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Report No. 13295

PROJECT COMPLETION REPORT

URUGUAY

**THIRD HIGHWAY PROJECT
(LOAN 2238-UR)**

JUNE 30, 1994

Infrastructure and Energy Division
Country Department IV
Latin America and the Caribbean Regional Office

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Fiscal Year

January 1 - December 31

Currency Equivalents

Year-end 1981	-	US\$1.00	=	Np.	11.59
Year-end 1982	-	US\$1.00	=	Np.	33.75
Year-end 1983	-	US\$1.00	=	Np.	43.25
Year-end 1984	-	US\$1.00	=	Np.	74.25
Year-end 1985	-	US\$1.00	=	Np.	125.00
Year-end 1986	-	US\$1.00	=	Np.	181.00
Year-end 1987	-	US\$1.00	=	Np.	281.00
Year-end 1988	-	US\$1.00	=	Np.	457.50
Year-end 1989	-	US\$1.00	=	Np.	805.00
Year-end 1990	-	US\$1.00	=	Np.	1,594.00

Units of Weights and Measures: Metric

1 kilometer (km)	=	0.62 mile (mi)
1 meter (m)	=	3.28 feet (ft)
1 kilogram (kg)	=	2.20 pounds (lbs)
1 metric ton	=	2,206 pounds (lbs)

Principal Abbreviations and Acronyms

AFE	State Railroad Administration <i>(Administración de Ferrocarriles del Estado)</i>
ANP	National Port Administration <i>(Administración Nacional de Puertos)</i>
DNT	National Transportation Directorate <i>(Directorate Nacional de Transportación)</i>
HDM	Highway Design Model
IDB	Inter-American Development Bank
<i>Intendencia</i>	Municipal administration in each district
MTOP	Ministry of Transport and Public Works
Np.	New Uruguayan Pesos
TPU	Transport Planning Unit of DNT
<i>Vialidad</i>	National Highways Directorate

THE WORLD BANK
Washington, D.C. 20433
U.S.A.

Office of Director-General
Operations Evaluation

June 30, 1994

MEMORANDUM TO THE EXECUTIVE DIRECTORS AND THE PRESIDENT

SUBJECT: Project Completion Report on Uruguay
Third Highway Project (Loan 2238-UR)

Attached is the "Project Completion Report on Uruguay - Third Highway Project (Loan 2238-UR)", prepared by the Latin American and Caribbean Regional Office. The report has no Part II, as the Borrower did not provide it, but it makes use of other Borrower supplied information.

The project's basic objective was to consolidate the momentum achieved under the Bank's first two highway projects. Specific tasks were road construction, rehabilitation and maintenance and, importantly for this repeater project, the institutional strengthening of the Ministry of Transport and Public Works (MTOB).

Implementation took three and one-half years longer than planned because of a variety of factors, including: changes in government, sector priorities and composition of physical works; and slow contract management. Actual project costs were about 75% of estimated costs due to national currency devaluations and strong contractor competition.

The project's physical achievements were good, with an ex-post economic rate of return (ERR) of 20% overall, as compared to an ex-ante ERR of 26%. Essential studies were carried out, but institutional development was limited. Discontinuity in Bank staff assigned to the Uruguay road sector had a negative impact on implementation and ultimate results.

Project outcome was marginally satisfactory. Institutional development was modest. Sustainability is uncertain as the prospects for adequate road maintenance are mixed and the institutional achievements have not been firmly implanted in MTOB. PCR quality is satisfactory. No performance audit is planned.

Robert Picciotto
by H. Eberhard Köpp

Attachment

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PROJECT COMPLETION REPORT

URUGUAY

THIRD HIGHWAY PROJECT
(Loan 2238-UR)

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PROJECT COMPLETION REPORT

URUGUAY

THIRD HIGHWAY PROJECT (LOAN 2238-UR)

PREFACE

This is the Project Completion Report (PCR) for the Third Highway Project in Uruguay for which Loan 2238-UR in the amount of US\$45.00 million was approved on February 15, 1983. The loan closed on December 31, 1990 three years behind schedule with US\$41.97 million disbursed. US\$3.03 million (7%) was cancelled.

The PCR was prepared by the Infrastructure and Energy Operations Division of the Latin America and Caribbean, Department IV. The Borrower sent tabulated data and a brief overview of the project in June 1993 which have been used in the preparation of Parts I and III of this report. The Borrower sent a letter on October 25, 1993 that noted the receipt and the review of Parts I and III of the PCR but offered no substantive comments or text to be included in Part II. Thus, this PCR was completed without Borrower contributions to Part II. This omission is permitted under Bank guidelines for PCRs more than two years old.

This PCR is based, *inter alia*, on: (a) the Staff Appraisal Report; (b) Loan and Guarantee Agreements; (c) supervision reports; (d) correspondence between the Bank and the Borrower; (e) interviews with Bank staff; and (f) data from the Borrower.

PROJECT COMPLETION REPORT

URUGUAY

THIRD HIGHWAY PROJECT (LOAN 2238-UR)

EVALUATION SUMMARY

1. Project Objectives

1.1 The main objective of this project was to consolidate the momentum achieved under the first two highway projects by the financing of a comprehensive investment program, covering the national and feeder road networks and a roads and bridges reconstruction program. This objective was achieved. A second objective was to provide technical assistance for strengthening the planning and executing capability of the MTOP (Ministry of Transportation and Public Works) and *Vialidad* (National Highway Directorate). This objective was only partially achieved.

2. Project Implementation and Results

2.1 There were substantial delays in the implementation of the project due to a late start caused by changes in the government, changes in sector priorities, project restructuring, decreases in budget allocations, and further changes in the government resulting in delayed decisions on contracts and payments and a lack of continuity. As a result, the loan closing date was extended twice for a total of three years.

2.2 Changes in the country's monetary policies and the resulting currency devaluation—only partially compensated for by price increases—helped lower project costs (para. 5.6). Highly competitive bidding for the civil works resulted in further savings and a significantly lower total project cost (para. 5.7). Combined, the two resulted in the elimination of the cofinancing element in the financing plan for the project. The lower costs, along with the dropping of Route 1 reconstruction, enabled some additional works to be included, principally in the Feeder Roads Program and traffic safety (para. 5.4). Delays, however, in calling for bids and budget restrictions slowed civil works execution in 1989 and 1990 and led to a number of contracts remaining uncompleted at the time of loan closing. Thus, US\$3.03 million of the US\$45.00 million loan was cancelled. Financing for these uncompleted contracts was eventually provided under the follow-on Transport I Project (Ln. 3021-UR).

2.3 The physical improvement of the highway network as a result of this project was substantial. The institutional strengthening of the MTOP and

Vialidad was not as effective as anticipated largely because of several changes in the government and the management of the entities during the project period (para. 6.1).

2.4 The overall cost of the project at US\$101.8 million was 74% of the appraisal estimates of US\$137.0 million. Economic re-evaluation was performed for items covering more than 94% of the actual project costs and yielded an overall economic rate of return (ERR) of 19.6% for the Civil Works (Category I), with individual sub-projects ranging from 13% to 55%. In the *ex post* evaluation of the Feeder Roads Program, the average ERR was 13.1% (para. 6.3).

3. Sustainability

3.1 Provided that scheduled maintenance is carried out, the likelihood of sustainability for the Civil Works component is high. Recent supervision reports from the Transport I Project indicate that road maintenance is progressing well in many provinces but poorly in a few due to a system of fixed, per kilometer payments for maintenance that does not adequately cover the costs of transporting materials to remote sites (para. 7.1).

3.2 The likelihood of sustainability for sector institutional development is low. Since the project closed, there have been more changes in the management of MTOP as well as high staff turnover due to low wages. Further, a new government will be elected in 1994, which historically has meant sector management changes. However, some of the institutional gains such as the MTOP's annual investment planning system were still in place as of early-1994 (para. 7.2).

4. Lessons Learned

4.1 The costs of this project as well as that of its predecessor, the Second Highway Project, were off by 26% and 14% respectively—in both projects, primarily due to changes in the exchange rate *vis-à-vis* inflation. Thus, the first lesson learned is that greater attention needs to be given to the macro economic environment in Uruguay and its affect on project costs. The project costs should have been reassessed during a supervision mission, and if warranted, a portion of the loan cancelled. For this project, the lack of any reassessment resulted in project cost estimates that were too high. So although overall costs dropped, the Bank financed a greater share of the total project costs than originally approved, and the Borrower paid commitment fees on a portion of the loan that was never used (para. 8.3).

4.2 The second lesson learned comes from the benefit of hindsight. When the Route 1 civil works (42% of the loan) were removed from the project, it would have been prudent to reduce the scope of the project accordingly. Instead, the project became a catch-all for the road sector with various small scale works added or expanded to use the funds originally slated for Route 1

with little analysis of the work's economic merit. This caused delays and extensions and perhaps worse, further taxed the limited budget allocations and institutional capacity of the implementing agencies (para. 8.4).

4.3 The third lesson learned is that a lack of continuity in Bank supervision staff has a negative impact of the quality of Bank portfolio management. With at least six different Task Managers/Project Officers, four different Division Chiefs, and three reorganizations of the Managing Division, the lack of continuity in supervising this project was excessive. Consequently, during critical decisions affecting project implementation the Bank was ill prepared to take an active role (paras. 8.1 & 8.5). In the context of projects in Uruguay, this continuity is all the more important in order to compensate for frequent turnover among Borrower staff.

PROJECT COMPLETION REPORT

URUGUAY

THIRD HIGHWAY PROJECT (LOAN 2238-UR)

PART I: PROJECT REVIEW FROM THE BANK'S PERSPECTIVE

1. Project Identity

<u>Project Name:</u>	Third Highway Project
<u>Loan Number:</u>	2238-UR
<u>Loan Amount:</u>	US\$45.0 million
<u>RVP Unit:</u>	Latin America and the Caribbean Region
<u>Country:</u>	Uruguay
<u>Sector:</u>	Transport
<u>Sub-Sector:</u>	Highways (Roads)

2. Background

2.1 Uruguay's transport infrastructure comprises 62,000 km of roads (15% are paved), 3000 km of railway track, one deep-water port and a number of smaller ports, an offshore tanker-mooring station, pipelines for petroleum imports and 25 commercial airports. Montevideo, the capital and Uruguay's commercial and population center, is the hub of the transport system.

2.2 At the time of project appraisal (1982), roads carried 85% of the total freight, railways carried 12%, and river transport 3%. Since the 1960s, the road's share has been gradually increasing at the expense of rail and river transport. Much of the existing transport system in Uruguay, however, is antiquated. The last major investments in railroad lines and port facilities were in the 1920s, and there has been little roadway maintenance since the 1950s when most of the road networks (feeder and national) were completed. The principal problem of the road sub-sector is the age and deteriorated condition of the national network, notably the international connections.

2.3 **Sector Objectives.** To define key development issues in the transport sector, a comprehensive survey of the national transport system was undertaken by the Bank, with UNDP assistance, in 1976-78. This survey established a general framework for transport investment and identified four high-priority needs: (a) to strengthen national transport planning; (b) to improve road rehabilitation and reconstruction; (c) to reduce the railroad deficit, network and operations; and (d) to modernize the ports.

2.4 Following the framework of the National Transport Survey, this project grew out of a need to strengthen the road sub-sector, a need to further rationalize the railway system, and a need to improve transport planning in general. The first project brief (July 1981) highlighted the main transport problems of Uruguay, noting the high transport costs arising from poor infrastructure and equipment conditions, the poor sector organization, and the inadequate maintenance over the past twenty years.

2.5 **Bank Sector Lending Experience.** Overall, Bank experience in the sector has been mixed. The first Bank loan to the sector was signed in 1962 (Ln. 324-UR) for the amount of US\$18.5 million. This First Highway Project closed in 1972 with significant delays and cost overruns. The project did, however, finance the equipment and studies necessary to establish a regular highway maintenance operation. The Second Highway Project (Ln. 1689) was signed in June 1979 for US\$26.5 million and provided consulting services for the preparation of a roads and bridges reconstruction program, and provided technical assistance to the TPU (Transport Planning Unit), as well as helped finance the reconstruction of the main international highway between Montevideo and the Brazilian border (Route 8). The Second Highway Project performance was rated as satisfactory and sustainability as likely, but institutional development was only partial. The project closed two years behind schedule in June 1986, and US\$1.9 million (7%) of the loan was cancelled.

3. Project Objectives and Description

3.1 **Objectives.** The Third Highway Project was originally slated to: (a) help finance the MTOP's (Ministry of Transportation and Public Works) Five-Year Highway Investment Program; (b) consolidate and strengthen the planning, programming and executing capability of MTOP and *Vialidad* (National Highway Directorate); (c) strengthen the role of Montevideo as the center for transit traffic by reconstruction of key road corridors to Argentina and Brazil; and (d) finance studies on intermodal transport.

3.2 **Description.** The appraised project description consisted of the seven components.

- (a) **Road and Bridge Reconstruction:** civil works comprising reconstruction of 115 km of road sections on international links with Argentina and Brazil, and the construction of three new bridges—two to replace existing bridges on the rivers Caballada and Bellaco, and the third one, a new bridge on Route 10 near Punta del Este.
- (b) **Road Maintenance and Rehabilitation on National Highways:** civil works to rehabilitate five road sections (185 km), and some additional roads for which the evaluation would be submitted by the borrower during the execution of the project.

- (c) **Feeder Roads:** rehabilitation/reconstruction of 3000 km within the Feeder Road Program.
- (d) **Traffic Safety:** horizontal and vertical signalization on about 250 km of road sections.
- (e) **Strengthening of MTOP's institutional capabilities for transport planning, programming and investment, covering:**
 - (i) annual updating of the Five-Year Investment Program based on traffic counts, a balanced assessment of the needs of maintenance, bridge rehabilitation, construction and reconstruction of national highways, and the investment requirements of the National Feeder Roads Program;
 - (ii) preparation of plans of action for strengthening and restructuring the MTOP, including its training requirements; and
 - (iii) enhancement of the MTOP's capabilities, by using short-term consultant services and training MTOP personnel in the fields of organization, management, optimization of maintenance, rehabilitation, reconstruction and construction expenditures, road safety and research work.
- (f) **Studies on intermodal transport, including:**
 - (i) review of Borrower policies and regulations with the objective of recommending measures aimed at increasing domestic and international intermodal transport; and
 - (ii) economic, financial and technical justification for the establishment of a intermodal freight consolidation center, and, if needed, preparation of preliminary engineering and regulatory, institutional and financial framework for the operation of the center.
- (g) **Preparation and adoption by AFE (State Railroad Administration) of a cost accounting system.**

3.3 The total estimated cost of the project at the time of appraisal was US\$137 million. The foreign exchange component was approximately US\$70 million, of which US\$45 million was to be financed by the Bank loan, and the balance, US\$25 million, by cofinancing (para. 5.7). The

government and the *Intendencias* (the municipal administrations in each district) were to cover the entire local costs of US\$67 million.

4. Project Design and Organization

4.1 The project was designed to continue and consolidate the work initiated in the first two highway projects and to strengthen and reorganize the MTOP's capabilities. The overall execution of the project was the responsibility of the MTOP. DNT (National Transportation Directorate) was the executing agency for the reconstruction and rehabilitation of the national roads, the *Intendencias* for the feeder roads, TPU for the intermodal studies, and AFE for the establishment of accounting system. MTOP was also to handle the technical assistance funds.

4.2 As the *Intendencias* owned their own equipment, the execution of works on the Feeder Roads (US\$40 million) was to be by force account, with subcontracting of various tasks, and assistance of the land owners. A Special Account in Uruguay, subject to annual audit, was made available for financing the Bank's share of the project costs.

5. Project Implementation

5.1 **Loan Effectiveness.** The project was appraised in February 1982, negotiated in December 1982, and approved by the Board on February 15, 1983. The Loan Agreement was signed on March 25, 1983. It became effective more than six months later on October 4, 1983. The delay was caused by a change of government and an overhaul of the project management teams in the MTOP and DNT.

5.2 **Changes in Project Scope.** There were significant changes during project implementation as evidenced by the five loan amendments. The reason for the changes was that the project suffered from changes in administrations and changes in priorities. The national government changed three times during implementation. The overall executing agency, MTOP, was reorganized twice and changed its sector priorities twice. The first change in priorities came in 1985 and resulted in the government shifting all road sector resources to IDB-funded road projects at the expense of other works. The Bank mission in October 1985 noted that this would result in a two year delay in implementation. A formal, two year extension of the loan closing date was subsequently granted.

5.3 The second change in priorities came in 1988. The Uruguayan Government, with the help of the IMF, began a macro economic restructuring program. Government transfers to the transport sector decreased significantly. This risk was correctly identified at appraisal but was discounted because of the belief that the MTOP has sufficient reserves to cushion any reduction in transfers. This was not the case, and payments due to contractors lagged, in some cases, more than a year. The result was that

contractors slowed down or stopped work. The lag in transfer of funds caused the second extension of the loan closing to the actual closing date of December 31, 1990.

5.4 There were also changes due to design problems. The Bank mission in October 1985 noted that there were serious problems with the proposed reconstruction of Route 1—the most frequently used road in Uruguay. The road was designed in the 1940s to contemporary standards. However, current standards for line-of-sight, corner radii, etc. made the existing roadbed obsolete and a serious safety hazard. It is worth noting that during project appraisal, the Bank failed to adequately analyze the Route 1 engineering proposal, and it was only when it was to be implemented that the reconstruction proposal was found to be inadequate. The reconstruction of Route 1 was put on hold until a design study of the alternatives was completed. The delay of Route 1 resulted in a restructuring of the project. Funds originally slated for Route 1 reconstruction (US\$17.7 million in Jan. 1983) were reallocated to Feeder Roads, traffic safety and design studies for railroad and port improvements. Route 1 reconstruction was moved to the follow-on project, Transport I (Ln. 3021-UR) signed in 1989. During the reallocation, the AFE accounting system component was dropped since AFE was to be reorganized. Unfortunately, no economic analysis was done during the project restructuring on the effect of dropping Route 1 and adding or expanding other sub-components.

5.5 Further delays in calling for bids, combined with existing budget restrictions, slowed civil works execution in 1989 and 1990 and led to a number of contracts remaining uncompleted at the time of loan closing. Thus, US\$3.03 million of the US\$45.00 million loan was cancelled. Financing for these uncompleted contracts was eventually provided under the follow-on Transport I Project.

5.6 **Project Costs.** The actual cost of the project was US\$101.8 million against the estimated cost at appraisal of US\$137.0 million (see Table 3 for details). One of the primary reasons for the lower project costs was that the repeated devaluations of the Np. (New Uruguayan Peso) were not wholly counteracted by price increases. At the time of appraisal (February 1982), the Np. was at 12.73 to the US dollar. When the project closed (December 1990), the Np. was at 1,594 to the US dollar, a 12,522% increase. Consumer prices over the same period increased 11,430%. This meant local project costs, in US dollar terms, became cheaper.

5.7 A second reason the project cost dropped was the highly competitive bid process. There was significant excess capacity in the road construction industry of Uruguay. Competition among contractors fostered aggressive bids, resulting in substantial reductions in costs. As a result of the decrease in project costs, it was no longer necessary to seek cofinancing. An amendment to the Loan Agreement in May 1984 deleted the cofinancing requirement. Because of the low bids and the restructuring of the project

(para. 5.4), substantial savings were achieved in the Civil Works, which at a cost of US\$37.2 million were completed at 56% of the originally estimated US\$65.9 million. On the other hand, the Feeder Roads cost US\$59.4 million, 49% over the estimated cost of US\$40.0 million due to the substantial increase in the Feeder Roads Program. The net result of the changes in costs and project scope was that the final project cost was US\$101.8 million, 74% of the appraised US\$137.0 million.

5.8 Disbursements. The loan disbursement began slowly. In the first year, only US\$0.7 million was disbursed against US\$5.0 million forecast (see Table 4 for details). By the original loan closing date of December 31, 1987, only US\$18.9 million (42%) had been disbursed. There were significant lags in disbursements because of the delays in contract approval, delays in payments to contractors, and delays in government funds (para. 5.5). When the loan closed three years later in December 1990, US\$41.97 million (93%) of the US\$45.00 million loan had been disbursed. The remaining US\$3.03 million was cancelled.

5.9 Environment. Although the environmental impact was not addressed in the Staff Appraisal Report since the project was appraised in 1982, the follow-on project's Staff Appraisal Report from 1988 (Ln. 3021-UR) noted that there were no adverse environmental effects from the road sector works. The general nature of the project's civil works was upgrading existing infrastructure rather than creating new infrastructure; thus, the environmental changes were by nature limited.

6. Project Results

6.1 Overview. The essential component of the civil works program were comprised of: (a) road and bridge reconstruction works; (b) rehabilitation works on the national highway network; (c) traffic safety works; and (d) Feeder Roads Program. All were completed (except for Route 1), albeit with lengthy delays, and at a total cost significantly lower than the appraised estimate. The overall result of the program to strengthen sectoral planning as well as the MTOP's and *Vialidad's* institutional capabilities is more difficult to assess. The specific results were: (a) a railway study of restructuring AFE and the subsequent reduction of operations; (b) port studies on how best to strengthening the ports sub-sector, which became part of the Transport I Project (Ln. 3021-UR); and (c) the MTOP established an annual investment planning system for the transport sector. While some improvements have taken place in the capabilities of the Government for sectoral planning and in the MTOP's capacity for planning and investment, institutional development was only partial due to the frequent changes in the sector priorities and in the MTOP.

6.2 Economic Rate of Return. Economic evaluation was done for a little over 94% of the actual project costs. This covered Category 1 Civil Works and Category 3 Feeder Roads. The remaining project covering minor traffic

safety and technical assistance amounted to US\$6.0 million and have characteristics that do not lend themselves to economic evaluation. For this same reason they were not evaluated in the Staff Appraisal Report. The methodology used for the *ex post* evaluation of the project was the application of HDM - III (Highway Development Model), calibrated to Uruguayan conditions.

6.3 In the *ex post* analysis, Civil Works components gave an overall economic rate of return (ERR) of 19.6%, which is higher than the 12% commonly assumed to be the opportunity cost of capital in Uruguay. Table 5 details the overall results of the economic evaluation of Category I, and Table 6 lists general characteristics of some typical roads. The individual sub-projects were all economically feasible with ERRs ranging from 13% to 55%. In the *ex post* evaluation of Feeder Roads (Table 7), the average ERR was 13.1%. A note of caution, however; the ERRs are predicated on the execution of satisfactory periodic maintenance, in particular resealing work, which will need to be continually monitored in the coming years in order for the benefits to be attained. The Transport Project I (Ln. 3021-UR) currently under way should help ensure this supervision.

6.4 **Impact.** The overall impact of the project was medium to high. For Civil Works there was a high impact; there were tangible improvements in feeder roads, national bridges and roads (with the exception of Route 1), and traffic safety. The Civil Works improved vehicle operating conditions and thus reduced vehicle operating costs. High vehicle operating costs were singled-out in the Staff Appraisal Report as a major problem of the transport sector. Economically, the geographical spread of the Civil Works helped strengthen local construction industries. For strengthening sector planning and the MTOP's and *Vialidad's* institutional capacities there was a medium impact; essential studies were completed and a planning system for sector investment was implemented but frequent changes in governments, personnel, and sector priorities hampered institutional development.

7. Sustainability

7.1 Provided that scheduled maintenance is carried out, the likelihood of sustainability for the Civil Works component is high. At the least, the structural improvements (e.g., bridges, illumination, road reconstruction) in the feeder and national road networks will have long-term benefits. Recent supervision reports from the Transport I Project indicate that road maintenance is progressing well in many provinces but poorly in a few due a system of fixed, per kilometer payments for maintenance that does not adequately cover the costs of transporting materials to remote sites.

7.2 The likelihood of sustainability for sector institutional development is low. Since the project closed, there have been more changes in the management of MTOP as well as high staff turnover due to low wages. Further, a new government will be elected in 1994, which historically has

meant sector management changes. However, some of the institutional gains such as the MTOP's annual investment planning system were still in place as of early-1994.

8. Bank's Performance

8.1 Bank performance was less than adequate. In general, the Bank's role in problem-solving was reactive rather than proactive. The Bank treated project-delaying changes in priorities as *faits accomplis*, when in fact, the documentation shows the Bank was given advanced notice that priorities were being reevaluated and presumably could have had a greater role in determining the outcome. The Bank's reactive role in implementation was not from a lack of supervision. There were 13 supervision missions and 59 supervision staff weeks on the project. The problem with the supervision, and perhaps the reason for the reactive role of the Bank, can be found in the lack of staff continuity. During project implementation, there were no fewer than six different Task Managers/Project Officers, four different Division Chiefs and three restructuring of the Managing Division. This lack of staff continuity no doubt affected the quality of Bank supervision.

8.2 The Staff Appraisal Report correctly identified the potential risks. However, the report's conclusions that the risks were minimal—especially regarding government transfers to the transport sector—proved incorrect. The initial costs of the project were overestimated, which led to the cancellation of cofinancing, and eventually to the financing of over 41% of the project cost from the Bank loan instead of 34% as foreseen at appraisal. The original and actual financing plan of the project (in US\$ millions) are indicated below.

	Bank	Cofinancing	MTOP	Intendencia	Total
Original	\$45.0	\$25.0	\$47.0	\$20.0	\$137.0
Actual	\$41.9	\$0.0	\$30.2	\$29.7	\$101.8

8.3 **Lessons Learned.** The first lesson learned is that greater attention needs to be given to the macro economic environment in Uruguay as it affects project costs. The cost estimates of this project and that of its predecessor, the Second Highway Project, were off by 26% and 14% respectively—in both cases, primarily due to changes in the exchange rate *vis-à-vis* inflation. It would appear that staff did not apply the lessons from the Second Highway Project in preparing and appraising the Third Highway Project. The result in both projects was that although overall costs dropped, the Bank financed a greater share of the total project costs than originally approved, and the Borrower paid commitment fees on a portion of the loan that was never used. The experience gained from this project and its predecessor suggest that in future projects in Uruguay, supervision missions should periodically reassessing project costs, and if needed, cancel a portion

of the loan if there have been significant cost savings. This would be beneficial for both the Bank and the Borrower.

8.4 The second lesson learned regards the restructuring of the project after Route 1 was moved to the follow-on project (para. 5.4). Route 1 comprised 42% of the Bank loan. It would have been prudent to reduce the scope of the project when Route 1 was removed from the loan. Instead, the project became a catch-all for the road sector with various small scale works added or expanded to use the funds originally slated for Route 1 with little analysis of the work's economic merit. These changes caused delays and extensions and perhaps worse, further taxed the already strained budget allocations and institutional capacity of the Government.

8.5 The third lesson learned is that a lack of continuity in Bank supervision staff has a negative impact of the quality of Bank supervision. The staff turnover on this project was excessive and consequently the Bank missed opportunities to provide input at several critical junctures (para. 8.1). In the context of projects in Uruguay, this continuity is all the more important in order to compensate for frequent turnover among Borrower staff.

9. Borrower's Performance

9.1 Borrower's performance was substantially and adversely affected by frequent changes in government, followed almost invariably by changes in senior management and priorities and by a lack of fiscal resources due to macro economic restructuring. The result was delayed decision-making, inadequate funds, and a lack of continuity in the execution of the project.

10. Bank-Borrower Relationship

10.1 Bank relationships with the government and the various agencies were satisfactory. Even with the high turnover of staff in both the Bank and the Borrower, relations remained cordial and open. It was largely on the strength of the relationship that the project was as successful as it was, notwithstanding Bank staff turnover and shifts in sector priorities. Had the relationship been strained, support for the project on both sides would in all likelihood have eroded.

11. Consulting Services and Procurement of Goods

11.1 Technical assistance was provided primarily for strengthening the MTOP's capabilities and included the training of key MTOP personnel. Bank-approved procedures were used in hiring all consultants. Overall, the consultants performed well, although absorption of technology transfer was limited by the lack of continuity among Borrower staff. Supervision consultants performed satisfactorily but could do little to avoid delays caused by payment lags and bureaucratic changes.

11.2 Procurement of goods was limited and uneventful. As for civil works, although Bank-approved procedures were used, there were often delays in bid evaluation and in the negotiation of contracts.

12. Project Documentation and Data

12.1 The Staff Appraisal Report and the Legal Agreement provided the framework for the supervision of the project. Quarterly progress reports from the Borrower were received regularly, albeit with delays. The project went through several changes of which a faithful record was found in the supervision reports and the project files. However, neither the Bank's supervision reports nor the Borrower's quarterly reports contained reliable cost data. After completion of the project, the Borrower sent in June 1993 a "Final Report" containing a brief overview of the project and cost data. The data were the basis of the cost tables included in this report.

PROJECT COMPLETION REPORT

URUGUAY

**THIRD HIGHWAY PROJECT
(LOAN 2238-UR)**

**PART II: PROJECT REVIEW FROM THE BORROWER'S
PERSPECTIVE**

A copy of the PCR's Parts I and III was sent to the Borrower. The Borrower sent a letter on October 25, 1993 that noted the receipt and the review of Parts I and III of the PCR but offered no substantive comments or text to be included in Part II. The Borrower did, however, send a "Final Report" in June 1993 containing a brief overview and some cost data—but no critique—on the project. The data were incorporated into Part III of the PCR.

Given the number of changes in the government and executing agencies during implementation, and given the number of intervening years, a meaningful review of the project from the Borrower's perspective was unlikely. Thus, the PCR was prepared without the Borrower contributing Part II. This omission is permitted under Bank guidelines for PCRs more than two years old.

PROJECT COMPLETION REPORT

URUGUAY

**THIRD HIGHWAY PROJECT
(LOAN 2238-UR)**

PART III: STATISTICAL INFORMATION

Table 1: Related Bank Loans

Title	Loan No.	Year of Approval	Original Amount	Disbursed	Comments
First Highway Project	0324-UR	1962	18.5	18.5	Closed 1971
Second Highway Project	1689-UR	1979	26.5	24.6	Closed 1986
Montevideo Port Project	1798-UR	1980	50.0	50.0	Closed 1990
Transport I Project	3021-UR	1989	80.8	18.0	Under implementation
Public Enterprise Reform Project	3717-UR	1992	4.5 <u>g</u>	0.5	Under Implementation

Source: IBRD project files

g/ Port component of the loan.

Table 2: Project Timetable

Title	Date Planned	Actual Date
Identification		July 1980
Preparation		July 1981
Appraisal	February 1982	February 1982
Negotiation	December 1982	December 15 to 18, 1982
Board Approval	February 1983	February 15, 1983
Loan Signature		March 25, 1983
Loan Effectiveness	June 1983	October 4, 1983
Loan Closing	December 31, 1987	December 31, 1990
Project Completion	June 10, 1987	December 31, 1990

Source: IBRD Project Files

Table 3: Project Costs and Financing
(In millions of US dollars)

	ESTIMATED & ACTUAL COSTS						ORIGINAL AND ACTUAL FINANCING PLAN										
	Appraisal Estimates			Actual Costs			Original					Actual					
	Local	Foreign	Total	Local	Foreign	Total	Bank	Cofin.	MTOP	Intendencia	Total	Bank	Cofin.	MTOP	Intendencia	Total	
Road and Bridge Reconstruction	17.8	28.8	46.6	14.9	22.3	37.2	15.3	13.9	19.6		48.8	19.4			17.8		37.2
Road Rehabilitation	14.2	22.9	37.1				12.1	11.1	15.6					38.8			
Feeder Roads	33.9	15.7	49.6	41.9	17.5	59.4	15.3		10.7	20.0	45.9	17.5					59.4
Traffic Safety	0.8	1.3	2.2	0.2	3.8	4.0	1.3		0.9		2.2	3.8			0.2		4.0
Technical Assistance	0.2	0.8	1.0		0.9	0.9	0.7		0.3		1.0	0.9					0.9
Front End Fees		0.3	0.3		0.3	0.3	0.3				0.3	0.3					0.3
TOTAL	67.0	70.0	137.0	57.0	44.8	101.8 g/	45.0	25.0	47.0	20.0	137.0	41.9 h/		30.2	29.7	101.8	

Source: IBRD Project Files and Borrower's Data

g/ Actual costs were lower than estimated due to changes in exchange rates and lower than estimated contractor bids. (paras. 5.6 & 5.7)

h/ US\$3.03 million was cancelled. (para. 5.8)

Table 4: Estimated and Actual Schedule of Disbursements

IBRD Fiscal Year	Appraisal Estimate (cumulative)	Revised Estimate (cumulative)	Actual Disbursements (cumulative)	Actuals as % of Revised Estimates
1984 Sept 1983 Dec 1983 March 1984 June 1984	 2.00 3.50 5.00	 1.00	 0.33 0.71 0.71	 71%
1985 Sept 1984 Dec 1984 March 1985 June 1985	 7.00 9.00 11.50 14.00	 6.00	 1.67 5.80 7.07 7.07	 96%
1986 Sept 1985 Dec 1985 March 1986 June 1986	 17.50 21.00 24.50 28.00	 10.00	 7.07 7.71 7.71 8.47	 77%
1987 Sept 1986 Dec 1986 March 1987 June 1987	 31.00 34.00 37.00 40.00	 16.00	 9.0 9.08 11.14 12.00	 57%
1988 Sept 1987 Dec 1987 March 1988 June 1988	 42.50 45.00	 20.00	 14.15 18.91 22.15 23.98	 94%
1989 Sept 1988 Dec 1988 March 1989 June 1989	 	 30.0	 23.98 26.80 28.52 30.17	 89%
1990 Sept 1989 Dec 1989 March 1990 June 1990	 	 40.0	 33.07 34.61 35.95 35.95	 90%
1991 Sept 1990 Dec 1990 March 1991 June 1991	 	 45.0	 37.20 37.92 38.92 41.97	 87%

Source: IBRD Supervision Reports and Project Files

Table 5: Economic Evaluation of Category I

No.	Section	ERR SAR (%)	ERR Actual (%)
1	Route 3: Salto-B. Unión	(-)	20.5
2	Route 13: Aigua-A. Alferez	22	17.7
3	Route 1: Bridge Ao. La Caballada	25	(*)
4	Route 15: Lascano-La Coronilla	15	19.5
5	Route 12: Cardona-Cortinas	29	22.3
6	Route 14: RN 5-Sarandí del YI	(-)	13.4
7	Route 24: Acc. and Bridge Ao. R. Bellaco	25	(*)
8	Route 9: 107 km 000 to 121 km 600	(-)	17.3
9	Route 10: Acc. and Bridge Ao. Potrero	16	(*)
10	Route 23: San Jose-I Cortinas	28	31.4
11	Route 48: Junction RN 36 and RN 49	60	24.0
12	Route 27: Moirones Vichadero	(-)	14.8
13	Route 5: 65 km 000 to 91 km 200	29	13.0
14	Route 45: RN 1 to RN 11	(-)	54.9
15	Route 39: Acc. and Bridge Ao. Maldonado	44	17.0
16	Route 5: Paso de los Toros - Rivera	(-)	48.5
17	Route 33: RN 6 - RN 11	28	13.0
18	Route 65: RN 6 - RN 7	(-)	15.8
19	Route 81: RN 33 - RN 6	(-)	15.8
20	Route 3: Trinidad - Paso del Puerto	29	15.0
21	Route 49: RN 36 - RN 48	77	24.0
	Overall ERR:	26	19.6

(-) Note: Not available

(*) Note: The original SAR assumptions concerning the economic evaluation of these sub-projects are not available. The actual costs resulted in smaller values than originally estimated (Bridge Caballada, 62% of original SAR cost; Bridge Bellaco, 41%; and Bridge Potrero, 56%). Consequently, the real ERRs under the same assumptions in the SAR would result in values even greater than the already acceptable values in the SAR, which were, respectively, 25%, 25% and 16%.

Table 6: General Characteristics of Sample Roads

No.	Section	Lenght (km)	Width (m)	Surface w/o project	Conditions w/o project	Intereruptions Due to Rain (days)	Roughness (IRI)																																																																																								
1	Col. Rubio-R31 (km 13) R31 (km 10) - Pblo. Laureles	26	6.00	Earth	Bad	20 to 60	20																																																																																								
		59	5.00	Gravel	Fair			2	R8 - Cno. Cuchilla (Queb. Cuervos)	35	3.00	Gravel (5 km)	Fair	Less than 20	18	Earth (30 km)	Bad	20	3	Pblo. Arévalo - Po. de la Vuelta	22	3.00	Earth	Fair	20 to 60	20	4	Paso Vargas - Estación Ataques	16	6.00	Earth	Bad	20 to 60	20	5	Est. Vichadero (R20) - Est. Bellaco (R25)	52	5.50	Improved Earth (40 km)	Bad		20	Gravel (12 km)	Fair	18	6	R. 97 - Escuela No. 57	19	-	Improved Earth (10 km)	Bad	Less than 20	20	Gravel (9 km)	Bad	20	7	Verdún - Comercio Sainz	40	-	Earth	Bad	More than 60	20	8	R5 - Paso Hondo (R59)	34	5.50	Earth	Bad	More than 60	20	9	R7 (A. Saravia) - R80	14	7.00	Improved Earth	Fair	Less than 20	20	10	R14 (km 64.500)-R3 (km 264.500)	22	6.00	Earth (11 km)	Fair	Less than 20	20	Improved Earth (11 km)	Bad	20	TOTAL:		339 km	
2	R8 - Cno. Cuchilla (Queb. Cuervos)	35	3.00	Gravel (5 km)	Fair	Less than 20	18																																																																																								
				Earth (30 km)	Bad		20																																																																																								
3	Pblo. Arévalo - Po. de la Vuelta	22	3.00	Earth	Fair	20 to 60	20																																																																																								
4	Paso Vargas - Estación Ataques	16	6.00	Earth	Bad	20 to 60	20																																																																																								
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6	R. 97 - Escuela No. 57	19	-	Improved Earth (10 km)	Bad	Less than 20	20																																																																																								
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7	Verdún - Comercio Sainz	40	-	Earth	Bad	More than 60	20																																																																																								
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				Improved Earth (11 km)	Bad		20																																																																																								
TOTAL:		339 km																																																																																													

Source: Institute of Transport Planning, October 1993.

**Table 7: Results of Threshold Analysis for Category 3 (Feeder Roads):
Required Minimum Traffic Volume**

Sections	Cost/Km (US\$)	Minimum Traffic (Traffic Units)	Actual Traffic (Traffic Units)
1	4,697	18	27
2	2,966	9	12
3	2,685	10	17
4	8,952	32	30
5	11,797	34	25
6	4,176	15	30
7	26,908	97	63
8	9,921	36	41
9	3,318	12	41
10	3,316	12	20

Average Return of the Sample
(Excluding Section 7)

Average Economic Cost/Km: US\$6,487

Average AADT: Cars, 14; Pick-ups, 4; Trucks, 6

Average Annual Maintenance Cost per Km: US\$170 - 195

Average ERR: 13.1%

Table 8: Compliance with Loan Covenants

Covenant	Subject	Deadline	Status
Sec. 2.01	Amount of Loan	US\$45 million	US\$41,974,862 was disbursed US\$3,025,138 cancelled
Sec 2.04	Closing Date	Dec 31, 1987	Closing date postponed thrice, the last time to December 31, 1990
Sec. 3.01 (c)	Submission of additional works for inclusion in Parts A.2 and B.2 of the project.	Annually, not later than June 30	In compliance
Sec. 3.01 (d)	Submission of sub-projects for inclusion in the National Feeder Roads Program.	Annually, by June 30	In compliance
Sec. 3.04	Semi-Annual meetings between borrowed and the Bank	Starting September 1983	In compliance
Sec. 3.06	Plans for Restructuring and strengthening of MTOP	July 31, 1983	In compliance
Sec. 4.02	Certified copies of Audit Reports	6 months after end of each year	In compliance (although often with delays)
Sec. 6.03	Borrower to allocate Road maintenance funds yearly, in an amount not lower than funds for 1982		In compliance
Sec. 4.04	Special Account- Audit Report	Annually, within 6 months of end of each year	In compliance

Source: IBRD Supervision Reports and Project Files

Table 9: Mission Data

Stage of Project Cycle	Date	Number of Persons	Days in Field	Specialization Represented	Overall Rating	Comments
I. Through Appraisal						
Project Identification	12/80	1	3	Engineer		Third Highway Project Identified
Project Preparation	5/81	2	8	Engineer, Economist		Project Brief issued July 10, 1981
Project Preparation	10/81	2	7	Engineer, Economist		Project Brief updated December 11, 1981
Appraisal	2/82	4	18	Engineer, Economist, Spl. ¹ , Consultant		
II. Post Appraisal to Board Approval						
Post Appraisal	6/82	2		Engineer, Economist,		Discussion with new Minister and Head of Vialidad
Post Appraisal	7/82	1		Engineer		Review of designs and plans
Post Appraisal	8/82	1				Finalization of Investments Plan and the Institution Building Component
Yellow Cover and President's Report						Yellow Cover November 29, 1982
Negotiations	12/82					Negotiations on December 15 to 18. Summary of Negotiations not date December 20, 1982
Board Approval	2/83					February 15, 1983 Bank News Release Circular February 17, 1983
Loan Signature	3/83					Loan signed on March 15, 1983

1. Intermodal Specialist

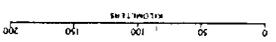
Stage of Project Cycle	Date	Number of Persons	Days in Field	Specialization Represented	Overall Rating	Comments
III. Supervision						
Supervision	4/83	1	4	Economist	1-2 ²	To review TOR's for studies and to expedite effectiveness of loan
Supervision	9/83	4	4	Engineer, Engineer, Economist, Spl.	1-2	Loan because effective October 4, 1983
Supervision	7/84	2	5	Engineer, Economist	1-2	
Supervision	12/84	1	4	Engineer	1-2	
Supervision	8/85	1	7	Economist	3	
Supervision	3/86	2	5	Engineer, Economist	2	
Supervision	12/86	1	2	Engineer	2	
Supervision	4/89	1	12	Engineer	2	Major changes in project, leading to amendments to Loan Agreement Project restrictive Disbursements slow (only US\$9.7 million so far)
Supervision	2/90	2	8	Engineer, Economist	2	Low Budget, Disbursements only US\$10.4 million so far
Supervision	4/90	2	1	Engineer, Engineer	-	Closing date extended for the third time to December 30, 1990
Supervision	6/90	2	6	Engineer, Economist	2	
Supervision	10/90	2	8	Economist, Financial analyst	2	New director for Vialidad from October Preparation of Transport I starts
Supervision	2/91	2	4	Economist, Economist	-	
SUMMARY						
<u>Mission Data</u>		<u>Staff Days</u>				
Through Appraisal		105				
Post Appraisal to Board		37				
Board Effectiveness		20				
Supervision		89				
Total		251				

Source: IBRD Project Files

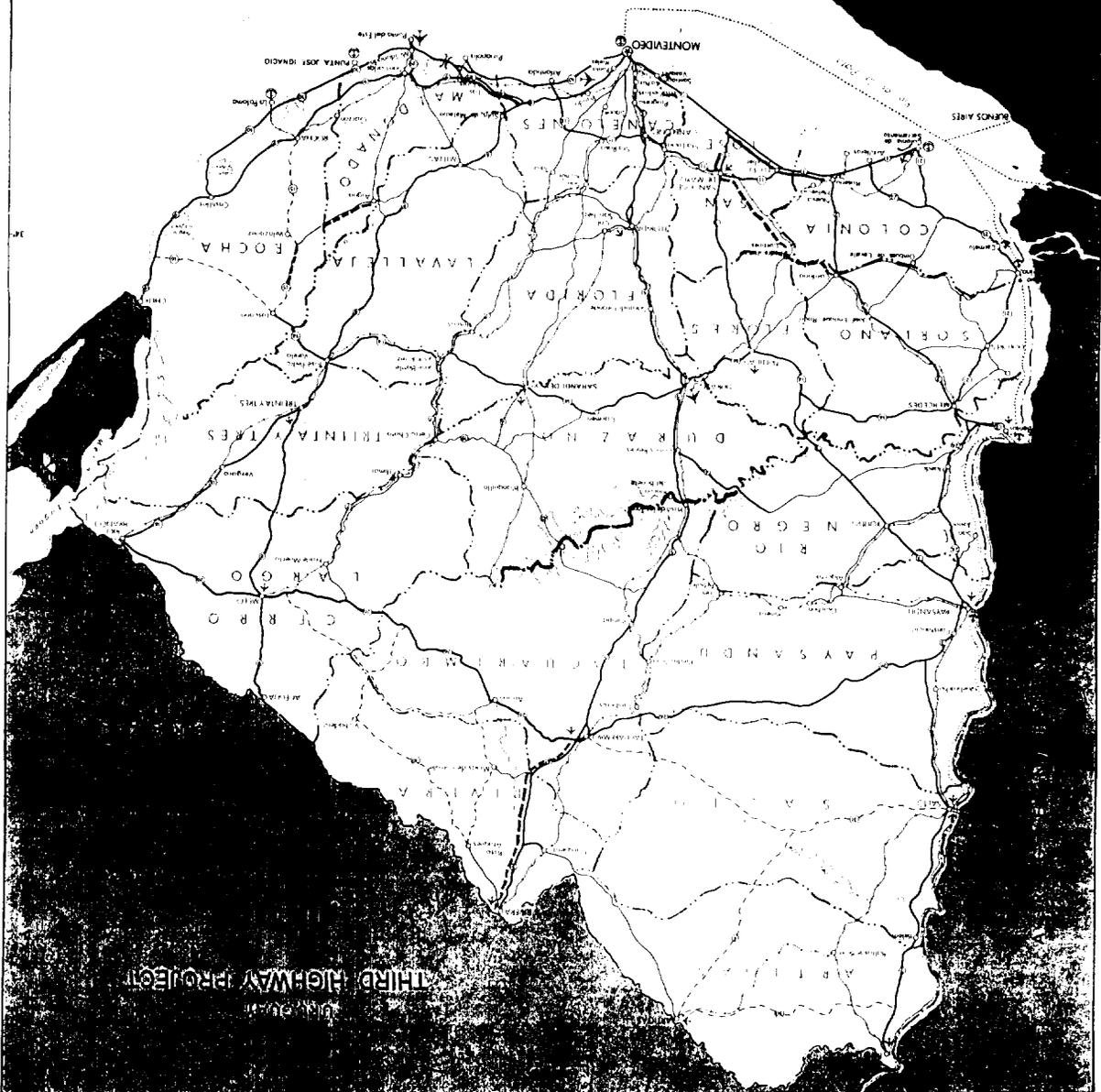
2. Rating 1-2 indicates general status for project 1, disbursements 2.

MAP SECTION

- PROJECT
- ROADS TO BE RECONSTRUCTED
- ROADS TO BE REHABILITATED
- BRIDGES TO BE REPLACED
- EXISTING
- PAVED MAIN ROADS
- PAVED SECONDARY ROADS
- UNPAVED ROADS
- RAILROADS
- NAVIGATION CHANNELS
- INTERNATIONAL AIRPORTS
- DOMESTIC AIRPORTS
- PORTS
- RIVER FORTS
- INTERNATIONAL BOUNDARIES
- RIVERS



This map shows the proposed road network in accordance with the Government of Uruguay's request for assistance in the design and construction of a road network in the region of the Rio Negro and the Rio Colorado. The map is based on the latest available information and is not intended to be used as a basis for any legal or administrative action.



THIRD HIGHWAY PROJECT