and growth, as part of the current government's program to reactivate the economy.

**Coordination
with other
agencies:**

The Bank has coordinated its activities in the road sector in Panama chiefly with the World Bank and the Andean Development Corporation (CAF) which, together with the IDB, are the largest external lending agencies. The Special Program Coordination Unit (UECP) administers operations being carried out by the three institutions. Also, as part of the PPP highway initiative, coordination meetings are being held that include other multilateral and bilateral organizations in addition to the three lending agencies (see paragraphs 1.26-1.28).

**Environmental
and social
review:**

To ensure the project's environmental feasibility, an environmental and social evaluation of the program was made available to the public on 4 March 2003, following the environmental and social strategy approved by the Bank. The environmental and social management proposal, which forms an integral part of the loan proposal, is summarized in chapter IV, section C.

The environmental and social evaluation of the program concluded that the project to rehabilitate and upgrade the Divisa-Santiago-El Pajal section: (i) does not affect the environment in protected zones and there is no negative impact on vulnerable groups; (ii) there are no critical points for operating the project or risks of natural disasters from earthquakes, landslides, floods or hurricanes; (iii) if the environmental process and regulations are complied with and the mitigation measures and construction specifications are strictly applied, there should be no significant environmental liabilities that are difficult to manage; (iv) the foreseeable environmental impact is moderate and the mitigation measures are inexpensive and easy to

implement; (v) consultations were held with organized society under the PPP, are duly documented, and there has been no criticism of the initiative; and (vi) the public participation process has led to results that provide positive support for the initiative to widen and rehabilitate the Divisa-Santiago-El Pajal section. Environmental impact assessments (EIAs) for each section have to be prepared and approved by the Autoridad Nacional del Medio Ambiente [National Environment Authority] ANAM before any of the works can begin.

The legal and institutional framework is adequate and is using funds from the operation under way to surmount some minor problems (involving personnel and equipment) in the Environment Section of the Ministry of Public Works, so that it will have no difficulties in monitoring and supervising implementation of the mitigation measures for the program, in effective coordination with other institutions such as the National Environment Authority and the Ministry of Health, and other directorates and departments of the Ministry of Public Works.

Benefits:

The program will reduce transportation costs and facilitate the movement of passengers and freight along the Pacific integration corridor of the PPP, specifically the Divisa-Santiago-El Pajal section to be rehabilitated under the program. Some of the targets are: vehicle operating costs in the corridor will be reduced by 17.6 percent for the Divisa-Santiago section and 19.8 percent for the Santiago-El Pajal section in the first year the program works are placed in service; the average travel time for heavy vehicles will be reduced on this section from 1:45 hours to 1:10 hours and from 1:25 hours to 1:05 hours for light vehicles in that same year; travel by private and commercial vehicles will increase by 30 percent and 23 percent, respectively, during the first five years of service; and annual accident rates will fall by 2 percent during the first five years in the provinces of Herrera and Veraguas.

Risks:

The proposed operation has no substantial risks. The government gives it top priority and the 2003 national budget includes the necessary counterpart funds. The risk that the project will not be sustainable owing to lack of maintenance is mitigated by the proposed contracting terms and conditions which will ensure maintenance for five years and by the steps the government has been taking to establish more efficient maintenance management mechanisms, such as the highway administration system (SAVIAL) and the highway maintenance fund (FONVIAL). The Ministry of Public Works has built up experience in executing programs and projects with different multilateral development agencies and has been strengthened institutionally thanks to technical assistance from the IDB and the World Bank, which will permit suitable management of the new program. The proposed works do not have any significant

environmental impact, do not call for resettlement, and the rights-of-way have been obtained. The government is making satisfactory progress in contracting the rehabilitation and upgrading of the other sections on the Pacific corridor using resources from the Development Trust Fund (FFD), which will permit the corridor to be fully rehabilitated, with the ensuing benefits.

Special contractual clauses:

A. Conditions prior to the first disbursement

If the borrower deems it necessary and advisable for this project to be executed in the context of the government's program to promote priority investments, in which the United Nations Development Programme (UNDP) participates for purposes of administration, it will need to present evidence to the Bank that the borrower and UNDP have signed an agreement, which requires the Bank's prior nonobjection and will establish the following, among other aspects: the way in which the financing and local counterpart resources—including financial returns generated—will be managed; the establishment of an internal control and audit system for program resources; observance of the Bank's policies and procedures for the procurement of goods, related services, and consulting services (see paragraph 3.6).

B. Special conditions during execution

To guarantee proper maintenance of the works included in component 2 of the program, Santiago-Pajal section, the borrower undertakes to contract out the maintenance of the three segments of the Santiago-Pajal section, according to the terms previously agreed upon with the Bank, no later than one month prior to the completion of the first of the rehabilitation contracts for that section (see paragraph 4.34).

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), nor does it qualify as a poverty-targeted investment (PTI) (see paragraph 4.30).

Exceptions to Bank policy:

None.

Procurement:

The procurement of goods and related services, the construction of works and the contracting of consulting services will follow the Bank's procurement policy. International competitive bidding will be required for goods in the amount of US\$350,000 and over and for works in the amount of US\$4 million and over. International competitive bidding will be required for consulting contracts over US\$200,000.

I. FRAME OF REFERENCE

- 1.1 Under the framework of Puebla-Panama Plan's Mesoamerican highway integration initiative, the government of Panama has asked the Bank for financing to complete the rehabilitation and improvement of the Pacific corridor that links Panama City to the border with Costa Rica at Paso Canoas, which extends for 497 km. The present operation would finance the rehabilitation and upgrading of the Divisa-Santiago-El Pajal section (92 km).

A. The Puebla-Panama Plan

- 1.2 The purpose of the PPP is to boost the human and ecological wealth of the Mesoamerican region, in a context of sustainable development. The Puebla-Panama Plan (PPP) proposes a strategy that supports Central American integration efforts and strengthens them by including south-southeastern Mexico in the concept of Mesoamerica. The PPP's strategy includes eight initiatives and their respective projects.¹ The Mesoamerican highway integration initiative is intended to enhance the internal and external connectivity of the region's economies by improving road corridors and harmonizing transportation legislation and regulations, with a view to reducing transportation costs, thus boosting the region's competitiveness, surmounting the limitations of its infrastructure and improving market access, in a context of environmental and social sustainability.
- 1.3 Based on the work of the technical committee of the PPP's highway integration initiative,² with support and participation by the Bank, a Memorandum of Understanding on the Mesoamerican international highway system (RICAM) was prepared, which establishes a common legal, institutional, regulatory and operational framework to carry out the highway integration initiative and includes a definition of the highway corridors in the network. The memorandum was signed by the Ministers of Transportation and Public Works and the presidential commissioners of the PPP on 28 June 2002 in Merida, Mexico. The memorandum includes the layout of the priority corridors for Mesoamerican integration, considering infrastructure needs balanced against the fiscal situation; general rules and priority action plans for sustainable development of the system; the principles for harmonizing transportation regulations and technical standards; and guidelines for road maintenance, disaster prevention and participation by civil society.

¹ Sustainable development, human development, natural disaster prevention and mitigation, tourism promotion, trade facilitation, highway integration, electric interconnection, and integration of telecommunications services.

² To coordinate the actions necessary to promote and execute the highway integration initiative, the ministers of transportation and public works established a technical commission for the initiative composed of government officials appointed by them. This commission receives support from the IDB, the Central American Bank for Economic Integration (CABEI), the Andean Development Corporation (CAF) and the Permanent Secretariat of the General Treaty on Central American Economic Integration (SIECA).

B. The Pacific integration corridor and the proposed program

- 1.4 The highways in RICAM are 8,977 km long, including 4,904 km of main integration corridors and 4,073 km of feeder roads and complementary regional connections. The main corridors are the ***Pacific corridor***, 3,159 km long, which joins Panama City to Puebla in Mexico, following the Pacific coast, and the ***Atlantic corridor***, 1,745 km long, in the northern part of Mesoamerica, linking Coatzacoalcos in Mexico to the future port of Cutuco in El Salvador. The Pacific corridor is the most efficient regional integration route for the Mesoamerican region, and reduces the distance between Puebla and Panama by about 300 km, when compared to the corridor that links the capitals of the Central American countries. The corridor (except for the 200 km closest to Puebla) runs over flat and rolling topography along the Pacific coast, at less than 400 meters above sea level.
- 1.5 The PPP's highway integration initiative has proposed to build, rehabilitate and upgrade the ***Pacific corridor***, based on international standards for the type of pavement, road width, shoulders, horizontal and vertical signage, safety features and services for users, all in the context of environmental and social sustainability consistent with the principles of the sustainable development initiative. About 1,242 km of this 3,159 km corridor are in satisfactory condition. Close to US\$1 billion are needed to finance the works required on the other 1,917 km. Of that sum, the governments and multilateral and bilateral agencies have ensured financing for US\$797 million, and many of the works are under way. The countries are discussing financing for an additional US\$203 million with multilateral and bilateral agencies that have expressed an interest.
- 1.6 This initiative also includes two additional projects to address problems that are unrelated to highway investments and maintenance but which affect international flows of freight and passenger transportation in the RICAM corridors. The first project is modernization of customs and border-crossing points, whose objective is to computerize procedures for international transit of goods which, under a master declaration containing all the data on merchandise, vehicles and passengers required by the agencies responsible for border control (customs, health, transport, immigration, etc.) and a common operating procedure for the borders of the eight countries, will reduce formalities and processing times and therefore the costs of commercial operations throughout the Mesoamerican region. The IDB approved technical assistance of US\$3 million from the MIF for this project on 25 September 2002. The project will be executed by SIECA. The second project is to harmonize regulations and technical standards to provide Mesoamerica with an integrated, efficient and competitive transportation sector, by coordinating domestic legislation and regulations affecting ground transport of passengers and freight, and standardizing rules and technical specifications for the construction and operation of regional highways. The idea is to harmonize and consolidate Central American standards with those of Belize, Mexico and Panama, to provide uniform regional

standards. The United States Agency for International Development (USAID) and other bilateral donors have expressed interest in supporting this process.

- 1.7 In Panama, RICAM covers 750 km, with 497 km in the Pacific corridor between Panama City and the border with Costa Rica at Paso Canoas and 253 km of feeder roads and connections between Chiriqui and Sixaola in Costa Rica and the freeway to Colon. The Panamanian government has given priority to the rehabilitation and upgrading of the Pacific corridor, which will cost an estimated US\$322 million. Table I-1 summarizes requirements:

Table I-1 Puebla-Panama Pacific integration corridor Requirements for rehabilitating and upgrading the Panama section				
	From	To	Km	US\$ million
PAC-51	Paso Canoas (PN)	Concepción	27	30
PAC-52	Concepción	David	28	0
PAC-53-A	David	El Pajal	129	50
PAC-53-B	El Pajal	Santiago	53	14
PAC-54	Santiago	Divisa	39	39
PAC-55	Divisa	Aguadulce	21	22
PAC-56	Aguadulce	La Chorrera	156	0
PAC-57	Chorrera	Arraiján	21	0
PAC-58	Arraiján	New bridge over canal	11	36
PAC-59	New bridge over canal	New bridge over canal	1	95
PAC-60	New bridge over canal	Panama City	11	36
			497	322

Note: The sections for which no requirement is shown have been recently rehabilitated or upgraded with funds from the Panamanian government, the IDB and the IBRD. The second bridge over the canal and its access roads have been contracted and construction has begun.

- 1.8 The sections from Arraiján to Aguadulce (177 km) and from Concepción to David (28 km) have already been rehabilitated and expanded to four lanes. The Aguadulce to Divisa section (21 km) is being improved and expanded to four lanes with support from loan 1116/OC-PN. An estimated US\$133 million will be required to upgrade and rehabilitate the section between Divisa and Paso Canoas (277 km), including bridges and critical points that require special works.

- 1.9 In May 2002, the Legislative Assembly passed Law 20, authorizing an investment of US\$200 million from the Development Trust Fund (FFD)³ in priority works for economic recovery. Of that sum, US\$90 million was earmarked to finance rehabilitation of the Pacific corridor from Divisa to Paso Canoas. The government has asked the Bank to consider the proposed lending operation, which complements the resources from the FFD, and it was agreed in principle that the prospective operation would include the rehabilitation and upgrading of the Divisa-Santiago-El Pajal section (92 km) with direct costs initially estimated at US\$53 million.
- 1.10 The Divisa-Santiago and Santiago-El Pajal sections were built from 1958 to 1961, as part of the Pan-American Highway, as a two-lane road, each lane being 3.05 meters wide, with a wearing course of individual concrete slabs and no shoulders. The Divisa-Santiago section is located on flat and rolling land and the Santiago-El Pajal section on rolling land before the start of the mountains. As for the wearing course, the MOP has tried to maintain a program to replace individual slabs with structural failures and in some sections has laid asphalt over the existing slabs to improve the serviceability of the road. In both sections, the road is stable with very few deformations but, owing to its age, the surface has deteriorated badly with transversal cracks in the slabs, and the asphalt shows signs of wear. Because of the lack of shoulders, culverts and drains, weeds have invaded the pavement and in some areas, the road floods. These problems, coupled with poor horizontal and vertical signage, the narrowness of the existing lanes and the absence of shoulders, mean that the road is easily saturated with heavy traffic and is very unsafe. For these reasons and given that the useful life of these sections of the road has reached its end, it is a priority to rehabilitate and upgrade them.

C. The road transportation sector in Panama

1. The road system and sector institutions

- 1.11 Because of its geographic location and the Panama Canal, the road system is vitally important for Panama. The backbone is the Pacific corridor (Pan-American Highway) to the border with Costa Rica, which connects to the main infrastructure and services in the multimodal transport system that is concentrated in the inter-oceanic corridor, i.e. the canal, the modern ports of Cristóbal and Manzanillo on the Atlantic and Balboa on the Pacific, the new railway, the inter-oceanic highway between Panama City and Colon, the Tocumen airport and the recently concessioned airport of Colon.
- 1.12 Panama has a national system with 11,717 km of highways and roads, of which 4,615 km (39 percent) form part of the main and paved secondary roads system,

³ The Development Trust Fund was created in 1995 with income from the sale of shares in public companies or from privatizations, to be used for permanent and productive investment programs in social development.

that carries 96 percent of the country's vehicular traffic. There are 7,102 km of unpaved gravel or dirt rural roads which make up the remaining 61 percent of the system. They carry just 4 percent of the country's traffic.

- 1.13 Law 5 on public works concessions, which was passed in 1998, established a system of administrative concessions for the execution of public works, applicable to the construction, upgrading, maintenance, conservation, renewal and operation of highways, freeways and other works of public interest. The intent was to promote private investment in return for fees and tolls during the concession. Under the law, the north and south corridors in Panama City and the freeway to Colon, representing a private investment of US\$550 million, were granted in concession as toll roads. To date, this mechanism has only been used for new projects, in cases where there are alternative roads. The results have not been completely satisfactory (the Colon concession has serious financial problems in making progress and there are still some disputes to be settled in the others). The government has not considered the concession system for the present project since, given the traffic volumes, the investment would not be feasible in view of the need for a toll-free alternative.
- 1.14 The responsibility for planning, construction, environmental control and maintenance of urban and interurban roads on the national level is the responsibility of the Ministry of Public Works (MOP). The ground transportation subsector was reorganized in July 1999, with the creation of the Traffic and Ground Transport Authority (ATTT), as an independent institution responsible for controlling traffic flows and for enforcing the laws and regulations governing transportation and control of weights and dimensions, in accordance with transportation policies. The ATTT took over the regulatory and supervisory functions that had previously been exercised by the Ministry of the Interior and Justice and the MOP.
- 1.15 The program to strengthen and modernize the MOP's institutions, which is supported by the IDB and the World Bank, is being executed satisfactorily and one of its main objectives is to gradually transfer design, construction and maintenance activities to the private sector, which has been successful. Today, the ministry is smaller and more efficient.

2. Financial situation in the road subsector

- 1.16 Table I-2 presents income and spending in the road subsector in recent years. In the period 1999-2002, allocations for the MOP's national system were US\$448.4 million, most of which were used for road rehabilitation and improvement, including operations financed by the IDB, the World Bank and the CAF. Over the period, annual spending declined significantly, particularly in 2002, reflecting the government's program to curb public spending.

- 1.17 Table I-2 also shows the projected evolution of spending and financing in the sector for the period 2003-2006. The spending projections for the period are US\$681.2 million, including a large increase in new construction as a result of the works on the second bridge over the Panama Canal, and its access roads. As for income, in addition to the general budget assigned to the MOP, the government will make a special contribution of about US\$167 million for the bridge and its access roads, and the Development Trust Fund (FFD) will contribute US\$90 million for rehabilitation of the Divisa-Paso Canoas section in the Pacific corridor.

Table I-2 Costs and financing of the road sector US\$ millions								
	Period 1999-2002				Period 2003-2006			
	1999	2000	2001	2002	2003	2004	2005	2006
Construction ^{1/}	17.3	22.2	3.0	22.3	50.5	88.0	50.0	30.0
Rehabilitation and upgrading	89.7	59.0	58.3	9.5	80.7	40.0	67.0	85.0
Maintenance	14.7	16.6	13.9	14.7	17.3	23.8	30.0	30.0
Vehicle crossings, drainage, etc.	4.8	22.7	35.0	9.2	15.7	8.2	13.0	13.0
Operations	10.0	8.5	8.2	8.9	8.0	9.0	10.0	12.0
Total spending	136.5	129.0	118.4	64.5	172.2	169.0	170.0	170.0
IDB	8.4	27.9	35.1	2.0	15.6	25.9	19.0	4.0
IBRD	7.8	2.8	2.2	2.9	1.1	0.0	0.0	0.0
CAF, UK & others	10.2	19.5	12.2	0.5	11.7	0.0	0.0	0.0
To be determined	0.0	0.0	0.0	0.0	0.0	6.0	6.0	35.0
External subtotal	26.4	50.2	49.5	5.4	28.4	31.9	25.0	39.0
Government	110.1	78.8	68.0	58.9	142.9	136.6	144.5	130.5
Appreciation	0.0	0.0	0.9	0.2	0.9	0.5	0.5	0.5
Internal subtotal	110.1	78.8	68.9	59.1	143.8	137.1	145.0	131.0
Total sources	136.5	129.0	118.4	64.5	172.2	169.0	170.0	170.0

^{1/} Includes funds to build the second bridge over the Panama Canal and its access roads and FFD funding for the Pacific corridor.

3. Road maintenance and sustainability

- 1.18 In 1993, the IDB and the World Bank jointly prepared a program for road rehabilitation and administration, of which one of the objectives was to improve the coverage, efficiency and effectiveness of road maintenance and to establish financing plans that would ensure self-sustainable maintenance and rational use of the human and material resources earmarked for those activities. In 1998, the Bank approved a second operation, the objectives of which included improving the coverage and efficiency of maintenance.

- 1.19 In the context of macroeconomic adjustment in recent years and despite the fact that the government has had to make sizeable cuts in its spending on roads (Table I-2), it has attempted to preserve most of the funding assigned to maintenance. As a result of this effort and the investments made in rehabilitation, SAVIAL's inventory for 2002 indicates that 67 percent of the main network and the paved secondary roads that carry 96 percent of the country's vehicular traffic is in good condition, 12 percent is in average condition and 21 percent is in poor condition. Over 80 percent of the main network is in good condition.
- 1.20 Table I-3 presents maintenance of the road system in recent years and spending on this category. Although the MOP has not fully achieved the goals for maintenance of the Bank operations mentioned above, the improvements in management have allowed reasonable levels of maintenance to be achieved considering the funds available which, as has been mentioned, were far below the projections for total spending on the system envisaged in those operations. One of the alternatives turned to by the government since 1998 to ensure maintenance is that its contracts for works construction also include maintenance for five years (currently affecting more than 300 km of reconstructed highways).

Table I-3 Road maintenance					
Source	1994	1999	2000	2001	2002
Funds (US\$ millions)					
Total maintenance */	13.5	26.9	26.9	20.1	16.0
% of total spending		20%	21%	17%	25%
System maintained (km)					
Interurban	2,250	3,826	3,993	2,283	2,503
Urban	1,300	1,814	1,960	1,653	1,233
Total	3,550	4,640	5,953	3,936	3,736

*/ Includes, in addition to direct budget allocations for maintenance, other investments made in maintenance with private companies under design-build-maintain contracts.

- 1.21 In recent years, the government has made considerable progress in reforms to achieve sustainable road maintenance. Significant progress has been made in implementing the road administration system (SAVIAL). The consulting firm Technology and Management Ltd. (TNM) of Israel, under a contract financed by the World Bank, has updated the inventory and data on the condition of the interurban system and traffic estimates and developed SAVIAL. The consulting firm has completed its work by training MOP personnel, so that the system can be fully transferred. The system provides the MOP with a tool to support planning by prioritizing investments in existing roads for maintenance, rehabilitation and construction, optimizing available resources.

- 1.22 The MOP has also made progress with proposals to set up a road maintenance fund (FONVIAL-PANAMA) based on successful experiences in other countries of the region. To that end, it has prepared preliminary legislation and held different meetings last year with users, authorities, business associations, legislators and other stakeholders to build the necessary consensus for its passage. Having a mechanism such as FONVIAL-PANAMA would confer transparency and accountability on road conservation, including decision-making by public and private institutions, users, shipping companies and members of civil society, who are supposed to keep the public permanently abreast of the fund's investments, returns and productivity. It would also spur private sector participation, mainly by microentrepreneurs, in performing and supervising routine maintenance involving patching, clearing, and culvert and drain cleaning on specific sections of highway. Having an instrument such as FONVIAL-PANAMA, with funds directly assigned, would minimize the future impact on maintenance of fluctuations in government spending. The authorities have made progress in preparing the proposal for a sustainable mechanism (FONVIAL-PANAMA) and are studying the best timing for its presentation to the Legislative Assembly. The Bank has made this matter a priority in its discussions with the new administration, as part of the policy dialogue.

4. Road safety and traffic

- 1.23 Panama has made considerable progress in road safety and accident reduction in recent years, through the efforts of the ATTT and the Traffic Operations Division of the National Police Force. With support from the World Bank, an accident information system (SIA) designed for the ATTT was developed and implemented, as part of the study on road safety, traffic and identification of dangerous sites, conducted in 1998. The SIA consists of automated processing of information on accidents, identification of critical sites and production of thematic maps of accidents and their characteristics. With respect to road safety campaigns, the foundations have been built for a civic education program in the printed press and on radio and television, which is being carried out by the authorities. A methodology to evaluate critical sites, measures to reduce the number and severity of accidents and an analysis of the existing signage system and its different safety features was prepared. Weight and size control, which was previously done by the National Ground Transportation Directorate of the MOP, was transferred to the ATTT after its creation in 1999. The ATTT has been operating the seven strategically located stations, which were financed with the proceeds of loan 769/OC-PN and have suitable, modern equipment; in particular the two largest stations, in La Chorrera and Divisa, which have electronic sensors and registers to ensure a stricter control of weight and size, with little human intervention. In 1999, the Traffic Regulations were updated, raising the fines imposed on violators. Funds from the World Bank loan were used to conduct highway safety campaigns, and vehicles, radar, motorcycles and first aid equipment have been procured for the traffic police.

- 1.24 Table I-4 gives the statistics on traffic accidents, which show a significant reduction in the last three years thanks to the efforts of the road safety programs. Accidents involving vehicle rollovers have increased, however, on account of the road improvements, particularly on the Pan-American highway, which have allowed vehicles to travel at higher speeds. The authorities are aware of this problem and have taken steps to address it, including education campaigns and traffic checks for speed and alcohol use, particularly on holidays and vacation periods. The second part of Table I-4 gives accident rates measured with respect to the population for 2001.

Table I-4			
Traffic accident statistics			
	2000	2001	2002
Collision	30,778	26,299	24,700
Knock down	1,060	963	732
Rollover	735	772	852
Leaving the road	656	506	303
Crash	1,861	1,488	1,562
Other	55	78	85
Total	35,145	30,106	28,234

Accident Rate ^{1/}			
	National	Herrera	Veraguas
Collision	907.1	357.2	292.5
Knock down	33.2	62.5	23.5
Rollover	26.6	39.0	31.7
Leaving the road	17.5	10.7	26.2
Crash	51.3	57.6	46.1
Other	2.7	15.6	2.3
Total	1,038.5	542.6	422.3

^{1/} Accidents per 100,000 inhabitants

- 1.25 As for the program works, the road rehabilitation and widening will result in greater safety for the heavier traffic on the Divisa-Santiago section, thanks to its four lanes, the median to avoid head-on collisions, 12 pedestrian crosswalks, an overhead vehicle crossing at a dangerous intersection in the City of Santiago, 25 level intersections at access streets, turning facilities and pull-ins for busses. During the works on the two sections and, in particular, during the rainy season, the contractor will be required to ensure public safety in the works area, protecting people from accidents caused by its operations and keeping the existing road and detours open,

including temporary structures, even if the rest of the operations have been suspended. At the approaches to Santiago and in the urban area, the aforementioned road safety details are focused on a 7-km stretch. In the urban area itself, the typical section consists of a 3.60-meter median protected with curbs and central lighting all along; each side of the road will have a 70-cm grassy buffer zone and a 1.20-meter-wide sidewalk, 20 cm above the level of the road. In addition, all the traffic safety measures identified by the ATTT for urban areas, including speed bumps, signs, etc., will apply.

D. Bank experience and coordination with other agencies

- 1.26 The proposed program will provide continuity for the support that the Bank has been providing for Panama under the road rehabilitation and administration programs approved in 1993 and 1998 (loans 769/OC-PN and 1116/OC-PN, respectively), to improve road conditions and safety over the medium term and help in the gradual implementation of reforms in the ground transportation subsector. The first of these loans was fully executed and the program's objectives were achieved, including sector reform with the creation of the ATTT. The second loan,⁴ which was mainly intended for the rehabilitation and construction of feeder roads, is making satisfactory progress. Almost 100 percent of the funds have been committed and 60 percent of the loan proceeds have been disbursed. The project team's evaluation of loan 1116/OC-PN and the project performance monitoring report (PPMR) find that performance indicators are satisfactory and it is highly probable that the program's development objectives will be achieved. However, the PPMR rates the institutional strengthening component as unsatisfactory, since the proposed goal of establishing a highway fund was not achieved. However the government has made considerable progress in this area, as described earlier.
- 1.27 The World Bank cofinanced the operation carried out under IDB loan 769/OC-PN approved in 1993, through World Bank loan 3686-PAN for US\$60 million. The operation is currently 90 percent complete, with equally satisfactory results in outputs and execution. The MOP is also carrying out a road and interchange improvement program in the provinces of Panama and Colon for US\$60 million, financed by the CAF, which is 60 percent complete.
- 1.28 The IDB has coordinated its activities in the road sector in Panama with the World Bank and the CAF which, together with the IDB, are the largest external lending agencies. As part of the PPP highway initiative, coordination meetings have been held that include other multilateral and bilateral organizations in addition to the three lending agencies. There is a great deal of interest in helping to finance the

⁴ Although loan 1116/OC-PN was intended to be executed in two stages, only the first contract for US\$85 million was signed (26 October 1998). On account of borrowing caps, the Government of Panama asked the Bank to cancel the second contract for US\$71 million, which was to have been signed in the first quarter of 1999.

sector, but any additional operation would be limited by the debt caps recently approved by the Legislative Assembly.

E. Consistency with the Bank's country and regional strategy

- 1.29 The proposed program is consistent with the Bank's strategies and policies. In particular, it will contribute to execution of the PPP which, coupled with other similar initiatives, forms part of the support the Bank has been providing for a new integrationist concept of the region, with a view to turning the high potential for complementarity among the countries into a reality and improving their competitiveness and that of the region as a whole.
- 1.30 The program is consistent with the Bank's general strategy for supporting Panama, which is organized into the following four priority areas: (i) a frontal attack on poverty and an improvement in equity; (ii) economic reforms to boost competitiveness and growth; (iii) consolidation of sustainable growth; and (iv) institutional reforms to improve governance and transparency. The proposed operation will mainly support an improvement in competitiveness and growth, as part of the current government's program to reactivate the economy.

II. THE PROGRAM

A. Objectives and description

- 2.1 The general objective is to promote physical integration and connectivity in the Mesoamerican region, reducing transportation costs, facilitating the movement of passengers and freight, and improving safety on the Divisa-Santiago-El Pajal section of the Puebla-Panama Plan's Pacific integration corridor. This will make for faster and safer communications from the western part of the country to the border with Costa Rica and the nation's capital. The program has the specific objective of rehabilitating and upgrading the Divisa-Santiago-El Pajal section (92 km), by adapting its operating characteristics to those agreed on in the Memorandum of Understanding on the Mesoamerican international highway system (RICAM).

B. Program structure

- 2.2 The program includes two components: (i) the project to rehabilitate and upgrade the Divisa-Santiago section; and (ii) the project to rehabilitate and upgrade the Santiago-El Pajal section, which are described below. A preliminary summary of the program's objectives and goals is presented in the logical framework for the operation (Annex II-1), which has been prepared jointly with the executing agency and in consultation with other stakeholders.
- 2.3 The proposed program will reduce the costs of transportation and facilitate movements of passengers and freight along the Pacific integration corridor of the PPP, specifically the Divisa-Santiago-El Pajal section to be rehabilitated under the program. The goals include: (i) in the first year the works are placed in service, vehicle operating costs will fall by an average of 17.6 percent on the Divisa-Santiago section, from US\$0.28 to US\$0.23 per vehicle/km and by 19.8 percent on the Santiago-El Pajal section, from US\$0.37 to US\$0.30 per vehicle/km; (ii) in the first year the works are placed in service, average travel time will fall by 33 percent for heavy vehicles, from 1:45 hours to 1:10 hours, and by 23.5 percent for light vehicles, from 1:25 hours to 1:05 hours; (iii) private and commercial vehicle traffic will increase by 30 percent and 23 percent, respectively, during the first five years of service; and (iv) annual per capita accident rates will be reduced during the first five years by 2 percent a year in the provinces of Herrera and Veraguas, compared with the baseline values for 2001 given in the logical framework.

1. Rehabilitation and upgrading of the Divisa-Santiago section

- 2.4 For the Divisa-Santiago section (39 km), the project will include the replacement of concrete slabs and sealing the joints, sealing crosswise and lengthwise cracks and laying a final asphalt surface on the existing lanes, which will be widened from 3.05 m to 3.60 m per lane. Two additional lanes will be built of concrete slabs

250 mm thick, with each lane being 3.60 m wide. Outside shoulders, 2.50 m wide, and median shoulders, 1 m wide, will also be built. The rehabilitated and new lanes will be separated by a median strip 3.65 m wide. Twelve footbridges, two vehicular bridges parallel to the existing bridges and a third vehicular bridge spanning the highway at Santiago will be built and the two existing bridges will be repaired.

- 2.5 The works also include drainage, horizontal and vertical signage and road safety devices where necessary, particularly in urban zones. Embankments will be shored up as a preventive measure and special precautions will be taken in landslide zones. Environmental mitigation measures will include rehabilitating the quarry sites by leveling the sites and planting trees. The project to expand this section to four lanes ends at the exit from Santiago at the crossroad to El Uvito, where the road narrows to two lanes to link up with the Santiago-El Pajal section. The rights-of-way have been obtained for the work, which will be built within 24 months after the date on which the MOP gives the order to proceed.

2. Rehabilitation and upgrading of the Santiago-El Pajal section

- 2.6 On the Santiago-El Pajal section, the project includes the replacement of concrete slabs and sealing the joints, sealing crosswise and lengthwise cracks on the existing lanes, which will be widened from 3.05 m to 3.60 m per lane. Outside shoulders, 2.50 m wide, and three new footbridges will also be built. Maintenance will be performed on the four existing vehicular bridges.
- 2.7 The works also include drainage, horizontal and vertical signage and road safety devices where necessary, particularly in urban zones. Embankments will be shored up as a preventive measure and special precautions will be taken in zones prone to landslides. Environmental mitigation measures will include rehabilitation of the quarry sites by leveling the sites and planting trees. This section will be subdivided into three segments, which will be built within 12 months after the MOP gives the order to proceed.

C. Cost and financing

- 2.8 Table II-1 presents the total cost of the program and the proposed financing. The estimated disbursement period is four years. The Bank loan will be US\$37 million (78.7 percent of the cost), and the counterpart of US\$10 million (21.3 percent of the cost) will be provided as follows: US\$5.2 million from the FFD, with an item already included in the budget passed by the Legislative Assembly for 2003, and US\$4.8 million, including the financial costs, to be covered out of the national budget.

Table II-1 Program to improve the PPP Pacific corridor (Divisa-Santiago-El Pajal section) Cost and financing (US\$ millions)					
Category	IDB	Local Counterpart		Total ^{2/}	% IDB
		FFD ^{1/}	Budget		
1. Divisa-Santiago section ^{2/}	25.39	3.80	0.00	29.19	87%
1.1 Rehabilitation and upgrading	23.73	3.55	0.00	27.28	87%
1.2 Supervision & inspection works	1.66	0.25	0.00	1.91	87%
2. Santiago-El Pajal section ^{2/}	7.69	1.15	0.00	8.84	87%
2.1 Rehabilitation and upgrading	7.19	1.07	0.00	8.26	87%
2.2 Supervision & inspection works	0.50	0.08	0.00	0.58	87%
3. Administrative support	0.45	0.00	0.00	0.45	100%
3.1 Support for the UECP	0.20	0.00	0.00	0.20	100%
3.2 Support for the Environment Section	0.12	0.00	0.00	0.12	100%
3.3 Financial and environmental auditing	0.13	0.00	0.00	0.13	100%
4. Unallocated	3.10	0.25	0.00	3.35	92%
4.1 Contingencies	3.10	0.25	0.00	3.35	92%
5. Financial costs	0.37	0.00	4.80	5.17	7%
5.1 Interest	0.00	0.00	4.45	4.45	0%
5.2 Credit fee	0.00	0.00	0.35	0.35	0%
5.3 Inspection & supervision	0.37	0.00	0.00	0.37	100%
Total program	37.00	5.20	4.80	47.00	78.7%
	78.7%	11.1%	10.2%		

^{1/} Local contribution from the Trust Fund for Development.

^{2/} Does not include costs related to work maintenance activities for the five years following completion (see paragraph 2.9).

- 2.9 In the case of the Divisa-Santiago section, the call for bids includes—as part of the design, construction, and maintenance contract (see paragraph 3.6)—work maintenance activities for the five years following completion. For the Santiago-El Pajal section, it has been agreed that such activities will be put out to bid in a separate maintenance contract through a competitive procedure (see paragraph 4.34). The costs of maintenance activities will be part of the MOP budget for the respective five years, but are not considered part of the program cost since the activities will be carried out after the execution stage is completed. They are therefore not part of the local counterpart and will not be considered for the *pari passu* of disbursements.

III. PROGRAM EXECUTION

A. Borrower and executing agency

- 3.1 The borrower will be the Republic of Panama and the executing agency will be the Ministry of Public Works (MOP), through the Unidad Especial Coordinadora de Programas [Special Program Coordination Unit] (UECP).

B. Program execution and administration

- 3.2 The UECP has been satisfactorily executing projects financed by the Bank and other multilateral institutions. It forms part of the MOP's organizational structure, has trained staff and an efficient organization for physical and financial control of its projects and, like the other key sections of the MOP, has been equipped and institutionally strengthened with the support of different IDB, World Bank and CAF programs. The UECP has the capacity to fully administer the program, keep the accounts and present the necessary reports. As for financial administration, since 2002, the UECP has had new software to systematize accounting, budgeting and contract control processes and to generate internal reports and train users. At present, the UECP is one of the few executing agencies in the country that is authorized for ex post reviews of disbursements.
- 3.3 Given the funds available in the different programs in execution, no new components have been included for institutional strengthening of the MOP. Some minor support for the administration of the Bank's program has been included for the UECP and the Sección Ambiental [Environment Section] (SA) of the MOP, which will be made available in the final two years of the program after the other operations have been completed. This funds will permit the UECP and the Environment Section to keep their staff trained and up to date, complete their equipment, contract consulting services to solve the specific problems that often crop up in operations of this kind and, in general, to cover the needs of program administration.
- 3.4 For program administration, the UECP has prepared a detailed action plan to execute the program, including the planned organization, the support to be provided by the different line units of the MOP and the actions to be carried out and has appointed a program coordinator. The coordinator will be responsible for coordinating the actions of the different sections of the MOP involved in execution.
- 3.5 The bid documents for both sections of the highway have been processed by the MOP, following the procedures established for loan 1116/OC-PN as part of the program to promote execution of the priority investment budget of public sector institutions, which the Ministry of Economic Affairs and Finance (MEF) has been carrying out since 1995. Considering that the bids have been processed as part of

the aforementioned MEF program, which is supported by the United Nations Development Programme (UNDP), the authorities are considering the benefits of having the UNDP participate in the proposed operation. It has been agreed that if the authorities deem it advisable for the present program to be executed as part of the MEF program, the borrower and the UNDP will need to sign an agreement (substantive revision) satisfactory to the Bank to incorporate the resources of the new Bank operation into the MEF program.

- 3.6 To contract the works to improve and widen the Divisa-Santiago section, the type of contract known as a design-build-maintain contract will be continued, as agreed with the government when operation 1116/OC-PN was approved, and which is being used for the Aguadulce-Divisa section of the highway (20 km) in the same corridor, just before the section proposed for the present operation. Under contracts of this kind, which have been successfully used by the government, the winning bidder, based on typical sections and aggregate quantities of work, also takes responsibility for conducting the final studies and detailed designs of the works, and for repairing any damages caused during execution, and undertakes to maintain the works for five years. As the entity in charge of the studies and designs, the contractor is responsible for performing the final environmental impact assessments (EIAs) based on terms of reference agreed on with the National Environment Authority (ANAM) and the rules established in Law 41 (General Environment Law), and for carrying out the resulting environmental management action plan and arranging for all the environmental licenses.
- 3.7 The design and construction should be completed within 24 months after the date of the order to proceed and the winning contractors will be required to maintain the section for 60 calendar months after the date of interim reception of the works established during the design and construction stage. Maintenance will include the full repair of construction and maintenance defects, based on objective criteria for prioritizing and programming similar operations, for the purpose of maintaining the service level of the road from the time the work is accepted and during the maintenance period. After the end of the fourth year of the maintenance period, the contractor will be required to renew all of the horizontal signage, for which purpose it must suitably prepare the surface course. Since the contracts include design of the works by the contractor, all matters related to the plans are the total and exclusive responsibility of the contractor and therefore acceptance of the works does not exempt the contractor from full liability. Approval of the plans and specifications by the MOP does not in any way exempt the designer from its liability for the works designed.

C. Procurement of goods and services

- 3.8 The procurement of goods and related services, the construction of works and the contracting of consulting services will follow the Bank's procurement policy. International competitive bidding will be required for goods in the amount of

US\$350,000 and over and for works in the amount of US\$4 million and over. International competitive bidding will be required for consulting contracts over US\$200,000. Procurements and contracts below these thresholds will be carried out in accordance with national legislation.

- 3.9 The minimum price method is proposed for the selection of consulting services. The method establishes a minimum acceptable technical level to gauge the quality of the technical proposals. Proposals are presented in two separate envelopes, with the technical envelopes being opened and evaluated first. Technical bids that do not attain the minimum acceptable level are rejected and only then are the economic proposals of the remaining bidders opened. The firm proposing the lowest price is selected. Under this method, the definition of the minimum acceptable level will be established on the understanding that proposals exceeding that level will only compete on the basis of price. The minimum level will be set out explicitly in the invitations to present proposals.
- 3.10 To move ahead with contracting in parallel with preparation of the operation, at the request of the Panamanian government, the call for prequalification and bidding for the construction and supervision of the Divisa-Santiago section was published in *Development Business* on 15 October 2002, based on the two envelope procedure. The invitation to prequalify as the consulting firm to take charge of inspection and supervision of the works on the Divisa-Santiago section was published on the same date. For the Santiago-El Pajal section, the notices were published on 8 January 2003. For supervision of the three smaller segments on the Santiago-El Pajal section, the open register of firms maintained for loan 1116/OC-PN will be used. In general, the contracting processes are advancing satisfactorily and it is expected that the loan will be approved when the corresponding works and supervision contracts are ready to be signed.

D. Execution period and disbursement timetable

- 3.11 The program will be executed in a minimum of three years and a maximum of four, counting from the date on which the loan contract comes into force. Table III-1 presents the estimated disbursement schedule.

Table III-1 Disbursement schedule (US\$ millions, equivalent)						
Source	2003	2004	2005	2006	Total	
IDB (OC)	3.76	20.88	9.44	2.92	37.0	78.7%
Trust Fund	0.52	2.96	1.32	0.40	5.2	11.1%
Government budget	0.27	0.91	1.66	1.96	4.8	10.2%
Total investment loan	4.55	24.75	12.42	5.28	47.0	
	9.7%	52.7%	26.4%	11.2%		

E. Follow-up and evaluation

1. Bank supervision

- 3.12 Program supervision will be performed by the Bank's Country Office in Panama. At least one program administration and monitoring meeting will be held each year, with the participation of the project team.
- 3.13 During execution, by 30 September of each year at the latest, joint meetings of the executing agency and the Bank will be held to examine progress in the program and in the annual investment plan. Compliance with goals, objectives and indicators will be reviewed. The investment plan for the following year will be examined, spelling out the goals to be achieved and any corrective measures that may be necessary. At least 15 working days in advance of each meeting, the executing agency undertakes to present a progress report to the Bank on fulfillment of the contractual obligations and headway in achieving the indicators and targets presented in Annex II-1 (logical framework). In the event the Bank encounters shortcomings in program execution, the executing agency will present a proposal to the Bank containing corrective measures and the timetable for implementing them, which will be reviewed during the administration and monitoring missions.

2. Annual reports on road maintenance

- 3.14 The MOP, through the UECP, will continue presenting annual reports on road maintenance to the Bank, in the terms agreed upon with the Bank. The report for the previous year will be presented during the first quarter of the next year during program execution and for five years after the final disbursement, with a view to permanently evaluating whether maintenance activities are adequate. The reports will contain the following as a minimum: (i) general information on the structure and responsibilities of the agency or agencies responsible for road maintenance, number and type of personnel assigned, equipment available and the nature and number of maintenance contracts in existence; (ii) updated inventory of the condition of the road system; (iii) evaluation of execution of the maintenance plan for the preceding year; and (iv) maintenance plan for the following fiscal year, justifying the priorities adopted, the types of activities, the execution schedule and the financial and physical resources.

3. External auditing

- 3.15 The executing agency will present the audited annual financial statements of the program within 120 calendar days after the end of each financial year during execution. The audits will be performed in accordance with terms of reference approved in advance by the Bank, by a firm of independent auditors acceptable to the Bank. It is recommended that the audit be commissioned at the same time as the audit of the road program under way (loan 1116/OC-PN) and that the costs of the

contract be financed from the proceeds of this loan. The auditing firm will be selected and contracted in accordance with the Bank's bidding procedures for external auditors (AF-200). It is recommended that the auditors be contracted for at least three years, subject to a contract termination clause for unsatisfactory performance.

4. Final and ex post evaluations

- 3.16 The executing agency and the Bank will participate in a final evaluation of the program after the loan has been disbursed, which will follow the rules for project completion reports. The purpose of the evaluation will be to examine the results of the program and compliance with the proposed goals. The indicators used to measure the program's impact will be reviewed and updated during the evaluation.
- 3.17 The project team and the authorities discussed whether an ex post evaluation of this program would be necessary. Since it is a road rehabilitation program, the activities and benefits of which are widely known and documented, they agreed that an ex post evaluation will not be necessary. When the program was being prepared, the indicators for outcomes, the development impact results and the baseline were suitably defined. That information will be at the disposal of the Bank and the authorities in case it is decided to perform an ex post evaluation of the operation in future. The government has stated that it may be interested in performing an evaluation of the entire plan to rehabilitate the Pan-American Highway to the border with Costa Rica, financed with resources from the FFD and other sources. For that evaluation, which exceeds the scope of the present program, the government will consider the possibility of requesting support from the Bank or other donors.

IV. FEASIBILITY AND RISKS

- 4.1 This program will provide continuity for the process of improving Panama's road infrastructure, which began with the operations under way. The program will support the government's efforts to complete the rehabilitation and upgrading of the Pacific corridor from Panama City to the border with Costa Rica at Paso Canoas.
- 4.2 The technical, economic, institutional, financial, environmental and social feasibility of the operation has been established on the basis of the studies and analysis summarized in this chapter and keeping in mind the execution capacity of the MOP's UECP and the lessons learned during the road operations being financed by the Bank.

A. Technical and economic feasibility

- 4.3 As part of program preparation, studies and evaluations were performed to define appropriate specifications for the highway that comply with the technical specifications agreed to by Panama as signatory of the Memorandum of Understanding of the Mesoamerican highway integration initiative of the PPP. Table IV-1 summarizes some of the elements in the geometric design for major highways in RICAM and the sections under study.

Table IV-1 - Elements in the geometric design of Mesoamerican highways			
	RICAM memorandum	Divisa – Santiago	Santiago – El Pajal
TPDA, average vehicle a day	3,000 - 20,000	7,241	2,200
VHD, vehicles per hour	450 - 2,000	900	300
Peak hour factor	0.91 - 0.95	0.94	0.94
Number of lanes	2 to 4	2	2
Width of lanes, meters	3.60	3.05	3.05
Width of inside shoulders, meters	0.50 to 1.00	None	None
Width of outside shoulders, meters	1.20 to 2.50	Almost none	Almost none
Width of the median, meters	2.00 to 6.00	NA	NA
Design load of bridges (AASHTO)*	HS20-44+25%		
Service level ⁵ according to the HCM	C - D	D	C

* American Association of State Highway and Transportation Officials.

⁵ The concept of **service level** is defined as a qualitative measurement to describe operating conditions in a flow of traffic and driver and/or passenger perception thereof. The definition of service level generally describes these conditions in terms of factors such as speed and travel time, freedom and room to maneuver, traffic interruptions, comfort and convenience and safety. Six levels of service have been defined from A to F. Level A represents the best operating conditions and level F the worst.

- 4.4 As the basis for the analyses, traffic studies and projections prepared by the MOP with the support of consulting firms were used. For the Divisa-Santiago section, the evaluation of demand and capacity was updated with new studies, including traffic counts at different points on the highway taken over several days, which determined that the traffic flow for 2003 would average 7,241 vehicles a day. This figure represents a major increase compared to the estimates that had been made for 2002 based on earlier statistics. The traffic flow along the entire Pan-American Highway has increased substantially in recent years as the works to expand other sections have been completed. For example, in the first four years after the Penonomé-El Caño and El Caño-Aguadulce sections had been rehabilitated and expanded to four lanes, annual traffic increased by 12.7 percent and 8.1 percent, respectively. Surveys indicate that the traffic is composed of 24 percent heavy vehicles, 10 percent busses and 66 percent light vehicles and pickup trucks. Based on surveys to measure origin and destination conducted in 2002 for a SAVIAL study, 62 percent of the traffic on this section was local traffic from three points (Aguadulce, Chitré and Santiago),⁶ 33 percent was national traffic and 5 percent was international traffic.
- 4.5 Projections were made on the basis of past experience, data on growth in traffic in the last five years on other sections of the highway and historical information on the growth of the vehicle park in Panama from 1998 to date, the results of which were estimated growth in traffic of 3.6 percent to 4.4 percent, depending on the type of vehicle. Higher growth in international traffic was considered, reflecting the integration process and the improvements being made along the entire Pacific corridor of the PPP. The results of these projections indicate that for 2008 and 2013, traffic would reach 11,463 and 13,405 vehicles a day, respectively. For the Santiago-El Pajal section, traffic is currently 2,200 vehicles a day, which would rise in 2008 to 3,684 vehicles and in 2013 to 4,480 vehicles, according to the projections.
- 4.6 Considering traffic levels and the specifications for the sections, the methodology used by the Highway Capacity Manual (HCM)⁷ and the Quality Level of Service Handbook and Level of Service highway planning model⁸ were applied. Based on the existing specifications, current traffic and its behavior, the Divisa-Santiago section has a service level of D which would decline to level E by 2005 unless the proposed improvements in specifications and expansion to four lanes are carried out. In the case of the Santiago-El Pajal section, service level C would be maintained until 2012 and would drop to D during the rest of the analysis horizon, and therefore its expansion to four lanes is not recommended. In short, owing to the existing level of traffic congestion and future demand for vehicle traffic over the

⁶ Since the zoning map of the surveys is very broad, these results could be overestimated.

⁷ Transportation Research Board, USA.

⁸ Florida Department of Transportation, 2002.

next 25 years: (i) the Divisa-Santiago section should be a four-lane highway, which requires the rehabilitation of the two existing lanes, construction of a median and two additional lanes; and (ii) the Santiago-El Pajal section should be maintained as a two-lane highway, with rehabilitation.

- 4.7 The two sections of the highway to be financed under this program lie in a zone with high rainfall which requires a significant drainage and terracing component. Given this situation and the fact that the country can produce cement but not asphalt, as an investment strategy the MOP has determined that its entire main system, which carries about 87 percent of interurban traffic, should have a concrete surface course, with periodic rehabilitation involving an asphalt layer on top of the existing concrete slabs.
- 4.8 The costs budgeted for the works lie within internationally acceptable parameters and are consistent with the results of recent bids for similar works in the country. For the Divisa-Santiago section, the initial budget prior to the call for bids was approximately US\$1 million per kilometer, which is similar to the costs obtained by the MOP in rehabilitating the six previous sections, which averaged between US\$850,000 and US\$1 million per kilometer. The envelopes for the respective call for bids resulted in proposals ranging from US\$732,000 to US\$936,000. The estimated cost is below the average reported in the Road Costs Knowledge System (ROCKS) database,⁹ which reckons an average of over US\$1 million just for the new construction of the two lanes in concrete, not including rehabilitation of the two existing lanes.
- 4.9 An analysis of the economic benefits and costs for the country was performed using indicators for economic returns such as: net present value (NPV) and internal rate of return (IRR) of the benefits after recovering the initial investment (discounted at 12 percent). The benefit/cost ratios, discounted at 12 percent, obtained for this project are based on the economic flows of the net costs and benefits shown in the summary tables evaluating the section under study. The benefits of the project come from the reduction in vehicle operating costs, the savings in travel time by passengers, the reduction in the cost of transporting goods, the reduction in maintenance costs, the reduction in the number of traffic accidents, and the increase in traveler comfort, safety and punctuality. These benefits are obtained by comparing use of the highway as it is at present and its use after the works are completed.
- 4.10 To estimate vehicle operating costs, current highway conditions and the technical specifications for the works to be built were taken into account. The technical

⁹ Road Costs Knowledge System (ROCKS) Version 2.01 September 2002. The World Bank, Transport and Urban Development Department. The system analyzes a database that includes more than 1,500 projects from 65 countries.

characteristics of the sections were incorporated into a submodel for vehicle operating costs, which is part of the highway design model (HDM-III). Based on the budgets for the works, including spending on technical and environmental studies, supervision and maintenance, adjustments were made to market prices to eliminate the purely financial costs represented by taxes. The economic cost of the maintenance plan was added to this economic cost. Table IV-2 summarizes the results of the economic evaluation. The IRR of the project for the Divisa-Santiago and Santiago-El Pajal sections was estimated as 28.6 percent and 30.5 percent, respectively, and the NPV was an estimated US\$93.65 million and US\$28.8 million, respectively. If the costs were 20 percent higher than expected, the IRR would be 25.8 percent and 26 percent, respectively. The projected traffic flows do not include traffic that could be generated on other highways in the zone as a result of the improvements and rehabilitation performed under the present project. If that happened, the benefits would increase. If the benefits were reduced by 20 percent, the IRR for Divisa-Santiago and Santiago-El Pajal would be 25.2 percent and 25.6 percent, respectively, with no increase in costs.

Table IV-2 Rehabilitation and upgrading Estimated IRR, NPV and sensitivity						
Work	Length (km)	Costs (US\$000)	IRR (%)	NPV (US\$000)	Sensitivity IRR	
					+20% Costs	-20% Benefits
Divisa-Santiago	39	41,000	28.6	93.65	25.8	25.2
Santiago-El Pajal	53	12,000	30.5	28.80	26.0	25.6

- 4.11 The rehabilitation and upgrading works to be carried out under the program do not pose major difficulties from the technical standpoint, since there is sufficient capacity and experience in the MOP and the UECP to execute them adequately, and private companies have the capacity to build the works. The UECP will have the support of the specialized consulting firms in supervising the works.

B. Institutional and financial feasibility

- 4.12 The program for institutional strengthening and modernization of the MOP, which is being carried out with support from the IDB and the World Bank, will result in strong institutions and well-defined sector policies to ensure the feasibility of the program. The funds for institutional strengthening provided under loan 1116/OC-PN have been used to support preparation of a proposal to create a sustainable mechanism to finance maintenance, strengthen management and operating capacity in the road sector and improve the MOP's environmental management capacity.

- 4.13 The financial plan for the investment program in the road sector, described in chapter I, section C.2, will ensure the financial feasibility of carrying out the program. The limited budget allocations that affected the sector in recent years are being surmounted thanks to fiscal reform. The budget allocations approved for 2003 reflect this recovery. Part of the program of investments in rehabilitation and maintenance for 2003-2006 is being financed from the budget and the FFD. Estimates suggest that external financing of only US\$47 million in addition to Bank operations will be required. Both the World Bank and the CAF have been discussing new operations with the government to make up that amount.

C. Environmental and social management proposal

- 4.14 To ensure that the project will be environmentally feasible, an environmental and social evaluation of the program was prepared following the environmental and social strategy approved by the Bank's Committee on Environment and Social Impact (CESI) and made available to the public on 4 March 2003. The environmental and social management proposal, which forms an integral part of the loan proposal, is summarized in this section.
- 4.15 ***Potential environmental and social impacts.*** The works proposed under the program do not pose major construction difficulties or call for resettlement. For the Divisa-Santiago section, the existing road will be rehabilitated and upgraded by building two new lanes in the original corridor, of which rights-of-way were reserved when it was built 40 years ago. No changes will be made in the layout, thanks to its excellent original construction and location in stable zones. For the Santiago-El Pajal section, the surface course will be rehabilitated and shoulders will be built. No changes will be made in the layout in this section either.
- 4.16 The project could have moderate negative environmental effects that are foreseeable and can be mitigated. There are known measures to prevent and mitigate (and/or compensate for) the direct negative impact, including the impact of maintenance, which are consistent with national regulations and in the environmental rules and specifications established in the bid documents used by the MOP.
- 4.17 No indirect negative environmental impact is anticipated, except for the medium- and long-term effects on the region's economy caused by the improvements in the existing road, coupled with the other projects included in the PPP regional initiative. There could be cumulative effects and indirect impacts (for example, migration which may occur in the medium-term owing to the reductions in travel times and costs brought about by this and other future projects). As part of the PPP's sustainable development initiative, work is being done in coordination with the Central American Environment and Development Commission (CCAD) and the officials responsible for environmental and social impact evaluations (EIAs) from the region's ministries of the environment to define strategies for managing the

environmental and social impact of the different projects and move toward harmonized environmental legislation, including the possible adoption of a regional content for EIAs, rules for bids, etc.

- 4.18 ***Process of dissemination, public consultation and citizen participation.*** To date, the project has been widely disseminated and public consultations and citizen participation have taken the form of three initiatives: (i) as part of the PPP's program of information, consultation and participation, workshops to publicize the project were held in February and December 2002, explaining the objectives, goals, projects, scope, benefits for Central America and Panama and the national counterpart; (ii) the national dialogue for economic reactivation, a broad process of national consensus-building, which gave priority to expansion and rehabilitation of the highway between Divisa and Paso Canoas and agreed to allocate FFD funds; and (iii) dissemination of the two projects (Divisa-Santiago and Santiago-El Pajal) by the Department of Community Affairs, the Executive Directorate of Studies and Designs and the Environment Section (SA) of the MOP in the communities located in the direct area of influence. In general, civil society and the inhabitants of communities in the vicinity fully support the project. In fact, there have been repeated complaints by members of civil society about the delays in executing the pending projects in the different sections of the Pacific corridor from Aguadulce to Paso Canoas. This corridor constitutes the backbone of the national road system, where all the main access roads converge.
- 4.19 The MOP has held meetings with the municipal authorities and in July 2002 the report on the inspection and assessment of properties that could potentially be affected was concluded. With the current layout of the road, there are 25 properties that might be affected: one residential fence, three commercial fences, four businesses, seven bus stops, seven signs for gasoline stations, one pedestrian crossing and two kiosks. It should be noted that the individuals or businesses that will be affected by the widening of the road have been carrying out their activities on the public rights-of-way of the highway. The Department of Community Affairs has notified each of the parties that could be affected about the ministry's plans and has held talks with them, reviewing the situation on a case-by-case basis to reach an acceptable solution.
- 4.20 ***Summary of the framework for environmental and social management.*** Since 1994, the government has been working to implement a number of priorities on the country's environmental agenda and has made good headway in environmental management. In 1998, it passed the General Environment Law and established the National Environment Authority (ANAM), drawing on the capacity of the former National Renewable Natural Resources Administration (INRENARE), as an autonomous public agency to lead environmental management, with the functions of enforcing laws, regulations and national policy, in conjunction with other public institutions that form part of the interagency environmental system. To support and address the challenges created by the General Environment Law and its new

institutions, in 1999 the Bank financed the national environment program (loan 1222/OC-PN), which takes a long-term strategic approach that makes it possible to plan, in stages, flexibly and feasibly, implementation of the law and the national environmental strategy (financed under loan 1090/OC-PN).

- 4.21 Panama's regulatory framework establishes which type of EIA will be required based on the level of risks and impacts that the activities of a project could have on the environment and society. The classification depends on whether the project appears in a concrete list required in Article 14 of Decree 59 dated 16 March 2000 and whether the project has a negative impact on the five criteria for environmental protection established in the decree.¹⁰ Three types of EIAs can be required. Category I is for projects with no significant environmental impact that comply with existing environmental rules and do not pose environmental risks. The EIA will be based on a duly-notarized affidavit. Category II is for projects included in the specific list envisaged in Article 14 of the decree, the execution of which could cause significant negative impacts that partly affect the environment and which can be eliminated or mitigated using known and easily applied measures to comply with existing environmental legislation. Category III is for projects included in the concrete list envisaged in Article 14 of the decree, the execution of which could cause significant quantitative or qualitative environmental impacts that warrant a closer analysis to evaluate them and propose the corresponding environmental management plan. It should be stressed that no work that is subject to an EIA may begin before a decision is obtained from ANAM approving the EIA.
- 4.22 The Environment Section (SA) of the MOP was established in 1982 and has staff with extensive experience in the road sector. Thanks to the SA's efforts, the MOP has included requirements in its terms and conditions for contractors to comply with the environmental rules and to include environmental management specialists on their technical teams. This requirement is applicable to construction companies and supervisory firms, alike. Further, failure to comply with environmental requirements affects the processing and payment of accounts. The SA has three offices (semi-autonomous) in different parts of the country. Decentralization of the different offices allows for wider coverage and better quality of project supervision

¹⁰ **Criterion 1.** This criterion is defined when the project generates or presents risks to public health, flora and fauna (in any state) and to the environment in general. **Criterion 2.** This criterion is defined when the project generates or presents significant alterations in the quantity or quality of natural resources, including soil, water, flora and fauna, with particular attention to biological diversity and territories or resources with environmental and/or heritage value. **Criterion 3.** This criterion is defined when the project generates or presents significant alterations in the features that caused an area to be classified as protected or of scenic and esthetic value. **Criterion 4.** This criterion is defined when a project requires resettlements, displacements and relocations of human communities and significant alterations in the lifestyles and customs of human groups, including urban spaces. **Criterion 5.** This criterion is defined when a project generates or presents alterations in monuments or sites with anthropological, archeological or historical value that form part of the cultural heritage.

- and monitoring, in addition to coordination with local authorities, beneficiary communities, civil society and other public agencies.
- 4.23 When the operation was being prepared, the SA's policies, procedures, operating manuals, functions and capacity were reviewed, as was compliance with the environmental aspects of loan 1116/OC-PN. Despite the progress made, it was found that delays existed in executing some of the activities recommended in the program for institutional strengthening of the Environment Section, including the need to augment staff and equipment at some offices, update functions and prepare an updated manual of procedures, procure equipment and mount the database and geographic information system. It was agreed with the MOP that funds from that operation would be used to contract a consultant to speed up execution of the plan.
- 4.24 Also, as part of the environmental review of completed projects, it was found that in some cases, the mitigation measures are carried out by the contractors but they are only half-hearted and do not achieve the purpose for which they were suggested. Although the Environment Section performs inspections and reports on inconsistencies in implementing environmental controls, there needs to be more effective interaction between the Inspection Directorate and the Environment Section to enforce the mechanism for economic penalties against contractors who fail to comply with the environmental protection specifications.
- 4.25 ***Program environmental and social management plan (ESMP).*** The program's environmental and social strategy has been included in the ESMP, the application of which will ensure the feasibility of the works. The ESMP is composed of the specific activities described below.
- 4.26 **1. In relation to the direct and indirect environmental impacts of the projects** to rehabilitate and upgrade the Divisa-Santiago and Santiago-El Pajal sections, the environmental and social evaluation concluded that the project: (i) does not affect the environment in protected zones and there is no negative impact on vulnerable groups; (ii) there are no critical points for operating the project or risks of natural disasters from earthquakes, landslides, floods or hurricanes; (iii) if the environmental process and regulations are complied with and the mitigation measures and construction specifications are strictly applied, there should be no significant environmental liabilities that are difficult to manage; (iv) the foreseeable environmental impact is moderate and the mitigation measures are inexpensive and easy to implement; (v) consultations were held with organized society under the PPP, are duly documented, and there has been no criticism of the initiative; and (vi) the public participation process has led to results that provide positive support for the initiative to widen and rehabilitate the Divisa-Santiago-El Pajal section.
- 4.27 The evaluation recommended that a Category II EIA be prepared for the Divisa-Santiago section and a Category I EIA for Santiago-El Pajal. Terms of reference for the studies were prepared jointly with the Environmental Studies Unit of ANAM

and the MOP's Environment Section. The EIAs will be reviewed by ANAM, the MOP and the Ministry of Health (MINSA), which are the institutions responsible for evaluating the EIAs for the two projects, through the network of sector environmental units. ANAM will be required to issue a decision approving or rejecting the EIAs, before any of the works can begin.

- 4.28 **2. In relation to the legal and institutional framework**, funds from the operation under way will be used to surmount some minor problems (involving personnel and equipment) in the Environment Section of the Ministry of Public Works, so that it will have no difficulties in monitoring and supervising implementation of the mitigation measures for the program, in effective coordination with other institutions such as ANAM and MINSA, and other directorates and departments of the Ministry of Public Works.

D. Benefits and impact on development

- 4.29 The program will contribute to the rehabilitation and upgrading of the main highway corridor and its environmental impact will be positive and bring significant economic and social benefits to the country. In particular, it will benefit: the inhabitants of the provinces of Herrera and Los Santos in the Azuero peninsula and those of Veraguas and its capital Santiago, which are located in the program's direct area of influence; the inhabitants of all the country's western provinces and the province of Bocas del Toro, who have to transport their products to the capital and to Colon; and, in general, the Mesoamerican region, by facilitating trade, tourism and regional integration. The program will facilitate the provision of efficient and safer freight and passenger transportation.
- 4.30 The program does not qualify as a poverty-targeted investment (PTI) or as a social-equity enhancing (SEQ) operation. Nevertheless, by promoting competitiveness, potential benefits will ensue in terms of generation of jobs and higher incomes.

E. Risks

- 4.31 The proposed operation has no substantial risks. The government gives it top priority and the 2003 national budget includes the necessary counterpart funds. The Ministry of Public Works has built up experience in executing programs and projects with different multilateral development agencies and has been strengthened institutionally thanks to technical assistance from the IDB and the World Bank, which will allow for suitable management of the new program. The proposed works do not have any significant environmental impact, do not call for resettlement, and the rights-of-way have been obtained.
- 4.32 There is a limited risk that might affect construction of the works proposed for the Divisa-Santiago section. In 1998, the MOP held an international competitive bid for the financing, design, construction and maintenance of the Aguadulce-Santiago

- section. The contract was awarded to an international consortium in June 1998. For different reasons related to financing of the works, the MOP did not issue the order to proceed and the contract is undated, since it was never approved by the Office of the Comptroller General. In January 2002, the MOP revoked the contract award and the consortium has filed a complaint that is being heard by Supreme Court Chamber III. The Bank, through its Legal Department and with the support of a firm of Panamanian legal advisors, studied the situation to determine whether the complaint could affect the proposed proposal. The analysis concluded that the consortium's interest in filing the complaint is to obtain compensation for expenses and damages related to the bid but not to invalidate the current bid process. Also, over the years, legal precedent has demonstrated that Chamber III does not generally annul acts or decisions that could affect the execution of works in the public interest, as in the present case.
- 4.33 The scope of the development objectives of the operation could be affected by failure to rehabilitate the other sections of the highway or to perform road maintenance. With respect to the former, the government is making satisfactory process in contracting the rehabilitation and upgrading of the other sections of the Pacific corridor, with FFD resources. As was mentioned in paragraph 1.5, the other countries in the PPP are also making satisfactory progress in financing the rest of the corridor, which will allow the benefits of total rehabilitation to be reaped.
- 4.34 In the absence of a sustainable mechanism for maintenance (highway fund or similar arrangement), the risk that the project may not be sustainable owing to lack of maintenance is mitigated by the type of contract proposed, which ensures maintenance for five years for the Divisa-Santiago section. In the case of the Santiago-El Pajal section, which did not use this type of contract, maintenance will be contracted under a separate bid, based on experience in the pilot projects in the program being financed by the World Bank. In addition, the steps being taken by the government to establish more effective mechanisms for managing maintenance, such as SAVIAL and FONVIAL, will reduce the future risk of failing to provide road maintenance. The authorities have made headway in preparing a proposal for a sustainable mechanism (FONVIAL-PANAMA) and are studying the best timing for presenting the proposal to the Legislative Assembly. The Bank has made this matter a priority in its discussions with the new administration, as part of the policy dialogue.

**PROGRAM FOR THE IMPROVEMENT OF THE PUEBLA-PANAMA PLAN'S PACIFIC CORRIDOR
(DIVISA-SANTIAGO-EL PAJAL SECTION)
(PN-0159)**

LOGICAL FRAMEWORK

NARRATIVE SUMMARY	INDICATORS			MEANS OF VERIFICATION	MAIN ASSUMPTIONS
GOAL					
To improve integration and connectivity in Mesoamerica and between central and western Panama.	Growth in statistics on trade and overland passenger traffic between Panama and the Mesoamerican countries. Growth in statistics on trade and overland passenger traffic to and from Panama’s western provinces.			Customs records, reports by the Comptroller General and the Panamanian Tourism Authority (IPAT). National statistics by the Comptroller General.	There is political will to take parallel steps and economic conditions continue to allow integration to be promoted and deepened. The program to rehabilitate and improve the other sections of the Pacific corridor to the border with Costa Rica (206 km) using resources from the FFD is carried out.
PURPOSE					
To reduce the cost of transportation, facilitate the movement of passengers and freight and improve safety along the Pacific integration corridor of the PPP, in the Divisa-Santiago and Santiago-El Pajal sections.	In the first year that the works are placed in service, vehicle operating costs are reduced by an average of 17.6% for the Divisa-Santiago section and by 19.8% for the Santiago-El Pajal section. The baseline without the project is:			Review of the economic evaluation of the rehabilitated sections.	Satisfactory macroeconomic and transportation market conditions.
		Divisa-Santiago	Santiago-El Pajal	Update of the technical studies, based on the application of the Highway Design Model and a user survey.	The MOP provides adequate maintenance for the system.
	Sedan	0.17	0.17		
	Pick-up	0.20	0.21		
	Bus	0.31	0.71		
	Light truck	0.21	0.21		
	Medium truck	0.60	0.60		The traffic laws are enforced and ATTT provides adequate maintenance for road signage.
Heavy truck (art.)	0.66	0.82			
	In the first year that the works are placed in service, average travel time for heavy vehicles is reduced by 33% (from 1:45 to 1:10 hours) and by 23.5% for light vehicles (from 1:25 to 1:05 hours).				

NARRATIVE SUMMARY	INDICATORS			MEANS OF VERIFICATION	MAIN ASSUMPTIONS
	Travel by private and commercial vehicles evolves in accordance with the following projections:			Traffic estimates and freight records at origin and destination.	
		Divisa-Santiago	Santiago-El Pajal		
	2003 2008 2013	7,241 11,463 13,940	2,200 3,648 4,480		
	Annual per capita accident rates are reduced during the first five years by 2% a year in the provinces of Herrera and Veraguas. The baseline values for 2001 are:			Statistics on accidents from ATTT and the Police’s Directorate of Traffic Operations. (The province statistics are used as an approximate indicator of the impact).	
		Herrera	Veraguas		
	Collision	357.2	292.5		
	Knock down	62.5	23.5		
	Rollover	39.0	31.7		
Leaving the road	10.7	26.2			
Crash	57.6	46.1			
Other	15.6	2.3			
Total	542.6	422.3			
COMPONENTS					
1. Rehabilitation of the Divisa-Santiago section	39 km rehabilitated and road widened from two to four lanes, 3 vehicular bridges and 12 footbridges built by 2005.			Progress reports by the works supervisor.	The government maintains its commitment to promoting these investments.
2. Rehabilitation of the Santiago-El Pajal section	53 km rehabilitated and the two lanes widened, three footbridges built by 2004.			Reports on execution.	
ACTIVITIES					
Bidding, contracting and executing of works and consulting services	Goals based on the procurement plan (Annex III-1) and the bidding and execution timetable (program technical files).			Project progress reports. Auditors’ reports. Supervision reports	The UECP has been strengthened for project administration and execution. The market for contractors and consulting firms presents suitable conditions for carrying out the bid processes as planned and acceptable bids are received.

**PROGRAM FOR THE IMPROVEMENT OF THE PUEBLA-PANAMA PLAN'S PACIFIC CORRIDOR
(DIVISA-SANTIAGO-EL PAJAL SECTION)
(PN-0159)**

PROCUREMENT PLAN

	Amount US\$ 000	IDB%	LOCAL%	Method	Prequalif.	Date of publication of the SPN
CIVIL WORKS:						
Divisa-Santiago	28,600	87	13	ICB	Yes	2002
Santiago-El Pajal: segment I	2,400	87	13	LCB	No	2003
Santiago-El Pajal: segment II	2,600	87	13	LCB	No	2003
Santiago-El Pajal: segment III	3,400	87	13	LCB	No	2003
CONSULTING SERVICES						
Divisa-Santiago	2,000	87	13	ICB	Yes	2002
Santiago-El Pajal: segment I	170	87	13	LCB	1/	2003
Santiago-El Pajal: segment II	190	87	13	LCB	1/	2003
Santiago-El Pajal: segment III	240	87	13	LCB	1/	2003
External auditing	100	100	0	LCB	Yes	2003
Environmental audit	30	100	0	2/	No	2003
Technical assistance for UECP and the Environment Section; engineering and studies	180	100	0	2/	No	NA
EQUIPMENT						
Equipment for UECP and the Environment Section	140	100	0	2/	No	NA

ICB = international competitive bidding

LCB = local competitive bidding

^{1/} The open register of consultants established for loan 1116/OC-PN will be used.

^{2/} Bank procedures will be followed, depending on the amount of the respective contract.