

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

EL SALVADOR

**MULTIPHASE PROGRAM FOR SUSTAINABLE ROADS IN RURAL
AREAS - PHASE II**

(ES-L1001)

**EVALUATION MEMORANDUM FOR PHASE I (ES-0129)
AND
PROPOSAL FOR PHASE II (ES-L1001)**

This document was prepared by the project team consisting of Carlos A. Trujillo (RE2/FI2), Project Team Leader; Germán Cruz (COF/CES); José Agustín Aguerre (RE2/FI2); Luis Hidalgo (Consultant); and María Eugenia Nepote-Cit (LEG/OPR). Michell Maxwell (RE2/FI2) and Yolanda Galaz (RE2/FI2) helped produce the document.

CONTENTS

PROJECT SUMMARY

I.	MULTIPHASE PROGRAM FOR SUSTAINABLE ROADS IN RURAL AREAS	1
A.	Background	1
B.	Evaluation of phase I	1
1.	Progress toward physical and financial goals of each component.....	2
2.	Development objectives and economic and social impacts	9
C.	Fulfillment of conditions for moving to phase II.....	11
D.	Lessons learned in phase I	14
E.	Conclusions and recommendation	15
II.	PHASE II	16
A.	Objectives and description.....	16
B.	Structure.....	16
C.	Cost and financing	19
D.	Targets and objectives.....	20
III.	EXECUTION OF PHASE II	21
A.	Borrower, guarantor, and executing agency	21
B.	Program administration in phase II	21
C.	Execution and schedule of disbursements	22
1.	Conditions precedent to project selection	22
2.	Project selection criteria.....	22
D.	Procurement of works and goods and contracting of consulting services	23
E.	Execution period and disbursement schedule.....	24
F.	Monitoring and evaluation.....	24
G.	Environmental and social management	25
H.	Risks	26

Electronic Links and References

Basic Socioeconomic Data	http://www.iadb.org/RES/index.cfm?fuseaction=externallinks.countrydata
Status of loans in execution and loans approved	http://ops/approvals/pdfs/ESen.pdf
Tentative lending program	http://opsgs1/ABSPRJ/tentativelending.ASP?S=ES&L=EN
Information available in the RE2/FI2 technical files	http://idbdocs.iadb.org/WSDocs/getDocument.aspx?DOCNUM=542179
Procurement plan	http://idbdocs.iadb.org/WSDocs/getDocument.aspx?DOCNUM=542182
Other – Executive summary of Phase	http://opsws3.reg.iadb.org/idbdocswebservice/getDocument.aspx?DOCNUM=385085
Country financial parameters	http://idbdocs.iadb.org/WSDocs/getDocument.aspx?DOCNUM=540245

Abbreviations

AADT	Annual average daily traffic
CESI	Committee on Environment and Social Impact
EIAs	Environmental impact assessments
EIRR	Economic internal rate of return
FOVIAL	Fondo de Conservación Vial [Road Maintenance Fund]
GGA	Gerencia de Gestión Ambiental [Environmental Management Office]
HDM	Highway Design Maintenance
ICB	International competitive bidding
IFF	Intermediate Financing Facility
LCB	Local competitive bidding
MARN	Ministry of Environment and Natural Resources
MOPTVDU	Ministry of Public Works, Transportation, Housing, and Urban Development
PTI	Poverty-targeted investment
SEQ	Social equity enhancing project
SIGESVIES	Sistema de Gestión Vial de El Salvador [Salvadorian Road Management System]
UACI	Unidad de Adquisiciones y Contrataciones Institucionales [Procurement and Institutional Contracting Unit]
UCP	Unidad Coordinadora de Proyectos [Project Coordination Unit]
UFI	Unidad Financiera [Financial Unit]
UIDV	Unidad de Investigación y Desarrollo Vial [Road Research and Development Unit]
UIV	Unidad de Inversión Vial [Road Investment Unit]
UMV	Unidad de Mantenimiento Vial [Road Maintenance Unit]
UPV	Unidad de Planificación Vial [Road Planning Unit]
VMOP	Vice-Ministerio de Obras Públicas del MOPTVDU [Office of the Deputy Minister for Public Works]

PROJECT SUMMARY

EL SALVADOR Multiphase Program for Sustainable Roads in Rural Areas - Phase II (ES-L1001)

Financial Terms and Conditions ¹				
Borrower:	Republic of El Salvador		Amortization period:	25 years
Executing agency:	Ministry of Public Works, Transportation, Housing, and Urban Development (MOPTVDU)		Grace period:	4 years
			Disbursement period:	4 years
Source	Amount	%	Interest rate:	Variable
IDB (Ordinary Capital)	US\$32,400,000	53.8	Inspection and supervision fee:	0%
IDB (OC/IFF)	US\$23,000,000	38.2	Credit fee:	0.25 %
Local	US\$4,800,000	8.0	Currency:	United States Dollars under the Single Currency Facility
Other/Cofinancing				
Total	US\$60,200,000	100.0		
Project at a glance				
Project objective: The objective of the program is to expedite passenger and freight transportation by rehabilitating a portion of the tertiary road system in rural areas, establishing new systems for road maintenance, and modernizing the transportation sector's institutional structure, thereby helping to revitalize the agriculture sector, integrate rural communities, and raise the standard of living of the rural population.				
Special contractual conditions: <i>For the first disbursement:</i> None <i>Special conditions for execution:</i> Conditions similar to those established for Phase I will be agreed upon relating to project selection criteria (paragraphs 3.6 and 3.7), the conditions precedent to the initiation of bidding (paragraphs 3.5 and 3.9), the annual road maintenance report (paragraph 3.11), program coordination and monitoring (paragraph 3.11), and the submission of program financial statements (paragraph 3.12).				
Exceptions to Bank policies: None.				
Project consistent with country strategy: Yes [X] No []				
Project qualifies as: SEQ [X] PTI [] Sector [] Geographic [] Headcount []				
Verified by CESI on: 15 October 2004				
Environmental and social review: See paragraphs 3.14 to 3.18				
Procurement: See paragraph 3.8				

¹ The interest rate, credit fee, and inspection and supervision fee mentioned in this document are established pursuant to document FN-568-3 Rev. and may be changed by the Board of Executive Directors, taking into account the available background information, as well as the respective Finance Department recommendations. In no case will the credit fee exceed 0.75%, or the inspection and supervision fee exceed 1% of the loan amount.*

* With regard to the inspection and supervision fee, in no case will the charge exceed, in a given six-month period, the amount that would result from applying 1% to the loan amount divided by the number of six-month periods included in the original disbursement period.

I. MULTIPHASE PROGRAM FOR SUSTAINABLE ROADS IN RURAL AREAS

A. Background

- 1.1 The Bank's Board of Executive Directors approved the loan proposal for the Multiphase Program for Sustainable Roads in Rural Areas – Phase I (PR-2566) on 11 April 2001. The program's goal is to expedite passenger and freight transportation by rehabilitating a portion of the tertiary road network in rural areas, establishing a new system for road maintenance, and modernizing the transportation sector's institutional structure, thereby helping to revitalize the agriculture sector, integrate rural communities, and raise the standard of living of the rural population.
- 1.2 The program was designed to be carried out as a multiphase program, with two execution phases lasting approximately three years each and Bank financing in the amounts of US\$58 million and US\$47 million, respectively. At the government's request, phase I included a US\$10 million component for the reconstruction and rehabilitation of sustainable rural roads that were damaged by the January 2001 earthquake. The program is being executed by the Ministry of Public Works, Transportation, Housing, and Urban Development (MOPTVDU), through the Deputy Minister for Public Works (VMOP), under the coordination of the Road Planning Unit (UPV).
- 1.3 Phase I of the program is proceeding satisfactorily; this proposal will provide financing for the second phase. The Government of El Salvador and the Bank agreed that the approval of phase II would be contingent upon significant progress being made toward meeting program targets and objectives, and upon the satisfactory execution of its components.
- 1.4 The aims of this memorandum are to: (i) show that the conditions for submitting phase II have been met; (ii) provide a brief summary of the outcomes of phase I to date; and (iii) submit the loan proposal for the second phase of Multiphase program for sustainable roads in rural areas to the Bank's Board of Executive Directors for approval.

B. Evaluation of phase I

- 1.5 The loan contract for phase I (1314/OC-ES) was signed in August 2001, four months after receiving Board approval; it entered into effect on 19 December 2001 and the final disbursement date was set for 19 December 2004. External factors relating to legislative approval produced delays in meeting the conditions precedent to the first disbursement and held up the start of projects. As a result, the deadline for the last disbursement had to be pushed back to 19 April 2006.
- 1.6 The loan contract sets forth the conditions that must be met before the process of approving the program's second phase can begin. These conditions are:

- (i) achievement of the physical and financial targets set for the various investment categories contained in the loan contract; (ii) institutional strengthening of the MOPTVDU and implementation of management systems that enhance its efficiency; and (iii) the accomplishment of economic and social development objectives in the areas where the program operates.
- 1.7 Pursuant to the loan contract, the VMOP hired an independent consultant to conduct the evaluation of phase I under terms of reference previously agreed upon with the Bank. The findings of the evaluation of phase I, based on the consultant's report and the revisions made by the project team, are presented in the following sections of this chapter.

1. Progress toward physical and financial goals of each component

- 1.8 The contract for loan 1314/OC-ES provides that the resources contributed by the Bank will be used primarily to: (i) rehabilitate and/or improve approximately 300 kilometers of the system of tertiary gravel roads in rural areas, for which US\$34.37 million were initially allotted; (ii) rebuild and rehabilitate approximately 100 kilometers of sustainable rural roads that were damaged by the earthquake, at an initial allocated cost of US\$9.94 million; (iii) consolidate the newly established road maintenance system, for which US\$3.7 million were allotted; and (iv) contribute to the process of modernizing the VMOP in terms of its role as the agency in charge of regulation, planning, promotion, and supervision of the road infrastructure, with an allocation of US\$3.22 million.
- 1.9 To date, 76.8% of the loan proceeds have been committed and 66.8% have been disbursed, as shown in Table I-1, which reflects the financial status of the program as of 31 March 2005:

Table I-1
Costs and financing for phase I (US\$ million)

Category	Current amount ¹			Committed 31 March 2005			Disbursed 31 March 2005		
	IDB	Local	Total	IDB	Local	Total	IDB	Local	Total
1. Engineering and administration	5,413	0.920	6,333	2,460	0.570	3,030	1,980	0.530	2,510
2. Direct costs	49,021	10,870	59,891	40,344	7,170	47,514	32,270	7,070	39,340
2.1 Rehabilitation and improvement of rural roads	43,107	5,140	48,247	34,430	5,140	39,570	26,360	5,040	31,400
2.2 Reconstruction and rehabilitation of earthquake-damaged rural roads	5,914	1,480	7,394	5,914	1,480	7,394	5,910	1,480	7,390
2.3 Support for maintenance plan	0.000	4,250	4,250	0.000	0.550	0.550	0.000	0.550	0.550
3. Institution-strengthening	3,220	0.480	3,700	1,450	0.190	1,640	1,350	0.150	1,500
4. Finance charges	0.058	8,540	8,598	0.058	8,540	8,598	0.058	1,730	1,788
Revolving fund	0.000	0.000	0.000	0.000	0.000	0.000	2,900	0.000	2,900
Program total	57,712	20,810	78,522	44,312	16,470	60,782	38,558	9,480	48,038
				76.8%			66.8%		

¹ Current budget, reflecting line-item adjustments and cancellation of resources requested by the Government of El Salvador from unused inspection and supervision fee resources

- 1.10 In the component for the *rehabilitation and improvement of rural roads*, financed under item 2.1, 11 roads totaling 195.1 km in length have been finished and paid for. Two more roads are still being worked on, totaling 41.2 km in length, and another three road improvement projects, totaling 53.1 km in length, are in the bidding process. With the completion of these last three projects, 289.4 km will have been rehabilitated and improved, representing 96.5% of the proposed target of 300 km for Phase I of the program.
- 1.11 Some changes had to be made to the original designs during project execution, and this has driven up the cost of these projects. For the first set of six roads, which have already been paid for, the actual cost per kilometer was US\$176,871, exceeding the US\$131,700/km figure used in formulating the loan by 34.3% and exceeding the contract amount by 17.7%. Three of the five contracts for the second set of road improvements, which are still being carried out, have already seen cost adjustments that will raise the average cost per kilometer to more than US\$250,000. These cost increases are justified in part by the need to include certain elements not in the original designs to guarantee drainage and prevent erosion as well as allow for the safe movement of pedestrians in the vicinity of schools and other public places. As explained in the section on lessons learned, measures are being taken to prevent this from happening in phase II.
- 1.12 Under the component for the *reconstruction of earthquake-damaged roads*, financed under item 2.2, 10 roads covering a total of 103.10 km have been rebuilt, meaning that the physical target of 100 km set for this component in the loan

contract has been exceeded. This component has also seen design adjustments, to incorporate additional works aimed at improving the condition roads were in before the earthquake, including paving on 40 km of roads; such changes have resulted in a 22.8% increase in the contract amounts. The resulting average cost per kilometer, however, has been US\$74,652/km, which is significantly lower than the estimate used in formulating the loan, which was US\$114,200/km. This is largely because the initial estimate was prepared in the context of emergency response to the earthquake, and the work ended up requiring a smaller investment. The excess funds for this item were reallocated.

- 1.13 The *support for a road maintenance plan* component sought to ensure that the necessary conditions were created for the national system of roads to be maintained efficiently. It specifically aimed to support the transformation of the road maintenance unit of the Office of the Deputy Minister for Public Works (VMOP) and to consolidate the Road Maintenance Fund (FOVIAL) created in November 2000, by providing resources to make the necessary operational changes to gradually assume responsibility for maintaining the national priority road network. The resources allocated to this component (US\$3.7 million) were to be spent to support the introduction of road maintenance through contracts and the hiring of microenterprises. Once FOVIAL was created, however, and began in late 2001 to have its own source of financing for all activities relating to maintenance of its part of the network, the resources provided for in the loan were no longer needed, so the aforementioned amount was reallocated. Starting in 2002, FOVIAL took on responsibility for maintaining practically all of the national priority network of paved and unpaved roads, managing coverage of 83% in 2001, 98% in 2002, 97% in 2003, and 98% of the total network in 2004. Currently all the maintenance work that FOVIAL is in charge of is contracted out to private companies, approximately 20% of it to microenterprises.
- 1.14 As part of the reform process, the country's road network was adjusted in 2001, with various roads assigned to different subnational entities as provided for by law. Although there was no change in responsibility, there was a review of the portion of the network that in theory the VMOP was servicing but was actually the responsibility of the municipalities. Municipal governments receive 6% of the nation's general budget for maintenance and development, and beginning in 2005 this percentage will go up to 8%. Table I-2 shows the classification of the network when phase I was approved and the current classification.

Table I-2
Adjustment of the road network (km)

Category	Phase I	Phase II
	2001	2004
National priority network (responsibility of the national government)		
Asphalt network (special, primary, and secondary)	1,962	2,069
Tertiary and paved rural network	88	827
Tertiary gravel network	1,679	1,080
Network of rural roads	6,411	2,015
Subtotal under VMOP/FOVIAL	10,140	5,991
Local road networks (responsibility of the municipios)	2,700	6,900
Total road system of El Salvador	12,840	12,891

- 1.15 The execution of the ***institution-strengthening*** component financed under item 3 of the loan was evaluated using three indicators: (i) progress in modernizing the VMOP; (ii) the establishment of a system for sustainable road maintenance; and (iii) the training and creation of road maintenance microenterprises. The accomplishments in these three areas are described below.

a. Restructuring and modernization of the Office of the Deputy Minister for Public Works (VMOP)

- 1.16 The reform process was already under way when loan 1314/OC-ES was approved, so this operation was designed in part to help lend continuity to and consolidate this process. The progress made so far is evident, and institutions working in the area of transportation, the media, and the community in general recognize its positive impact.
- 1.17 The VMOP's duties currently center on planning, regulation, contract administration, and quality control of works. Just a few activities, such as maintenance and signage for high-traffic urban corridors, support for the municipios, and emergency response are done on force account, so most of the VMOP's capital budget is executed through contracts with the private sector.
- 1.18 Restructuring has made it possible to reduce staff from 7,400 employees and workers in 2000 to only 650 permanent employees today. This downsizing process was handled well, in that financial compensation was provided and job retraining programs and support for the creation of microenterprises was offered to those who would be losing their jobs.
- 1.19 ***Planning, conducting studies, and programming investments.*** The ability of the Road Planning Unit (UPV) to plan, conduct preinvestment studies, and program investments has been strengthened through the installation of modern computer systems and the availability of high-performance equipment for road inventory

surveys and pavement testing, and for conducting traffic studies. As a result, it has the latest information on the condition of the roadways, the loads that travel over them, and the composition of the vehicle fleet—information that is essential for preparing project profiles and preinvestment studies, as well as for prioritizing and timing investments to improve or rehabilitate the roadways and carry out maintenance. The UPV also has the technical staff and the standards and specifications it needs to prepare studies and designs for road projects and to do quality control and monitoring of the work of consultants hired for such activities.

- 1.20 ***Assessment and mitigation of environmental and social impacts.*** Significant changes have been seen in the area of assessment and mitigation of environmental and social impacts since the Environmental Unit became the Environmental Management Office (GGA), which is part of the VMOP's Road Planning Unit. The GGA put together a multidisciplinary team, including professionals with academic backgrounds in the environment area, specializing in biology, agronomy, social sciences, and economics. The team participates actively in all stages of the project cycle, from the "project idea" to acceptance of the works and final evaluation of their impact, as set forth in the Environment Act. It has developed job descriptions, procedural guides for obtaining environmental permits for road projects and for environmental monitoring of projects being executed, and terms of reference for carrying out environmental and social impact assessments. The GGA has also prepared the technical environmental specifications that will apply to all rural road construction, improvement, rehabilitation, and maintenance works throughout the country once the Ministry of Environment and Natural Resources (MARN) approves them. The GGA also has the manuals, forms, and procedural guidelines that are used to process the environmental permits that the MARN must issue for road works to be executed.
- 1.21 The GGA is involved in preparing road projects from their earliest stages, interacting with the VMOP's other technical units to obtain the information it needs to prepare the environmental profiles. The latter include the physical and biotic characteristics of the project area, socioeconomic information on that area, a description of the principal features of the works, and their potential environmental and social impact. This information is summarized on environmental forms that are sent to the MARN for evaluation, a determination as to whether an environmental impact assessment (EIA) must be done, or specific recommendations as to impact mitigation measures that should be included in the project. The GGA oversees the execution of EIAs and verifies that its and the MARN's recommendations are incorporated in the designs and the corresponding budgets. During project execution, GGA staff conduct periodic inspections to ensure that the technical environmental specifications are being followed and the measures to mitigate social and environmental impacts are put in place. The results of the inspections are used to prepare the monitoring reports, and when the project is completed, a final review is done before the project is accepted. Lastly, the GGA is responsible for assessing the social impact of prospective projects, monitoring social mitigation measures,

and measuring several indicators that enable it to determine the projects' social impact and their contribution toward development.

- 1.22 ***Execution and quality control.*** The Project Coordination Unit (UCP) is in charge of managing contracts and supervising and monitoring the execution of works. It has the professional staff, the technical resources, and the computer programming systems it needs to efficiently discharge its functions. The VMOP contracts out both the execution and the supervision of works to construction companies and consulting firms selected through competitive bidding. The UCP, together with the planning, procurement, and research and development units, is involved in preparing the technical files, the bidding conditions, and the terms of reference for the calls for bids and proposals; the Procurement and Institutional Contracting Unit (UACI) is in charge of issuing calls for bids, and evaluates proposals together with the UCP, the Road Planning Unit, and the Road Research and Development Unit. None of these processes have resulted in complaints or challenges that have interfered with the start of the contracts. Nor have there been discrepancies during execution that have compromised the normal course of the contractors' work, so most of them have finished by the deadlines specified in the contracts.
- 1.23 The Road Research and Development Unit (UIDV) works with the UCP to verify the quality of the works, for which it has a modern laboratory fully equipped with the instruments it needs to test the quality of the soils and materials and assess their proper use. This includes equipment needed to: (i) determine the properties of soils and their supporting capacity under different conditions; (ii) verify the degree of compaction of soils and stabilized blends placed in the embankments and in the different layers that constitute the pavement base; (iii) verify the correct dosage and placement of the asphalt mixes and hydraulic concrete and take pavement samples to analyze their composition and resistance; (iv) check the level of finish and roughness of the surface course; and (v) conduct other special tests. The UIDV has standards for the field tests that project supervisors must perform, detailing the procedures and the frequency with which they should be done; it also has the tools needed to make certain that the equipment used by supervisors is properly calibrated.
- 1.24 ***Administration and finance.*** One of the centerpieces in the organizational restructuring of the MOPTVDU was the consolidation of all administration and financial management, legal counsel, procurement and contracting, information technology, human resources, institutional development, and communications functions into "enterprise units" that answer directly to the Minister and serve all three deputy ministries, making it possible to eliminate redundancies and to integrate the offices that were performing similar functions within each one. Thanks to this measure and the installation of modern computer systems, together with the personnel education and training programs financed through loan 1314/OC-ES, the MOPTVDU has managed to streamline procedures, exercise greater control, and make its respective activities more transparent. This is clearly reflected in the

significant decrease in the time it takes to process bids and payments to contractors and suppliers. These units now have organization and function manuals, as well as detailed procedures and standards for each of their activities, all of which are public information.

b. Establishment of systems for sustainable maintenance

- 1.25 FOVIAL was created by Decree-Law 208, issued 30 November 2000, which imposed a tax equivalent to US\$0.20 per gallon on the consumption of diesel, gasoline, or blends of these with other fuels, the entire receipts of which go toward road maintenance. This levy became effective in November 2001, enabling FOVIAL to award 67 contracts for US\$49.5 million in 2002, which provided for the maintenance of 2,344 km of paved roadways and 2,708 km of unpaved roads. In 2003, 29 contracts were handed out for a total of US\$67 million, and 22 contracts totaling US\$62.1 million were awarded in 2004, ensuring total coverage of the network assigned to FOVIAL. In 2005, 78 construction firms and 44 firms to supervise the works are scheduled to be hired for periodic and routine maintenance, pavement markings and road signs, and bridge and crossing works maintenance, with an allocation of US\$71.4 million.
- 1.26 FOVIAL is an efficiently managed operation, with a staff of 31 people to prepare, follow up on, and monitor contracts (the MOPTVDU's procurement unit handles the bidding procedures). FOVIAL's efforts have had a noteworthy impact on the overall condition of the paved road network, as evidenced by a survey of road users, whose responses reveal that, since the creation of FOVIAL: the quality of roads has improved (92%); users are satisfied with the work done (88%); they save travel time (33%); there is less wear on vehicles (31%); traveling is more comfortable (about 20%); and they feel safer driving (11%). As for how they would rate the overall condition of the roads, responses were: excellent (20%), very good (38%), good (25%), fair (11%), and poor or terrible (5%).
- 1.27 After the creation of FOVIAL, the responsibilities of the VMOP's Road Maintenance Unit (UMV) were limited to periodic and routine maintenance of high-traffic urban roadways, emergency work needed on the national network, maintenance of provisional bridges, signage, and support for the municipios with which it has agreements to perform some maintenance work on municipal roads. Some of this work is done on force account, so it maintains a staff of 327 employees and owns 168 pieces of equipment; it also contracts out some of its work to the private sector. In 2004, the UMV serviced a total of 600 km of roads, in which it invested approximately US\$4.2 million. Its budget for the projects scheduled for 2005 is US\$4.3 million. The use of computer scheduling and resource distribution systems, together with the systematic monitoring of equipment and input use for its operations, has enabled the UMV to boost its efficiency and expand coverage of the areas in its purview.

- 1.28 FOVIAL's board of directors resolved to adopt the Salvadorian Road Management System (SIGESVIES), which is administered by the VMOP's Road Planning Unit (UPV), and covers the entire system of roads under the Ministry's jurisdiction. This system is used to determine yearly investment needs for the national network, priorities, the nature of projects (improvement, rehabilitation, periodic and routine maintenance), and the resources needed to carry them out. Based on this information and the available budget resources, FOVIAL and the UMV formulate and implement their respective annual work programs. These agencies in turn provide the UPV with information on the activities carried out so it can update the SIGESVIES databases.
- 1.29 The condition assessment for a total of 2,646 km of paved roads, performed in 2003, produced the following results: 868 km (32.8%) in very good condition; 501 km (19.0%) in good condition; 375 km (14.1%) in fair condition; and 902 km (34.1%) in poor condition. The assessment for the unpaved roads, which totaled 2,938 km, yielded the following results: 170 km (5.8%) in very good condition; 530 km (18.0%) in good condition; 2,006 km (68.3%) in fair condition; and 232 km (7.9%) in poor condition.

c. Training and creation of road maintenance microenterprises

- 1.30 Business training courses and lectures were given to encourage the establishment of maintenance microenterprises capable of participating in calls for bids for maintenance projects issued by FOVIAL. In 2002, as a result of these efforts, 7 of a total of 67 maintenance contracts entered into by FOVIAL were awarded to microenterprises started by former VMOP workers. In 2003, that number rose to 13 of a total of 29 contracts awarded by FOVIAL. In 2004, a total of 16 microenterprises satisfactorily carried out road maintenance works, together with another 17 larger businesses. In 2005, the contracts from 2004 were extended for a period of three additional months, during which time the bid processes for the hiring of companies in charge of these activities will be carried out.

2. Development objectives and economic and social impacts

- 1.31 To gauge the progress made in accomplishing the program's development objectives, the economic evaluations of the projects were updated and opinion surveys were analyzed. The purpose of this analysis was to determine to what extent the criteria adopted and the assumptions made during the preinvestment studies and the project design process were correct and are beginning to produce the expected economic and social impact and benefits and, if not, to provide for the appropriate adjustments during preparation of the projects to be included in the second phase.
- 1.32 *Updating the projects' economic evaluations.* The VMOP has proceeded to update the economic evaluations on which the improvement projects were based for the six

roads that have already been completed and were placed into service approximately one year ago. The UPV has rerun the World Bank's HDM-III model, keeping the basic parameters such as vehicle type and road geometry, but entering current data on final construction costs, maintenance costs, cost of the inputs for vehicle operation, and traffic volumes, based on information from the VMOP's various units.

- 1.33 The findings of the updated economic evaluations are shown in Table I-3:

Table I-3
Updated Economic Evaluation

Project	EIRR (%)		Time (minutes)		Vehicle operating costs (US\$ million)	
	Initial	Current	Initial	Current	Initial	Current
Comasagua – La Perla	23.6	38.3	22.4	12.1	2.9	1.8
San Antonio – Puxtla	29.0	74.8	41.7	22.8	21.7	13.5
San Ignacio – Las Pilas	19.0	31.9	33.6	23.5	10.6	8.2
CA 4 – Suchitoto	27.0	29.7	44.6	24.8	8.7	5.7
Opico – Aguilares	25.0	44.2	76.5	43.4	31.3	20.9
Pte. Cuscatlán – S. Ildefonso	24.0	34.0	25.1	14.7	7.5	5.1

- 1.34 ***Perception of program impacts amongst the population in the area of influence.*** To assess the program's impacts, opinion surveys have been conducted to road users and people living in the service areas of the improved roads to determine how they perceive the benefits generated by these improvements. Approximately one third of respondents cited as added benefits a decrease in dust and its harmful effects on children's health, and better prospects of finding work in other areas. Over 90% of those in the business community said that the number of visitors from other areas has increased, resulting in increased sales; there is a broader selection of suppliers and orders arrive more quickly. Nearly 50% of these people reported having opened new businesses or expanded existing businesses in the area, and increased their income. Those who work in the agriculture sector are not seeing the benefits very clearly; while they agree that travel times are shorter and that freight rates have come down a little, more than 85% have still not increased their crop area. As for the drawbacks to road improvements: 33% said that traffic accidents had increased; for just two of the roads, 22% said they were bothered by noise; and in another case the influx of tourists had produced an increase in the amount of trash.
- 1.35 ***Perception of the impact of reorganizing road maintenance.*** Road users nationwide said that: since the creation of FOVIAL, the quality of roads has improved (92%); they are satisfied with the work done (88%); they save travel time (33%);

there is less wear on vehicles (31%); traveling is more comfortable (about 20%); and they feel safer driving (11%). As for how users would rate the overall condition of the roads, responses were: excellent (20%); very good (38%); good (25%); fair (11%); and poor or terrible (5%).

- 1.36 ***Impact on employment of the VMOP reform.*** VMOP reform, pursuant to which its permanent staff of 7,400 employees was cut to 650, was carried out in an orderly fashion, with two compensation options offered to employees who would be laid off: (i) financial compensation; and (ii) job retraining to help them start road maintenance microenterprises. The companies hired by FOVIAL during 2002 created jobs for a monthly average of 9,000 workers, and in 2003 that figure rose to 10,500, which more than compensates for the imbalance caused by the initial layoffs.
- 1.37 Each road improvement project under the program has led to direct temporary employment, lasting approximately 10 months, for an average of 100 people living in the road's service area, at wage rates that are above those normally paid in these areas. Additionally, greater demand for the area's services and products has generated employment for approximately 120 persons.

C. Fulfillment of conditions for moving to phase II

- 1.38 Considering that in many cases it is impossible to determine whether a condition has been fully met, the evaluation system presented in the table below was used to rate the degree of progress in meeting each of the minimum conditions:

Degree of fulfillment	Description
A	Condition fully met.
B	Condition being met; significant progress made.
C	Minor failure to meet the condition; fulfillment delayed, but no structural obstacles exist.
D	Serious failure to meet the condition. Substantial problems exist.
P	Pending; fulfillment has been deferred or depends on the fulfillment of a condition precedent.
N/A	Not applicable. Fulfillment no longer applicable.

Ratings A and B indicate that conditions were acceptably met. In those instances where there was a failure to meet conditions, justifications must be supplied and the necessary corrective actions must have been taken.

- 1.39 Table I-4 shows in matrix form the progress made toward each of the minimum conditions that must be met to move to phase II, as explained in chapter III, section D, of the loan proposal for phase I.

Table I-4
Fulfillment of the Minimum Conditions for Moving to Phase II

Condition	Indicators agreed upon	Fulfillment / observations
Levels of commitment and disbursement of loan proceeds are consistent with the Bank's standard practices	At least 75% of funds committed	A – Condition fully met. The funds committed by 31 March 2005 represented 76.8% of the total.
	At least 50% of funds disbursed	A – Condition fully met. On 31 March 2005, disbursements represented 66.8% of the total.
FOVIAL has established itself as the execution and maintenance mechanism for the maintainable priority road network, and that network is serviced through contracts with microenterprises	FOVIAL satisfactorily services at least 50% (about 1,850 km) of the maintainable priority road network.	A – Condition fully met. Beginning in 2002, FOVIAL assumed responsibility for the entire national priority network, executing routine maintenance projects on 4,442 km of paved and unpaved roads as well as periodic maintenance according to the needs identified by the SIGESVIES system.
	FOVIAL contracts out maintenance to businesses and microenterprises.	A – Condition fully met. All maintenance activities are carried out through contracts with private companies. From 2002 to 2004, FOVIAL awarded 129 contracts for the execution of routine and periodic maintenance. It entered into another 57 contracts for the supervision of those projects. This total number of contracts includes contracts entered into with 36 maintenance microenterprises.
	FOVIAL has rules, procedures, and manuals governing contracts, personnel, finances, etc.	A – Condition fully met. FOVIAL has established all the organizational and functional regulations, as well as the operating manuals required for the management and administration of a business entity. It also has a website that provides the latest information about bidding, contracts, project progress, locations, traffic restrictions, etc.
	FOVIAL has a system for managing maintenance of the priority network.	A – Condition fully met. The board of directors of FOVIAL resolved to adopt the SIGESVIES system, which is administered by the VMOP's UPV and covers the entire road network under the Ministry's jurisdiction. This system is used each year to set priorities and make assignments for road maintenance and rehabilitation projects, and based on that information and the availability of budget resources, FOVIAL develops its annual work program. FOVIAL in turn provides the UPV with information on the activities carried out so it can update the SIGESVIES databases.
	FOVIAL has a financial information and unit pricing system.	A – Condition fully met. FOVIAL has computerized systems installed and running to track execution of all maintenance contracts, enabling it to monitor their physical and financial progress. It also has databases and models for calculating unit prices and maintenance budgets.

Condition	Indicators agreed upon	Fulfillment / observations
The VMOP unit charged with maintaining the national road network not serviced by FOVIAL has been reorganized.	VMOP unit responsible for maintaining the network not serviced by FOVIAL reorganized.	A – Condition fully met. The VMOP's Road Maintenance Unit (UMV) was reorganized, and now takes care of maintenance for main highways and high-traffic urban roads, collaborates with FOVIAL in doing emergency work on the national network, and lends support to the municipios through agreements entered into with these entities.
	VMOP maintenance unit has a system for evaluating, prioritizing, and maintaining the network not serviced by FOVIAL.	A – Condition fully met. The UMV uses the SIGESVIES, administered by the UPV, which sets priorities and assigns work for the year, based on which the UMV develops its annual work program. The UMV in turn provides the UPV with information on the results of its projects so it can update the SIGESVIES.
	VMOP maintenance unit services at least 50% of the rural road network not serviced by FOVIAL (approximately 2,600 km).	N/A - Fulfillment no longer necessary. As a result of the redrawing of the country's road network and the demarcation of maintenance responsibilities, some of the rural roads became part of the national priority network and hence were assigned to FOVIAL. The rest remained under the jurisdiction of municipal entities, rendering this condition inoperative.
	VMOP maintenance unit services 1,300 km of the maintainable priority road network on force account while the process of transferring responsibility to FOVIAL continues.	N/A - Fulfillment no longer necessary. Owing to how quickly—beginning in 2002—FOVIAL was able to assume responsibility for maintaining 100% of the national priority road network, this condition was also rendered inoperative.
The Environmental Unit (UA) has been strengthened and trained.	The UA has updated procedures and manuals that reflect the new regulations under the Environment Act.	A – Condition fully met. In the process of reorganizing the MOPTVDU, the UA became the Environmental Management Office (GGA), which is part of the UPV. The GGA has developed guidelines for the environmental monitoring of projects, terms of reference for conducting environmental and social impact assessments, and forms and procedural guides for handling environmental permits, thus ensuring its active involvement, from the “project idea” to acceptance of the works and the final evaluation of the impacts, as provided by the Environmental Act.
	Technical environmental standards for rural roads throughout the country have been prepared.	A – Condition fully met. The GGA has developed technical environmental specifications for rural roads, which are applicable to all road construction, improvement, rehabilitation, and maintenance projects carried out by the VMOP on the road network under its jurisdiction.

Condition	Indicators agreed upon	Fulfillment / observations
The VMOP's planning unit has been modernized.	It has investment planning and project evaluation tools; the road inventory has been updated and rescaled and jurisdiction over it has been revised.	A – Conditions fully met. The UPV has computer systems and high-performance equipment for surveying the road inventory, obtaining and processing traffic information, and controlling freight on the national road network. With the help of the Road Research and Development Unit, which has the equipment to evaluate pavement conditions, it can obtain the data for running the HDM model, which is used to select amongst alternatives for improvement, rehabilitation, and maintenance of the national network, as well as to prioritize road investments. The inventory has been updated and the jurisdiction over all the roads that make up the country's road network has been defined.
The VMOP unit responsible for project execution has been strengthened in all construction and project supervision areas.	It has the tools to monitor projects and the ability to make the necessary decisions in order to meet the goals and objectives of each program.	A – Condition fully met. The Project Coordination Unit (UCP) has computer systems installed and running to monitor the physical and financial progress of all the projects under its responsibility. Technical oversight is done through specialized consulting contracts, and for quality control it receives the support of the UIDV, which has modern, fully equipped laboratories for the testing of soils and materials. The UCP, together with the planning and procurement units and the UIDV, has developed the standard documents and model contracts for the bidding procedures and the calls for proposals for project supervision.
The VMOP's administrative and financial department is strengthened.	The financial and accounting management and internal audit systems for the program work properly.	A – Conditions fully met. According to the latest audited financial statements for the 2003 fiscal year, the program's financial management and accounting systems were rated acceptable.
	Audited financial statements are prepared and submitted on time, in accordance with Bank requirements.	A – Conditions fully met. Audited financial statements have been submitted to the Bank on time, as provided in the loan contract. The statements from the 2003 fiscal year were received on time. The 2004 financial statements are currently being prepared for delivery.
	The weaknesses identified and the recommendations made by the external auditors have been addressed.	A – Conditions fully met. The Ministry has addressed virtually all the recommendations made by the auditors and those made during financial/accounting visits in previous years. Of the 23 recommendations made by the auditors for the 2003 fiscal year, only the one regarding periodic staff evaluation mechanisms remains to be completed.

D. Lessons learned in phase I

- 1.40 The process of reforming the Ministry and establishing a sustainable mechanism for road maintenance showed that the key to success, aside from resource allocation, was the administration's political will to promote a continuous process of institutional transformation aimed at achieving greater efficiency, transparency, and technical expertise in management decision-making. Also contributing to success

was the permanence of the transportation authorities and the professional, administrative, and technical personnel responsible for the process.

- 1.41 Based on the experience gained with the projects in phase I, the following recommendations will be taken into account to address the problem of cost overrun seen in some instances: (i) special attention should be given to making certain that the project designs include all the elements to ensure drainage and prevent erosion, as well as to allow for the safe movement of pedestrians in the vicinity of schools and other public places; (ii) should design changes be needed for a project, the designer should be involved in analyzing those changes; (iii) the terms of reference for conducting the final engineering studies should state explicitly that the consultant must submit an analysis of options that considers different types of top course (gravel; single, double, or triple surface treatment; asphalt wearing surface, etc.), enabling the Ministry to choose the optimum pavement structure for the annual average daily traffic (AADT); and (iv) it is a good idea to use “design and construction” contracts, as this modality has allowed for the successful completion, on time and on budget, of works contracted out by the VMOP in the past. The Ministry has determined that the quality of work has been consistent, and there has been greater efficiency in the use of resources. The decision whether to use such contracts in phase II will be made on a case-by-case basis, taking into account the status of available designs and the complexity of, and risks in, execution.
- 1.42 Other recommendations arising from the experiences with phase I include: (i) accountability for the quality of works should not rest exclusively with the supervisor, considering that the supervisor’s approval of work done does not exempt the builder from all responsibility; and (ii) prequalification will be required for construction of works costing US\$5 million or more.

E. Conclusions and recommendation

- 1.43 The evidence presented indicates that phase I of the program is being executed satisfactorily and that the conditions precedent for processing phase II have been met. It is therefore recommended that the Board of Executive Directors approve phase II of the multiphase program for sustainable roads in rural areas.

II. PHASE II

A. Objectives and description

- 2.1 Phase II of the program shares the same goal and purpose already defined in the first phase, which were to promote passenger and freight transportation, thereby helping to revitalize the agriculture sector, integrate rural communities, and raise the standard of living of the rural population. This second phase will continue to support the same specific objectives pursued in phase I—to rehabilitate a portion of the tertiary road system in rural areas, establish new systems for road maintenance, and modernize the transportation sector’s institutional structure.

B. Structure

- 2.2 The multiphase program has been structured into four components: (i) the first component is to help rehabilitate and improve approximately 600 km of the tertiary gravel road network in rural areas (300 km in each phase); (ii) the second component is to help rebuild and rehabilitate approximately 100 km of sustainable rural roads that were damaged by the January 2001 earthquake; (iii) the third component is to help establish and consolidate new systems for carrying out road maintenance; and (iv) the fourth component is to support the process of modernizing the VMOP in terms of its role as the agency in charge of regulation, planning, promotion, and supervision of the road infrastructure.
- 2.3 The latest cost and financing levels for this multiphase program are shown in Table II-1. The figures for phase I come from the current budget and reflect line-item adjustments and cancellation of resources requested by the Government of El Salvador from unused inspection and supervision fee resources. It shows the latest budget for phase II, reflecting the increase in the amount of the loan to US\$55.4 million, stemming from application of the new policies on the eligibility of expenses.

Table II-1
Cost and Financing (in thousands of U.S. dollars)

Item	PHASE I			PHASE II		
	IDB	Local	Total	IDB	Local	Total
1. Engineering and administration	5,413	0.920	6,333	4,600	0	4,600
2. Direct costs	49,021	10,870	59,891	49,110	0	49,110
2.1 Rehabilitating and improving rural roads	43,107	5,140	48,247	49,110	0	49,110
2.2 Rebuilding and rehabilitating earthquake-damaged rural roads	5,914	1,480	7,394	0	0	0
2.3 Support for the maintenance plan	0	4,250	4,250	0	0	0
3. Institution-strengthening	3,220	0.480	3,700	1,690	0	1,690
4. Finance charges	0.058	8,540	8,598	0	4,800	4,800
Program total	57,712	20,810	78,522	54,400	4,800	60,200

- 2.4 No resources are included in phase II for the rehabilitation of earthquake-damaged roads, since this was a specific objective already accomplished in phase I. No additional financing has been planned for the road maintenance component, as FOVIAL has sufficient resources.
- 2.5 ***Rehabilitation and improvement of rural roads:*** In phase II, this component will finance the rehabilitation and improvement of approximately 300 additional kilometers of roads that fall under the National Plan for Sustainable Roads in Rural Areas. Projects will be selected in accordance with the ranking criteria agreed upon with the Bank for phase I, which were revised in view of the inclusion of roads in the aforementioned national plan: (i) the SIGESVIES system implemented during phase I of the program, which factors in the rescaling of the road network and the responsibilities over management thereof assigned to the various subnational agencies, and factors in the latest inventory of the road network; (ii) the Salvadorian National Land Use and Development Plan, finalized in 2003, which sets out spatial integration proposals and makes it possible to assign priority to resolving mobility problems; and (iii) the priorities in the new administration's programs, which assign an essential role to the fight against poverty. The selection criteria are summarized in section III-C of this proposal.
- 2.6 With a view to forming the fourth group of roads to be rehabilitated, a set of prospective projects totaling 168.4 km in length has been agreed upon and will be evaluated in greater detail to make certain that they meet the program's selection criteria (see Table II-2). From this set, approximately 100 km will be selected to make up the projects for the first year of phase II. The final designs for some of these projects are in the process of being contracted out, with resources from phase I, so that the works can be tendered in late 2005 or early 2006. These

prospective projects are listed in the following table. For each selected project, technical and economic feasibility is assessed using the Highway Design Maintenance Model (HDM), the Rural Roads Model, or other applicable models; compliance with environmental regulations (see paragraph 3.13) is ensured; an environmental profile is prepared; and, if the Ministry of Environment and Natural Resources (MARN) so decides, environmental and social impact assessments are done as well. In all cases, consultations are held with the communities benefiting from the project, and environmental management action plans are prepared, along with the corresponding measures to mitigate environmental and social impacts.

Table II-2
Preselected Projects for the Fourth Group (First Group of Phase II)

PROJECT	Department	Length (km)	AADT 2004	Estimated cost (US\$000)
Improvement of rural road CAB16N, Ilobasco - Presa 5 de Noviembre section	Cabañas	32.37	198	5,827
Improvement of rural road AHU24S-AHU25S, CA02W - Ent. AHU25S - Garita Palmera section	Ahuachapán	9.28	725	1,670
Improvement of rural road SAL11N, Venecia - San Jose Cortez - Km. 9 CA04 (Apopa) section	San Salvador	7.64	840	1,911
Improvement of rural road CHA25/LIB31, Nueva Concepcion - San Pablo Tacachico section	Chalatenango, La Libertad	25.41	427	7,378
Improvement of rural road SAL16S, Ilopango - Asino and Santiago Texacuangos - Ent. SAL16S.	San Salvador	11.49	345	2,068
Improvement of rural road CUS18E, Suchitoto - CAB17N (Tejutepeque) section	Cuscatlan, Cabañas	28.79	101	5,182
Improvement of rural road CHA09S/CAB17N, San Miguel de Mercedes – Potonico - Jutiapa-Tejutepeque section and connector (Ilobasco - Presa 5 de Noviembre)	Chalatenango, Cabañas	40.54	176	7,297
Paving of rural road LIB12S/SAL14S, Nuevo Cuscatlán - Ent. LIB 13S section and SAL13 - SAL14 spur road (Boulevard Orden de Malta and Planes de Renderos)	La Libertad, San Salvador	12.93	316	2,327
TOTALS		168.45		33,662

- 2.7 ***Support for the Road Maintenance Plan:*** As indicated earlier, this component's targets of establishing new systems of management, expanding road maintenance, and contracting microenterprises have been more than met during phase I. The targets of the Road Maintenance Plan have been reviewed (see logical framework), and during phase II the MOPTVDU will continue to submit its annual maintenance reports to show that levels of organization and financial resources are adequate to

properly maintain the road network, which contributes to the program's sustainability.

- 2.8 ***Institution-strengthening:*** The targets and objectives of this component have essentially been accomplished during phase I; the additional resources called for in phase II will continue to support the consolidation of the government's institutional reform of the VMOP. Given that institution-strengthening is an ongoing process of change and adaptation for the institutions involved, this component will primarily finance annual programs in the executing agency's various areas of activity, including technical-assistance programs, training, procurement of computer, communications, and laboratory equipment, and other logistical support for the VMOP's units. Based on experience from phase I, it is estimated that US\$200,000 will be invested each year in these areas.
- 2.9 The balance of the resources under this component will finance the continuation during phase II of the modernization process in the following areas: (i) promoting public-private partnerships for investing in and financing the road infrastructure; (ii) making management of the road infrastructure a key part of the transportation system; and (iii) fostering research and development of technologies that might reduce the cost of works and increase the coverage of investments in the road network. Resources from phase I will finance technical assistance for the detailed formulation of actions and proposals in these areas to be executed in phase II.

C. Cost and financing

- 2.10 Table II-3 presents a breakdown by category of the total cost and financing for phase II of the program. Of the US\$55.4 million Bank loan, resources from the Intermediate Financing Facility (IFF) account will be used to pay part of the interest on US\$23 million.

Table II-3
Costs and Financing Plan – Phase II (US\$ million equivalent)

Item	IDB	Local Contrib.	Total	% IDB
1. Engineering and administration	4,640	0.000	4,600	100
1.1 Engineering and studies	1,654	0.000	1,654	100
1.2 Supervision, auditing, and evaluation	2,946	0.000	2,946	100
1.3 Support for the UCP	0.000	0.000	0.000	N/A
2. Direct costs	49,110	0.00	49,110	100
2.1 Rehabilitation and improvement of rural roads	49,110	0.000	49,110	100
2.2 Rehabilitation of earthquake-damaged roads	0.000	0.000	0.000	N/A
2.3 Support for the Maintenance Plan	0.000	0.000	0.000	N/A
3. Institution-strengthening	1,690	0.000	1,690	100
4. Finance charges	0.000	4,800	4,800	0
4.1 Interest	0.000	4.553	4.553	0
4.2 Credit fee	0.000	0.247	0.247	0
4.3 Inspection and supervision	0.000	0.000	0.000	N/A
Program total	55,400	4,800	60,200	92

D. Targets and objectives

- 2.11 Annex II-1 has a detailed version of the program's logical framework, which reflects the revisions and adjustments resulting from the evaluation of phase I and from the project performance monitoring report feedback process in which the Bank and the executing agency are engaged.

III. EXECUTION OF PHASE II

A. Borrower, guarantor, and executing agency

- 3.1 The borrower will be the Republic of El Salvador. The executing agency for the program will continue to be the MOPTVDU, through the VMOP.

B. Program administration in phase II

- 3.2 The VMOP will continue to execute and administer the program during phase II through its administrative units. The Road Planning Unit (UPV) is in charge of coordinating the entire program and monitoring it from conception through evaluation. The UPV performs this function for projects financed by the Bank and by other donors, including the Central American Bank for Economic Integration, the Overseas Economic Cooperation Fund of Japan, the United States Agency for International Development, the Government of China, etc. As a result of the modernization of the VMOP, the role of the Project Coordination Unit (UCP) has been limited to managing the contracts for works, as well as overseeing and monitoring their execution. During execution, the UPV will coordinate with the UCP in all aspects relating to the management of rehabilitation and project supervision contracts. It will also coordinate with the Procurement and Institutional Contracting Unit with regard to bidding and contracting, and with the MOPTVDU's Financial Unit (UFI) in connection with the financial monitoring of the program. As a result of the reforms and institution-strengthening efforts during phase I, the executing agency's various units have the internal capacity and the staff they need to carry out the program. The UPV has satisfactorily performed the tasks of coordination, preparation of progress reports, and monitoring of the indicators agreed on for the program.
- 3.3 The UFI will handle the financial management of the program, in coordination with the UPV. Its responsibilities will include: (a) preparing and submitting to the Bank: (i) disbursement requests and justifications in support of eligible program expenditures; (ii) semiannual statements of activity for the revolving fund; and (iii) audited program financial statements, as well as other reports required by the Bank; (b) maintaining a suitable filing system for documentation in support of eligible expenses so it can be checked by Bank staff and external auditors; (c) maintaining suitable information systems, integrated with the MOPTVDU's official accounting system, for the accounting and financial management of program expenses, as well as a system for managing contracts and monitoring projects and the corresponding internal audit structure for handling resources from the IDB, the local counterpart, and other lenders in accordance with Bank requirements; and (d) maintaining separate and specific bank accounts for the loan proceeds and the local counterpart funds.

- 3.4 To carry out the program, the UPV will receive support as needed in the form of advisory support on specific issues that will enable it to resolve problems that arise in managing areas for which there is no expertise on staff. Resources from the institution-strengthening budget category will be used.

C. Execution and schedule of disbursements

1. Conditions precedent to project selection

- 3.5 Prior to the Bank's authorizing calls for bids on the fifth and sixth group of road rehabilitation projects, the annual monitoring meetings referred to in chapter III, section F, of this proposal will be held to verify that:
- a. The program is making satisfactory progress in keeping with the objectives and targets proposed in the logical framework, and any corrective measures to guarantee the accomplishment of the program's development objectives have been adopted.
 - b. The units responsible for execution and maintenance of the maintainable road network continue to operate with a clear mandate and adequate funds. The borrower commits to allocating the resources needed to ensure that the national road network is kept in satisfactory condition, which are estimated to be at least US\$45 million annually. These resources will enable FOVIAL and the Road Maintenance Unit to continue to provide adequate maintenance for the national priority network.
 - c. Appropriate measures have been adopted to ensure that environmental quality control procedures have been followed during the various planning and execution phases for all the projects under this program, and the program's stipulated environmental conditions have been met.

2. Project selection criteria

- 3.6 The projects to be financed under this program must meet the general criteria for rehabilitation and improvement projects agreed upon with the executing agency, which are in the program's technical files. The basic criteria are: they must involve existing roads, selected based on their proven economic merits and positive impact on the region's development, and should not involve any legal problems associated with the right of way. Criteria that have been agreed upon for selecting and assigning priority to projects include agroeconomic variables, such as current and potential land use, area, and type of production; social variables, such as access to health and education services, and population size; environmental aspects, such as environmental vulnerability and the existence of protected areas; and other variables that affect project engineering, such as topography, climate, and geology, and annual average daily traffic (AADT). Also taken into account will be the extent to which projects complement development plans formulated by the Ministries of

Agriculture and Economic Affairs, local governments, and the community; the SIGESVIES, which was implemented during phase I of the program and factors in the redrawing and the updated inventory of the road network; the National Land Management and Development Plan; and plans to combat poverty. The rehabilitation and improvement projects should be accompanied by their respective environmental assessments and environmental management action plans, and involve consultations with the population and authorities in the project's service area, with the aim of determining the specific mitigation measures to be included in the bidding documents and project and supervision contracts.

- 3.7 All designs and rehabilitation and improvement works under this program will be carried out by private-sector contractors. The designs will include an analysis of options that considers different types of top course (gravel; single, double, or triple surface treatment; asphalt wearing surface, etc.), enabling the Ministry to choose the optimum pavement structure for the AADT. To use the "design and construction" modality, the VMOP will submit to the Bank a study justifying its use based on available designs and the findings of the analysis of the complexities and risks in execution. Technical supervision and quality control of works and environmental mitigation measures will be done by specialized firms to be hired before the project contracts are awarded.

D. Procurement of works and goods and contracting of consulting services

- 3.8 The procurement of works and goods and the contracting of consulting services financed with Bank resources will be carried out in accordance with the provisions set out in documents GN-2349-4 (Policies for the procurement of works and goods financed by the IDB) and GN-2350-4 (Policies for selection and contracting of consultants financed by the IDB). International competitive bidding will be required for works estimated to cost more than US\$2 million equivalent and for goods estimated to cost more than US\$300,000 equivalent; local competitive bidding will be used for works estimated to cost less than US\$2 million equivalent and for goods estimated to cost less than US\$300,000 equivalent; and shopping will be used for works estimated to cost less than US\$350,000 and for goods estimated to cost less than US\$50,000 equivalent per contract. Prequalification of bidders will be required for works with an estimated value of over US\$5 million equivalent. In the case of consulting services, the short list of consultants whose services are estimated to cost less than US\$200,000 equivalent per contract may be comprised entirely of national consultants. The borrower, through the executing agency, will use any of the proposed methods for the selection and hiring of consultants that the Bank agrees meet the requirements set out in the policy on consultants.
- 3.9 Prior to issuing a call for prequalification or bids or requesting proposals, as applicable, the proposed procurement plan is to be submitted to the Bank for review and approval, as provided for in the documents mentioned in the preceding

paragraph. This plan will be updated every 12 months during project execution and each updated version will be submitted to the Bank for review and approval. The procurement of goods and works and the contracting of consulting services will be carried out in accordance with the procurement plan approved by the Bank. Annex III-1 presents the procurement plan for the first 18 months of phase II. In addition, before publishing the invitation to bid for works, consulting services, or goods, the VMOP must submit for the Bank's consideration: the general plans for the works, technical and environmental specifications, terms of reference, price and budget analyses, environmental permits, and all other documents that need to be reviewed in order to receive the Bank's nonobjection. Environmental mitigation measures should incorporate contingency plans to mitigate the adverse impacts that may occur because of the rehabilitation and improvement of the respective road, as well as measures to mitigate the indirect and project-induced impacts, or those resulting from development spurred by improvements to the road infrastructure, in keeping with the environmental management action plans. Specific environmental measures must be incorporated into bidding documents for new works and into road maintenance contracts.

E. Execution period and disbursement schedule

- 3.10 The execution period for phase II of the program will be approximately four years, starting with the date the loan contract enters into force. The estimated timetable for disbursements is presented in Table III-1.

Table III-1
Disbursement Timeline (US\$ million equivalent)

Source	Year 1	Year 2	Year 3	Year 4	Total	
IDB – OC	9.84	19.04	20.48	6.89	55.40	92.80%
Local contribution	0.30	0.85	1.57	2.08	4.80	8.0%
Program total	10.14	19.04	22.05	8.97	60.20	100.00%
	16.8%	31.7%	36.6%	14.9%	100.00%	

F. Monitoring and evaluation

- 3.11 The monitoring and evaluation mechanisms agreed upon for phase I, and described in chapter III, section F, of the project proposal, will continue to be applied during phase II. These include holding annual monitoring meetings, submitting audited financial statements, and presenting the annual maintenance report.
- 3.12 The executing agency will submit program financial statements every year during program execution. The external audit will be performed by a firm of independent auditors acceptable to the Bank in accordance with the requirements in documents

AF-100 and AF-300 and based on the terms of reference previously approved by the Bank (document AF-400). The audited program financial statements will be submitted 120 days after the end of each fiscal year, and the program closure statements will be submitted 120 days after the last disbursement.

- 3.13 The procedures set out in the external audit procurement document (AF-200) will be used to select and hire the auditing firm. The cost of the external program audit will be considered part of the project cost and will be financed with the proceeds of the Bank loan.

G. Environmental and social management

- 3.14 The proposal for environmental and social management of the project set out in chapter III, section G, of document PR-2566 is being implemented satisfactorily. As was indicated in chapter I, section B.1. of this proposal, the VMOP unit in charge of environmental and social matters was restructured and strengthened through the creation of the Environmental Management Office (GGA). The new management gets involved in the preparation of road projects from their earliest stages, interacting with the other technical units of the VMOP to comply with environmental regulations and commitments with the Bank.
- 3.15 With support from the institution-strengthening component, the GGA developed job descriptions, a guide to procedures for obtaining environmental permits for road projects, a guide for the environmental monitoring of projects in execution, and terms of reference for conducting social impact assessments. The GGA has also prepared the environmental technical specifications for rural roads, to be followed in all construction, improvement, rehabilitation, and maintenance projects on rural roads throughout the country.
- 3.16 Environmental regulations have been observed for all the roads. For the six roads making up the program's first group, environmental and social impact assessments were conducted that confirmed that the indirect impacts would be insignificant or nonexistent, which is why the resulting recommendations focused on controlling the projects' direct impacts during the construction stage and on including measures to prevent accidents, which could increase during the operation stage. In view of the passage of the regulations under the Environment Act, which entered into force in 2001, an environmental profile must first be prepared for each project, and should identify the possible environmental risks and especially the potential indirect impacts; this information is asked for specifically in the environmental form accompanying the application to request an environmental permit from the Ministry of Agriculture and Natural Resources (MARN). After the forms are evaluated and a field inspection is carried out jointly by staff from the GGA and the MARN, the MARN determines whether or not an environmental and social impact assessment must be conducted, and if not, it issues detailed recommendations on specific measures it considers necessary to mitigate and control certain potential impacts.

This procedure has been followed for all the roads. In those cases where the MARN has required it, EIAs have been conducted, public consultations announced by a press release and in other media have been held, and environmental management action plans have been prepared. Additionally, social impact assessments were conducted for all the projects, involving consultations that made it possible to define social mitigation efforts and gain the affected population's full acceptance of the projects. In no instance have situations arisen that have made it necessary to apply the Bank's Involuntary Resettlement Policy.

- 3.17 The measures to mitigate direct impacts, such as the prevention of erosion, the preservation of natural drainage, etc., have been incorporated into the designs and the works. Mitigation measures for temporary impacts stemming from the execution stage, such as dust control, prevention of waterway pollution, removal of debris and waste, etc., are explicitly set out in the project specifications and are part of the contractors' responsibilities. The project supervisor is tasked with continuously ensuring that environmental protection measures are followed, and the GGA performs monthly inspections to verify compliance.
- 3.18 As was indicated earlier, with the exception of a possible increase in accidents owing to better road conditions, the assessments conducted and the evaluation by the MARN found the potential indirect impacts of the proposed rehabilitations to be negligible. This is largely the result of the fact that the rehabilitated roads are in already populated areas in which the original vegetation has been supplanted by various types of annual and perennial crops. Signs of growing agricultural production will appear gradually and should largely reflect increased productivity resulting from programs like the Bank's agricultural restructuring program carried out in the same areas. The GGA has devoted its efforts and human resources to monitoring direct impacts and incorporating accident prevention and road safety measures. It has been agreed that the GGA will commission independent environmental audits to verify that the environmental management processes are working properly, to review the GGA's performance, to ensure that the various stakeholders are participating, and to determine the quality of the environment affected directly or indirectly by the works financed. The first audit will assess how well the environmental management process works and will prepare an impact assessment for the six roads already rehabilitated, comparing information and baseline data in the environmental briefs, the EIAs (where one was prepared), the social impact assessments, and the public consultations. This audit report should be available before the calls for bids are issued for the fourth group of roads to be rehabilitated and, if necessary, any recommendations for corrective actions should be followed.

H. Risks

- 3.19 An additional risk has been identified for the execution of phase II that was not foreseen in phase I. Owing to the major fiscal constraints facing the country, there

may be potential problems in allocating the budget that the MOPTVDU needs to disburse the Bank's resources and make the required local counterpart contributions. The potential impact associated with this risk is mitigated by the following: the national government has signaled its commitment to the objectives of this operation and has assigned it priority; it is also requesting that the new policies on the eligibility of expenditures financed with Bank resources apply to 100% of the program's direct costs.

EL SALVADOR
MULTIPHASE PROGRAM FOR SUSTAINABLE ROADS IN RURAL AREAS
LOGICAL FRAMEWORK (PHASES I AND II)

OBJECTIVES	VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
GOAL			
Contribute to developing El Salvador's rural areas, revitalizing the agriculture sector, and integrating rural communities into the national economy by promoting the transportation of passengers and freight.	<p>Improved access to agricultural markets and reduced costs will be assessed using the following proxy indicators:</p> <ul style="list-style-type: none"> Studies for each rehabilitated road show an average decrease of 25% in vehicle operating costs with respect to the base years. Studies for each rehabilitated road show an average decrease of 30% in travel times with respect to the base years. 	<ul style="list-style-type: none"> Updated inventory, as reflected in the annual maintenance report. Economic evaluations of projects under way using the HDM model. 	<ul style="list-style-type: none"> The government continues to assign priority to improving living conditions for the people of El Salvador, especially in rural areas.
PURPOSE			
To provide rural areas with an adequately serviced network of sustainable roads, so that roads are consistently passable.	<ul style="list-style-type: none"> By the end of the program, the percentage of the national priority road network in good condition grows from 40% in 2000 to 70% in 2005 (phase I), and 85% in 2009 (phase II). The number of municipal seats that are connected year-round to the principal highways in the national road network increases from 74% in 2002 to 80% in 2005 and 85% in 2009. By the end of the program, the number of accidents on improved roads has been reduced by at least 5% when compared to the 2000 baseline, measured in accidents/veh-km. 	<ul style="list-style-type: none"> Periodic assessments of the condition of the road network. Opinion surveys conducted by FOVIAL. 	<ul style="list-style-type: none"> There is continued willingness to support the system for sustainable road maintenance. The legislature approves funds in time for program execution.

OBJECTIVES	VERIFIABLE INDICATORS				MEANS OF VERIFICATION	ASSUMPTIONS
COMPONENTS						
1. Rehabilitation and improvement of rural roads	Year	Cumulative rehabilitation			<ul style="list-style-type: none">Evaluation report from the first phaseAnnual monitoring meetingsProgram progress reports	<ul style="list-style-type: none">The government’s budget includes the resources needed to execute the projects.
	2002	290				
	2003	550				
	2004	650				
	2005	750	End of phase I			
	2006	800				
	2007	900				
	2008	1000				
	2009	1050	End of phase II			
2. Rebuilding and rehabilitation of rural roads damaged by the earthquakes of 13 January 2001 and February 2001.	<ul style="list-style-type: none">At least 100 km of earthquake-damaged rural roads are repaired between 2002 and the end of phase I (2004).				<ul style="list-style-type: none">Semiannual progress reports and annual monitoring reports	The government’s budget includes the resources needed to execute the projects.
3. Establishment and consolidation of a system for sustainable road maintenance.	Annual targets for the size of the road network maintained by the MOPTVDU and FOVIAL for 2001 and after are:				<ul style="list-style-type: none">Annual road maintenance reportProgram progress report	<ul style="list-style-type: none">There are appropriate, sustainable sources for road maintenance contracted out by FOVIAL or the UMV.Civil society supports the continued existence of FOVIAL.
		Total Maintainable Network (km)	Maintenance MOPTVDU (%)	Maintenance FOVIAL (%)		
	2001	5520	83%	0%		
	2002	5485	2%	98%		
	2003	5585	2%	98%		
	2004	6073	2%	98%		
	2005	6322	2%	98%		
	2006	6572	2%	98%		
	2007	6672	2%	98%		
	2008	6772	2%	98%		
	2009	6872	2%	98%		

OBJECTIVES	VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
4. Reorganization and strengthening of the Ministry of Public Works	<ul style="list-style-type: none"> • Sustainable system for road maintenance established and approved by 2003. • Unit to do road maintenance on force account reorganized and operating by 2002. • Environmental Unit strengthened by June 2003. • Road management system implemented in 2002 and road inventories updated yearly between 2003 and 2009. • Road network adjusted and jurisdictions servicing roads revised by 2002. • Project execution department strengthened by 2005 and 2009. • The MOPTVDU's administration and finance departments strengthened by 2005 and 2009. 	<ul style="list-style-type: none"> • Evaluation report from the first phase • Annual monitoring meetings • Program progress reports 	<ul style="list-style-type: none"> • The government's budget includes the resources needed to execute the projects.
ACTIVITIES			
COMPONENT 1 <ul style="list-style-type: none"> • Selection of roads to be rehabilitated/improved • Engineering studies, economic evaluations, and environmental and social assessments • Completion of bidding documents • Award of contracts and contracting • Execution and supervision 	<ul style="list-style-type: none"> • See Budget Table 	<ul style="list-style-type: none"> • Progress reports, audit report, and supervision reports 	<ul style="list-style-type: none"> • The market for contractors and consulting firms is conducive to carrying out bidding processes as planned and generates acceptable offers.
COMPONENT 2 <ul style="list-style-type: none"> • Selection of roads to be rehabilitated/improved • Engineering studies, economic evaluations, and environmental and social assessments • Completion of bidding documents • Award of contracts and contracting • Execution and supervision 	<ul style="list-style-type: none"> • See Budget Table 	<ul style="list-style-type: none"> • Progress reports, audit report, and supervision reports 	<ul style="list-style-type: none"> • The market for contractors and consulting firms is conducive to carrying out bidding processes as planned and generates acceptable offers.

OBJECTIVES	VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
<p>COMPONENT 3</p> <ul style="list-style-type: none"> • Inventory of network to be maintained • Management system • Annual maintenance plans • Bidding documents for maintenance contracts • Award of contracts and contracting • Execution and supervision • Budget allocation 	<ul style="list-style-type: none"> • See Budget Table 	<ul style="list-style-type: none"> • Progress reports, audit report, and supervision reports 	<ul style="list-style-type: none"> • Consulting firms show interest in performing studies and participating in calls for proposals.
<p>COMPONENT 4</p> <ul style="list-style-type: none"> • Bidding, contracting, and delivery of assessments and consulting services for strengthening the MOPTVDU. 	<ul style="list-style-type: none"> • See Budget Table 	<ul style="list-style-type: none"> • Progress reports, audit report, and supervision reports 	<ul style="list-style-type: none"> • The market for contractors and consulting firms is conducive to carrying out bidding processes as planned and generates acceptable offers.