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Report No. 15215

PROJECT COMPLETION REPORT

YUGOSLAVIA

**FIRST HIGHWAY SECTOR PROJECT
(LOAN 2715-YU)**

AND

**SECOND HIGHWAY SECTOR PROJECT
(LOAN 2878-YU)**

DECEMBER 27, 1995

**Energy, Environment, Transport and Telecommunications Division
Central Europe Department
Europe and Central Asia Region**

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CURRENCY AND EQUIVALENT UNITS

Currency Unit	=	Yugoslav Dinar (Din)
US\$1 (July 1985)	=	Din 280
US\$1 (July 1987)	=	Din 693
US\$1 (1989 average)	=	Din 28,764
US\$1 (1991 average)	=	19.638 Dinar*

WEIGHTS AND MEASURES

m	=	meter (3.28 feet)
km	=	Kilometer (0.62 miles)
Kg	=	Kilogram (2.2 pounds)
ton	=	Metric tonne (2205 pounds)

ABBREVIATIONS AND ACRONYMS USED

AADT	-	Annual Average Daily Traffic
COI	-	Communities of Interest
CRO	-	Council of Republican and Provincial Road Organizations
EIB	-	European Investment Bank
EBRD	-	European Bank for Reconstruction and Development
EC	-	European Community
ERR	-	Economic Rate of Return
FCTC	-	Federal Committee for Transport and Communication
FHSP	-	First Highway Sector Project
FARP	-	Federal Association of Republican and Provincial Road Organizations
GOC	-	Government of Croatia
HC	-	Croatian Roads Authority
HDM	-	Highway Design and Maintenance Standard Model
LDR	-	Less-Developed Region
NRA	-	National Roads Administration
PMS	-	Pavement Management System
RAP	-	Republic and Province
RME	-	Road Maintenance Enterprise
RO	-	Road Organization
SFRY	-	Socialist Federal Republic of Yugoslavia
SHSP	-	Second Highway Sector Project
THSP	-	Third Highway Sector Project
TYH	-	Trans-Yugoslav Highway
vpd	-	vehicles per day

FISCAL YEAR

January 1 - December 31

* Starting from January 1, 1990, a new Dinar was in effect which was equal to 10,000 old Dinars.

The World Bank
Washington, D.C. 20433
U.S.A.

Office of the Director-General
Operations Evaluation

December 27, 1995

MEMORANDUM TO THE EXECUTIVE DIRECTORS AND THE PRESIDENT

**SUBJECT: Project Completion Report on Yugoslavia
First and Second Highway Sector Projects (Loans 2715-YU and 2878-YU)**

The Project Completion Report (PCR) on the Yugoslavia: First and Second Highway Sector Projects (Loans 2715-YU and 2878-YU, approved in FY86 and FY87, respectively) was prepared by the Europe and Central Asia Regional Office. The Borrower did not contribute Part II. Loan 2715-YU for US\$121.5 million equivalent was approved on June 10, 1986 and closed on December 31, 1991. Loan 2878-YU for US\$68 million equivalent, was approved on October 13, 1987 and closed on December 31, 1992, with a cancellation of about US\$15.3 million. Both projects closed one year later than the original schedule.

The two operations, which followed after eleven highway projects, turned out to be the last highway loans for the former Republic of Yugoslavia. Both loans had similar objectives: (a) to continue support for development of the highway network, including a balanced program between new investments and road rehabilitation and maintenance; (b) to improve investment planning and increase road user charges; and (c) to strengthen inter-Republic coordination on highway matters. The physical targets, mainly widening and reconstruction of the Trans-Yugoslav Highway and rehabilitation of road sections throughout Yugoslavia, were substantially achieved. Cost overruns were small, with the exception of Slovenia, where they were greater due to difficult conditions in road construction.

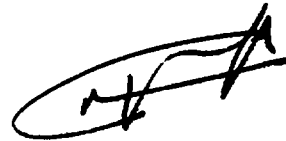
The institutional objective was also substantially achieved. Funding for road construction and maintenance was secured as the fuel tax was raised substantially and changed to an ad valorem basis. As a result, all individual republics met the financing targets, and Croatia largely exceeded it. A pilot road maintenance planning system launched in this province laid the foundation for inter-Republic coordination on highway maintenance.

The PCR is comprehensive, although project completion data was only received from three republics (Slovenia, Croatia, and the former Yugoslav Republic of Macedonia), and pre-war data available in the Bank prior to 1990 was used for the other republics. The projects' overall Economic Rate of Return (ERR) could not be calculated due to incomplete data; a recalculation for the Trans-Yugoslav Highway suggests that the section in Slovenia had a low return of about 8 percent, due to high construction costs and that in Croatia a satisfactory return of 15 percent. In both cases, the ERR was lower than at appraisal. All seven subprojects in the FYR of Macedonia showed revised ERRs ranging from 21 percent to 30 percent, almost the same as at appraisal.

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The projects' outcomes are rated as satisfactory and their institutional development, at project completion, as substantial. Their sustainability is rated as uncertain (and as unlikely in war-ravaged Bosnia) due to the break-up of Yugoslavia and to the ensuing hostilities. For example, road traffic patterns are changing, generally in the direction of less inter-Republic direct as well as transit traffic. This has happened, notably, in the conflict areas of Bosnia and Croatia and in Serbia-Montenegro due to the UN-imposed blockade. At the same time, road user charges in several republics are being transferred to the general budget and no longer constitute a secure source to finance highway maintenance. In contrast, improvements made in investment planning and maintenance management, tailored on practices of the European Union, are likely to be unaffected. No audit is planned

Attachment

A handwritten signature in black ink, consisting of a large, stylized 'A' with a horizontal line through it, enclosed within an oval shape.

YUGOSLAVIA

FIRST HIGHWAY SECTOR PROJECT (LOAN 2715-YU)
AND
SECOND HIGHWAY SECTOR PROJECT (LOAN 2878-YU)

PROJECT COMPLETION REPORT

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IBRD 179341RI - Yugoslavia - Highway System

YUGOSLAVIA

FIRST HIGHWAY SECTOR PROJECT (LOAN 2715-YU) AND SECOND HIGHWAY SECTOR PROJECT (LOAN 2878-YU)

PROJECT COMPLETION REPORT

PREFACE

This is the Project Completion Report (PCR) for the First Highway Sector Project (FHSP) and Second Highway Sector Project (SHSP) in the former Yugoslavia. Both projects had similar objectives and were implemented in parallel during the same time frame between 1987 to 1992. In addition, the two projects together covered the entire ex-Yugoslav highway system for strengthening the investment planning approach and inter-Republican coordination in the road sector. These factors provided an opportunity to prepare a combined PCR giving comprehensive nationwide coverage of developments in the road sector and a retrospective analysis of the main issues in the sector during the past five years.

The FHSP, for which Loan 2715-YU in the amount of US\$121.5 million was signed on February 27, 1987, became effective on July 21, 1987. The Loan was closed on December 31, 1991, one year behind schedule and the remaining undisbursed balance amount of US\$1,806.00 was canceled. The Loan 2715-YU was apportioned among the four Borrowers, the Road Organizations (ROs) of Slovenia: US\$25.5 million; Croatia: US\$33.4 million; Serbia: US\$36.5 million; and Bosnia and Herzegovina: US\$26.1 million. The last disbursement was made on August 8, 1991.

The SHSP, for which Loan 2878-YU in the amount of US\$61.6 million was signed on September 30, 1988, became effective on June 15, 1989. The Loan was closed on December 31, 1992, one year behind schedule, after a cancellation of US\$8.947 million. The loan 2878-YU was apportioned among the four Borrowers, the ROs of Vojvodina: US\$28.2 million; Macedonia: US\$17.9 million; Montenegro: US\$9.6 million; and Croatia: US\$5.9 million. The last disbursement was made on July 28, 1992.

The report was prepared by the Transport Division of the Transport, Water and Urban Development Department (TWUTD) and was reviewed by the Energy, Environment, Transport and Telecommunications Division (EC2ET) and the Country Operations Division of the Central Europe Department. The report consists of: the Preface, the Evaluation Summary, Part I (Project Review from the Bank's Perspective), and Part III (Statistical Information).

Following the break-up of the former Yugoslavia -- into Slovenia, Croatia, the former Yugoslav Republic of Macedonia, Bosnia and Herzegovina, and the Federal Republic of Yugoslavia (Montenegro and Serbia, the latter including Vojvodina and Kosovo) -- the status of the road organizations of the former Republics has changed. As a result, it has been difficult in some cases to obtain all the desired information. The report is thus based on: pre-hostility data (available prior to 1990); updated information received from the road organizations of Slovenia, Croatia, and the former Yugoslav Republic of Macedonia; and information in Bank files, including Loan Agreements, Staff Appraisal Reports, Bank correspondence with the Borrowers, and Bank internal memoranda. Information for Part II (Project Review from the Borrower's Perspective) was requested from the

road organizations of Slovenia, Croatia, and the former Yugoslav Republic of Macedonia, but no response was received. UN-imposed sanctions, and ongoing hostilities, have precluded receiving information from Bosnia and Herzegovina or from the Federal Republic of Yugoslavia.

The final report was sent to the road organizations of Slovenia, Croatia, and the former Yugoslav Republic of Macedonia for comment and review, with a request for additional clarifications. The final report with the transmittal letter was also copied to the Federal Republic of Yugoslavia (Serbia) and to Bosnia and Herzegovina. No responses have been received from the Borrowers.

EVALUATION SUMMARY

Recent Events

1. The hostilities and breakup of the former Yugoslavia in 1992 have had a major impact on infrastructure and its management. New countries have been formed with changes in economic systems, traffic patterns and transport planning. Fortunately, implementation of both projects was nearing completion when the changes began to occur thus only had a marginal effect on the physical completion of the roadworks. On the Bank side, supervision missions were limited and it has been difficult to obtain data from the former borrowers. Nevertheless, it is felt that, within these limitations, the PCR gives a reasonable assessment of the success of the projects.

Project Objectives

2. **Background:** Since 1963, the Bank has made 25 loans for transport in the former Yugoslavia for a total of US\$1,679.6 million equivalent. These include thirteen loans for the highway sector, eight loans for the railway sector, one loan for the port sector, one multimodal loan for earthquake rehabilitation and two for pipeline projects. The main emphasis in highway lending has been on improvements to key links in the primary road network.

3. **A Sector Approach:** Both projects were based on the successful experience gained in the sector lending approach introduced under the Tenth Highway Project. The First Highway Sector Project (FHSP) further consolidated the sector lending approach by financing a four-year (1986-89) time slice of the investment program of four Road Organizations (ROs) of Slovenia, Croatia, Serbia and Bosnia and Herzegovina. It had the aim of not only financing construction and rehabilitation but also addressing investment and maintenance planning systems, road user charges and inter-Republican co-ordination. The Second Highway Sector Project (SHSP) had similar objectives and financed a three-year (1988-90) time slice of the investment program of the three ROs of Vojvodina, Macedonia and Montenegro in the former SFRY. Thus, with the exception of Kosovo, the two projects together covered the entire country of ex-Yugoslavia and extended the support into critical areas of the road sector planning (para. 2.18). The Province of Kosovo was initially part of the agreed loan but withdrew before loan signatures because it was not able to provide the loan guarantee within the scheduled time (para 5.27).

4. **Objectives of the First Highway Sector Project:** The principal objectives of the FHSP were: (a) to continue the Bank's long term strategy to assist and foster sound, planned development of the highway network to meet the needs of the economy; and (b) to consolidate institution-building and policy efforts in the sector with particular reference to investment and maintenance planning, road user charges, and inter-republican co-ordination. Specific objectives included the elimination of some of the major bottlenecks in the primary road network, particularly on the Trans-Yugoslav Highway (TYH), as well as establishing a road rehabilitation program with a view to preserving the existing infrastructure. In addition and most importantly, the FHSP was aimed at strengthening and consolidating investment and maintenance planning in highways at a time when there was a severe shortage of funds and a need for improved co-ordination of resource use (para 3.01).

5. **Objectives of the Second Highway Sector Project:** The principal objectives of the SHSP were: (a) to consolidate and extend past efforts to improve investment planning, concentrating on

achieving a balanced program between new investments and adequate road rehabilitation and maintenance, and to remove major bottlenecks in the network; (b) to improve the cost-effectiveness of road maintenance operations; (c) to encourage a sound road user taxation policy which would ensure adequate funding for road construction and maintenance programs; and (d) to strengthen inter-Republic coordination in highway matters. The SHSP primarily assisted the three ROs which were not included in the FHSP. Although included in the FHSP, the RO of Croatia also participated in a pilot road maintenance management system component under SHSP. The project's main emphasis was on improvements and rehabilitation of the TYH in Vojvodina and Macedonia in the former SFRY, and the rehabilitation of other primary routes, including selected sections of the Adriatic Highway in Montenegro (para 3.08). Each Project included an Action Plan with an annual review with the Bank during which each RO road program for the coming year was reviewed.

Implementation Experience

6. The FHSP was appraised in February 1985 and the loan was declared effective on July 21, 1987. The SHSP (covering different investment programs) was appraised in February 1987 and the loan was declared effective on June 15, 1989. Each participating RO prepared an investment and maintenance program for the time slice period listing individual project items, as well as financing plans supporting the proposed expenditure. Although there were broad differences from one Republic to another in the content of the program, the first priority in all the Republics and Provinces was given for maintenance and rehabilitation activities. The FHSP had substantial delays in loan processing due to non-adjustment of road user charges by the Federal Government in accordance with the letter of development policy issued in early 1983 under SAL-1 (para. 2.33). Both projects were implemented during a period of economic stabilization when there was a strong need to support adequate level of road rehabilitation and maintenance through proper planning and budgeting of limited resources. Due to insufficient local funds there was some delay in the implementation of civil works in Bosnia and Herzegovina and Serbia. To meet the delay, the Loan Closing Dates scheduled for December 31, 1990 for these ROs was extended to December 31, 1991. The Loan Closing Date of SHSP was scheduled for December 31, 1991, but due to outbreak of hostilities in Croatia in 1991, the loan was suspended and finally closed on December 31, 1992.

7. The feasibility studies and detailed engineering for major road components were complete by the time of appraisal. Proposed rehabilitation works were selected on the basis of economic and technical criteria in three phases of the road program. The Bank reviewed the feasibility studies for only major sub-projects estimated at cost over US\$1.0 million. The new construction of bypasses, rehabilitation and upgrading of selected sections of TYH to 4 lanes, and upgrading of gravel roads of the primary road network (17 sub-projects under FHSP and 12 sub-projects under SHSP), were completed by the extended Loan Closing Date. For the most part, procurement went smoothly although works had to be rebid in Slovenia and there were two cases of misprocurement in Vojvodina with a cancellation of US\$1.67 million. In general, the quality of completed civil works was satisfactory (para 5.23).

8. A study of Road Maintenance and Bridge Rebuilding, initially started in mid-1985, was completed under the technical assistance program of the FHSP. The study broadly categorized the road network into five traffic levels and five pavement conditions for preparation of maintenance estimates (para. 5.20). The completion of the followup pilot study on Maintenance Planning Phase I

in Croatia under SHSP, made useful recommendations for introducing systematic maintenance methods in stages (para. 5.40). The planned training programs including foreign training were completed, except the RO of Montenegro was not able to utilize the training funds. Difficulties were encountered in the procurement of specialized equipment. However, with the Bank authorization to use Limited International Bidding and by employing a trading firm, all the ROs succeeded in procuring agreed equipment by the Loan Closing Date (para 5.37).

9. The total cost of the road program under FHSP for a four-year time slice (1986-89) was estimated at US\$1,659 million, including the cost of the Bank-supported program of US\$501 million. The FHSP loan totalling US\$121.5 million covered principally the foreign exchange component of high priority investments under the road program of the four Borrowers. The undisbursed amount US\$1,806.00 under FHSP was canceled and the last date of disbursement was August 8, 1991 (para. 5.25). The total cost of road program under SHSP for a three-year time slice (1988-90) was estimated at US\$585 million including the cost of the Bank-supported road program of US\$141 million. The SHSP loan totalling US\$61.6 million covered principally the foreign exchange component of high priority investments under the road program of the three Borrowers. Under SHSP, the loan of US\$8.947 million was canceled and the last date of disbursement was July 28, 1992 (para. 5.46).

Project Results

10. Overall, both projects were substantially successful in meeting their objectives. The fuel tax was significantly increased and in 1989 the Government put the allocation for roads from the fuel tax on an ad valorem basis -- a major step forward in road user taxation policy. This arrangement substantially achieved the objective of ensuring adequate funding for road construction and maintenance. The objective of planned development and investment was achieved substantially in the Republics of Vojvodina, modestly in Slovenia, Bosnia and Herzegovina, and Macedonia in the former SFRY, and partially in Croatia. For the remaining Republics Serbia and Montenegro it was difficult to obtain data. Concerning maintenance funding, a comparison of FHSP and SHSP appraisal data with that of the data used for appraisal of the Third Highway Sector Project (THSP) (in late 1989) and that supplied by the ROs of Croatia, Slovenia and Macedonia indicates that, when periodic maintenance (i.e. pavement strengthening) is taken into account, Bosnia and Herzegovina, Macedonia, Slovenia and Vojvodina in the former SFRY met the goals set in the project. The data for Croatia indicates that it exceeded its goal (paras. 6.01 - 6.03). With the completion of the technical assistance program, the institutional capacity was strengthened in the road maintenance planning and budgeting. The pilot Road Maintenance Planning System introduced in the Republic of Croatia, which was the subject of a Republic and Province wide workshop, laid a good foundation for inter-Republic co-ordination and extended improved road maintenance planning based on Pavement Management System (PMS) in the follow-up THSP. The Loan for THSP was approved but lapsed prior to effectiveness following the breakout of hostilities.

11. The physical targets of both projects were achieved substantially with only minor cost overruns; except in Slovenia, where due to the difficult conditions in road construction, cost overruns were greater. Under the FHSP, the following works were completed: (a) 41 km construction of two additional lanes and reconstruction of the two existing lanes of the TYH; (b) construction of 3 bypasses (18 km); and 610 km of rehabilitation and betterment program of selected road sections

(para. 6.07). Under SHSP the following works were completed: (a) 30 km of construction of two additional lanes and reconstruction of two existing lanes on TYH; (b) rehabilitation and betterment of 360 m bridge; and (c) 210 km rehabilitation and betterment of selected road sections (para. 6.08). The 7 sub-projects in the former SFRY Republic of Macedonia have shown acceptable revised ERR estimates of 21% to 30% compared with 25% to 30% at appraisal. In Croatia the revised ERR is 15% compared with 18% estimated at appraisal. With increased final costs, the TYH components in Slovenia have revised ERRs of 7% to 8% compared with 15% to 20% estimated at appraisal. The revised ERR for other sub-projects in the remaining Republics and Provinces (RAPs) could not be estimated due to non-availability of the required data (para 6.13).

Project Sustainability

12. In the former Yugoslav Republic of Macedonia (FYR Macedonia), Slovenia, and the part of Croatia that is under Government control, projects are sustainable as they were less affected by the hostilities. It is difficult to comment upon sustainability in Serbia (including Vojvodina), Montenegro, Bosnia and Herzegovina and occupied Croatia because of sanctions or hostilities in these areas. But, apart from the effects of military traffic, it is highly likely that project works in Serbia, Vojvodina and Montenegro were unaffected. Benefits from the civil works components of the projects, savings in vehicle operating costs, reduced travel time and increased safety in the unaffected areas should continue over their economic life. The realization of benefits will, of course, depend on the level of road maintenance and more importantly on the rate of economic recovery in those areas where hostilities have severely disrupted life. Given that it currently closed to transit traffic, the TYH program financed under the project will not provide benefits as significant as expected in saving in the transport costs. Apart from any aspects of coordination, the institutional improvements at RO level should be sustainable given that most of these were based on practice in the European Union of which the newly emerging countries wish to become a part.

Finding and Lessons Learned

13. In retrospect, the project experience provides the following main findings and lessons (para. 8.04).

(1) In a project with multiple loans, crosslinking of effectiveness can seriously delay the project implementation.

(2) The Government of former Yugoslavia made significant changes in the road user taxation and the fuel tax was made ad valorem and raised in steps to 24-26% of the retail price on fuel thus ensuring adequate funding for the road programs. After the independence of Croatia, Slovenia and FYR Macedonia, road user charges are no longer the main source of incomes to the ROs but are transferred through the general budget.

(3) FARP (the coordinating and review organization) performed admirably under the circumstances, and the preparation and implementation of both projects would not have been possible without it. However, within a federation, the Bank should be realistic in its support for coordinating transport planning.

(4) With the differences between appraisal estimates, contract amount and the final cost of civil works in the Republic of Slovenia, every effort should be made to ensure that the detailed engineering is up to date, technically satisfactory and that the cost estimates reflect the going rates for such work -- particularly where construction difficulties are likely.

(5) In FYR Macedonia, the north-south corridor (TYH) is closed due to the UN-imposed embargo of Serbia/Montenegro and unresolved issues with Greece. As a result, the East-West road corridors has now become the lifeline of the Macedonian economy. Furthermore, in Slovenia the war has radically altered traffic patterns, the country's neighboring trading partners and thus its and there are now major movements of international traffic on routes leading to the Hungarian border.

(6) Phase I of a Pilot Study on Maintenance Planning in Croatia, which was completed in 1989, had two main findings. First, that the current method of rating pavement conditions (i.e., the rating from 0 to 5) was inconsistent and technically inadequate to be used in a PMS. The study concluded that pavement conditions needs to be improved and extended to include automated measurements of roughness, strength and traffic loadings. Second, the study found that road rehabilitation backlogs are substantial and growing. Based on these findings, the ROs of the ex-Yugoslavia agreed to proceed with the full scale implementation of PMSs in their respective RAPs.

(7) The investment programs proposed by the ROs did not always include projects which were subjected to proper feasibility studies. At times the selection was based on considerations other than economic efficiency. However with the exception of one or two non-Bank-financed components, the cases were minor.

(8) When a Loan has several borrowers, it is easier to monitor the project performance if there is a uniform system for project reporting. There also is need for mutually agreed monitorable targets and performance indicators which should be reviewed regularly with the borrower.

(9) Prior to appraisal, all project components should be reviewed for their environmental impact both during and after construction and should be subject to environmental assessment appropriate to their size and likely impact. For example, in Montenegro, a large part of the approved loan (75%) remained undisbursed and later on canceled as the RO was not able to obtain the authorization for operation of asphalt plants because the project areas were close to the environmentally sensitive areas. The implementation schedule should take into account the procedures related to environmentally sensitive locations.

YUGOSLAVIA

FIRST HIGHWAY SECTOR PROJECTS (LOAN 2715-YU) AND SECOND HIGHWAY SECTOR PROJECT (LOAN 2878-YU)

PROJECT COMPLETION REPORT

PART I - PROJECT REVIEW FROM BANK'S PERSPECTIVE

1.0 PROJECT IDENTITY

Project Name : First and Second Highway Sector Projects
Loan Number : YU-2715 and YU-2878
RVP Unit : ECA Region
Country : Yugoslavia
Sector : Transport
Sub-sector : Highway

2.0 PROJECT BACKGROUND

A. Recent Events

2.01 The hostilities which broke out in the former Yugoslavia in 1991 and the consequences have had a major impact on the economies of the former republics in the federation, their infrastructure and on the transport sector. The hostilities also affected progress in the closing phases of both projects. Supervision missions could not take place and Bank staff were reassigned. With the regional tensions and changes in the organization personnel and funding of Road Organizations (ROs) in the newly independent former Republics, obtaining data has been difficult and in some cases not possible. Traffic patterns have also radically changed making it difficult to undertake an economic reevaluation of the projects. Nevertheless, as the project was nearing completion at the outbreak of hostilities, and with the data that is available, it is considered that, under the circumstances, the PCR reflects a fair assessment of the success of the two projects. As background, the details of the breakup of Yugoslavia are given below.

2.02 The Republics of Slovenia and Croatia both declared independence from the Socialist Federal Republic of Yugoslavia (SFRY) on June 25, 1991. The FYR Macedonia declared independence in January 1992. In the Republic of Bosnia and Herzegovina a referendum was held in March 1992. Of the two-thirds of the population that voted, 99% voted in favor of independence. The official date of independence and recognition was April 6, 1992. After the split-up, hostilities escalated in Bosnia and Herzegovina and in Croatia, and have continued to date. UN international sanctions have been imposed on Serbia (which now includes Vojvodina) and Montenegro. From the breakup, there are five potential successor states to WB membership. Of these, Croatia, Slovenia and the former Yugoslav Republic of Macedonia have succeeded to SFRY's membership in the Bank as of February 25, 1993. The former Republic of Bosnia and Herzegovina, and the Federal Republic of Yugoslavia are the remaining two potential successor states.

B. The Economy

2.03 Until 1991, the former Yugoslav economy, including the transport sector, was organized on a self-management basis. Under this system, economic decision-making was fragmented and the Federal Government had only limited influence on economic policy. At self-management community level, decisions were achieved through a consensus of managers, and the social-political community. Such a system resulted in a "soft budget" constraint where organizations and enterprises did not have incentives to reduce costs and did not invest efficiently. With the breakup, political systems have changed markedly as has economic management. This is particularly true for Croatia, Slovenia and FYR Macedonia.

2.04 Croatia - The hostilities which broke out following the Croatian declaration Independence, quietened down early 1992 but with about one-third of Croatia's pre-war territory now designated as U.N Protected Area. A cease fire in March 1994, reinforced by the withdrawal of personnel and weapons, although breached, is still in place. The hostilities severely disrupted the economy, inflicted thousands of casualties and caused considerable damage to physical infrastructure and buildings with, for the latter, Government estimates as high as US\$20 billion. Prior to the war, Croatia with its population of 4.8 million was, after Slovenia, the second richest Republic of former Yugoslavia with a per capita income of about US\$3,350 equivalent. The disruption of inter-Republic trade and the hostilities impact on production and tourism activities have brought about a 25% drop in output, with per capita income falling to about US\$2,500. The decline in production was accompanied by a significant reduction in the level of employment, by about 25% over the whole period, and by the near-doubling of the unemployment rate, from about 9% at end-1990 to about 18% in early 1994. In addition, Croatia suffered from the loss of foreign exchange reserves that were kept by the National Bank of Yugoslavia, and suffered from a lack of access to foreign financing, due in part to the dispute on the allocation of part of former Yugoslavia's foreign debt.

2.05 Slovenia - With only limited hostilities following the breakup and with its traditional ties to Austria and Italy, the Slovenian economy has been the least affected of the former Republics.

2.06 In Slovenia, transport patterns have changed due to the disruption of trade and transit traffic. Since 1990, traffic growth has been restrained by the political events and the resulting general economic recession, manifested particularly by the fall in trade with the rest of former Yugoslavia, nevertheless, traffic levels still remains substantial over the trunk road and rail networks. Moreover, there are now increased east-west movements due to growth in regional traffic within Slovenia, transit traffic between Italy and Central Europe, and the diversion of some north-south transit traffic to east-west corridors.

2.07 FYR Macedonia - The former Republic of Macedonia is a small, landlocked economy with a population of 2.2 million people. The economy maintains an open regime (annual export and imports equal nearly 65% of GDP) and hence is extremely vulnerable to any impediments to its external trade. From its inception three years ago following the breakup, in common with other countries undergoing transition to market economies, the country has had to face large scale dislocation in production, employment and social welfare. Also economic management has been complicated by the United Nations trade and transit sanctions against former Yugoslavia (Serbia/Montenegro), and by the closure of its southern border by Greece depriving Macedonia of

access to Salonika, its closest and most economic outlet to the sea. The country has had to rely on alternative transit which substantially increased transport costs. The Government's on going stabilization program combines an incomes policy, tight monetary stance, a flexible exchange rate regime, and domestic resource mobilization. These efforts pulled the country back from the brink of hyperinflation in 1993 and, in 1994, have lowered inflation and enabled the authorities to stay well within targeted performance agreed with the International Monetary Fund (IMF). Structural policy reforms already in place include liberalization of trade and pricing policies; a major tax reform involving rationalization of income and sales tax; passage of two laws to advance privatization and establishment of a proactive task force to restructure important public enterprises. The country has been engaged in a policy dialogue with the Bank and the IMF and appears prepared to deepen economic reforms over the medium term. Its medium-term growth prospects will critically depend also on availability of sufficient external finance.

C. The Transport Sector

2.08 The former Yugoslavia was a large country stretching about 1,200 km from Austria in the north to Greece and Bulgaria in the south. Prior to the breakup, the country, surrounded by seven other countries, was a strategic crossroad between Eastern and Western Europe and provided north-south corridors to ports on the Adriatic and for massive tourism on the spectacular coast. In addition, with eight autonomous Republics and Provinces (RAP), of considerable diversity in background and religion as well as terrain and climatic conditions, the role of transport was considered crucial in providing and maintaining inter RAP links within the country. While the 9,245 km rail network partly served this purpose, it was the 118,000 km road network which was seen as the principal carrier of international traffic and the means of maintaining national integration. The Trans Yugoslav Highway (TYH) was used by the European trucking industry as the main route to and from Greece, Turkey and beyond to the Middle East.

2.09 Transport planning responsibilities were divided between the Federal Government and the Republics. While various organizations had existed to coordinate transport planning, planning was dominated by RAP pressure for each RAP to have its own transport facilities. This was particularly true for ports. The Federal role became principally concerned with investments which would promote unity amongst the RAPs and those over which it had some control of funding.

2.10 In the 1960s and 1970s, the investment levels in the transport sector varied widely. This was partly due to the need to complete the basic transport system and Yugoslavia's relatively easy access to credit in the 1970s, followed by a slowdown in economic activity and a debt crisis in the 1980s. Since the slowdown and resultant budgetary constraints, transport authorities found it more difficult to carry out their investment programs during the 1980s. Road investments, for example, were reduced by about 40% after 1980 compared to the level spent during 1970s. These restrictions came at a time when there was an increasing need to maintain and rehabilitate existing infrastructure for all transport modes. However, even with the budgetary constraint, the "soft budget" constraint continued with little incentive for enterprises to use their investments funds efficiently by selecting investments on a rational economic basis. But changes were beginning to take place.

2.11 With Bank assistance, a systematic approach to highway feasibility studies had been accepted by all RAPs in the 70's (para. 2.17). Railway projects were financed on a sector basis and, in the

80's this approach was also adopted for Bank-financed highway projects (para. 2.18) beginning with the Tenth Highway Project. Also in the 80's funding for roads from the fuel tax was rationalized and made more predictable. However, with the breakup of former Yugoslavia the economic picture is now very different as is the planning and funding for roads.

D. Road Network

2.12 The former Yugoslavia's road network as of 1990 totalled about 118,000 km, of which about 67,000 km were paved, 33,000 km were gravel and the remainder were earth. During the period from 1970 to 1980, the length of the paved network had doubled and accounted for 57% of the total. Paved road standards range from high quality four-lane toll facilities with grade separated interchanges to narrow country lanes. The backbone of the road network was the 1,170 km TYH or Brotherhood and Unity Highway (Map IBRD 179341RI). In addition, and of major importance to the ten million tourists who used to visit the former Yugoslavia each year, were the spectacular Adriatic Highway running almost the entire length of the country alongside the Adriatic Sea and the roads leading to this coast. Network details are given in Annex 1.

2.13 Modernization of the network was a major priority for the RAPs and the Federal government. And, with a view to eventual membership in the EC, (now the EU), the standards for quality of road networks were looked at as the standards to be achieved. As noted above, in the more developed areas of the country, the primary focus was on eliminating the major bottlenecks, particularly on the TYH, while in the less developed areas, the main focus was on upgrading and modernization of the basic primary network. With increasing tourism and accompanying traffic growth, the RAPs and Federal government were seriously concerned about summer congestion and also the deterioration of the road pavements. Following Bank recommendations, while a continuation of emphasis was being given to the upgrading of the TYH to four lane standards, plans also now called for improvement of other roads with a stepped up level of betterment, easing of rural congested sections with passing and climbing lanes, and constructing bypasses around congested urban areas. Also, with 30-40% of the network pavement considered to be in fair to poor condition, pavement strengthening was considered of high priority and was supported by Bank financing during the periods previous to and during the First and Second Highway Sector Projects.

2.14 Maintenance had generally been satisfactory, but had suffered because of the budgetary constraints. Allocation of maintenance funds followed a complicated procedure and, although traffic levels were a main criteria, the process was fragmented and required decisions by the many self management groups using a particular section of road. In some cases attempts were being made to extend the self-management system with road section management by user groups and with the road being considered as a means of production. To rationalize the assessment of requirements and the subsequent allocation of maintenance and rehabilitation funds, the SHSP included funding for a pilot road maintenance planning system in Croatia (para. 5.39).

2.15 Following the breakup, each new state now has sovereign responsibility for its own network. And fortunately, given the relative independence of the former ROs, the changeover has been relatively smooth. Details of the present networks in Croatia, Slovenia and FYR Macedonia are given in Annex 1.

E. Previous Bank Assisted Projects

2.16 The Bank has had a long relationship with former Yugoslav Federal and RAP transport authorities in assisting in the development of the transport system. Over the past 28 years, the Bank has lent US\$1,680 million equivalent for highways, railways and ports of which US\$812 million was for highways. The first highway loan (344-YU) in 1963 was for the completion of the Adriatic Highway and sections of the Belgrade to Nis road -- now part of the TYH. Since then, the main emphasis in highways continued to be improvements of key links in the primary road network, including many sections of the TYH.

2.17 Since the first loan in 1963, the Bank-financed program has been remarkably successful with, in general, most work completed within an acceptable timeframe and only minimum cost overruns - and those due mostly to inflation. In addition to being the principal financier of the development of a modern highway system, the Bank has also emphasized improvements to the policy framework in the sector and strengthening of project preparation and investment planning capabilities. Common design standards were introduced and, in 1975, under the Seventh Highway Project, technical assistance was introduced to improve the standard of feasibility standards. Nearly all projects included support for training with emphasis being given to training outside of the country (and thus outside of the system of socially-owned enterprises that prevailed in former Yugoslavia).

2.18 For the earlier projects, Bank appraisal had been generally confined to specific road sections but, under the Tenth Highway Project, a sector approach was introduced which allowed the Bank an overview of the entire highway sector within a particular RAP and also permitted greater flexibility in adjusting the level of road expenditures. While the subsequent *Eleventh Highway Project* focussed entirely on improvements to the TYH in Slovenia, Croatia, Serbia and Vojvodina, the successful sector approach was adopted for the two projects covered by this report. As between them the two projects covered the entire country¹, the projects included not only the financing of construction and rehabilitation but also addressed planned development of the road network, investment and maintenance planning systems, road user charges and inter-Republic coordination. The approach was continued under the now lapsed Third Highway Sector Project with even greater emphasis being given to maintenance, pavement strengthening and rehabilitation.

2.19 The success of the past program as a whole was due to both the drive within the country to modernize its highway system in line with adjacent and nearby western European countries, and a gradually increasing willingness on the part of Yugoslav officials to work with Bank staff in putting this development momentum on a sound economic basis. On the Bank side, Bank staff worked hard and successfully to overcome attitudes required by a system which inspired a mistrust of economic analysis and open procurement. In this the Bank was fortunate in low staff turnover within the responsible division (para. 8.03).

¹With the exception of Kosovo, which withdrew from the Second Highway Sector project.

F. Institutional Developments

2.20 Until 1980, the Federal Government exercised considerable control over the economic management of the country. A major event was the passing of the Associated Labor Act in 1976 which formalized the "Self Management System" and created many small relatively independent work units. The effect on railways was major with, for example, an independent organization for labor operating railway signalling separately in each RAP. In highways, the major effect was on maintenance with separate independent organizations for each maintenance area with local communities and enterprises contributing directly for local road maintenance. The Federal Government retained planning authority mainly over those plans to be funded from revenue raised through Federal legislation. However, since the mid-1960s, there was a gradual shift of authority from the Federal to the Republican/Provincial transport agencies, thereby increasing the number of decision-making bodies and making transport planning and coordination more difficult.

2.21 With its support for the transport sector, the Bank emphasized the need for improved coordination between sub-sectors at the regional and national levels as well as the need for developing adequate institutions and an appropriate policy framework. At the national level, the Bank encouraged and supported the establishment or strengthening of important planning and coordinating institutions. Notable among these were the *Federal Committee for Transport and Communication* (FCTC) and the *Council of Republican and Provincial Road Organizations* (CRO). FCTC oversaw the total transport picture in ex-Yugoslavia, and was responsible for common policy and regulatory matters such as vehicle regulations, road user taxation and the international aspects of highway administration and road transport. The CRO dealt with nationwide standardization of engineering and design criteria in the highway sector and highway safety. The Bank also encouraged the preparation of a long-term master plan study for TYH which provided a basis for overall coordination and for several Bank-financed highway projects.

2.22 At the Federal level, road transport enterprises and operators had formed the Association of Road Transporters which provided information on the transport market, recommended tariff levels and acted as a lobbying body with the Federal Government and the RAPs.

2.23 Each of the eight RAPs had its own self managing community for roads (road organizations or ROs) responsible for the primary and regional roads within their RAP. An RO was responsible to a road assembly made up of representatives of various groups with an interest in roads, such as transport companies, industrial enterprises, agricultural cooperatives and professional and road user associations. The Secretariat of the Assembly managed the operations of the RO with the Secretary being the chief officer of the RO. The ROs interpreted and administered the decisions of the Republic and Provincial Assemblies and were responsible for planning, execution and finance of construction and maintenance. The ROs themselves operated in a managerial capacity with all their actual functions such as undertaking feasibility studies, design and supervision being carried out through a form of contracting by local engineering design institutes. Construction and maintenance work was undertaken by construction and maintenance enterprises. In 1990, a law was passed which began a dissolution of the self managing system. This was an improvement for the ROs which were transformed into more manageable Social Funds with smaller boards rather than having to answer to the previous larger assemblies.

2.24 Through their long association with Bank-financed highway projects and Bank staff, the ROs developed adequate capabilities for the preparation and implementation of projects according to acceptable criteria and procedures. The investment planning approach introduced under the *Tenth Highway Project* and consolidated under the two projects covered by this PCR, served to strengthen planning procedures and improved balance between new investments, rehabilitation and maintenance in the country.

2.25 To broaden inter RAP coordination, in 1983, with Bank support, the CRO was replaced by a new coordinating body, known as the *Federal Association of Republican and Provincial Road Organizations* (FARP) with the intention that it would have broad responsibilities for overall planning and monitoring of development related to road infrastructure and road transport. FARP was also responsible for liaising with the Federal Government on matters related to road user charges and for coordination studies and implementation of recommendations.

2.26 FARP was created against the trend of RAP autonomy and the role for FARP perceived by the Bank of having overall responsibility for national highway planning was not, and in retrospect, could not have been achieved. Nevertheless, working against this trend, FARP proved to be one of the few institutions where RO officials from all eight diverse RAPs could meet regularly on good terms, relax, exchange ideas and agree on technical policy. FARP also coordinated inter-RAP training activities and acted as the main lobbying conduit in the discussions on the lifeblood of the ROs -- revenue from the Federally mandated fuel tax. Both the ROs and the Federal Government recognized that FARP was the essential focal point not only for Bank-financed projects but also the increasing involvement of the European Investment Bank (EIB) and other possible financing agencies.

2.27 FARP no longer exists -- a victim of the breakup. However it should be on record that, from the Bank's point of view, preparing and supervising the highway projects of the 80's and, in general, working simultaneously with all eight ROs would have been impossible without FARP and the professional skills and enthusiasm of its small but dedicated staff.

2.28 Road institutions have also changed and the present (5/2/95) situation is described below.

2.29 Croatia: Responsibility for road management and coordination has been taken over by the *Ministry of Transport, Communications and Maritime Affairs* of the Republic of Croatia. In 1991 a public company, *Hrvatske Ceste* (HC) (Croatian Road Authority) was established responsible for planning, construction and maintaining all public interurban roads in Croatia. Since July 1, 1994 most of the HC financing resources now come from the Government's centralized budget. HC is governed by a managing board of nine members, of which six are appointed by the Government and three are selected by HC. HC is headed by a manager and his deputies, all appointed by the Government. The maintenance department is the largest of the three departments into which HC is organized. It is responsible for road maintenance with the actual work carried out by 17 district offices. The other two departments deal with planning and engineering, and administrative functions.

2.30 Slovenia: Prior to independence in 1992, Slovenia had already reorganized its management of roads and had created a *National Roads Administration* (NRA) under the *Ministry of Transport and Communications* (MTC) for this purpose. The NRA is continuing to exercise these functions over the major road network but in 1996 it will lose most of its responsibilities for the planning and

management of the motorway system (Slovenia's section of the former TYH and other four lane mostly tolled roads). For the motorways, the Government intends to establish the *Company for Motorways of the Republic of Slovenia* (DARS), with the long term objective to plan, design and construct some 300 km of new motorway links to be built on the East-West corridor. The main source of finance for this program will be the toll revenue from both the existing and future motorways on east-west alignments. DARS will also be responsible for the operation and management of these motorways. Besides this, DARS will receive the proceeds of a special 16 per cent levy on gasoline and diesel sales to remain in force until 31 December 1999. DARS may also be authorized to issue bonds to help finance its program and to bring in private sector involvement. Initially DARS will be Government managed, but once the program has been firmly established, the possibility of private sector concessions for parts of the network will be considered. A concession law is currently being considered by the Slovenian Parliament.

2.31 FYR Macedonia: In 1990, the self managing community for roads was transformed into a Social Fund with a small Board of about 12 members, currently in the FRY Macedonia. The Secretary is proposed by the managing board and confirmed by parliament.

G. Road Financing

2.32 Before the breakup of former Yugoslavia road, expenditures were financed at the RAP level from earmarked sources which included taxes on fuel, vehicle registration fees and road tolls, as well as from contributions made available by community work organizations, Republican/Provincial budgetary allocations, and from local and foreign loans. The less-developed areas, particularly Kosovo and Montenegro, also received small amounts from the Federal Fund for Less Developed Regions (LDR). In most RAPs, revenue from vehicle registration fees was used to finance local roads. In 1990 the distribution of revenue sources of funding for the highway sector was as shown below:

Fuel tax	56%
Foreign loans	15%
Tolls	10%
Vehicle registration fees	5%
Communities	4%
Federal and Republic contributions	5%
Domestic loans	3%
Tax on foreign vehicles	2%

2.33 Funding for roads had declined in 1980s due mainly to an unwillingness by the Federal Government to link road user charges -- mostly the tax on fuel -- with inflation. Also, early in the 1980s, there was a tendency by the RAPs to use funds earmarked for roads for other purposes. To meet this decline in funding, in early 1983, a commitment was included in the Letter of Development Policy under the Bank-financed Structural Adjustment Loan (SAL I) providing for regular adjustments of road user charges and for the allocation of road user revenue to road expenditures. This approach was fairly successful and by the end of 1984, all the RAPs had returned to earmarking of over 95% of the road user charges for road expenditures. However, the linking to inflation was

on an ad hoc basis with each increase having to be considered by the Federal Assembly. With the rampant inflation of the 80s, clearly this was an unsatisfactory arrangement. These issues were again addressed during the preparation of First and Second Highway Sector Projects and the adjustment of road user charges in line with inflation were made a prior condition for Loan Negotiations, Board Presentation and Loan Effectiveness. Adjustments were made to meet these conditions but further adjustments continued to be made erratically and always lagged considerably behind the effects of inflation. The resulting deficiency in funding played havoc with road planning and funding and the completion of sub-projects under both the Loans YU-2715 and YU-2878 were delayed.

2.34 In 1988 revenues reached an alarmingly low level, causing rehabilitation to be postponed and routine maintenance to be neglected. The Bank expressed its concern over the low level of funding for maintenance and rehabilitation works. As a result, and in consultation with the Bank, the Federal and RAP governments adopted a new road financing law -- the *Social Compact on Sources of Funds for Road Maintenance, Rehabilitation and Construction*. The most significant provision of the law was putting the road user tax on fuel on an ad valorem basis such that the level of taxation increased automatically with the price of the fuel. In addition the absolute level was raised in steps to 24-26% of the retail price of fuel. Further, Federal earmarking was abolished and the ROs were given almost complete freedom over the use of the road user tax.² On the down side, fuel tax revenue was not distributed nationally according to need but remained in the RAP in which it was collected. Vehicle registration fees were also increased and standardized among the RAPs. On the whole, the new system of road user tax was a significant improvement and, while the fuel tax on diesel was not set at about the same level as gasoline, the overall level of revenues from road user charges became significantly more in line with the expenditure requirements.

2.35 These financing measures were reinforced under the follow-up THSP and additional agreements were reached that road maintenance and betterment would receive first priority in the allocation of revenue from the road user tax. However, and naturally, the breakup of the Federation and changing priorities and immediate needs of the newly independent states have changed the pattern of road financing. Since the breakup, the general trend has been to follow the examples of many other industrialized countries and move from an earmarked system to one where revenue from road user charges accrues to the general budget. With transport having to compete with other sectors for funds, this change should enhance the role of transport planning in general and highway planning in particular and it is propitious, that over the years, the Bank has been supporting the development of highway planning on a sound economic basis.

2.36 The respective current positions in Croatia, Slovenia and FYR Macedonia are given below.

2.37 Croatia: Due to the downturn in economic activity and the disruption due to the hostilities, there have been insufficient funds to meet the needs of the road network. Parliament set the level of the fuel tax annually and the proportion earmarked for roads as well as the level of other sources

² Previously, about half of the revenue from the road user tax on fuel had been earmarked for the construction of the TYH and other primary roads. There also were provisions that: (a) this revenue could only be used as counterpart funding for foreign loans; and (b) that, if the TYH passes through a Province, no work could be undertaken on other primary roads until TYH upgrading was completed. This made it difficult to plan an investment program on the basis of economic priorities.

of revenue for roads and these declined over the period 1991 - 1994. However, earmarking of part of the fuel tax for roads has been discontinued and, beginning January 1995, all revenue of Croatian roads is allocated from the general budget.

2.38 Slovenia: After independence, allocations for roads come from the general budget. The government endeavors to maintain a balance between total expenditures on roads and the revenue generated by the sector through fuel taxes, vehicle registration fees and motorway tolls. A recent study conducted by EBRD determined that, despite the generally low level of road user charges in Slovenia, when compared with other European countries, current road user revenue, estimated at about US\$440 million annually, exceeds current expenditures on roads about threefold. Passenger cars pay between four and five times their road costs, while the revenue from heavy vehicles generally equals their road costs. Only buses appear to be slightly under-taxed at the present time.

2.39 FYR Macedonia: Since January 1, 1994, user charges from fuel are transferred to RO through the general budget. This change in the flow of funds reflects not only the Government's attempt to increase the flexibility of public expenditures, but also the decision to integrate Transport Sector planning in the Ministry of Urban Development, Civil Engineering, Transport and Ecology. Nevertheless, through the general budget, the revenue from the fuel tax has been and is still projected to cover about 60% of road expenditures.

3.0 PROJECT OBJECTIVES AND DESCRIPTION

A. First Highway Sector Project

3.01 Overall: The FHSP was directed at continuing the Bank's presence in the highway sector in order to promote and assist the effective implementation of a number of programs initiated under previous Bank projects and to extend the Bank's institution-building efforts through all regions of the country. The FHSP supported a minimum investment and maintenance road program in four Republics: Slovenia; Croatia; Serbia; and Bosnia and Herzegovina. Specific objectives included the elimination of some of the major bottlenecks in the primary highway network, particularly in the TYH, as well as establishing road rehabilitation programs in all the participating republics with a view to preserve the existing infrastructure. In addition, and most importantly, the FHSP was aimed at strengthening and consolidating investment and maintenance planning in highways at a time when there was a severe shortage of funds and a need for improved coordination of resource use.

3.02 Project Objectives: The principal objectives of the FHSP were:

- (a) to continue the Bank's long term strategy to assist and foster sound, planned development of the highway network to meet the needs of economy; and
- (b) to consolidate institution-building and policy efforts in the sector with particular reference to investment and maintenance planning, road user charges, and inter-Republican co-ordination.

3.03 Project Description: The project financed a four-year time slice (1986-89) of the road investment and maintenance programs in the four participating Republics of Slovenia, Croatia, Serbia, and Bosnia and Herzegovina. The project was prepared with the aim of providing better control over total expenditure in the highway sector and of ensuring that the program is appropriately timed and meets the needs of the economy. Taking into account the level of road user revenue and the shortage of funds from other sources, the time slice supported a minimum investment program in the four RAPs with emphasis on upgrading heavily-trafficked sections in the TYH system, on rehabilitation of existing infrastructure and on improved maintenance activities. The project aimed at eliminating several major bottlenecks in the primary highway network thereby reducing transport costs and facilitating commodity and passenger traffic.

3.04 Considering the available funding and the needs of the network, the investment programs were well balanced and the individual components were fully justified. In particular, the Bank-financed items of the programs included: (i) improvement of 47 km of TYH sections, including a start on the TYH route between Ljubljana and Zagreb and the continuation of the TYH program in Croatia eastward from Zagreb towards Belgrade (Map IBRD No. 17934RI); (ii) in Slovenia the program included the construction of the Maribor By-pass, located on the most important international access route in the country; (iii) in Serbia the main focus was on the rehabilitation of existing primary roads and on the construction of two bypasses on the Nis-Sofia Highway, a branch of the TYH leading to Bulgaria, Turkey and the Middle East; and (iv) in Bosnia and Herzegovina, the main focus was on the rehabilitation of existing primary routes as well as upgrading of gravel roads in the primary network. The project also financed high priority maintenance equipment for use on the TYH and some items of office equipment for strengthening the administrative and planning capacity of the ROs.

B. Second Highway Sector Project

3.05 Overall: The SHSP was aimed primarily at assisting the four remaining ROs (Kosovo, former SFRY Republic of Macedonia, Montenegro and Vojvodina), not included under the FHSP, in implementing their highway development programs, including the upgrading and rehabilitation of the TYH, and extending institution-building efforts throughout the country. Together with the FHSP, the SHSP extended the Bank's involvement to cover the entire Yugoslav highway system. Croatia participated in a pilot road maintenance management system.

3.06 Project Objectives: The principal objectives of the SHSP were:

- (a) to consolidate and extend past efforts to improve investment planning, concentrating on achieving a balanced program between new investments and adequate road rehabilitation and maintenance, and to remove major bottlenecks in the network;
- (b) to improve the cost-effectiveness of road maintenance operations;
- (c) to encourage a sound road user taxation policy which will ensure adequate funding for road construction and maintenance programs;
- (d) to strengthen inter-Republic coordination in highway matters.

3.07 Project Description: The SHSP included the following:

- (a) the 1988-90 highway development programs of the ROs in Vojvodina, former SFRY Republic of Macedonia, Montenegro and Kosovo¹;
- (b) a training program for the staffs of the ROs and their associated maintenance enterprises and engineering institutions. Provision of planning equipment for the ROs in Vojvodina, former SFRY Republic of Macedonia, Montenegro and Kosovo for setting up road data bases;
- (c) training and technical assistance and provision of road monitoring equipment to assist the RO of Croatia to set up a pilot road maintenance planning system;
- (d) provision of equipment for road maintenance in Croatia; and
- (e) technical assistance to FARP for Project preparation and planning.

3.08 The main focus of the program in Vojvodina and former FRY Republic Macedonia was on the improvement and rehabilitation of the TYH. In Montenegro, emphasis was on removing bottlenecks on the Adriatic Highway and rehabilitation of bridges. In the less developed Province of Kosovo, the main focus was on the rehabilitation of existing primary routes, including part of the Adriatic Highway, and the construction of a new 5 km by-pass near Pristina to replace an existing gravel road. Croatia was selected to set up a pilot road maintenance management system which was planned to be extended to cover the whole country under a later project. A financing plan was drawn up for each Borrower and sources of funds identified for all planned expenditures. Agreements were reached with each Borrower on the selection of sub-projects for Bank participation.

4.0 PROJECT DESIGN AND ORGANIZATION

A. Project Design of FHSP and SHSP

4.01 As noted above, the FHSP financed a four-year time slice (1986-89) of the road investment/maintenance program of four RAPs. The FHSP was designed as a transitional project in sector lending such that while the larger investment projects were clearly identified during the appraisal process, it was neither possible nor necessary for each sub-project to be analyzed in detail. Instead agreement was reached on overall investment program for each Borrower and the procedures and criteria were established for periodic updating of these programs during project implementation. If due to unforeseen changes in, say traffic levels, priorities changed, Bank financing could be switched to higher priority projects. A significant feature of this approach was that all proposed investments and maintenance activities for each RAP, whether directly Bank-financed or not, and their funding were subject to the Bank appraisal process. The approach supported and strengthened

¹The RO of Kosovo was not able to provide the Bank guarantee required for the Loan Agreement therefore it withdrew before loan was signed;

investment planning and analysis, a systematic approach to road maintenance operations, and sound financial planning under conditions of budgetary constraint. The approach also strengthened the coordinating role of FARP.

4.02 FHSP preparation was delayed due to slowness in reaching agreement on the Republics to be included and composition of the investment plans, and delays in adjusting road user charges. The SHSP followed a similar pattern but with a three year time slice (1988-1990) to keep in step with the FHSP. Both projects emphasized investment planning and strengthened the role of FARP.

4.03 The scope and scale of both projects and their timing were appropriate. With the restriction on funds, there was an increasing need to establish systematic rehabilitation programs and an improved level of maintenance to preserve the existing network. The road investment programs were well balanced and the individual components of the programs were justified on the basis of economic evaluation. While construction projects still formed the core of the programs, the share of these was decreased and attention was focussed more and more on improved rehabilitation and maintenance.

4.04 Although the contents of each RAP plan was different, all had a clear conceptual foundation and sources of funds were identified for all categories of planned expenditure. The estimated needs for construction and rehabilitation were based on economic criteria and, for maintenance, on a complex system in which traffic levels played a significant role. Depending on estimated fuel sales within an RAP, fuel tax revenue provided between 40% and 60% of the total funds. Nevertheless, based on past experience, at projects appraisal, insufficient availability of local funding was considered as the main risk. To meet this risk, the project's Action Plans included a provision for an Annual Review of the projects with a review of funding.

4.05 Project Action Plans defined the actions required to implement the project's objectives and also laid out responsibilities and timing as well as review and monitoring activities. The Plans provided for: (a) agreement on the overall investment and maintenance program, including annual review and updating; (b) a general framework for adjustments to road user taxation; (c) specific measures for implementing improved road maintenance strategies; (d) an action program for FARP, with an aim of improving overall coordination, monitoring and reporting; (e) procurement and administrative arrangements for the project; and (f) provision for further training in the field of highway management and administration. The requirement for an Annual Review went further than normal supervisory activities and ensured Federal participation and thus a review of the level of revenue for roads from the fuel tax. The Action Plans were discussed and agreed during negotiations.

4.06 The institution building program was designed to meet the objective of planned development of highway network with reference to investment and maintenance planning, and inter-Republic co-ordination. The training program was designed to develop a sound capability for the preparation of feasibility and design studies for the staff of FARP, the ROs, technical staff of the highway engineering institutes and highway maintenance enterprises. The proposed training program was an extension of the program implemented under the previous Tenth and Eleventh Highway Projects. It was aimed at providing continuous updating of key technicians of the ROs in highway safety and maintenance management.

4.07 The FHSP also included a continuation of a study of the state of the road network. The initial study, based on existing inventory data, was started in mid-1985 with the aim to establish a program of data collection and to provide a framework for further analysis of the network state under a subsequent phase. The FHSP provided retroactive financing for foreign consultants who had assisted local institutes with the study.

B. Project Organization of FHSP and SHSP

4.08 The ROs of all the participating RAPs were the Borrowers under both projects. As in earlier projects, where such arrangements proved satisfactory, design of the project roads and supervision of construction was exercised by local technical institutes under contract to the respective RO. FARP served as the coordinating agency between the Borrowers to the extent this was possible prior to the dissolution of former Yugoslavia. FARP's role and responsibilities included coordinating withdrawal requests to the Bank, standardization of economic, engineering and design criteria and overall planning and monitoring of highway development. Under the sector approach, FARP was also responsible for reviewing sub-project feasibility studies prior to bank submission. With the experience of previous projects, the procedures and criteria used in the preparation of sub-projects were well known to all ROs¹.

4.09 FARP was already staffed by an acting secretary (transport economist), a senior highway engineer and a traffic engineer. To strengthen its coordinating role, FARP agreed to hire additional staff during 1987/88 including a second economist, a financial analyst, a lawyer and two technical staff with computer experience coordinated withdrawal requests to the Bank.

5.0 PROJECT IMPLEMENTATION AND COSTS

First Highway Sector Highway Project

A. General

5.01 The FHSP was identified in October 1981 and was prepared by the ROs with the assistance of Bank preparation missions in December 1982 and in March 1983. The FHSP was appraised in October 1983 and before negotiations a post-appraisal mission took place in February 1985. Negotiations were completed in November 1985. The delays in negotiating were due to: (i) delays in Government implementing its agreement on the adjustment of road user charges for inflation in line with the SAL undertaking (para. 2.33); (ii) delays in approval of the individual investment and financing plans by the Republican Governments; and (iii) delays in the employment by FARP of the executive head and at least one senior professional staff in its technical department; (iv) RO reluctance to bear the foreign exchange risk of the Loan; and (v) delay in the RO of Montenegro reaching a decision on its participation. Subsequent to negotiations, due to a shortage of local funds, the RO of Montenegro reversed its decision to participate in the project and the loan amount was

¹The criteria for Bank approval of sub-projects were that: (i) the quality of preparation and analysis must be acceptable to the Bank; and (ii) the Economic Return (ER) of investment at least 12%.

reduced from \$134 million to \$121.5 million. Montenegro's withdrawal did not affect the sector objectives of the project since agreements concerning road user revenues, the coordinating role of FARP, and the strengthening of the maintenance program for roads and bridges applied to the country as a whole.

5.02 Loan 2715-YU for FHSP was approved on June 10, 1986, signed on February 27, 1987, and became effective on July 21, 1987. The delay in loan effectiveness was due to late adjustment of road user charges -- a condition for Loan Effectiveness. At appraisal the FHSP was prepared for a three-year (1986-88) time slice of the invest plan of the ROs, but in view of the long term period since the last adjustment of the road user charges in May 1984, it was felt before negotiations that a greater flexibility could be exercised into the investment program by scheduling them over a four-year period (1986-89) rather than three-year period (1986-88) envisioned at appraisal. As a result, the Loan Agreement was signed for financing a four-year time slice (1986-89) of the investment and maintenance programs.

B. Civil Works Overview

5.03 After the initial delays in declaring the loan effective, the project jumped to a very good start with commitments exceeding 50% of the loan amount within the first 18 months of project implementation. All contracts for the first phase of construction/rehabilitation works were awarded as scheduled and the construction program began rapidly in all four Republics. Then, while the ROs of Croatia and Slovenia continued to show good progress, the ROs of Serbia and Bosnia and Herzegovina slipped behind schedule primarily due to shortage of local funds due, in turn, to the delay in adjustment of road user charges. The other ROs also began experiencing delays -- mainly with rehabilitation works. Some delay was due to delays in the FARP review of sub-project feasibility studies prior to submission to the Bank¹. This was due to staff shortages occasioned by a Federal Government hiring freeze. To complete the project, the Bank agreed to extend the Loan Closing Date to December 31, 1991. All works were completed by this extended date.

5.04 During supervision missions, Bank staff met with RO planning and construction staff, the staff of the Institutes responsible for design and construction supervision, made visits to the project sites, inspected the works in progress, discussed scheduling and suggested and/or agreed to modifications and inspected the quality control arrangements. Bank staff stressed that, in addition to laboratory testing, site staff should pay more attention to the final finishes, particularly the riding quality of the pavements and the final finish of the concrete works.

Slovenia

5.05 The total cost of the four-year time slice (1986-89) of the investment and maintenance program for Slovenia was estimated at US\$374.1 million including administration debt servicing and

¹The Bank agreed with FARP that the feasibility studies for sub-projects to be submitted to the Bank for review, according to the procedures given in the loan documents would be limited to major sub-projects valued at over US\$1.0 million. As stipulated in the Action Plan, for Bank-financed major sub-projects, FARP was responsible for reviewing and summarizing the reports of feasibility study and forwarding comments to the Bank for review.

contingencies. The Bank participation identified at negotiations was for US\$24.9 million to cover the foreign exchange component of: (i) construction of a 12 km section of TYH between Smarje Sap and Visna Gora; (ii) construction of an 6.8 km Maribor by-pass; and (iii) a slice (about 10%) of Slovenia's road rehabilitation program. However the actual expenditure for the time slice was US\$851.70 million - i.e., 227% above the appraisal estimates (Annex 3). It is also seen that the difference between the appraised and the actual was the highest in the year 1989; appraised US\$103.60 million and the actual US\$345.7 million. The RO has indicated that the difference is due to high inflation and change in the average exchange rate. However, administrative costs were also higher than estimate, and in 1989 reached \$153 million (compared to \$3 million estimated). The reason for the increase is not clear. However, our understanding is that in part it covered payment for prior investments. It was also distorted by the hyper-inflation of 1988-89 and the rapid devaluation of the Dinar. The loan was closed on June 30, 1991 with final disbursement of US\$26.090 million. All new and rehabilitation works were completed without any substantial delay and the quality of works was satisfactory.

5.06 Smarje Sap - Visna Gora: Bids for this section were invited in early 1987. The lowest bidder was "Transinvest" (Hungary), with a bid of US\$30.8 million. However, as the appraisal estimate (based on detailed engineering) was US\$22.8 without contingencies, the RO recommended that bids should be reinvited. The Bank at first held that, in accordance with the English bidding documents, which governed the bidding process, the "Transinvest's" bid was valid and should be awarded the contract. Ultimately an agreement was reached between the Bank and the RO to rebid due to both the high price of lowest bid received but also to inconsistencies between the English and Slovenia bidding documents. The plans were also revised to reduce the cost of works; it was agreed to defer the construction of a service road and utility works estimated at US\$5 to 6 million and to complete construction before the 1989 tourist season, the construction period was reduced from 30 to 23 months. In the event, costs were not reduced and, after the next round of bidding in May/June 1987, the contract was awarded to the lowest bidder for US\$35 million. The work was completed at a final cost US\$48.0 million which, including contingencies, was about 66% above the appraisal estimates. However, the project was not completed as originally conceived. Due in part to lack of local funding during the construction period, the scope of the project was cut back by the RO without informing the Bank with only two lane of the expressway being completed. This was noted during a supervision mission; nevertheless, given the ability of the existing road to handle traffic in the other direction, the Bank concurred with the RO's proposal to defer bringing the section up to 4-lane standard until after 1992.

5.07 Maribor Bypass: A similar situation arose with the Maribor Bypass. The lowest bid was US\$36.3 compared with the appraisal estimate without contingencies of US\$18.3 million. As a result, quantities and unit prices were checked during a special Bank review to ascertain if changes had been made since loan negotiations. Interestingly it was found that the bid included an already built bridge (at a bid value of about US\$1.38 million), and already completed works which were: additional service roads, enlargement of three overpasses and additional utility works for an approximate total value of US\$5.0 million. As no retroactive financing had been included for these items, they were excluded from eventual contract as was construction of other components not considered immediately necessary. With the Bank's agreement, the RO negotiated with the lowest evaluated bidder and reached an agreement for a contract amount of US\$27.8 million, for which the

Bank gave a "No Objection." The work was actually completed at a final cost of US\$36.8 million which including contingencies, is about 74% above the appraisal estimate.

5.08 The rehabilitation program was completed satisfactorily. Through FARP, and both at headquarters and in the field, the Bank requested details supporting the traffic forecasts and operating costs for all the sections selected and reviewed the economic analysis for each section prior to its approval. Rehabilitation of road sections would take place in order of priority based on the ERR.

Serbia

5.09 The total cost of four-year time slice (1986-89) of the road investment and maintenance program for the Republic of Serbia was estimated at US\$485.6 million including administration and debt servicing. Due to UN imposed sanctions to Serbia, it was not possible to obtain actual expenditures. Bank participation was US\$35.8 million and principally covered the foreign exchange component of: (i) a slice of Serbia's priority rehabilitation and betterment program; (ii) the 8 km Pirot bypass; and (iii) the 5.5 km Bela Palanka bypass. The larger part of the Bank participation (US\$28.6 million) covered rehabilitation of primary roads. About 60% of Serbian primary roads have a traffic volume of over 3,000 vpd and the RO's priority for the period 1986-89 was the rehabilitation of about 150 km to 200 km the more heavily trafficked of these roads.

5.10 Completion of both new investments and rehabilitation works was delayed due to lack of local funding induced by the local inflation and delays raising the fuel tax in line with inflation. The construction of Pirot bypass was also delayed due to late award of contract; however, the work was completed in July 1990. The start of work on the Bela Palanka Bypass was delayed due to delays in the RO receiving certain military authorization. The work was completed during November 1990.

5.11 The rehabilitation program for primary roads approved by the Bank, was implemented in two phases, 13 sections under phase I and 7 sections under Phase II. Due once again to lack of local funding, the RO contract awards fell behind schedule; however, the works were completed within the extended Loan Closing Date of December 31, 1991.

Bosnia and Herzegovina

5.12 The total cost of four-year time slice (1986-89) of the road investment and maintenance program for the Republic of Bosnia and Herzegovina was estimated at US\$244.9 million including administration, debt servicing and contingencies. At appraisal the road expenditure program for 1989 was estimated at US\$73.6 million. Due to hostilities in the Republic, it was difficult to obtain the actual annual expenditures of the time slice (1986-89) but, as an example, based on data obtained during the appraisal of the Third Highway Sector Project the actual expenditure for 1989 was US\$97 million compared with US\$80.4 million at appraisal -- both at 1989 prices. Bank participation was US\$25.8 million to finance the foreign exchange component of priority roads with the highest priority being given to the completion of key components of highway master plan which was prepared under the Tenth Highway Project. Detailed engineering for four road sections were complete by appraisal. These were Blazuj-Bradina (30.3 km), Maslovare-Pribinic (18.8 km), Baraci-Mliniste (19.9 km) and B. Kostajnica-B. Dubica (21.8 km). The first of these would ensure continuity in a planned program of rehabilitation and improvements to the main road between

Sarajevo and the Adriatic coast. The alignment was to be improved to enhance traffic safety and new climbing lanes were to be constructed over a short but difficult section of the route. The remaining three sections involved upgrading gravel roads in the primary network.

5.13 The contracts for the rehabilitation works were awarded under three phases with prior Bank approval. The lowest responsive bid received for the Blazuj-Bradina section was US\$13.6 million compared with the estimated price of US\$10.0 million. In keeping with the sector approach and following the agreed technical and economic review procedures, further rehabilitation contracts were awarded for sections not identified at appraisal. During supervision missions Bank staff advised the RO to change the road alignment, in the northern end of the section Ostrazac-Jublanica (7 km) to achieve a reduction in the construction cost (about US\$2.0 million). All sub-projects were in mountainous terrain and suffered substantial delay, not only due to unexpected construction difficulties, but also expropriation problems; and the shortage of local funding. Nevertheless, all road works were satisfactorily completed by the extended Loan Closing Date of December 31, 1991.

Croatia

5.14 The total cost for a four-year time slice (1986-89) of the investment and maintenance program for the RO of Croatia was estimated at US\$552.2 million including the cost of administration, debt servicing and contingencies. Actual expenditure for the time slice is US\$560.60 million, which is about 2% above the appraisal estimates (Annex 3). At appraisal the expenditure program for the year 1989 was estimated at US\$164.6 million, while the actual expenditure is US\$309 million which is 88% above the appraisal estimates. The cost of the Bank financed program was estimated at US\$78.8 million, which represented about 15% of total road program. The Bank loan covered principally the foreign exchange component of: (i) the TYH section Prvca-Luzani (28.5 km); and (ii) a slice (about 10%) of Croatia rehabilitation program. All the works were completed before the Loan Closing Date of December 31, 1990.

5.15 The RO placed high priority on the modernization of TYH to four lane expressway standards. Bank assistance for TYH improvement began under the Ninth and continued under the Eleventh Highway Project. Some sections were also being financed by EIB. Under the FHSP, EIB using the Bank agreed appraisal methodology, agreed to finance a further section of TYH. At appraisal the traffic volume on the TYH sections in Croatia was between 11,000 and 18,000 vpd, with over one third being trucks, truck-trailers and buses. With the completion of the FHSP, just over half of the TYH in Croatia was improved to modern tolled expressway with 4-lane limited access.

5.16 The contract for the road section Prvca-Luzani on TYH was awarded on October 30, 1986 to the lowest evaluated bidder at a cost US\$47.1 million compared with the estimated cost US\$52.5 million; the work was completed at a final cost of US\$48.2 million. The work was completed five months ahead of schedule in July 1988 -- before the big annual traffic increase of the tourist season. With the completion of the improvement on TYH, traffic congestion was much reduced and traffic safety was enhanced.

5.17 Under the rehabilitation program, 24 road sections were completed under three phases. On account of staffing difficulties, there were some delays in obtaining FARP's review and comments

on feasibility studies of sub-projects causing some delay in contract award. However, all the civil works were satisfactorily completed before the extended Loan Closing Date December 31, 1991.

C. Equipment

5.18 The project also included the procurement of snow removal and some computer equipment. The procurement of all agreed equipment was completed before the extended Loan Closing Date of December 31, 1991. Although not originally included, the Serbian RO requested and the Bank agreed for a pavement profiler be added to its list of agreed equipment. The final agreement between the RO and the *Serbia Put* (the Serbian Maintenance Organization -- the end user) for the pavement profiler was delayed substantially and by the time RO was finally ready to procure this equipment, the loan was fully disbursed. The Bank advised the RO of Serbia to procure this equipment under the follow-up THSP.

D. Training and Technical Assistance

5.19 The training programs for all participating ROs were carried out satisfactorily before the extended Loan Closing Date of December 31, 1991. At appraisal it was agreed that 65 man-months of training outside Yugoslavia would be used for the staff of FARP and the ROs, as well as technical staff from Highway Engineering Institutes and the highway maintenance enterprises. Although the complete record of staff months utilized could not be traced, supervision reports have confirmed that the following training activities were completed: (i) a visit by the FARP president to the IRF conference in Seoul; (ii) an intense study tour to Germany by a group of about 35 FARP and RO staff; and (iii) a visit to Virginia, USA by three persons to attend the "Conference on Traffic and Economic Development."

5.20 The project also included retroactive financing for 20 man-months of foreign consulting services to finance the completion of a Road and Bridge Rehabilitation Program for primary and regional roads. The study was a nationwide effort covering all eight RAPs and was coordinated by FARP and began in mid-1985. The study was instrumental in establishing a program of detailed data collection and provided the framework for further analysis under a subsequent phase of more detailed study and made considerable inputs to the preparation of 1988-90 road work program. The final study was named "The Study of Road Maintenance and Bridge Rebuilding on Yugoslav Road Network (RMS)", based on questionnaires and visual inspections, broadly categorized the road network into five traffic levels and five pavement conditions with cost estimates required to put the network back into a state capable of taking traffic for the next ten years. The study was particularly useful in discussions with the RAPs on maintenance priorities and, together with the initial findings of the Pavement Management Study in Croatia, provided a basis for a three day road maintenance conference and workshop, supported by the Bank, held in late 1989 in Porto Roz (Slovenia) and attended by, international experts, over 200 representatives from all RAPs, and also by the Federal Minister for Transport.

E. Procurement

5.21 Construction contracts based on unit prices were awarded after international competitive bidding in accordance with the Bank's "Guidelines for Procurement" for all Bank-assisted sub-projects. Contracts were prepared of such a size as to encourage the participation of foreign contractors, but also allowing local firms to bid for one or more sections up to their pre-qualified capacity. A prequalification for civil work contracts began in November 1985 and completed in May 1986. A prequalification questionnaire for highway construction contractors was issued to 32 prospective bidders. From the evaluation report 16 firms were qualified to undertake the construction of civil works, 13 for road rehabilitation and improvement and 3 for bridge construction only. Two categories of contractors were prequalified. One category to include contractors that could participate in contracts up to the maximum amount envisaged under the project and a second category that would be entitled to participate only in smaller contracts (expected to cost less than US\$3.0 million). Standard bidding documents for civil works were agreed in June 1986.

5.22 Except for the issue noted above for Slovenia (paras. 5.06 and 5.07), overall, procurement for civil went smoothly.

5.23 Building and construction were an important industry in all the Republics of ex-Yugoslavia. The procurement of civil works for road construction, reconstruction and rehabilitation was normally executed by means of unit-price contracts. In the past under civil work contracts financed by the Bank under ICB, no foreign contractors have been successful in presenting the lowest responsive bid. While this was mostly due to lower prices by the local contractors, there was an antipathy to foreign firms working in Yugoslavia, which no doubt inhibited their participation. With the emphasis on rehabilitation and strengthening programs, and with the intention of encouraging the smaller local contractors, LCB was introduced as an acceptable procurement procedure under SHSP. The quality of the construction work, though generally good, could have benefited from more demanding construction supervision.

F. Project Costs

5.24 The total cost of the project comprising four-year time slice (1986-89), was estimated at US\$1,659 million including about US\$417 million for road maintenance, US\$402 million for debt servicing by the participating ROs and about US\$31 million for administration. Due to the current embargo in the Republics of Serbia and Bosnia and Herzegovina, it was only possible to obtain the final costs of road expenditure programs for Slovenia and Croatia. The appraised road expenditure program of Slovenia and Croatia were compared with the actual and are shown in Annex 3. The cost of the Bank-financed program including the Bank loan of US\$121.5 million was estimated at US\$501 million which represented about 53% of construction and maintenance investments during the four-year slice period 1986-89. The full loan of US\$121.5 million was apportioned among the four Borrowers according to an agreed allocation as follow: Slovenia US\$25.5 million; Croatia US\$33.4 million; Serbia US\$36.5 million; and Bosnia and Herzegovina US\$26.1 million. Estimated total road expenditure (1986-89) at US\$1659.5 million and its financing plan are given in Table 3 in Part III. Summary of Bank participation in road programs for a loan US\$121.5 million is given in Table 4 in Part III.

G. Disbursements

5.25 The estimated disbursements of the Loan 2715-YU are given in Table 7 in Part III. Due to shortage of local funds and with respect to Bosnia and Herzegovina and Serbia, the original Loan Closing Date of December 31, 1990 was extended to December 31, 1991. The Loan Closing Date, last disbursement date and the amount disbursed in respect of the four Borrowers are given in the Table below. A small undisbursed amount US\$1,806.00 was canceled.

Borrower	Loan Number	Original Value US\$ million	Loan Closing Date	Last Disbursement Date	Amount Disbursed US\$ million	Amount Canceled US\$ million
Bosnia-H	27150	26.090	06/30/91	08/08/91	26.090	0.00
Croatia	27151	33.378	12/31/90	06/29/90	33.378	0.00
Serbia	27152	36.495	12/31/91	01/18/91	36.495	0.00
Slovenia	27153	25.537	12/31/90	06/28/90	25.5352	0.001,806

H. Loan Covenants

5.26 The Loan Covenants and status are detailed in Table 8. Both covenants covering (a) fuel tax adjustment; and (b) submission of annual expenditure and financial plans were complied with. The delays in complying with the fuel tax covenant are detailed in paras. 2.32-2.35.

SECOND HIGHWAY SECTOR PROJECT

A. General

5.27 The project was appraised in February 1987 after a pre-appraisal mission, which took place in November 1986. The loan was approved on October 13, 1987 and signed on September 30, 1988. The reason for this delay was that the province of Kosovo, the RO was not able to provide the Bank guarantee required for the Loan Agreement and, as the five loans to the five Republics/Provinces were packaged into one loan document and all five authorizations were required before loan signature can take place no single loan could be made. In order to avoid delay in the loan effectiveness, the Bank advised the Federal Government about the seriousness of the situation (major road works agreed for retroactive financing and already underway were being delayed, and others not commencing due to the loan not being effective). To overcome this difficulty, the Bank suggested that Kosovo withdraw from the loan, and Kosovo's road works be picked up under THSP. Consequently, the loan of US\$68.0 million agreed at negotiations was reduced to US\$61.6 million. However, Kosovo's withdrawal did not affect the sector objectives of the project since agreement concerning road user revenues, the coordinating role of FARP, and improving investment planning for road program applied to the country as a whole.

5.28 The significant effectiveness condition was the raising of the road user charges incorporated in gasoline and diesel retail prices in accordance with the movement of the producer price index for industrial products from the level at July 1, 1987 to a level at the date of effectiveness. Due to a delay in raising the tax and also the delays mentioned above, the project did not become effective until June 15, 1989 - 18 months later than anticipated in the SAR. The major problems encountered in implementation, were the negative effect of the high rate of inflation in the country. Nevertheless, despite its late start, the Loan Closing Date scheduled for December 31, 1991 was extended for only one year to December 31, 1992.

B. Civil Works

5.29 The ROs of the four participating RAPs, (Croatia, Vojvodina, Macedonia and Montenegro) were the Borrowers under the project with the RO of Croatia participated in maintenance management system. All contracts for the first phase of construction/rehabilitation works were awarded and the construction program began rapidly in all the three RAPs (Vojvodina, Macedonia, and Montenegro). With the exception of Montenegro, all civil works were completed by the extended Loan Closing Date of December 31, 1992. There were no major problems, although the Bank had to cancel US\$1.67 million for the RO of Vojvodina due to misprocurement of civil works contracts (para. 5.32). The undisbursed balance of US\$7.221 million due to non completion of civil works and training program in Montenegro, was canceled (para. 5.46).

Vojvodina

5.30 The total cost of a three-year time slice (1988-90) of road investment and maintenance program was estimated at US\$219.8 million including administration and debt servicing. It was not possible to get the actual expenditure total for the time slice of (1988-90) due to both the merging of Vojvodina with Serbia and the current embargo of the Serbian Republic. However, for the year 1989 the expenditure program was estimated at appraisal at US\$71.2 million and the actual expenditure was US\$55.8 million, i.e., 21% less than the SHSP appraisal estimates. Bank participation of US\$28.2 million financed the foreign exchange component of: (i) a 30.8 km section of TYH between Sasinci and Kuzmin; and (ii) a slice (about 15%) of Vojvodina's road rehabilitation program. With the completion of the 31 km Sasinci-Kuzmin of TYH under SHSP, together with the 30 km financed under the Tenth and Eleventh Highway Projects and the 4.5 km Sasinci-Ruma section financed by EIB, provided a 66 km continuous four lane highway from the Serbian border to Kuzmin near the Croatian border.

5.31 The contract for Kuzmin-Sasinci section was awarded on September 7, 1987 for a price of US\$48.2 million with a completion date of August 15, 1989. The work showed good progress in the start, but suffered delays due to delay in loan effectiveness and thus the non-availability of the retroactive financing included for this road section. While Vojvodina continued the work with its own funds, due to delays in raising the fuel tax, these were insufficient to maintain the scheduled progress. Another reason for the slower progress was the higher than anticipated water level in a nearby river which hampered the mining of sand and gravel for the road embankment. In October 1989, in spite of delays in local funding, the south bound lanes were completed and opened to traffic. The quality of construction was good and the riding quality of the completed lanes was satisfactory. The work was completed in June 1990 with the final cost of US\$39.4 million. It could not be

ascertained from the files how this difference occurred between the appraisal estimate and the revised estimates.

5.32 There were two cases of misprocurement in Vojvodina both involving rehabilitation contracts. The first involved a section along Route M-24 from Crepaja to Pancevo where the Bank stated that the contract award should go to "Jugoslavijaput", that had presented the lowest responsive bid in accordance with the bidding document. The Bank further did not agree with the RO's proposal to award the contract to "Vojvodinaput" (Vojvodina), for the price quoted by "Jugoslavijaput" (Serbia). The second case involved sections along Road M-24, from Ostojicevo to Coka and from Senta to Gornjibreg. Again, the Bank disagreed with the Borrower's recommendation to award the contracts to "Vojvodinaput" but expressed "No Objection" to awarding these contracts to "Transinvest" (Hungary) that had presented the lowest evaluated bids. Despite Bank's "No Objection" the Borrower did not award the contract to "Transinvest" and the work was already started by "Vojvodinaput." It was confirmed from the supervision reports that out of the seven completed rehabilitation projects, the Bank was in disagreement on four contracts which were not awarded to the lowest evaluated bidder. Although the RO requested the Bank not to cancel the portion of the loan with respect to the four contracts which were not awarded in accordance with the Loan Agreement, the Bank did cancel US\$1.67 million due to the misprocurement.

SFRY Republic of Macedonia

5.33 At appraisal the total cost of a three-year time slice (1988-90) of the road investment and maintenance programs was estimated at US\$186.29 million including the cost of administration of the road investment. The actual expenditure for this time slice is US\$213.76 million, which is 15% above the appraisal estimates (Annex 3). However, given that foreign price contingencies were stipulated by the Bank at 1% pa and that actual was around 4%a, the difference between appraised and actual is minimal. The Bank participation US\$17.9 million covered the foreign exchange component for the rehabilitation of: (i) 80 km two-lane section of the TYH between Gradsko and Gevgelija (Greek Border); and (ii) 88 km section of the primary road between Skopje and Ohrid. Improvements to the Gradsko-Gevgelija trunk route and to Skopje-Ohrid through Kicevo included replacement of weak pavement areas with asphalt overlays.

5.34 After the loan became effective, the RO proposed not to rehabilitate the Gradsko-Gevgelija road section of TYH. Their proposal was based on their understanding of Federal pronouncements stated that the entire TYH, including the sections in SFRY Republic of Macedonia would be completely upgraded by 1991. The Bank mission considered that, with the current traffic level of 6,000-7,000 vpd, it would be some considerable time before construction of the four-lane TYH would be economically justified between Gradsko and Gevgelija. With the design life of 10 years, the currently proposed rehabilitation program fitted neatly into that schedule. The mission was concerned that as the construction of TYH on this section was not justified and if the rehabilitation program was not done, the road would deteriorate and raise the operating costs and limit its usefulness as a transit facility. Based on this position, the Bank mission requested and the RO agreed to proceed as scheduled. Contracts were awarded for two sections: (a) Gradsko-Negotino (15.9 km) at cost US\$1.3 million versus the estimated cost at US\$2.6 million at appraisal and the final cost was US\$2.4 million; (b) Negotino-Gevgelija (67.9 km) at cost US\$6.5 million versus the estimated cost

at US\$12.5 million at appraisal and the final cost was US\$15.5 million. All agreed civil works were completed before the Loan Closing Date of December 31, 1991 and the loan was fully disbursed.

Montenegro

5.35 The total estimated cost for a three-year time slice (1988-90) of road investment and maintenance program was estimated at US\$83.4 million including administration and debt servicing. Due to the current embargo in the Republic it was not possible to obtain the actual expenditure of the time slice (1988-90). The Bank participation was US\$9.6 million to finance the foreign exchange cost of the rehabilitation of about 90 km of the two lane Adriatic Highway between Kolasin, Ivangrad and the Serbian border -- Serbia's main outlet to the Adriatic and the port of BAR. The rehabilitation works on Kolasin-Ribarevina were delayed substantially due to problems in obtaining authorization to operate the asphalt plant that was near environmentally sensitive areas. As a result all the agreed civil works could not be completed within the extended Loan Closing Date of December 31, 1992 and the undisbursed loan of US\$7.221 million was canceled. Nonetheless, the rehabilitation of a spectacular 320 meter span steel bridge over a gorge of the river Tara was completed before loan closing.

C. Equipment

5.36 Although there were some delays in Croatia and Montenegro, most of the equipment was procured by the Loan Closing Date. Nevertheless, there were some procurement difficulties -- particularly with Croatia. In accordance with the Loan Agreement, bids for the procurement of Croatia's imported specialized road maintenance equipment (estimated to cost US\$4.8 million) were invited in October 1988 under ICB procedures. Bids were high and few and the RO recommended cancellation of bids. The Bank, while, considered that the high bids were due to inappropriate technical specifications, agreed to rebidding except for items where the lowest bid were less than 19% above estimated price. For these, the Bank agreed to the use of International Shopping and Limited International Bidding.

5.37 The Bank also agreed to the employment of a foreign trade firm to handle the procurement process with the clear understanding that the procurement procedure to be followed would be that of the Bank's and not of the firm. The RO of Croatia employed such a firm for equipment procurement and succeeded to procure and receive most of the agreed equipment financed under the loan. Due to the outbreak of war in Croatia, the Loan was suspended and it was not possible for the RO of Croatia to be reimbursed for the amount spent on equipment within the scheduled Loan Closing Date of December 31, 1991. The Borrower requested to extend the Loan Closing Date and it was extended to June 30, 1992. Finally the loan was fully disbursed except a balance of US\$0.066 million was canceled.

D. Training and Technical Assistance

5.38 With the exception of the RO of Montenegro, all the ROs were able to complete the agreed training program financed under the loan. The RO of Montenegro requested FARP to include the training program in the THSP.

5.39 The technical assistance program covered under SHSP concentrated on the pilot road maintenance management system in Croatia and the experience gained was disseminated to other RAPs. The Civil Engineering Institute (CEI), Zagreb, under contract to the RO acted as consultant in setting up the pilot management system and a contract for Phase I of the work was signed on November 11, 1987, although behind schedule by more than 9 months. The study was expected to be completed within 12 months but was substantially delayed due in part to the originality of the work and also delays in procuring the study equipment. The consultant submitted the Phase I study report and proposed to extend the study to other RAPs under Phase II. The Phase I study report was found satisfactory. The Bank comments were incorporated in the final report which was circulated to the ROs of other RAPs.

5.40 In all, the study achieved its three planned objectives of: (i) reviewing and evaluating the current pavement condition survey methods; (ii) recommending improved road monitoring techniques; and (iii) undertaking a preliminary economic analysis of the maintenance and rehabilitation needs of the primary and regional road networks in Croatia. The findings of this study indicated that the visual ratings from the condition surveys represented a composite index of distress that was not adequate for distinguishing the various maintenance needs, and which was unreliable to account variations between regions and districts. Improved visual survey methods, calibrated roughness surveys and selective deflection surveys were among the recommended practices. The study was an important step forward in improving road maintenance planning and budgeting and showed, for example, that the current maintenance norms, particularly those for periodic maintenance were not appropriate and that there was a need for a significant increase in funding to reduce the backlog of pavement strengthening.

5.41 As a result of the need to involve all ROs in implementing the results of the pilot Study Phase I, its Phase II was renamed as "Pavement Management System (PMS)". Detailed Terms of Reference for the PMS were prepared and were discussed during the negotiations of the now lapsed THSP. Under the THSP, the maintenance planning system would have been extended to other RAPs in stages. The present situation of PMS in Croatia and Macedonia is as follows.

5.42 Croatia: In Croatia full implementation of PMS still requires Government decision to adopt it as a highway management tool and a commitment to a timetable for: (a) completing the road data base system; (b) purchasing the computer hardware, (c) providing and installing decision making models; and (d) assigning and training a team to operate. Currently, under the recent loan in progress for Highway Sector Project in Croatia, an action plan has been proposed to make PMS fully operational by 1997. On the basis of a small pilot study completed in 1989, it was decided to try HDM-III and EBM models. The use of HDM in Croatia has some limitations and needs to be adapted to local conditions, particularly to existing climatic conditions (freezing and thawing) that influence pavement deterioration. On-going research includes the local calibration of HDM and connecting the HDM and EBM to the data base system. Implementation of several of the above aspects has been hampered by the hostilities. Acquisition of the necessary computer hardware and software, and of the communication and measuring equipment required were delayed. In addition, parts of the network are inaccessible and traffic on the entire network has significantly reduced, making data collection difficult and sometimes unreliable.

5.43 SFRY Republic of Macedonia: In a follow up Bank Project in Macedonia, a separate contract will cover PMS development. The concept is for the RO to establish a relationship with a specialist PMS company which will help the RO to select a strategy for PMS development appropriate to a small country and establish an Action Plan. Once in place, the RO would execute the plan, including the acquisition or hiring of necessary equipment with the assistance of a specialist firm at regular intervals, thus maximizing the effectiveness of the technical assistance funds.

E. Procurement

5.44 With the exception of misprocurement in Vojvodina and the delays on equipment procurement in Croatia, procurement was satisfactory. Prequalification of contractors for ICB works took place in February 1987 using the same prequalification procedures and forms as agreed to under the FHSP. The prequalification questionnaire was issued to 23 prospective bidders and the Bank was satisfied with the prequalification evaluation report prepared by the Borrower. In all 15 local and 5 foreign firms were prequalified to bid for civil works contracts. Civil works for Bank-financed items over US\$3.0 million for the improvement and rehabilitation of TYH and primary roads and bridges were procured through ICB in accordance with Bank's Procurement Guidelines. The Bank also reviewed and commented on the ex-Yugoslav local procurement laws and regulations, which were found generally satisfactory. Although the participation of foreign contractors in LCB procedures was allowed under Federal law, it was not provided for specifically in the Republican and Provincial laws. Therefore, during negotiations, assurances were obtained that, under LCB, foreign contractors would be allowed to bid and import the necessary materials and equipment.

F. Project Costs

5.45 The total cost of the project comprising three-year time slice (1988-90) of road expenditure programs, was estimated at US\$585 million including about US\$136 million for road maintenance, US\$111 million for debt servicing by the participating ROs and about US\$11 million for administration. The cost of the Bank-financed program was estimated at US\$141 million which represented about 45% of construction and rehabilitation investments during the three-year period 1988-90 (Table 6). The Bank loan covered principally the foreign exchange component of high priority investments, selected on the basis of economical and technical criteria. The full loan of US\$68.0 million was apportioned among the four Borrowers according to an agreed allocation as follows: Kosova -US\$6.4 million, SFRY Republic of Macedonia - US\$17.9 million; Montenegro - US\$9.6 million; and Croatia - US\$5.9 million; and Vojvodina US\$28.2 million. However, the RO of Kosovo was not able to provide the Bank guarantee required in the Loan Agreement, therefore the amount of loan was reduced from US\$68 million to US\$ 61.6 million (para. 5.33). Due to the current embargo in Serbia (now including Vojvodina) and Montenegro, it was not possible to obtain actual data. In Macedonia, the difference in cost between appraised and actual was minimal. The summary of Bank participation in road programs as agreed at negotiations is given in Table 6 in Part III.

G. Disbursements

5.46 The estimated disbursements of the Loan 2878-YU are given in Table 7 in Part III. The disbursements were delayed due to shortage of local funding in implementation of certain sub-

projects. The original Loan Closing Date scheduled on December 31, 1991 was extended to December 31, 1992. The Loan Closing Date, the last disbursement date, the amount disbursed and the loan canceled in respect of all the four Borrowers are shown below. As indicated in the Table below, a total amount of US\$8.947 million was canceled.

Borrower	Loan Number	Original Value US\$ m	Loan Closing Date	Last Disbursement Date	Amount Disbursed US\$ m	Loan Cancelled US\$ m
Montenegro	28780	9.600	12/31/92	04/06/92	2.378	7.221
Croatia	28781	5.900	06/30/92	07/28/92	5.833	0.066
Macedonia	28782	17.900	12/31/91	12/18/90	17.900	0.000
Vojvodina	28783	28.200	12/31/92	03/09/92	26.540	1.660

H. Loan Covenants

5.49 The Loan Covenants and status are detailed in Table 8. Covenants common to both projects are dealt with in para. 5.28. Of the three other covenants one covered increasing the allocation for road maintenance. Except for Croatia, the covenant was generally complied with. In Croatia, there appeared to be a shift of routine maintenance funds to periodic maintenance -- in this case pavement strengthening. Of the other two covenants, road user charges were reviewed in conjunction with the review and raising of the fuel tax, and all sub-projects which were Bank-financed were selected on the basis of agreed methodology. Some components, which were not Bank financed, were selected taking other factors into account.

6.0 PROJECT RESULTS

A. Project Objectives

6.01 Overall, both projects were successful in achieving their principal objectives. The objective of achieving a balanced road program between new investments, rehabilitation and maintenance was moving in the right direction. However, balance by itself is not a useful measure of whether or not the maintenance needs of the system are being met. A better indicator is the extent to which adequate funding is being provided to meet maintenance needs. However, during the FHSP and SHSP, the categorizing of maintenance needs was changed such that pavement strengthening (i.e., periodic maintenance) was separated out and assessed separately (which also facilitated proposed Bank financing of pavement strengthening. Therefore, an assessment of whether adequate maintenance funding was being provided should take pavement strengthening into account.

6.02 Given the situation in former Yugoslavia, comparison of appraised estimates with actual road expenditure for all ROs was difficult. Data were received only from three ROs (Slovenia, Croatia

and Macedonia) and the estimated and actual road expenditure program and financing plan are shown in the Annex 3. However, some 1989 data from the appraisal of the THSP was for the ROs of Vojvodina and Bosnia and Herzegovina.

6.03 The maintenance and pavement strengthening estimates and expenditures are given below.

RO	Routine (R) Pavement Strengthening (PS)	FHSP & SHST SAR Estimated Annual Average	Actual as shown in Annex 3 Annual Average	FHSP & SHSP SAR estimate for 1989 (i.e., one year)	THSP SAR estimate for 1989 (i.e., one year)
Slovenia	R. PS. Tot.	21.7 0 21.7	30.4 0 30.4	23.7 0 23.7	24.1 0 24.1
Croatia	R. PS. Tot.	42.9 0 42.9	19.3 0 19.3	46.4 0 46.4	115.0 46.9 115.0
SFRY Macedonia	R. PS. Tot.	15.8 0 15.8	6.7 0 6.7	14.3 0 14.3	5.9 8.1 14.0
Serbia	R. PS. Tot.	18.0 0 18.0		20.0 0 20.0	non sector
Bosnia-H.	R. PS. Tot.	21.8 0 21.8		23.2 0 23.2	32.0 13.6 45.6
Vojvodina	R. PS. Tot.	16.7 0 16.7		14.3 0 14.3	12.9 6.0 18.9
Montenegro	R. PS. Tot.	6.6 0 6.6		5.5 0 5.5	not incl.

Thus, given that the THSP SAR figures were fairly accurate for 1989 and if pavement strengthening is taken into account, it would appear that Bosnia and Herzegovina, SFRY Republic of Macedonia, Slovenia and Vojvodina met the FHSP and SHSP estimated maintenance requirements and that Croatia far exceeded this estimate (note the table data requires slight adjustment to take into account US\$ inflation but the figures are unlikely to change by more than 10%).

6.04 Both projects succeeded in meeting the objective of encouraging sound road user taxation policy for adequate funding of the road program in all RAPs of ex-Yugoslavia. The fuel tax, the

principal source of local funds was significantly increased, largely solving the problem of local funding of the road program. While that lag in adjusting road user charges resulted in delaying the loan effectiveness and implementation of rehabilitation programs in some Republics, in 1989 at the Bank's request, the Government put the fuel tax on an ad valorem basis. This was a major step in providing adequate funds for the road programs with an increase in funding from the fuel tax of about 40% to 60%. However, after the breakup, in the states of Slovenia, Croatia and FYR of Macedonia, the situation has changed with road user charges accruing to the general budget and the general budget financing the road programs. (Paras. 2.37-2.39.)

6.05 The objective of consolidating institution-building efforts was largely met. Continuity in project training programs continued to strengthen the institutional capacity of the ROs in all RAPs in feasibility studies, technical planning, budgeting and in management of the road network. Under the SHSP the pilot road maintenance planning system introduced in Croatia and the circulation of results through FARP, laid a good foundation for the improved road maintenance planning in the other RAPs of ex-Yugoslavia. The projects therefore succeeded in setting maintenance norms and criteria for the allocation of funds to routine maintenance, resurfacing, and rehabilitation. As a result the project has created a strong potential for improving the cost effectiveness of road maintenance operations in all the RAPs.

6.06 Under the projects, FARP continued to play a leading role in coordination between the ROs and between the ROs and the Bank and other financing agencies. Particularly during supervision missions and appraisal of the THSP, Bank staff combined both visits to each RAP, and to fieldwork, with joint meetings at FARP headquarters attended by Federal Ministry of Transport, FARP and RO representatives. Nevertheless, FARP did not achieve a role of coordinating overall planning of the highway system. As noted in the THSP (prior to the outbreak of hostilities), the original role conceived for FARP was driven more by the Bank's and the Federal Government desire for an overall planning mechanism without recognition (on the Bank's part) of the political realities of the situation. On the brighter side, apart from its formal duties, FARP became almost a club like institution where RAP and RO officials met regularly on an informal basis, pressed for increases in the fuel tax and generally unwound. Given that as a sector project, seven ROs were involved and that the projects covered virtually the entire country, the Bank would not have been in a position to finance projects of this magnitude without a central liaison organization such as FARP.

B. Physical Results

6.07 **First Highway Sector Project:** The physical targets of the project were achieved as planned and comprised the completion of a four-year slice (1986-89) of the road programs of the ROs in Bosnia and Herzegovina, Croatia, Serbia and Slovenia in which the following construction and rehabilitation works were completed:

- (a) Bosnia and Herzegovina, 150 km road rehabilitation and widening;
- (b) Croatia, Construction of 29 km of four lane TYH and 190 km road rehabilitation;

- (c) Serbia, construction of two, about 6 km, TYH bypasses at Pirot and Bela Palanka and 145 km road rehabilitation; and
- (d) Slovenia, construction of 12 km of the first stage of a four-lane section of the TYH, a 6 km bypass at Maribor and 125 km road rehabilitation.

6.08 Second Highway Sector Project: The physical targets of this project were also achieved as planned and comprised the completion of a three-year slice (1988-90) of the road programs of the ROs in Macedonia, Montenegro, and Vojvodina in which the following construction and rehabilitation works were completed:

- (a) Vojvodina, construction of 30 km of four lane TYH and 50 km road rehabilitation;
- (b) SFRY Republic of Macedonia, 160 km road rehabilitation; and
- (c) Montenegro, rehabilitation of a 360 m bridge and rehabilitation of selected road sections.

C. Impact of Projects

6.09 Both projects would have made a major impact on development, rehabilitation and maintenance of transport infrastructure and service to support a period of growth in the economy of former Yugoslavia, provided there would have been no hostilities and UN imposed sanctions in some areas. Because of the inter-regional character of the TYH, road improvement was expected to benefit primarily long distance traffic linking country's main centers of population and economic activity. In addition, as the major transport route between Western Europe, the Balkan area and the Middle East, improvements to the TYH were expected to facilitate international transit traffic and to have a far-reaching impact beyond the borders of former Yugoslavia. Following the accession of Greece to the EC, the international importance of the TYH was increased but with the current political events the situation has now changed. As a transit facility, the TYH is closed due to the UN-imposed blockade of Serbia/Montenegro and unresolved issues between Greece and the FYR Macedonia. As a result the East-West corridor is now more important than TYH. In addition with the rehabilitation of roads to the coast and the Adriatic Highway itself, the foreign exchange earnings from tourism and transit traffic were expected to increase considerably. While tourism is returning to Slovenia and Croatia, it will be some time before it reaches prehostility levels.

6.10 Under the present situation it is difficult to assess the impact of project in the Republics and states of former Yugoslavia. In Slovenia, since 1990, traffic growth has been restrained by political events and the general economic recession, manifested particularly in the fall in trade with the rest of former Yugoslavia, but traffic levels still remain substantial over the trunk road and rail network. Moreover there are now increased east-west movements due to growth in regional traffic within Slovenia, transit traffic between Italy and Central Europe, and the diversion of some north-south transit traffic to east-west routes. With the disturbance of 1991, traffic fell overall by about 13 percent and even more on the main north-south routes. However, traffic volumes have recently increased beyond the 1990 levels on the main east-west corridors and are now comparable to the 1990 levels on many of the main links with the Austrian border.

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D. Economic Re-evaluation

6.11 The appraisal ERs were estimated for all sub-projects planned for Bank-financing during the first year of the project. Project costs were based on substantially completed detailed engineering design for most road sections and included the costs of right-of way, construction of works and supervision. The ERs were based on estimated savings in vehicle operating costs, travel time costs and maintenance expenditures, taking into account base-year traffic levels and projected traffic growth. Time savings and benefits for generated traffic were generally excluded. After the elimination of fuel rationing in January 1985, traffic on most routes increased by about 5%, and at appraisal it was assumed that traffic would continue increasing by 4% per year through 1990 falling to 3% in the longer term. It was assumed at appraisal that vehicle operating costs reduction on sections for rehabilitation will range from 6% to 9% while those on the upgrading of roads from gravel standards will range from 20% to 40%.

6.12 The economic reevaluation was carried out using the basic concept of HDM-Model III, which derives the net benefits and ERR by calculating the road agency costs and the savings in road user costs. Based on actual traffic volumes in 1985 and estimated cost of construction, ERR under appraisal conditions was calculated using the same assumption of traffic increase by 4% through 1990 falling to 3% in longer term as given in the SAR. Since all the data required for economic evaluation including road geometry, terrain, rainfall at the appraisal conditions were not available in the SAR, saving in road user costs were multiplied by a constant to arrive at exactly the same figure of ERR as that of appraisal estimates given in the SAR. By using the same constant the revised ERR was then estimated for various sub-projects based on the actual traffic counts after completion and final cost of their construction. The rate of traffic increase assumed in the revised calculations of ERR, is same as in the case of appraisal estimates. On comparing the actual traffic counts of 1989, 1990 and 1993 for individual road projects on their completion with the projected traffic counts for the same year at appraisal, traffic volume in most of the cases have been found on higher side. Table given in Annex 2 shows the comparison of traffic counts projected at appraisal for all sub-projects with the traffic counts actually found after their completion.

6.13 The estimated ERRs at appraisal were revised on project completion based on actual traffic counts and final costs of construction for all individual sub-projects in the Republic of Macedonia, Slovenia and Croatia. The reduction in voc and rate of traffic growth were assumed at the same rate as assumed in the appraisal estimates. Under FHSP, ERRs for the two TYH sections in Slovenia were 15% and 20% respectively, but on reevaluation their ERRs were found 7% and 8%. The estimated ERRs were less because of increased final costs. The reason for the increase in the final costs, as explained by the RO of Slovenia, is that the project was realized in the year of high inflation. The revised estimated ERR 15% for the TYH section in Croatia has been found acceptable as compared to 18% estimated at appraisal. The overall ERR for Bank financed sub projects under FHSP was estimated at about 20% but it was not possible to calculate the overall ERR on completion because the data including the traffic counts from the other Borrowers (Serbia and Bosnia and Herzegovina) could not be obtained due to the current embargo in these areas, but is likely to be much less. All the seven sub-projects in the FYR Macedonia have shown the revised estimates of

ERRs acceptable and range from 21 % to 30 % as compared to the appraisal estimates of ERRs range from 25 % to 30 %. The overall ERR for the Bank-financed sub-projects under SHSP at appraisal was estimated at 23 %, but the revised overall ERR could not be estimated as it was not possible to get the data from the other ROs (Vojvodina and Montenegro).

7.0 PROJECT SUSTAINABILITY

7.01 In Slovenia, FYR Macedonia and the part of Croatia that is under government control, the physical aspects of the projects are sustainable and, although military traffic will have taken some toll on road surfaces, where traffic levels are lower, for longer than their original design life. It is virtually impossible to assess the physical aspects of project sustainability in Serbia, Vojvodina, Montenegro, Bosnia and Herzegovina and occupied Croatia. It is likely that most of the project infrastructure in Serbia, Vojvodina and Montenegro is intact. However, in Bosnia and Herzegovina and occupied Croatia, hostilities have severely damaged part of the road infrastructure and in Bosnia and Herzegovina the hostilities are still continuing. Croatia's section of the TYH constructed under the FHSP has been the scene of heavy fighting. From Sarajevo, the project road south to the Adriatic has been fiercely contested and it is likely that the many bridges and tunnels which are a feature of this road have been severely damaged. Nevertheless, the benefits from the undamaged physical project works are still likely to be realized although over a longer time frame. The realization of benefits will, of course, depend on the changed traffic patterns, the level of road maintenance and more importantly on the rate of economic recovery in the states where the economy has been severely disrupted. Nonetheless, the Adriatic and its islands have been a tourist attraction since Roman times and no doubt will continue to be so with, eventually, traffic matching and surpassing previous levels.

7.02 Given that sections of the TYH are hazardous and that transit traffic has ceased, the TYH program financed under the project will not yet provide benefits as large as expected in savings in transport costs. The construction of additional lanes and bypasses will eventually (and in some cases are now) expected to provide substantial benefits to the urban areas. Benefits from international traffic were expected to accrue in the form of revenue collected from tolls and through transit traffic agreements and partly through the participation of international traffic in the country's foreign trade. It is not possible to speculate on the return of transit traffic. Nevertheless, the TYH is still the most direct road route to Greece, Bulgaria, Turkey and the Middle East. In addition, the TYH may provide a starting point for reconstruction when hostilities have ceased in all parts of the former Yugoslavia. The procurement of snow blowers/cleaning machines and other specialized road maintenance equipment for those open sections of the TYH will ensure adequate traffic servicing during periods of severe winter weather and reduced delays to traffic in the less affected areas.

7.03 There are other benefits. Several of rehabilitated primary roads were routes which normally carry heavy volumes of international tourist traffic during the summer months. These will continue to serve and attract tourist. The upgrading of gravel roads closed many of the gaps in the primary road network and helped improve integration of lesser-developed areas of the newly independent states which have not been influenced by the war. Benefits from the minor betterment programs, such as improvement in geometric designs and traffic capacity have provided enhanced traffic safety and savings in the form of reduced transport and maintenance costs.

7.04 To consolidate these benefits, the present ROs need to focus on continued institutional development, to install maintenance management system to improve operational efficiency and meet maintenance requirements. For principal transport corridors including TYH, East-West, and Adriatic Highway, it is necessary for the concerned ROs to improve planning implementation of works and maintenance through modern tools of highway management. Given high vpd and traffic congestion during summer season in some project areas, transport related environmental issues deserve attention and necessary steps to reduce road vehicle emissions. Most of these aspects are being supported in Bank-financed projects currently underway in Croatia and the FYR Macedonia.

7.05 Despite the breakup, the institutional strengthening will be sustainable. All the former Republics were and in their present forms, most still are strongly influenced by the European Union and the professional aspects of European road management. Bank projects in the 80s built on this characteristic -- particularly the need to rationalize maintenance needs. Whereas, in the past, because of the political system, there was always resistance to be overcome in the introduction and strengthening of economic analysis, the political changes in Slovenia, Croatia, FYR Macedonia and in Bosnia and Herzegovina now embrace the fundamentals of such analysis. While there have been staff changes, it is significant that some of the professional staff with whom Bank staff had close relationships in the 80s are now in senior positions in transport and road management.

8.0 BANK PERFORMANCE AND LESSONS LEARNED

A. Bank Performance

8.01 The Bank's strategy in the transport sector was in agreement with the Government's objective of providing appropriate transport infrastructure and service to support a period of growth in the economy, development of foreign trade and tourism, and the economic integration of various regions. The Bank assisted the Government to respond to investment issues in a number of ways. First, the two highway projects and three railway projects were prepared as "sector" (actually subsector) loans. The projects each financed a time-slice of the road and railway investment plans of participating RAPs, with the objective of assuring that the entire program was appropriately timed, covered by realistic financing plans, were within the absorptive capacity of the responsible authorities and, within these programs that investments were well selected. Second, aided by the loans, the ROs adopted an up-to-date methodology for evaluating investments. Finally the THSP project, loan approved but lapsed, was aimed at supporting the ex-Government's economic reform program by assisting to finance a road investment program which was a reasonable balance between the need to rehabilitate and maintain existing infrastructure, to improve selected corridors in support of tourism and export industries, and to constraint public spending in a period of economic difficulty. As noted above, these objectives continue in ongoing projects.

8.02 Through the FHSP and SHSP, the Bank made a positive contribution to the physical and institutional development of the highway sector in the former Yugoslavia and improved the formulation and execution of balanced road programs new investments, rehabilitation and maintenance. The projects' scope was appropriate for the needs of all participating ROs. The SAR clearly identified the key issues associated with the highway planning and management and provided a good vehicle to deal with them at the right time.

8.03 In terms of Bank staff inputs, the projects were efficiently managed (Table 9). Over the years, Bank project staff had developed close professional relationships with RO management and staff -- with surprisingly little turnover on either side. Bank project staff also developed a deep knowledge of the physical and to some extent political aspects of the country. This paid off handsomely not only in institutional strengthening but also in supervision efficiency. With this close professional relationship and well thought out preplanned travel arrangements, it became possible for missions of two to cover seven Republics with both office and site visits and wrap up meetings with FARP and the Federal Government. When the SHSP became effective, for supervision purposes, both projects were supervised at the same time. Supervision was also undertaken in conjunction with appraisal of the THSP.

B. Findings and Lessons Learned

8.04 Within the context that both projects can be considered substantially successful, the principal findings and lessons learned from the experience in implementation of both projects are as follows:

(1) In a project with multiple loans, crosslinking of effectiveness can seriously delay the project implementation (para. 5.27).

(2) The Government of former Yugoslavia made significant changes in the road user taxation system in consultation with the Bank. In particular they adopted a new law, *Social Compact on Source of Funds for Road Maintenance Rehabilitation and Construction*. Under this law, the road user tax on fuel was made ad valorem and raised in steps to 24-26% of the retail price on fuel. The ROs were given almost much freedom over the use of the road user tax. After the independence of Croatia, Slovenia and former SFRY Republic of Macedonia, road user charges are no longer the main source of incomes to the ROs but are transferred through a general budget (paras. 2.37, 2.38 and 2.39).

(3) While the goal of a coordinated approach to highway planning was laudable, it flew in the face of constant pressure from the RAPs to manage their own affairs. Within a federation, the goal of a national approach to transport planning should be tempered by the political realities within the federation (para. 2.26).

(4) The investment programs proposed by the ROs included components which were not subjected to adequate feasibility studies with selection being based on considerations other than economic efficiency. However, with the notable exception of the Rijeka Bypass in Croatia, such projects were confined to relatively minor rehabilitation works.

(5) With the large differences between appraisal estimates, contract amount and the final cost of civil works (paras. 5.06 and 5.07) in Slovenia, it is recommended that both the Borrower and the Bank make every effort to ensure that the detailed engineering is up to date, technically satisfactory and that the cost estimates reflect the going rates for such work -- particularly where construction difficulties were likely.

(6) In Slovenia, bids were reinvited because the lowest bid was rejected on the grounds that it exceeded appraisal estimates by 35%. However, the next round of bidding (with major reductions

in works) resulted in substantially "higher" lowest bid which was about 54% above that appraisal estimate. Serious consideration should be given prior to reinviting bids purely on the basis that the bids prices exceed the appraisal estimate -- and there should be a substantial difference before a decision is taken to reinvite (para. 5.06).

(7) For the efficient procurement of specialized equipment, technical specifications need to be explicit to obtain responsive bids. For such equipment, appropriate consulting expertise should be employed in specification preparation. Project related and even item related procurement seminars should be given shortly before the procurement process commences. The seminar should be given to those who will be handling the procurement. At the outset, International Shopping or Limited International Bidding should be considered for procurement of specialized equipment. (Paras. 5.36-5.37.)

(8) Although the Bank's relationship with the RO Slovenia was as close as with the other ROs that, given that the Bank did not appear to have prior information as to a major change in the scope of the Smarje Sap - Visna Gora road component, at times, it would seem that there was a certain lack of adequate communication between the ROs and the Bank (para. 5.06).

(9) Phase I of a Pilot study in Croatia, which was completed in 1989, had two main findings. First, that the current method of rating pavement conditions (i.e., the rating from 0 to 5) was inconsistent and technically inadequate for using in a PMS. The study concluded that pavement assessments need to be improved and extended to include automated measurements of roughness, strength and traffic loadings. Second, the study found that road rehabilitation backlogs are substantial and growing. Using HDM III, the study demonstrated the advantages of the application of economic analysis to periodic maintenance and rehabilitation planning and concluded that such works yield economic benefits about ten times greater than costs with ERR typically in excess of 50%. Based on these findings, the ROs of the former Yugoslavia agreed to proceed with the full scale implementation of PMSs in their respective RAPs.

(10) All project components should address environmental issues and appropriate to their size, should be subject to environmental assessment. For example, in Montenegro, a large part of the approved loan (75%) remained undisbursed and later on canceled as the RO was not able to obtain the authorization for operation of asphalt plants because the project areas were close to the environmentally sensitive areas. The implementation schedule should take into account the procedures related to environmentally sensitive locations (para. 5.35).

(11) In the supervision of a sector loan, a balance must be achieved in addressing sectoral issues and the performance of borrowers and those which are related to the physical aspects of road management.

9.0 BORROWER PERFORMANCE

9.01 Overall, except for Montenegro, the performance of all the Borrowers¹ was satisfactory. The ROs were keen to undertake and complete the project. Management, staff and local Institutes were competent and enthusiastic. Delays in local funding were largely (but not solely) the fault of the Federal government rather than the RAP governments. Genuine efforts were made to overcome the bias towards new construction and to begin to give maintenance its fair due.

9.02 As predicted in the SARs as a major risk, there were local funding delays and Montenegro was not able to provide counterpart funding needed to complete civil works and the undisbursed loan balance of US\$7.221 was cancelled. Also in Montenegro, although the RO effort to complete civil works as scheduled, it was not possible to obtain the necessary authorizations required to operate the asphalt plan in the project area closed to environmentally sensitive locations (para. 5.34). The loan effectiveness was delayed due to the Guarantor (the former Yugoslav Federal Government) delaying the adjustment of road user charges as agreed during negotiations. Thus, as predicted at the time of appraisal the ROs of some RAPs were not able to provide the local funds in time resulting in delay in project completion. Due to a hiring freeze of the former Yugoslav Federal Government, and due to an unwillingness by some ROs to accept the hiring of local consultants from only one Republic, FARP was not always able to review the RO feasibility studies in time before they were submitted to the Bank for review and, to some extent this caused delays in the completion of some minor civil works (para. 5.03).

9.03 The participating ROs made every effort to accelerate the disbursement of loan funds through: (i) execution of project in accordance with the provisions of the Project Action Plan (ii) selecting sub-projects in the later years of the project as per agreed procedures and criteria and (iii) updating the investment and maintenance program annually. The training component was completed satisfactorily, except in Montenegro where the agreed training program was not completed before the extended Loan Closing Date December 31, 1992.

10.0 PROJECT RELATIONSHIP

10.01 During the project implementation period of FHSP (1987-91) and SHSP (1988-92), the Bank-Borrower relationship was excellent. The relationship was productive, as measured by the physical results achieved (paras. 6.07 and 6.08). Continued efforts by both the Bank and the Borrower to adjust road user charges in line with the inflation succeeded. Fruitful discussions between the Federal Government, the ROs and the Bank contributed to better understanding regarding the policy framework, and the provisions of agreed Action Plans. This in turn led to preparation of a THSP to consolidate the investment and maintenance management approaches introduced in both projects.

¹"Borrowers" refers to those which actually took part in the project. Kosova which was a Borrower under the SHSP withdrew before project works commenced.

11.0 CONSULTING SERVICES

11.01 Retroactive financing was included for completed foreign consultants services, otherwise all professional services for the feasibility studies, engineering designs and supervision of the project were carried out by technical institutes.¹ While lacking professional independence from the parent RO, the performance by the Institutes was satisfactory.

12.0 PROJECT DOCUMENTATION AND DATA

12.01 As noted earlier, completion data was lacking for three of the Borrowers. Although all the participating ROs were advised of the requirements for preparation of PCR well before the final disbursements, no data were delivered. Subsequently, it became very difficult to correspond with the Borrowers (ROs of Serbia and Bosnia and Herzegovina under FHSP and the ROs of Montenegro and Vojvodina under SHSP) due to hostilities and/or current embargo on the FRY. However, limited data were received from the ROs of Slovenia, Croatia and FYR Macedonia which formed the basis for preparation of the PCR of their loans.

12.02 Within the Bank, the data needed for the preparation of PCR were generally available in files, Bank supervision reports, aide-memoires, and progress reports. Legal documents, including the Loan Agreement, were appropriate for this operation and useful during the project implementation. The appraisal reports prepared for the projects provided a useful framework for review of project implementation as did the SAR prepared for the THSP. Some sub-projects went through several changes particularly in the scope of work and cost, however good record were found for their variance in the supervision reports and aide-memoires.

¹ Prior the breakup of Eastern Europe, and of Yugoslavia, all professional services were provided by state technical institutes. There were virtually no private consulting firms.

PART II - PROJECTS REVIEW FROM BORROWERS' PERSPECTIVE

No responses were received from the Borrowers

PART III - STATISTICAL INFORMATION

Table 1: Related Bank Loans

Loan Title	Amount (US\$ m)	Purpose	Year of Approval	Status
1. Loan 344-YU First Highway	35	Completion of the coastal section of the Adriatic Highway and parts of the Central Highway	1963	Completed in 1966
2. Loan 485-YU Second Highway	10	Improvement of 367 km of roads connecting the Zagreb-Belgrade Highway	1967	Completed in August 1974
3. Loan 608-YU Third Highway	30	Construction of 120 km of roads in Croatia, Macedonia and Slovenia	1969	Completed in August 1974
4. Loan 678-YU Fourth Highway	40	Construction of 220 km of roads in various republics	1970	Completed in 1975
5. Loan 751-YU Fifth Highway	35	Construction of 153 km in Kosovo, Macedonia and Slovenia	1973	Completed in 1977
6. Loan 990-YU Sixth Highway	40	Six road section in Bosnia and Herzegovina totalling 150 km.	May 1974	Completed in 1978
7. Loan 1143-YU Seventh Highway	40	90 km of road construction in Slovenia, Serbia and Montenegro	July 1975	Completed in 1979
8. Loan 1377-YU Eighth Highway	56	130 km of roads in Serbia, Bosnia and Herzegovina, Macedonia and Kosovo	September 1977	Completed in 1981
9. Loan 1535-YU Ninth Highway	80	Construction of 4 highly congested sections of the Trans-Yugoslav Highway totalling 86 km.	April 1978	Completed in 1982
10. Loan 1535-YU Tenth Highway	148	Three-year trench (1979-82) of the highway sector program in five Republics	April 1979	Completed in mid 1984
11. Loan 1819-YU Eleventh Highway	125	Construction of six sections of the TYH in four republics totalling 164 km.	April 1980	Completed in June 1985.

Table 2: Project Time Table**First Highway Sector Project (Loan 2715-YU)**

Item	Date Planned	Date Revised	Date Actual
Identification(EPS)	October 1980	October 1981	October 1981
Appraisal Mission	September 1982	October 1983	October 1983
Post Appraisal Mission	February 1985	February 1985	February 1985
Loan Negotiations	April 1984	November 1985	November 1985
Board Approval	December 1985	June 1986	June 10, 1986
Loan Signature	February 1987	February 1987	February 27, 1987
Loan Effectiveness	July 1987	July 1987	July 21, 1987
Loan Closing	December 31, 1990	December 31, 1991	December 31, 1991

Second Highway Sector Project (Loan 2878-YU)

Item	Date Planned	Date Revised	Date Actual
Identification(EPS)	June 1986	January 1987	January 1987
Appraisal Mission	January 1987	February 1987	February 1987
Loan Negotiations	May 1987	July 1987	July 13-17, 1987
Board Approval	July 1987	October 1987	October 13, 1987
Loan Signature	July 1987	December 1987	September 30, 1988
Loan Effectiveness	April 1988	April 1988	June 15, 1989
Loan Closing	December 31, 1991	June 30, 1992	December 31, 1992

TABLE 3: Loan 2715-YU: Estimated Total Road Expenditures (1986-1989)^{1/}

(Due to current embargo in some Republics, it was not possible to get the actual expenditures)

	Local	Foreign (US\$ million)	Total
Ongoing Investments	37.9	25.3	63.2
New Investments	247.4	219.4	465.8
Maintenance	416.3	-	417.3
Equipment	-	1.6	1.6
Technical Assistance and Training	0.6	0.5	1.1
Administration	30.8	-	30.8
Debt Servicing	63.5	339.2	02.7
Subtotal	796.5	586.0	1382.5
Contingencies			
Physical	28.5	24.5	53.0
Price	129.7	94.3	224.0
TOTAL ^{2/}	954.7	704.8	1659.5

Financing Plan

Source of Funds	US\$ million	Percent
Road User Charges (Fuel tax)	859.5	51.8
Communities	258.9	15.6
Bank Loan	121.5	7.3
Tolls	134.0	8.1
Tax on Foreign Vehicles	122.9	7.4
Vehicle Registration Fees	95.4	5.7
Local Bank Credits	30.5	1.8
Foreign Credits	29.3	1.8
FF LDR ^{3/}	7.5	0.5
Total Financing Plan	1,659.5	100.0

1/Total planned expenditures for four participating Republics; base costs at July 1985 prices.

2/Including duties and taxes, estimated at US\$300 million.

3/Federal Funds for Less-Developed Regions.

TABLE 4: Summary of Bank Participation in Road Program (1986-89) (Loan 2715-YU)

(Due to current embargo in some Republics, it was not possible to get actual expenditures)

	Local	Foreign	Total	Local	Foreign	Total	Bank ^{1/} Participation
	Din. m			US\$ m			
Slovenia							
On-going Investments	9,767	6,510	16,277	20.8	13.9	34.7	
New Investments	46,491	41,361	87,852	86.4	76.2	162.6	24.9
Maintenance and Other	61,793	32,767	94,560	115.3	61.6	176.9	
	118,051	80,638	198,689	222.5	151.7	374.2	24.9
Croatia							
On-going Investments	8,426	5,615	14,041	19.6	13.0	32.6	
New Investments	59,432	50,122	109,554	106.7	90.1	196.8	32.7
Maintenance and Other	123,411	49,498	172,909	229.3	93.5	322.8	
	191,269	105,235	296,504	355.6	196.6	552.2	32.7
Serbia							
On-going Investments	1,794	1,194	2,988	4.5	3	7.5	
New Investments	47,228	42,551	89,779	85.7	77.9	163.6	35.8
Maintenance and Other	69,203	98,295	167,498	129.4	185.1	314.5	
	118,225	142,040	260,265	219.6	266	485.6	35.8
Bosnia-Herzegovina							
On-going Investments	-	-	-	-	-	-	
New Investments	20,402	20,402	40,804	38	37.8	75.8	25.8
Maintenance and Other	63,568	27,218	90,786	118.4	50.7	169.1	
	83,970	47,620	131,590	156.4	88.5	244.9	25.8
Technical Assistance/Training	316	268	584	0.5	0.5	1.1	0.7
Equipment	-	856	856	-	1.6	1.6	1.6
	316	1,124	1,440	0.5	2.1	2.7	2.3
TOTAL	511,831	376,657	888,488	954.6	704.9	1659.6	121.5

1/ Cost estimates have been developed from July 1985 base costs. Price contingencies, when basic costs are expressed in US\$ equivalent, have been estimated assuming annual price increases of zero for 1985, 7% for 1986 and 1987, 7.5% for 1988 and 7.7% for 1989; and when expressed in Dinars, 60% for 1985, 30% for 1986, and 25% for each year from 1987 to 1989.

TABLE 5: Loan 2878-YU: Estimated Total Road Expenditures (1988-1990)^{1/}
 (Due to current Embargo in some Republics, it was not possible to get actual expenditures)

	Local	Foreign (US\$ million)	Total
New Construction ^{2/}	56.0	37.4	93.4
Rehabilitation/Betterment	96.2	96.2	192.4
Maintenance	132.3	-	132.3
Equipment	-	5.9	5.9
Technical Assistance and Training	-	1.2	1.2
Administration	11.4	-	11.4
Debt Servicing	7.0	104.4	111.4
Subtotal	302.9	245.1	548.0
Contingencies			
Physical	15.0	13.6	28.6
Price	5.7	2.7	8.4
TOTAL ^{3/}	323.6	261.4	585.0

Financing Plan

Source of Funds	US\$ million	Percent
Road User Charges (Fuel tax)	231.7 ^{4/}	40
Communities	74.9	12
Republican Funds	70.4	12
Bank Loan (IBRD)	68.0	12
Joint Funds	54.	5 9
Tolls	27.2	4
Tax on Imported Vehicles	27.2	4
Bank Loans	21.2	4
Funds for LDR ^{5/}	8.0	2
Vehicle Registration Fees	1.9	1
Total Financing Plan	585.0	100

1/ Total planned expenditures for four participating Republics/Provinces (Vojvodina, Macedonia, Montenegro and Kosovo) and cost of equipment, technical assistance and training for Croatia; base costs at mid-June 1987 prices.

2/ Include expenditures on Kuzmin-Sasinci section in Vojvodina during last quarter of 1987.

3/ Including duties and taxes, estimated at about US\$100 million.

4/ Includes 1987 funds to meet expenditures on the Kuzmin-Sasinci section.

5/ Federal Funds for Less-Developed Regions.

TABLE 6: Summary of Bank Participation in Road Program (1988-90) (Loan 2878-YU)

(Due to current embargo in some Republics, it was not possible to get actual expenditures)

	Local	Foreign	Total	Local	Foreign	Total	Bank Loan	
	-----Din. m-----			-----US\$ m-----			%	US\$ m
TYH New Construction ^{1/}	33,453	22,302	55,755	35.2	23.5	58.7	40	23.5
Road Rehabilitation and and Betterment	60,312	60,312	120,624	36.6	36.6	73.2	50	36.6
By-pass (Lebane-Milosevo)	1,460	973	2,433	1.2	0.8	2.0	40	0.8
Subtotal	95,225	83,587	178,812	73.0	60.9	133.9	45	60.9
Equipment	-	10,747	10,747	-	5.9	5.9	100	5.9
Technical Assistance		1,217	1,217	-	0.7	0.7	100	0.7
and Training	-	982	982	-	0.5	0.5	100	0.5
	95,225	96,533	191,758	73.0	68.0	141.0	48	68.0

1/ Includes expenditures on Kuzmin-Sasinci section on Vojvodina during last quarter of 1987.

P.S. The RO of Kosovo was not able to provide the Bank guarantee required in the Loan Agreement, therefore the amount of loan was reduced from US\$68.00 million to US\$61.60 million (para 5.45)

Table 7: Loan Disbursements**Cumulative Estimated and Actual Disbursement (US\$ millions)****First Highway Sector Project (Loan 2715-YU)**

FY	1987	1988	1989	1990	1991
Appraisal	3.6	36.4	105	116.4	121.5*
Actual	0	35.2	81.9	83.9	121.5
Actual as % of Estimated	0	96	85	72	100

* the undisbursed balance US\$ 1,806.00 was canceled.

Second Highway Sector Project (Loan 2878-YU)

FY	1988	1989	1991	1992
Appraisal	12.9	50.7	57.1	61.6*
Actual	0	19.5	37.4	52.7
Actual as % of Estimate	0	39	61	86

* the undisbursed balance US\$ 8.947 million was canceled.

Table 8: Status of Covenants

First Highway Sector Project(Loan 2715-YU)

Loan Agreement Reference	Description of Covenant	Status of Compliance
Guarantee, Recital C	Guarantor to Adjust fuel tax revenue for roads in line with inflation	The tax was made ad valorem with respect to wholesale price and was at a satisfactory level
Loan 3.02	Borrower to prepare and submit for Bank review, annual expenditure and financing plans	Complied with (as indicated in the supervision report). Complete data not available, except 2 RAPs (para. 6.01)

Second Highway Sector Project(Loan 2878-YU)

Loan Agreement Reference	Description of Covenant	Status of Compliance
Guarantee Recital C	Guarantor to adjust fuel tax revenue for roads in line with inflation	The tax was made ad valorem with respect to wholesale price and was at satisfactory level
	ACTION PLAN (Principal Components)	
Loan 3.01(a)	(i) Increase allocation for road maintenance	Level was generally satisfactory ^{1/}
	(ii) Sub-projects to be selected on basis of agreed methodology	All bank financed sub-projects were so selected, but not all non-Bank financed
	(iii) Review road user charges	complied with
Loan 3.02	Borrower to prepare and submit for Bank review, annual expenditure and financing plans	complied with (as indicated in the supervision report) Complete data not available, except Macedonia (para. 6.01)

^{1/} In the supervision report it has been indicated as generally satisfactory but the situation is not the same in all the Republics (para. 6.01 of Part I)

Table 9: Use of Bank Resources (Loan 2715-YU)**First Highway Sector Project****A. Staff Inputs (sw)**

Stage of Project Cycle	FY 82	FY 83	FY 84	FY 85	FY 86	FY 87	FY 88	FY 89	FY 90	FY 91	FY 92
Through Appraisal	8	38	40	-	-	-	-	-	-	-	-
Appraisal through Board Approval	-	-	16	14	-	-	-	-	-	-	-
Board Approval through Effectiveness	-	-	-	-	42	-	-	-	-	-	-
Supervision	-	-	-	-	1	17	11	2	10	7	2
Total	8	38	56	14	43	17	11	2	10	7	2

B. Supervision Missions

Stage of Project Cycle	Month/ Year	No. of Weeks	No. of Persons	Staff Weeks	Date of Report
Supervision I	04/30/1987	3	2	6	06/05/1987
Supervision II	04/21/1988	3	2	6	05/18/1988
Supervision III	06/30/1989	3	2	6	07/15/1989
Supervision IV	10/27/1989	3	4	12	12/21/1989
Supervision V	03/21/1990	3	4	12	05/15/1990
Supervision VII	10/12/1990	3	2	6	10/16/1990
Supervision VIII	05/10/1991	2	1	2	06/04/1991

Table 10: Use of Bank Resources (Loan 2878-YU)**Second Highway Sector Project****A. Staff Inputs (sw)**

Stage of Project Cycle	FY87	FY88	FY89	FY90	FY91	FY92
Through Appraisal	17	5	-	-	-	-
Appraisal through Board Approval	2	6	-	-	-	-
Board Approval through Effectiveness	-	3	-	-	-	-
Supervision	-	10	6	9	8	4
Total	19	24	6	9	8	4

B. Supervision Missions

Stage of Project Cycle	Month/ Year	No. of Weeks	No. of Persons	Staff Weeks	Date of Report
Supervision I	12/11/1987	2	2	4	12/11/1987
Supervision II	04/21/1988	3	3	9	05/23/1988
Supervision III	06/30/1989	3	2	6	07/31/1989
Supervision IV	10/27/1989	3	2	6	12/29/1989
Supervision V	03/21/1990	3	2	6	05/15/1990
Supervision VI	10/12/1990	2	2	4	10/16/1990
Supervision VII	5/10/1991	1	2	2	06/04/1991

The Road Network of Ex-Yugoslavia at 1990 (km)

Republic/Province	Paved	Gravel	Earth	Total
Bosnia-Herzegovina	9,535	8,791	2,260	20,590
Croatia	19,952	7,749	---	28,669
Kosovo	1,830	1,658	1,470	4,958
Macedonia	4,461	1,369	4,587	10,417
Montenegro	2,414	1,432	299	4,145
Serbia	15,165	6,816	6,738	28,719
Slovenia	8,890	5,223	---	14,113
Vojvodina	4,752	189	2,192	6,133
TOTALS	66,999	33,227	17,546	117,744

Source: FARP

The Present System

1. Croatia: The road network comprises about 26,732 km which are administratively classified as main regional or local roads. Of these, 21,541 km are paved and 5,191 km are gravel surfaced. The density of the road network is about 48 km per 100 square kilometers, compared to an average of about 77 km per 100 square kilometer in Western Europe. Presently, about 5,600 km of roads are not under Government control or accessible. Paved roads standards vary from high quality four-lane toll facilities with grade separated interchanges to narrow country lanes. The main road network carries around 75% of road traffic. As before, the Government of Croatia (GOC) desires to rehabilitate and upgrade these roads to a level consistent with the network of countries in the European Community. While the GOC would like to improve a number of roads, it gives high priority to the Zagreb-Karlovac-Rijeka highway only the first 60 km of which are four lane. which is a part of the Trans-European Highway network. The average traffic levels on main roads were about 4,500 vehicles per day (vpd) in 1990, but fell to about 3,000 vpd in 1993, ranging from 1,800 vpd to 15,800 vpd. Croatian Road Authority (HC) estimates that there were about 4,000 km of roads with traffic levels exceeding 3,000 vpd, and that the average traffic level on regional roads was about 1,600 vpd, ranging from about 500 vpd to over 7,000 vpd. Road traffic has fallen overall by around 30% since the beginning of the war in mid-1991 but with some roads, e.g., Zagreb-Rijeka showing substantial increases, with re-oriented traffic patterns. Traffic has considerably decreased on the Adriatic Highway, especially on its section leading from Zadar to Sibenik, owing to the war circumstances, while traffic on the roads toward Bosnia and Herzegovina serve only humanitarian aid activities. The roads running through the UN protected areas are still closed to traffic. Traffic is expected to eventually recover to pre-war levels, but over a period of several years in parallel with economic recovery.

2. Slovenia: The main road network of Slovenia comprises about 5,000 km of main roads (91% paved), including 246 km of motorways, most of which are operated as toll roads, and about 10,000 km of minor local roads. Traffic on main road varies from about 3,000 vpd to flow of over 20,000 vpd on some major routes. Heavy vehicles comprise 25-30 percent of total traffic. Recent events have radically altered traffic patterns, and there are now major movements of international traffic on routes leading to the Hungarian border. Local roads, which are 70 percent paved, commonly carry between 50 and about 400 vpd in rural areas, but flows on city streets can be heavy. Currently, there are two major motorways sections under construction, which are financed in part by the European Investment Bank (EIB). EBRD loan US\$62.1 million to finance removal of bottlenecks in the main East-West Highway is in progress.

3. Macedonia: The main transport infrastructure in the former Yugoslav Republic of Macedonia consists of 8,215 km (of which 4,900 are paved), a railway network of 700 km and two international airports in Skopje and Ohrid. Roads are classified as arterial, regional and local. Of the total network, 915 km are arterial, 2,611 km are regional and 4,700 are local. In addition to the national classification, about 520 km of the arterial roads are part of the European road network ('E' Road). The arterial and regional roads are the responsibility of the Road Organization (RO) and local roads are the responsibility of the municipalities. The configuration of the transport system was influenced by geopolitical considerations of the former Yugoslavia, which emphasized the development of the north-south corridor (namely the TYH) which was developed with Bank financing. The development of east-west corridor, although growing in importance for domestic traffic and as a feeder of the north-south artery, was hampered by the political and economic isolation of Albania, which until 1992 prohibited transit through its territory, and by the administrative difficulties of crossing to Bulgaria. The situation has now changed: the north-south corridor is closed due to the UN-imposed blockade of Serbia/Montenegro and unresolved issues with Greece. As a result the port of Salonika no longer serves the landlocked former Yugoslav Republic of Macedonia. Road Transport through the east-west road corridor has now become the lifeline of the country's economy. Although the Government is planning to complete the east-west rail link to Bulgaria, the road corridor is now the only connection of the country with the rest of the world. A Bank loan to finance the rehabilitation of East-West road corridor is under progress (para. 5.33).

Traffic Data and Economic Re-evaluation

A. Traffic Data

Sub-project	Traffic Counts projected at Appraisal		Traffic Counts actual on Project Completion		% Difference
	Year	Total	Year	Total	
(A) Macedonia					
1. Skopje-Tetovo	1993	6575	1993	8213	+25%
2. Gostivar-Kicevo	1993	3029	1993	3154	+4%
3. Kicevo-Ohrid	1993	2068	1993	3609	+74%
4. Gradso-Negotino	1993	5319	1993	7293	+37%
5. Negotino-D. Kapija	1990	5360	1990	7312	+36%
6. D. Kapija-Udovo	1990	3765	1990	5570	+48%
7. Udovo-Gevgelija	1990	5105	1990	5856	+15%
(B) Slovenia					
1. Smarge Sap-Visna Gora	1990	13535	1990	20758	+53%
2. Maribor Bypass	1989	16209	1989	19626	+21%
(C) Croatia					
1. Prvca-Luzani	1989	14900	1989	12700	-14%

First Highway Sector Project (Loan 2715 - YU)
Expenditure Program and Financing Plan

Slovenia

Description	Estimated at Appraisal in US\$ million					Actual Expenditure in US\$ million				
Expenditure Program	1986	1987	1988	1989	Total	1986	1987	1988	1989	Total
Investments	46.13	50.39	48.11	52.67	197.30	55.6	98.0	114.0	96.4	364.00
Maintenance	19.23	23.13	28.15	30.24	100.75	28.90	34.4	27.8	30.5	121.60
Administration & Other	2.36	2.52	2.70	2.90	10.48	5.8	23.2	9.1	153.3*	191.40
Debt Servicing	15.99	15.47	16.34	17.79	65.59	28.6	36.7	43.9	65.7	174.90
Total	83.70	91.50	95.30	103.60	374.10	118.9	192.30	194.8	345.7	851.70
Financing Plan										
Fuel Tax	33.41	37.17	42.76	46.39	159.73	37.8	49.9	65.3	81.0	234.00
Tolls	6.65	7.39	8.53	9.21	31.78	11.8	14.3	16.2	15.6	57.90
Vehicle Registration Fee	11.86	13.13	15.04	16.24	56.27	16.5	20.6	22.3	17.1	76.50
Tax on Foreign Vehicles	2.44	2.69	3.10	3.38	11.61	2.8	2.9	3.1	2.5	11.30
Budget	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.00
Community co-financing	15.16	16.80	19.46	20.98	72.40	2.7	3.1	2.7	7.1	15.60
Local Credits	0.00	0.00	0.00	0.00	0.00	12.5	26.5	6.6	101.7	147.30
Foreign Credits	14.18	14.32	6.41	7.41	42.32	5.4	36.1	50.2	13.9	105.60
Others	0.00	0.00	0.00	0.00	0.00	29.4	38.8	28.6	106.8	203.60
Total	83.70	91.50	95.30	103.60	374.10	118.9	192.3	194.8	345.7	851.70

* Although we have not received clarification from the Borrower, it appears that 1989 administrative costs in part covered payments for prior investments. The amount was also distorted by the hyper-inflation of 1988-89 and by the rapid devaluation of the Dinar.

First Highway Sector Project (Loan 2715 - YU)
Expenditure Program and Financing Plan

Croatia

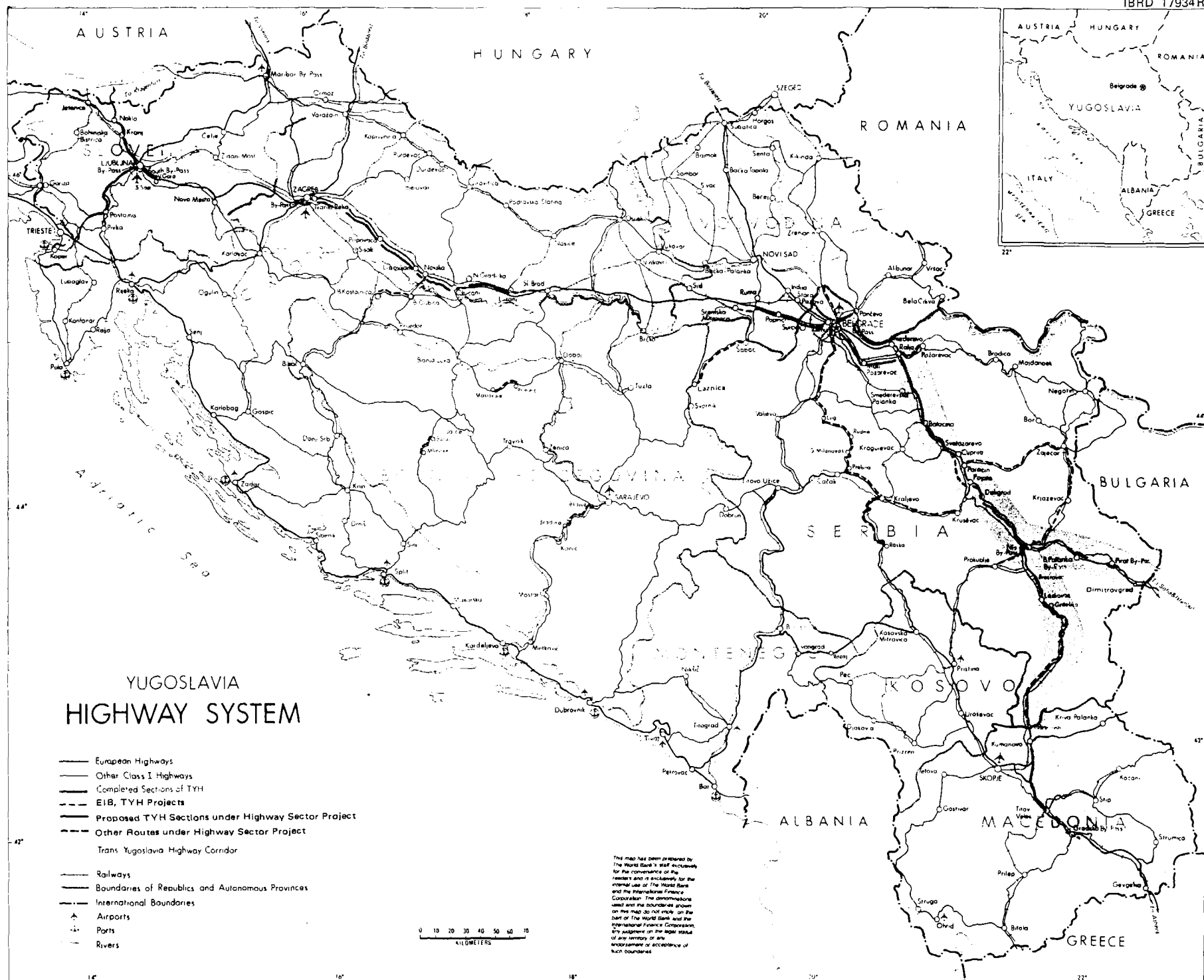
Description	Estimated at Appraisal in US\$ million					Actual in US\$ million				
Expenditure Program	1986	1987	1988	1989	Total	1986	1987	1988	1989	Total
Investments	46.28	51.48	59.99	71.53	229.28	64.50	79.30	70.60	132.90	347.30
Maintenance	37.02	47.47	55.18	59.32	198.99	13.80	27.90	21.10	14.40	77.20
Administration (other)	3.70	3.96	4.25	4.56	16.47	2.00	4.10	6.20	2.50	14.80
Debt Servicing	24.91	25.99	27.39	29.19	107.48	2.9.80	31.70	33.50	26.30	121.30
Total	111.90	128.90	146.80	164.60	552.20	110.10	143.00	131.40	176.10	560.60
Financing Plan										
Fuel Tax	63.41	69.96	81.64	88.92	303.93	27.60	47.10	43.50	87.10	205.30
Tolls	7.07	11.92	14.26	15.97	49.22	18.70	29.30	27.00	36.10	111.10
Tax on Foreign Vehicles	6.73	7.70	9.21	10.31	33.95	8.400	8.20	8.700	2.30	27.60
Communities	2.55	34.47	32.82	36.39	106.23	37.30	31.00	36.60	18.80	123.70
Foreign Credits	9.19	11.08	8.87	13.01	42.15	18.100	27.40	15.60	31.80	92.90
Total	111.90	128.90	146.80	164.60	552.20	110.10	143.00	131.40	176.10	560.60

Second Highway Sector Project (Loan 2878- YU)
Expenditure Program and Financing Plan (1988-90)

Macedonia

Description	Estimated at Appraisal in US\$ million				Actual in US\$ million			
(A) Invest. & Maint. Program	1988	1989	1990	Total	1988	1989	1990	Total
Investments }					14.069	34.557	29.538	78.16
Rehabilitation}	34.50	38.48	27.08	100.06	9.581	23.090	44.506	77.18
Maintenance	14.43	16.72	16.88	48.03	4.945	5.943	9.217	20.11
Administration	2.77	2.79	2.82	8.38	0.491	0.990	1.539	3.02
Debt Servicing	9.80	9.41	9.99	29.20	11.160	10.796	13.241	35.20
Total (a)	61.50	67.65	56.77	185.92	40.787	75.376	97.592	213.76
(B) Equip. TA & Training	0.00	0.24	0.13	0.37	0.000	0.002	0.000	0.00
Total (a) and (b)	61.50	67.89	56.90	186.29	40.787	75.378	97.592	213.76
(C) Financing Plan								
Fuel Tax	19.78	20.97	22.23	62.98	21.177	31.800	52.896	105.87
Tolls	3.08	3.10	4.60	10.78	4.400	5.508	9.650	19.56
Vehicle Registration Fee	0.00	0.00	0.00	0.00	1.795	1.187	2.866	5.85
Tax on Foreign Vehicles	4.22	4.55	4.60	13.37	2.665	2.773	3.497	8.94
Republican funds	9.44	16.92	10.81	37.17	9.600	11.041	6.282	26.92
Community co-financing	13.27	12.79	10.50	36.56				0.00
Loan (Local)	0.00	0.00	0.00	0.00	1.150	0.000	2.270	3.42
Loans (Foreign IBRD/EIB)	6.14	9.27	5.63	21.04	0.000	23.069	20.131	43.20
Total	61.50	67.89	56.90	186.29	40.787	75.378	97.592	213.76

MAP SECTION



IMAGING

Report No: 15215
Type: PCR