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PROJECT COMPLETION REPORT

**TUNISIA - TUNIS DISTRICT URBAN PLANNING
AND PUBLIC TRANSPORT PROJECT
(LOAN 937/CREDIT 432-TUN)**

March 27, 1984

Europe, Middle East and North Africa Regional Office

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TUNISIA - TUNIS DISTRICT URBAN PLANNING

AND PUBLIC TRANSPORT PROJECT

(LOAN 937/CREDIT 432-TUN)

PREFACE

Loan 937/Credit 432-TUN for the Tunis District Urban Planning and Public Transport Project was signed on October 5, 1973. The loan/credit, for US\$11.0 and 7.0 million respectively, was closed on December 31, 1981; \$17.86 million was disbursed and the balance (\$0.14 million) was cancelled. During implementation, project content was marginally revised, and the closing date was postponed by three years.

This report consists of a Project Completion Report (PCR) prepared by the EMENA Urban Division. The PCR is based on a review of files and documents, interviews with Bank and Borrower staff, and a visit to Tunisia in May 1981.

In accordance with the revised procedures for project performance audit reporting, this Completion Report was read by the Operations Evaluation Department but was not audited by OED staff. The draft Completion Report was sent to the Borrower; however, no comments were received.

PROJECT COMPLETION REPORT BASIC DATA SHEET
TUNISIA - TUNIS DISTRICT URBAN PLANNING AND TRANSPORT PROJECT
 (Loan 917-TUN/Credit 437-TUN)

| KEY PROJECT DATA | | |
|--|--------------------|---------------------|
| Item | Appraisal Forecast | Actual |
| Total Project Cost (US\$ million) | 28.62 | 53.43 |
| Overrun (2) | | +87.00 |
| Loan Amount (US\$ million) | | 11.00 |
| Credit Amount (US\$ million) | | 7.00 |
| Total Loan and Credit (US\$ million) | | 18.00 |
| Disbursed (as of December 31, 1981) | | 17.86 ^{a/} |
| Cancelled | | 0.14 |
| Repaid to | | 2.03 |
| Outstanding (as of April 30, 1983) | | 15.76 ^{b/} |
| Date Physical Components Completed | 12/75 | 12/81 ^{b/} |
| Proportion Completed by Above Date (%) | | 99 |
| Proportion of Time Overrun (2) | | +167 |
| Economic Rate of Return for TGM only (2) | 16-17 | 10 |
| Financial Performance | | as expected |
| Institutional Performance | | as expected |

a/ For detail, see Annex III.

b/ Except for minor equipment and furnishings of bus depot.

| OTHER PROJECT DATA | | | |
|--------------------------|---|-----------|----------------|
| Item | Original Plan | Revisions | Actual |
| First Mention in Files | | | 02/28/72 |
| Government's Application | | | 05/ /72 |
| Negotiations | | | 05/23-06/05/73 |
| Board Approval | | | 08/07/73 |
| Loan/Credit Agreement | | | 10/05/73 |
| Effectiveness Date | 01/31/74 | 05/15/74 | 09/24/74 |
| | | 07/15/74 | |
| | | 09/15/74 | |
| Closing Date | 12/31/76 | 12/31/77 | 12/31/81 |
| | | 12/31/78 | |
| | | 12/31/79 | |
| | | 12/31/80 | |
| Borrower | Republic of Tunisia | | |
| Executing Agencies | District of Tunis, Municipalities of Tunis and Sfax, and Société Nationale des Transports (SNT) | | |
| Fiscal Year of Borrower | January 1-December 31 | | |
| Follow-on Project Name | Second Urban Development Project | | |
| Loan Number | 1705-TUN | | |
| Amount (US\$ million) | 19.00 | | |
| Loan Agreement Date | 05/31/79 | | |

| MISSION DATA | | | | | | |
|------------------|---------|------------|-----------|-------------|-----------|----------------|
| Mission | Sent by | Month/Year | No. Weeks | No. Persons | Man-weeks | Date of Report |
| Identification | | 07/72 | 2 | 2 | 4 | 08/16/72 |
| Preparation | | 10/72 | 4 | 2 | 8 | 11/24/72 |
| Pre-Appraisal | | 12/72 | 2 | 4 | 8 | 01/10/73 |
| Appraisal | | 01-02/73 | 6 | 7 | 42 | 07/25/73 |
| Total | | | 14 | | 62 | |
| Supervision I | URB2 | 11/73 | 4 | 2 | 8 | none |
| Supervision II | URB2 | 01/74 | 2 | 2 | 4 | none |
| Supervision III | URB2 | 04/74 | 1 | 2 | 2 | 03/05/74 |
| Supervision IV | URB2 | 05/74 | 1 | 1 | 1 | none |
| Supervision V | URB2 | 08/74 | 1 | 2 | 2 | none |
| Supervision VI | URB2 | 11/74 | 2 | 2 | 4 | none |
| Supervision VII | URB2 | 03/75 | 3 | 3 | 9 | 04/23/75 |
| Supervision VIII | URB2 | 07/75 | 1 | 2 | 2 | none |
| Supervision IX | URB2 | 10/75 | 2 | 3 | 6 | none |
| Supervision X | URB2 | 07/76 | 2 | 4 | 8 | 04/22/76 |
| Supervision XI | URB2 | 04/76 | 3 | 1 | 3 | none |
| Supervision XII | URB2 | 10/76 | 2 | 2 | 4 | 12/30/76 |
| Supervision XIII | URB2 | 01/77 | 3 | 1 | 3 | 03/31/77 |
| Supervision XIV | URB2 | 09/78 | 1 | 1 | 1 | 09/22/78 |
| Supervision XV | URB2 | 10/79 | 2 | 3 | 6 | 04/14/80 |
| Completion | EMPUR | 05/81 | 1 | 3 | 3 | 06/11/81 |
| Total | | | 31 | | 66 | |

| COUNTRY EXCHANGE RATES | | Tunisian Dinar (TD) |
|--------------------------|--|---------------------|
| Name of Currency | | Exchange Rate |
| Year: | | US\$ 1 = 0.46 |
| Appraisal Year Average | | US\$ 1 = 0.42 |
| Intervening Year Average | | US\$ 1 = 0.485 |
| Completion Year Average | | |

TUNISIA - TUNIS DISTRICT URBAN PLANNING
AND PUBLIC TRANSPORT PROJECT
(LOAN 937/CREDIT 432-TUN)

HIGHLIGHTS

1. The Tunis District Urban Planning and Public Transport Project was the first Bank project addressing urban issues in Tunisia. The objectives of the project were (1) to establish effectively the Tunis District -- the first metropolitan planning authority in the country --, and to strengthen its ability to plan, program and supervise public investments, and design suitable urban policies for the region; (2) to improve public transport services through the renewal of equipment, expansion of maintenance facilities and upgrading of management; and (3) to improve traffic conditions for both public and private transport in Greater Tunis.

2. After some delays in its start-up phase, especially in building a competent staff, the Tunis District was able to carry out a number of sectoral studies (e.g., housing, industrial development) as well as special studies (e.g., on public/social facilities capital and operating costs, development of the Lake shore, solid waste management), and produced a Regional Structure Plan. Most of its endeavors had significant impact on the Greater Tunis region (e.g., solid waste), and occasionally, nationally (e.g., housing). Also, the District gradually became the moderator/advisor on many development issues affecting the region. However, the District did not fulfill the functions related to programming and supervision of public investments, essentially because of a lack of political backing. Its effectiveness being highly dependent on the quality and commitment of its top management, it is a reflection of political realities that, in the last few years, the Director General changed twice and the District remained without any leadership for more than a year. It would take political support from the highest authorities in the country for the District to achieve fully what it was established to do.

3. Ridership of the public transport company in Tunis (SNT) went from 152 million in 1979 to 253 in 1980: an average annual growth of 7.5%, against 5.2% that was forecast at the time of appraisal for the same period. The renewal and expansion of the SNT bus fleet, and a complete overhaul of the TGM railway operation were major reasons for this success. The effectiveness of SNT maintenance operations also improved substantially: (a) bus availability went from 60% in 1973 to 80-83% in the 1975-1980 period; and (b) the breakdown rate fell from 6.5/10,000 km to 1.8; these improvements, however, were achieved at high costs, with low productivity of maintenance staff being the leading cause. Schemes that were originally designed to relate the magnitude of financial support that SNT would receive from the government to the staff productivity of the company, were not implemented; the main reason for this being the weakness and limited proficiency of the SNT's supervising ministry.

4. The traffic improvement program in Tunis was supported by local authorities and was substantially expanded relative to estimates made at the time of appraisal. The number of intersections eventually upgraded, equipped with signals and connected into a centrally-controlled system nearly doubled, and the number of pedestrian-only streets was nearly tripled. The program was implemented well, but suffered from poor follow-up and monitoring, as was the case for SNT; eventually, most reserved bus lanes were again lost to common traffic. Nonetheless, the city was able to maintain average traffic speeds in its downtown area, whereas conditions would have worsened very significantly without the project.

5. Whereas the physical works of the project were successful, on the institutional side, only cautious optimism is warranted. SNT should be able to maintain quality management, but the Tunis District is likely to remain weak. Policy-wise, the Government is moving only very slowly toward effective decentralization of decision-making power, and remains weak in sectors like urban transport. This first urban project laid down the basis for continued assistance to strengthen the urban sector, which had remained too long overlooked.

6. The following points may be of particular interest:

- (1) Worldwide inflation starting in 1974 was very detrimental to the project and made it necessary to find complementary financing, thus delaying completion by nearly two years.
- (2) The reversal by the Municipality of Tunis of its original decision to transfer land to SNT for construction of its bus maintenance facility, caused a delay of nearly three years on this component.
- (3) Monitoring SNT and its performance proved elusive which made determination of its financial assistance difficult, and prevented the experience gained from SNT being used to help other public transport companies.
- (4) Traffic improvement measures, while popular with the public and the authorities, are very dependent on the continued commitment of the authorities to maintain and enforce them (e.g., reserved bus lanes in major transport corridors, parking bans along the curb on major arteries).
- (5) The Tunis District, with its regional focus, became influential on issues of national importance -- such as housing.

TUNISIA: TUNIS DISTRICT URBAN PLANNING AND PUBLIC TRANSPORT PROJECT

PROJECT COMPLETION REPORT

1. INTRODUCTION

The Tunis Metropolitan Area

1.01 In 1956, the year of independence, the population of the metropolitan area of Tunis was about 400,000; by 1972, it had more than doubled, to almost 900,000. Growing at 5% annually, the population of the area was projected to reach 1.5 million by 1980.

1.02 The Tunis metropolitan area encompasses the built-up areas, three lakes and a substantial amount of rural land; its boundaries are over 140km long. The city of Tunis and the 13 communes which make up its suburbs cover only about 33,000 ha., less than 13% of which is truly urbanized. The form and structure of the area's urban space is, in a sense, unique. The traditional quarter (Medina) and its "suburbs" remain virtually untouched, retaining the typical layout of a North African medieval town, whereas the modern city has formed a new center between the Medina and the Lake of Tunis, and residential suburbs of single-family dwellings have developed to the northwest and southeast and along the coast to the north and south.

1.03 A large part of the economic activity of, and employment in the country is concentrated in the Tunis metropolitan area. In 1972, at the time of project identification, the area accounted for more than half the nation's total commerce and trade, construction and administration. The active labor force was estimated at 237,100, of which about 13.8% was officially listed as unemployed.

1.04 The transport system serving metropolitan Tunis has been complicated by the walled Medina and the constricted location of the city center. One of the main causes of urban transport problems has been the pattern of land use; at the time of project preparation, the metropolitan area had an excessive concentration of employment in the center, scattered residential growth in the periphery, and uneven distribution of urban amenities and infrastructure. The economic consequences of this were manifold, including a steady increase in the length of home-work and home-shopping trips, and increasingly high infrastructural costs.

1.05 In 1970, there were some 45,000 vehicles registered in the Tunis metropolitan area, of which about 31,000 were private and commercial automobiles; 7,000 trucks and lorries; and 650 buses. In addition, 20,000 automobiles registered elsewhere were being operated in the Tunis area. Average car ownership was low at about 40 cars per 1,000 people, but with some high-income areas boasting 1 car/household. The fleet was growing at 5% a year, with a similar growth rate for the traffic. According to the 1969 household survey, the average trip rate was 2.6 trips per person per day, with a prevalence of home-to-school (52%) and home-to-work (31%) trips. Modal split was the following:

| <u>Mode</u> | <u>All Trips (%)</u> | <u>Motorized Trips (%)</u> |
|------------------|----------------------|----------------------------|
| Walking | 70 | - |
| 2-wheel vehicles | 2 | 6.7 |
| Taxi | 1 | 3.3 |
| Private auto | 5 | 16.7 |
| Public transport | 22 | 73.3 |

The monocentric urban pattern, the physical constraints in the street network, the lack of systematic traffic and parking management, and anarchic driving practices combined to produce a badly congested inner city. Peak hour average speeds were about 10-12 km/hr., with bus speeds at about 10 km/hr. The projected 40% increase in bus fleet and traffic was both a threat to an already poor traffic performance, and a stimulus to improve conditions under which buses would operate.

1.06 Aware of transport problems and difficulties in managing the growth of the metropolitan area, the Government promulgated on February 15, 1972, Law No. 72-1 establishing the Tunis District--the first regional authority ever created in the country--to guide the area's development. The decision to establish the District sprang from the need to provide for the orderly development of the metropolitan area by coordinating the infrastructural programs of ministries, public agencies and communities on the basis of long-term planning policies.

1.07 The District's geographical limits were to be the same as those of the Governorate of Tunis--the governorates being the principal units of regional administration in Tunisia. The law establishing the District set forth a somewhat more complex institutional structure than that prevailing in other governorates. Under Law No. 72-1, the District's highest authority was to be the Council (Conseil Supérieur), chaired by the Prime Minister, and consisting of seven ministers and the Governor of the Tunis Governorate. Its mandate was to approve development plans for the metropolitan area, and to act on the suggestions submitted to it by the District Board (Conseil d'Administration). There was also to be a Consultative Committee consisting of representatives of the Neo-Destour Party and of national and regional bodies. This organization showed one important gap: the absence of a formal structure to bring together technical representatives of ministries and autonomous public corporations to discuss common problems and resolve issues, and thus to obviate wherever possible the need to submit these issues to the Council.

Role of the Project

1.08 In mid-1972, the Government of Tunisia requested assistance from the Bank Group in financing an urban project for the metropolitan area of Tunis, designed to (i) establish effectively the Tunis District, and strengthen its technical capabilities to plan, program and supervise public investments and to establish suitable urban policies for metropolitan Tunis; (ii) improve public transport services by purchasing new equipment and increasing the efficiency of public transport management; and (iii) improve traffic conditions for both public and private transport. The project was to be the Bank's first involvement in the urban sector in Tunisia.

1.09 In formulating the project, the Government placed special emphasis on the effective establishment of the Tunis District as the institution responsible for identifying urgent needs and guiding future metropolitan growth. Establishing the Tunis District was also to be a first step towards decentralization of public administration in Tunisia. However, making the District a reality, building up its staff, and making it operational proved an arduous task. The project nonetheless contributed to the organization and staffing of the District, as well as to the definition of its authority and relations with other agencies. Also, in order to bring together decision-making representatives of interested ministries and public corporations and to close the gap referred to in para. 1.07, the project assisted in the addition of a Technical Coordinating Committee to the Tunis District.

1.10 The Government also gave priority to public transport in the District because the availability of reliable and efficient public transport would have an important impact on the direction of the future growth of the metropolitan area. The project eventually provided assistance to (i) renew and expand the bus fleet to meet requirements for the 1973-76 period, (ii) improve bus maintenance, (iii) renew the suburban rail system, and (iv) improve traffic conditions for both pedestrians and vehicles in the congested areas of the city. The project also assisted in the adoption of sound management practices for both the bus and the rail systems, and in the introduction of priority schemes for public transport.

Brief Details of Project

1.11 The title of the project was "Tunis District Urban Planning and Public Transport Project." It was approved by the Bank's Board of Directors on August 7, 1973 and financed by the Loan No. 937-TUN for \$11.0 million and the Development Credit No. 432-TUN for \$7.0 million. The agreements were signed on October 5, 1973.

Source of Information of this Report

1.12 This Project Completion Report is based on information contained in the Project Appraisal Report (No. 157a-TUN of July 5, 1973)^{1/} and a review of Bank files including supervision and progress reports. Two special reports prepared by consultants towards the end of the project were of particular value: one, commissioned by the borrower, on the public transport component; the other commissioned by the Bank, on the traffic management component. A supervision mission visited Tunis in early May 1981 to obtain additional information for the Report. The final updating of the report followed an urban transport sector mission in September 1981.

1/ Hereafter AR

2. PROJECT IDENTIFICATION, PREPARATION AND APPRAISAL

Origin and Formulation of the Project

2.01 In May 1972, the Tunisian Government requested Bank assistance in financing an urban transport project for the metropolitan area of Tunis. The Government envisaged the renewal of the bus fleet operating in Greater Tunis and the modernization of the Tunis-La Goulette-La Marsa (TGM) railway line serving the northern suburbs. Feasibility studies were being carried out by two consulting firms, BCEOM and SOFRERAIL. A Bank reconnaissance mission visited Tunis in July 1972 to review with Government and Société Nationale des Transports (SNT) the status of the above studies and to assess proposals for the improvement of public transport in Tunis. The mission was of the opinion that, although transport problems in Tunis were not yet critical, the combination of population growth and deterioration of existing public transport services called for prompt action and investment programs.

2.02 The reconnaissance mission suggested that an urban transport project for Tunis could include the following major items: (a) renewal and rehabilitation of the bus fleet; (b) construction of a bus maintenance depot; (c) modernization of the TGM line for which detailed engineering and tender documents were already available; and (d) a transport/land use study for the Greater Tunis metropolitan area. The preliminary cost estimate for such a project was TD 11.0 million (US\$22.0 million) with a foreign exchange component of about 75%, for a possible Bank loan estimated at about US\$16.0 million. The preliminary justification of the project was based on three primary considerations: (i) the benefits expected from the renewal of transport equipment that had exceeded its economic life; (ii) the need to maintain a satisfactory level of public transport services for the growing population to continue to rely on public rather than private transport; and (iii) the adoption of coordinated investments in the transport system to ensure a balanced growth of all modes.

2.03 At the time of the Government's request, public transportation in Tunis was provided by (a) the SNT bus system, consisting of a 360 vehicle bus fleet servicing 50 urban and suburban lines which totalled 500 km, with individual lengths ranging from 3 to 35 km and an average length of about 15 km; (b) a northern suburban railway line 20 km long, the TGM, operated by SNT, built in the early 1900s and operating with a rolling stock dating back to 1902-09; (c) a southern suburban railway line, 17 km long, run by the Société Nationale des Chemins de Fer Tunisiens (SNCF) as part of the national railway system; and (d) about 1,100 taxis.

2.04 SNT had a large maintenance depot at Bab Saadoun, which was designed in the early 1950s to serve a tramway system. A new bus depot for servicing and garaging 250 buses was being built at Cherguia in the northern suburb, and SNT had plans for the construction of a second depot to serve 250 buses at Kebaria, in the southern section of the city. Maintenance was a major problem for the bus fleet, spare parts were scarce and difficult to obtain. Because of serious shortcomings in maintenance and lack of proper servicing, buses were immobilized about 40 days a year on the average. The SNT bus system employed 1,500 persons out of the 2,640 SNT total labor force.

2.05 The BCEOM report proposed renewal of about 25% of the existing bus fleet and expansion of the fleet over the next five years. The renewal program offered a number of options, based on assumptions on the economic life of vehicles and the level of maintenance. Within each option, the study indicated the number of buses to be purchased over a period of five years, which varied according to the percentage of articulated buses (with a capacity nearly double that of a regular bus) to be included. Total investments for purchase of buses and related spare parts for the 1972-76 five-year period were estimated to range from TD 3.0 million (197 new buses) to TD 4.5 million (291 new buses), depending on the assumptions.

2.06 As regards procurement of buses, the Government had no objection to the Bank's procedure of international competitive bidding. However, the market for buses for Greater Tunis was limited and not very attractive for international tenders; as a result, the merits of attempting to coordinate the supply of buses to meet the transport needs of the three (or more) largest cities in the country were discussed by the reconnaissance mission. The Bank's point of view was that the standardization of buses could serve three ends: to hold down bid prices, to induce uniform maintenance practices, and to achieve economies in maintenance costs.

2.07 The modernization program for the TGM prepared by SOFRERAIL proposed the electrification of the system to 25 KV AC, the installation of automatic block signalling equipment, and the complete renewal of the railway car fleet; the total cost of the modernization program was estimated at TD 4.0 million. The SOFRERAIL study compared this alternative against maintaining the existing 600 VDC system with the inherent hazards due to its third rail, and concluded in favor of the 25 KV AC system. The study also analyzed different solutions to modernize and improve the southern suburban railway line run by SNCFT, and recommended that the two suburban railway lines be connected. The Government, however, was reluctant to adopt the last recommendation in view of the difficulties to integrate the TGM and southern lines due to their different gauges (the former was standard 1.44 m gauge; the latter, metric gauge). Besides, SNCFT's southern suburban line was part of the national railway system, and therefore, the Government did not wish a takeover of this line by SNT.

2.08 The BCEOM traffic study was based on data collected in 1970, and provided information on traffic flows, origin/destination and purpose of travel. The study indicated that major traffic flows were between the suburbs and the city center--where the major part of employment was located--, and that 47% of the home-to-work trips were made toward this center. The data also indicated that a sizeable number of passengers commuting between the suburbs had to transfer at the city center, in the absence of direct connections.

Project Preparation

2.09 Project preparation had to tackle the fact that information available was either outdated or too aggregate and difficult to utilize. The 1963 Master Plan offered few well-justified spatial guidelines, and failed to provide a sound investment programming framework. The most recent census was

that of 1966, and the 1960 traffic study barely went beyond the extrapolation of past urban development trends. Finally, the 1972 BCEOM study of SNT fell short of the expectations of the new SNT management who commissioned a new study to substantially complement the old one.

2.10 Preliminary cost estimates for the proposed TGM modernization program were at TD 5.0 million. Viewed against the population served by the TGM--10% of the total Greater Tunis population, and to a substantial extent, a rather affluent population--, investment per capita appeared excessive. The alternative of substituting the TGM line by buses was explored in a preliminary fashion and showed that servicing the TGM corridor would require about 30 vehicles at a cost of TD 450,000. The magnitude of the cost difference between these two alternatives was such that the Bank preparation mission recommended that other alternatives be investigated, and that their costs and benefits be compared in order to reach a decision on a more reliable basis. Among these alternatives was the rehabilitation of existing facilities.

2.11 In the course of project preparation, SNT appeared in substantial need of technical assistance to reach a satisfactory level of operation. It was suggested that four experts be assigned to SNT for about two years: (a) a financial expert to set up a proper accounting system and propose improvements to the structure of the fare system; (b) a bus operation expert to work on scheduling of services and training of personnel; (c) a bus maintenance expert to organize the depots, establish an efficient system for preventive maintenance and train the related staff; and (d) a rail operation and maintenance expert, if the TGM railway was to be modernized.

2.12 The Bank preparation mission drew the attention of Tunisian authorities to the traffic increases that would be associated with the operation of the project financed buses--and hence, to a need to study and monitor traffic flows--and the need of incentives to encourage the use of public transport and discourage that of private cars. It was recommended, therefore, that consultants be hired to work on public transport policy issues and to assist in planning and programming future urban development. The same consultants were also to (i) train Tunisian technical staff, (ii) provide technical support to the Tunis District, (iii) assist in designing integrated urban development policies, and (v) help prepare priority projects.

2.13 A bank preappraisal mission visited Tunisia in December 1972 to review the dossiers prepared by SNT and the Municipality of Tunis. A consultant was on the mission to analyze the TGM modernization program specifically. The mission concluded that it was unreasonable--if at all possible--to maintain beyond five years the TGM's overaged rolling stock. The alternative of closing the railway line would require extensive roadwork between La Goulette and La Marsa, and faced serious reservations from SNT, the Municipality of Tunis and the Government. A rehabilitation/modernization program was gradually identified: as a first step toward reducing costs, electrification of the system to 25 KV AC was rejected because of the high capital and operating costs. This change alone reduced the original cost estimates of the TGM component by 50%. Further alternative measures to reduce the overall cost were considered, including acquisition of diesel-powered vehicles, replacement of the rolling stock with new 600 VDC electric equipment, purchase of used motors and other equipment to be installed on new cars.

Project Appraisal

2.14 The Bank appraisal mission was in Tunis from January 15 to February 8, 1973. In the course of appraising each project component and assuring its overall effect on the improvement of Tunis transport, it was found desirable to modify further the project content. Regarding the bus acquisition component, the Government and SNT officials requested that against the original proposal which was to cover bus requirements for the 1973-75 period, the project finance the purchase of all the buses needed by SNT for the Four-Year Plan (1972-76) period. The need for additional bus maintenance facilities was also taken into account to ensure proper overhaul and maximum use of available vehicles.

2.15 For the railway component, six alternative TGM modernization programs (three rail and three bus alternatives) were costed and evaluated. The rail alternatives included the replacement of the existing rolling stock with new electrically-powered equipment, the acquisition of used motors and other equipment to be installed on new cars, and the purchase of diesel-powered vehicles. Bus alternatives involved closing the TGM line and replacing it by a bus system, and included bus operations on the existing road infrastructure, or conversion of the TGM right-of-way to exclusive busway. A comparison of these alternatives showed that maintaining and rehabilitating the electric rail service was the most economic solution. The comparative cost data to support this conclusion were developed in consultation with SNT, the Ministry of Public Works, and local and international experts.

2.16 To provide for a comprehensive approach for solving urban transportation problems, other essential components were included in the project, inter alia assistance to the Municipality of Tunis for increasing street capacity, improving circulation, discouraging private automobile use in the downtown area, and encouraging the use of public transport. These measures were to be among the major factors determining the effectiveness of the bus component. It was also proposed that the project include the purchase and installation of traffic signals and minor civil works to improve the operation of street intersections; also, that the Municipality improve traffic conditions through the introduction of one-way streets and prohibited turns, and the promulgation of limited parking regulations, including the towing of cars parked on major streets.

2.17 The appraisal mission also found that, notwithstanding the 1972 Law instituting the Tunis District, the agency was still non-existent. The mission recommended external support in the form of a UNDP project for (a) the provision of six experts for two years, (b) sector studies on housing, transport and public finance, and (c) feasibility studies on low cost housing, developing the banks of the Lake of Tunis once its pollution was resolved, and the future of the Tunis port area; these studies to be subcontracted and supervised by the Tunis District, if need be. A UNDP officer came to Tunisia to join the appraisal mission and assist the Government in drafting a UNDP Project Document.

2.18 During project appraisal, the Government requested the Bank mission to look into the urban problems of Sfax and consider the possibility of including in the project, development and pre-investment studies for Greater Sfax. The Directorate of Aménagement du Territoire in the Ministry of Equipment had already completed a first-phase study in which the major problems affecting the city had been identified and preliminary proposals had been put forward. The main objective of the requested studies was to evaluate development options and lay the groundwork for urban projects suitable for future consideration by external sources of financing, with a view towards developing Sfax as the main urban center in the South.

2.19 As agreed between the Government and the Bank, the Tunis District Urban Planning and Public Transport project consisted of the following parts.

Part A: purchase and putting into operation of up to 210 buses, and purchase of spare parts for the SNT bus fleet;

Part B: construction and equipping of a bus maintenance depot for SNT at Bir Kassa, and improvement of all SNT bus maintenance operations and facilities;

Part C: rehabilitation of TGM suburban railway services by purchase and putting into operation of 26 new rail cars (13 of which electrically powered), as well as a stock of spare parts; renewal of track and signalling equipment; and improvement of TGM maintenance operations;

Part D: technical and managerial assistance to SNT during project implementation;

Part E: technical assistance to the Municipality of Tunis in establishing and implementing modern traffic engineering, control measures and regulations;

Part F: construction works for improvement of street intersections and for experimental pedestrian tunnels; as well as installation of additional traffic signals in the Municipality of Tunis;

Part G: technical assistance to help the Tunis District assume its planning, programming and supervision functions and train its personnel; and

Part H: technical assistance to undertake an urban development study of Sfax.

2.20 The total cost of the project, including contingencies, was estimated at about TD 12.5 million (US\$28.6 million equivalent). The foreign exchange component was estimated at TD 8.5 million (US\$19.5 million equivalent), or 68% of the total cost. Project cost estimates and the financing program are summarized in Annex I.

2.21 The Tunis District was made responsible for the overall supervision of project execution. To this end, agreement was reached during project negotiations that a decree would be issued providing the District with proper organization and staff, and establishing a Technical Coordinating Committee bringing together senior technicians of the ministries and public agencies involved in the project. Issuance of the decree, hiring qualified staff for the District and establishment of the Committee were conditions of effectiveness. It was also agreed that SNT would begin executing the public transport improvements (Parts A - C) during the fourth quarter of 1973, and that procurement of buses, TGM rail cars and other necessary equipment would take place over a three-year period. The Tunis Municipality was made responsible for executing the traffic engineering and control measures (Part F).

2.22 Despite earlier tentative agreements (see para. 2.06), the Government proposed during negotiations that the procurement of buses to be financed under the project (Part A) be undertaken by SNT through the local bus, truck and automobile manufacturing enterprise, Société Tunisienne d'Industrie Automobile (STIA). To ensure that the cost to the project of the STIA assembled buses would not be unreasonable, it was agreed that buses would be procured through STIA only if STIA's offer would not exceed by more than 15% an international reference price, Cif Tunis, for comparable buses. This reference price was to be established by SNT with the assistance of an independent consultant and agreed upon by the Bank. If STIA prices were to exceed this limit, SNT would acquire complete buses through international competitive bidding.

2.23 SNT agreed not to undertake until December 31, 1978, any "major" project related to its urban operations (defined as any project requiring an aggregate investment exceeding TD 250,000) without first satisfying the Bank that such a project would not interfere with SNT obligations under this Credit/Loan, a bus fleet expansion of up to 110 buses between 1976 and 1978 being an exception. Furthermore, SNT agreed to submit for Bank review the technical and economic justification of its 1976-1980 urban operations investment program, no later than December 31, 1975.

2.24 The Government requested UNDP assistance to finance Part G of the project for the benefit of the Tunis District. The long-range objective of the UNDP project was to assist the staff of the District to initiate and supervise integrated development in the Greater Tunis area, and it was expected that the UNDP project would permit strengthening and training of the District's technical and administrative staff. It was also expected that it would enable short-and medium-term corrective measures to be taken without delay, and a continuing planning process for the long term to be gradually developed and established. The immediate objective of the UNDP project was to train and guide a multi-disciplinary team and increase its capacity to carry out its work program. In July 1974, UNDP approved a contribution of US\$850,000 against a Government counterpart financing of US\$497,000 equivalent. IBRD was made the executing agency of the UNDP project.

2.25 On August 7, 1973, the Bank's Board of Directors approved a development credit in an amount equivalent to US\$7.0 million (Credit No. 432-TUN) and a loan of US\$11.0 million (Loan No. 937-TUN). The legal documents were signed by representatives of the Government and the Bank on October 5, 1973.

3. IMPLEMENTATION

Effectiveness

3.01 Conditions of loan/credit effectiveness (Section 8.01 of the Loan Agreement) were the following: (a) authorization or ratification of the SNT Project Agreement on behalf of SNT; (b) authorization or ratification of the District Project Agreement on behalf of the District; (c) authorization or ratification of the SNT subsidiary Loan Agreement on behalf of the Government and SNT; (d) issuance of the District Organization Decree by the Government in a form satisfactory to the Bank; (e) establishment of a Technical Coordinating Committee (consisting of decision-making level officials of interested ministries and public agencies) within the District; (f) appointment of a qualified and experienced Directeur Général of the District; (g) employment of a traffic engineering consultant by the Municipality of Tunis; and (h) employment of engineering, management and cost accounting consultants by SNT; and (i) employment of seven experts and six counterparts by the District. January 31, 1974 was specified as the expected date of effectiveness.

3.02 The above date was first postponed until May 15, 1974 because most of the conditions of effectiveness were not yet fulfilled; by early 1974, the only steps taken to meet such conditions had been the appointment of the Directeur Général for the District. In May, the consulting firm to the District was selected and appointed. At the request of the Planning Ministry, the effectiveness was again postponed until July 15, 1974. Selection and appointment of consultants and counterpart technical personnel, and the issuance of the District Organization Decree in a form satisfactory to the Bank were the conditions most difficult to fulfill. The decree, issued and published in November 1973, was not entirely satisfactory on a number of points despite submission of comments by the Bank on previous drafts; Inter alia the November 1973 decree did not provide for (i) examination by the District (prior to commitment) of investment proposals from public agencies and authorities; (ii) inclusion in the investment budgets of technical ministries, of projects responding to priorities established by the District; (iii) supervision by the District of implementation of other agencies' programs and projects; and (iv) entrusting the District with the authority to comment on private industrial and commercial investment proposals. The sum of these omissions amounted to a considerable weakening of the power and the role of the District. The Bank requested that the decree be amended, but the Government remained hesitant to do this less than a year after the decree had been promulgated. The Bank, eventually, agreed that circulaires d'application would be issued and that—for effectiveness purposes—a letter would be submitted to the Bank, giving the points to be covered by the circulaires and the dates by which they would be issued. Third and fourth extensions of the effectiveness were requested and accepted by the Bank. Finally, the Loan and Development Credit became effective on September 24, 1974.

3.03 The delays in the fulfillment of conditions of effectiveness had an adverse impact on the timely start-up of the project and the implementation schedule. Critical to the establishment of the Tunis District and the execution of its work program was the participation of Tunisian staff (see para. 3.01, condition (h)). Of the 23 counterparts to be appointed by early 1975 as agreed under the Project Agreement, only six had been recruited by then, making it impossible for foreign technical assistants to reach their main objective, namely, the training of Tunisian staff in urban planning operations. The absence of a competitive salary scale and the lack of administrative and financial autonomy to ensure its development as an effective metropolitan agency were also among the causes of the District's initial problems.

3.04 Beyond effectiveness, most covenants in Loan, Credit and Project Agreements were satisfied, although frequently with substantial delays (see Annex IV). Most covenants that were not satisfied pertain to SNT financial management as a result of the Government's reluctance to adopt a clear system of targets by which both SNT and the Ministry of Finance would have been respectively and concomitantly bound to such operational and compensation targets.

Revisions

3.05 TGM Component. The eight-months delay in fulfilling conditions of effectiveness of the project coincided with a period of sharply rising world prices in 1974. The TGM component of the project suffered the worst damage in this respect; when the bids for 26 rail cars were opened in January 1975, the prices quoted by the lowest, technically acceptable offer were twice the original estimates (TD 316,000 for a 2-car set). The Bank appointed a consultant to investigate the magnitude of this cost differential; the consultant reviewed prices quoted internationally in early 1973 and 1975 for comparable equipment, and confirmed that submission to SNT were indeed fair market prices. Subsequently, the Bank informed SNT that it had no objection, and the contract was signed in August 1975. The Government started looking for supplementary financing and requested from the Bank in November 1976 that the percentage against which project funds could be disbursed for the TGM component be changed from 40 to 100% until funds were fully exhausted under the corresponding category. The request was justified by a desire to prevent delays in the execution of the TGM component while supplementary financing was being sought. The Bank did not approve the request, arguing that the whole TGM component would be in jeopardy unless the Government intensified its effort to make up the difference. Supplementary financing was finally obtained from Abu Dhabi (to be spread over both the TGM component and the bus depot at Bir Kassa) in March of 1977. The delivery of the new rail-cars commenced in mid-1977 -- as compared to September 1974, according to the schedule agreed upon at negotiations --, and was completed by the end of that year, two and a half years behind schedule.

3.06 During these negotiations, the rail-car supplier offered an additional set of five 2-car trains, at the same unit price as the first 26 cars. In view of the running inflation and diseconomies of small orders, SNT and the Government accepted this offer. The cars were delivered in mid-1979.

3.07 SNT Bus Component. Under the project agreement, 210 buses were bought for the SNT urban services, and delivered from 1974 through 1978. In addition to project financed buses, SNT bought 367 buses in the period 1975-1980 (inclusive), more than half of the 1980 fleet. In the period 1976-1978, 126 buses were purchased, slightly above the limit set in the Project Agreement (para. 2.23).

3.08 Traffic Improvement Component. Following an international tender, the consulting group SETEC-SOTUETEC-TRANSITEC was appointed in late 1974 to assist the Municipality of Tunis in carrying out a traffic management study. The results of the study, published in September 1975, were promptly adopted by the City Council, and a further contract was awarded to the same consultants to produce detailed designs and cost estimates. The program differed from that outlined in the appraisal report in that fourteen intersections were to be improved rather than six, three pedestrian underpasses were to be constructed rather than five; also, various traffic signs, reserved bus lanes, and six pedestrian streets were to be introduced where none had been originally planned. Detailed engineering was completed in 1977 and diverse contracts to implement the improvement were awarded in late 1976 and 1977. Between 1977 and 1980, the Municipality's newly created Traffic and Transport Unit introduced further changes in the traffic management component, namely:

- (i) the layouts of another eleven intersections were improved;
- (ii) all pedestrian underpasses were dropped from the program, due to the prohibitive unit costs involved;
- (iii) about 20 additional pedestrian streets were introduced; and
- (iv) an area traffic control system encompassing a total of 44 intersections, plus signal equipment for 6 isolated intersections were introduced.

The net result of all these changes, summarized in Annex II, was that Tunis was equipped with a signal system significantly more extensive and sophisticated than originally envisaged, and that the actual costs came to three times those estimated during project appraisal (para. 3.16 below).

3.09 Technical Assistance to Tunis District and Sfax. The credit agreement specified that sums of US\$189,000 (Category VIII) and US\$497,000 (Category IX) were earmarked for technical assistance to undertake an urban development study of Sfax and for the Tunis District, respectively. Total disbursements for technical assistance came to be consistent with forecasts. However, a confusion was introduced between the two objects mentioned above — Categories VIII corresponding to part H of the project, and Category IX corresponding to part G of the project, respectively — ended up being in a proportion inverse to that written in the Credit Agreements.

Implementation Schedule

3.10 The appraisal report had assumed that the loan/credit would become effective by early 1974. On this basis, it was estimated that the project would take two years to implement and that disbursements would be completed by mid-1976. As of December 1981, the project was completed with the exception of the SNT bus depot, scheduled for full completion in early 1982. The closing date of the credit/loan, originally set for December 31, 1976, was postponed by five years, to December 31, 1981.

3.11 The project suffered a variety of delays (see Table 1), starting with the initial eight months' delay in effectiveness, with a ripple effect on the timing (and prices) of several project components, but especially the TGM rolling stock purchase and track upgrading (para. 3.05).

Table 1: DELAYS IN IMPLEMENTATION OF MAJOR COMPONENTS

| <u>Event Activity</u> | <u>Start</u> | | <u>End</u> | | <u>Delay (months)</u> | | |
|--|-----------------|---------------|-----------------|---------------|-------------------------|--------------------------|---------------------|
| | <u>Forecast</u> | <u>Actual</u> | <u>Forecast</u> | <u>Actual</u> | <u>In Start- Up</u> | <u>In Dura- tion</u> | <u>In Total</u> |
| Implementation, from Date of Effectiveness to Closing Date | 1/31/74 | 9/24/74 | 12/31/76 | 12/31/81 | 8 | 52 | 60 |
| SNT/TGM - Reconstruction of Way | 10/1/73 | mid 1974 | 7/31/74 | end 1977 | 9 | 32 | 41 |
| SNT/TGM - Arrival of New Cars | 10/1/74 | 6/1/77 | 5/31/75 | 12/31/77 | 32 | -1 | 31 |
| SNT - Arrival of New Buses | 4/1/74 | 10/74 | 12/31/75 | 12/77 | 6 | 18 | 24 |
| SNT - Construction of Bir Kassa Depot | 4/1/74 | mid 1978 | 12/31/75 | 1/82 | 51 | 22 | 73 |
| Tunis Municipality - Traffic Improvements <u>1/</u> | | 9/75 | mid 1976 | mid 1980 | - | - | 48 |

1/ From commencement of technical studies to completion of the improvements and installation of the equipment.

By mid-1976, about 60% only of loan/credit funds were disbursed. On the traffic improvement component, delays due to extensive revisions were compounded by the difficulties experienced by the Tunis Municipality in following Government administrative procedures. At one point, the supplier of traffic control equipment stopped work for four months because his invoices were not being paid. Also, a contract for training traffic computer operators and preparing a library of traffic control programs remained dormant for an entire year. However, the longest delay occurred in constructing the SNT bus depot at Bir Kassa: about six years in total (see Table 1). It took a long time to select—in cooperation with the Tunis Municipality—a suitable location for the depot, only to have the Municipality withdraw its commitment in 1976. It then took another year and a half to find an alternative location. By December 1981, the construction and equipment of the depot were substantially completed; full completion was scheduled for early 1982. The cost of the depot increased from an estimated TD 1.6 million (in 1973 prices) to TD 3.6 million; essentially, because of the delay (the General Price Index in Tunisia went from 100 in 1973 to 145.2 in 1978, and 169.1 in 1980).

3.12. In retrospect, the original time schedule for the project was optimistic, since a number of the delays were due to political/administrative matters that could have been foreseen in a more realistic manner. Attaching the loan/credit effectiveness to a major institutional change which involved redistribution of decision making power, might appear as a weak feature in the project, but it was a necessary risk since the potential benefits (see para. 1.07 & 3.02) from establishing the Tunis District went far beyond a mere \$28 million transport project. A viable alternative, however, might have been to make this institutional change a condition of Board presentation instead. As for the late 1973's increase of oil prices and resulting 1974 rise of world prices, they could not be foreseen and the project implementation could only suffer from such developments.

Procurement

3.13 As already mentioned in paragraph 2.22, the Government requested during negotiations that the Bank Group finance imported chassis and mechanical sub-assemblies for the SNT buses, while the Tunisian enterprise STIA would manufacture bodies and do the assembly of vehicles. The value added in Tunisia would be 50 to 55 percent. It was expected that the procurement of buses by STIA would help build up STIA's capacity to integrate further its bus assembly operation, and would thus provide the impulse for a new industrial activity where Tunisia had comparative advantage because of low-priced labor. STIA already had experience in assembling buses from imported components, and by 1973 had launched an expansion program under which it was to manufacture bodies—with Van Hool assistance—largely from locally produced materials, and was to complete buses with imported frames, engines and gear boxes. This expansion program was to create 300 new jobs in STIA, in addition to an unspecified number of positions in domestic supplying industries.

3.14 At the time of Board presentation, STIA had already invited bids for the supply of bus chassis and mechanical sub-assemblies through international competitive bidding. The Bank reviewed the bidding procedures followed by STIA, and was satisfied that the procedures conformed with the Bank's

procurement guidelines. SNT employed a consultant to assist in evaluating STIA's bid price against prevailing international market prices. STIA's bid did not exceed by more than 15% the international reference price, and the contract was awarded to STIA.

3.15 In January 1975, SNT submitted for Bank approval a report on the evaluation of bids for the supply and installation of signalling equipment under the TGM railway modernization scheme.^{1/} Initial bids were found to contain several errors and omissions, and SNT asked bidders to provide supplemental information and clarification on their offers. The lowest evaluated bidder was eliminated in view of its lack of experience in supplying and installing signalling systems for similar public transport projects. The second lowest bid was also rejected because the proposal did not conform to the bid specifications. SNT proposed to retain the third bid as the only one technically satisfactory. The Bank reviewed the detailed information furnished by SNT and its consultants and, after discussions with its engineers and consultants, agreed with SNT's position.

Project Costs and Disbursements

3.16 Annex I shows details of project costs as forecasted at the time of appraisal and actual costs by component, by source of finance, and in total. These costs can be summarized as follows:

Table 2: PROJECT COSTS, ESTIMATED AND ACTUAL

| | <u>Appraisal Forecast</u> | | <u>Actual</u> | | <u>Cost Differential (%)</u> | |
|--|---------------------------|------------------|-----------------|------------------|------------------------------|-------------|
| | <u>ID '000</u> | <u>US\$ '000</u> | <u>ID '000</u> | <u>US\$ '000</u> | <u>ID</u> | <u>US\$</u> |
| 1. <u>SNT Total</u> | <u>10,868.0</u> | <u>24,843.0</u> | <u>19,286.4</u> | <u>45,919.9</u> | <u>+77</u> | <u>+85</u> |
| Buses & Spare parts | 4,920.3 | 11,176.8 | 4,807.6 | 11,446.7 | -2 | +2 |
| Bus Depot | 1,571.4 | 3,610.8 | 3,620.0 | 8,619.0 | +130 | +139 |
| TGM | 4,054.1 | 9,315.7 | 10,530.2 | 25,071.9 | +160 | +169 |
| Tech. Assistance | 322.2 | 739.7 | 328.6 | 782.3 | +2 | +6 |
| 2. <u>Traffic Component</u> | <u>766.0</u> | <u>1,762.0</u> | <u>2,241.2</u> | <u>5,336.2</u> | <u>+193</u> | <u>+203</u> |
| Tech. Assistance | 82.5 | 190.4 | 288.2 | 686.2 | +249 | +260 |
| Traffic Improvements | 683.5 | 1,571.6 | 1,953.0 | 4,650.0 | +186 | +196 |
| 3. <u>Technical Assistance to Tunis District</u> | <u>737.0</u> | <u>1,695.0</u> | <u>728.9</u> | <u>1,695.0</u> | <u>-1</u> | <u>0</u> |
| 4. <u>Sfax Urban Study</u> | <u>139.0</u> | <u>319.0</u> | <u>199.1</u> | <u>474.0</u> | <u>+43</u> | <u>+49</u> |
| <u>TOTAL</u> | <u>12,510.0</u> | <u>28,619.0</u> | <u>22,455.6</u> | <u>53,425.1</u> | <u>+80</u> | <u>+87</u> |
| | ===== | ===== | ===== | ===== | ===== | ===== |

^{1/} See para. 3.05 on procurement of TGM cars.

The total cost of the project came to TD 22.5 million (US\$53.4 million 1/), compared to TD 10.9 million (US\$24.8 million) expected during appraisal. During negotiations (May-June 1973), appraisal forecasts were adjusted -- especially the foreign exchange component--to TD 12.5 million (US\$28.6 million) in view of the provisional agreement reached that the SNT buses might be supplied by STIA. Thus, actual cost of the project came to be 80% higher than the 1973 forecast if expressed in TD, or 87% higher if expressed in US\$. This cost overrun is due to a combined effect of sharp price escalation that started in 1974, long delays in some components (e.g., bus depot) and major revisions and delays in others (e.g., traffic signals). The Bank/IDA contribution to the project, estimated in 1973 to be 63% of total cost, eventually amounted to only 33%; the rest of the funds were supplied by the Government and by a complementary loan from the Abu Dhabi Fund.

3.17 These data illustrate well how a delay of less than a year, in the initial 1973-74 period, made a tremendous impact on project costs. Contracts for buying buses for SNT were signed in mid-1974, with actual prices roughly equal to those estimated during appraisal; bids for TGM rolling stock were received in January 1975 and were 99% higher than forecasted. The entire TGM component 2/ ended up costing 160% more than expected.

3.18 Of the \$18 million credit/loan, a sum of US\$17.6 million was disbursed 3/ (see Annex III). Delays in project execution resulted in approximately equivalent delays in disbursements. Once construction and procurement started, disbursements proceeded at a rate somewhat faster than estimated at the time of appraisal. An exception to this were disbursements for the traffic improvements component (see Table 3), where 45% of the original amount has yet to be disbursed, due to administrative delays in the Tunis Municipality; this, however, is only about 2% of the Bank/IDA participation in the project.

1/ Average exchange rate of US\$1 = TD 0.42 used for the overall project implementation period.

2/ Including 5 extra 2-car trains.

3/ As of December 11, 1981.

**Table 3: DISBURSEMENT OF LOAN BY CATEGORY
(US\$ 000)**

| <u>Category</u> | <u>Part of Project</u> | <u>Amount Allocated in Loan Agreement</u> | <u>Amount Disbursed</u> |
|-----------------|------------------------|---|-------------------------|
| I | A | 4,927.0 | 5,627.0 <u>1/</u> |
| II | B,C | 9,804.0 | 9,700.7 |
| III | B | 1,324.0 | 924.5 <u>1/</u> |
| IV | D | 497.0 | 299.8 |
| V | F | 123.0) | |
| VI | F | 525.0)***.0 | 308.6 <u>2/</u> |
| VII | E | 114.0 | 114.0 |
| VIII | H | 189.0 | 474.0 <u>3/</u> |
| IX | G | 497.0 | 185.8 <u>3/</u> |
| <u>TOTAL</u> | | <u>18,000.0</u> | <u>17,634.4</u> |

- 1/ \$700,000 transferred to Category I from Category III in the early period of project execution.
2/ Categories V and VI aggregated in the early period of project execution.
3/ For comments, see para. 3.09.

4. EVALUATION OF PERFORMANCE--SNT PROJECT COMPONENTS

4.01 This section reviews technical, financial, economic and organizational performance as regards the SNT project components.

Assessment of SNT Past Operations and Level of Service

4.02 Major problems affecting the SNT urban bus services, as diagnosed during project preparation and appraisal, were: overcrowding in buses, low ride comfort, frequent breakdowns, lack of punctuality, and low travel speeds. These problems, in turn, were traced to a (i) shortage of buses on the road vis-a-vis transport demand; (ii) advanced age of part of the fleet; (iii) inadequate maintenance stemming from lack of facilities, delays in purchasing of spare parts, and generally low level of efficiency in the maintenance operation—including its management—; and (iv) congestion of the street network in which SNT buses operate. As for the TGM suburban railway line, its cars had been manufactured early in the century and had far outlived their economic acceptability, while the track, third rail and signalling were in bad need of reconstruction.

4.03 In addition, SNT had serious financial problems. On the revenue side, fares were kept artificially low by a government decision and insufficient compensation was paid by the Government for reduced fares imposed onto SNT for some categories of passengers. Also, a false sense of security was maintained by fare-box revenues covering costs, the latter reflecting

unrealistically low write-offs for equipment depreciation. On the supply side, SNT was overstaffed, and modern managerial practices leading to higher productivity were generally absent; for example, performance and costs of various SNT activities were not monitored, and therefore, past experience could not be fed back into operations.

4.04 The project was designed as a comprehensive package dealing with each specific problem mentioned above. Hence, the project provided for (i) the bus fleet to be renewed and enlarged by about 210 buses and for stocks of spare parts to be refurbished; (ii) maintenance to be improved, which meant opening a new, fully equipped depot; (iii) the environment for bus services to be improved, by launching a traffic improvement program (Chapter 5); (iv) the TGM track to be reconstructed; (v) modern control to be installed along this line; and (vi) the TGM fleet to be completely replaced. On the financial side, project covenants called for appropriate compensation by the Government for special fares and for Government's approval of fare increases (and/or regular subsidy payments) sufficient to ensure that the SNT could meet its operating costs and debt service. The project also provided for technical assistance in diverse areas of operations and management to help improve efficiency in the provision of transport services.

4.05 Quantitative targets for future operating performance were adopted, along with a timetable for reaching these targets. Some targets were in terms of capacity (e.g., fleet size), others in terms of output (e.g., passengers carried), yet others were average costs or broad indicators (e.g., on maintenance). Tables 4 and 5 show for bus and TGM services, all major operational indicators at the time of appraisal, operational targets ^{1/} set for SNT and values of indicators for subsequent years. Annex IV presents the major agreements/covenants concerning SNT as they were recorded in the Project, Loan and Credit Agreements; Annex IV also reviews the borrower's compliance with these covenants.

Urban Bus Operations

4.06 In physical terms, all project financed 210 buses were bought and put into service (Table 6). In addition to these SNT purchased another 367 buses from 1975 to 1980 (inclusive).

^{1/} Except for "percent of overload" for which no later data are available.

**Table 4: SNT - URBAN BUS SERVICES
MAJOR OPERATING STATISTICS**

| | 1973 | target for 1975 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 |
|--|---------------|--------------------|--------|--------|--------|--------|--------|--------|---------|
| Passengers Carried (Millions) | 135.6 | 170.0 | 138.2 | 159.5 | 179.2 | 203.1 | 209.1 | 221.4 | 230.2 |
| Network Length (km) | 807 | - | 940 | 1,025 | 1,230 | 1,506 | 1,558 | 1,619 | - |
| Fleet Size (No. Buses) | 378 <u>1/</u> | 392 <u>2/</u> | 378 | 403 | 495 | 529 | 601 | 631 | 638 |
| Average Fleet Age (Years) | 6 | - | 7 | 8 | 7 | 568/12 | 665/12 | 669/12 | 6611/12 |
| Scheduled Kilometrage (1,000 km) | 19,000 | | 20,800 | 23,700 | 25,100 | 29,100 | 31,900 | 32,900 | 33,100 |
| Average km/Bus (1,000) | 50 | - | 55 | 59 | 51 | 55 | 53 | 52 | 52 |
| Average Fleet Availability (%) | 60 <u>1/</u> | 85 | 74 | 83 | 81 | 80 | 80 | 80 | 82 |
| Daily Passengers/Bus in Service | 1,640 | | 1,352 | 1,304 | 1,224 | 1,315 | 1,191 | 1,201 | 1,205 |
| Average No. Days Immobilized/Bus/Annum | 160 | 55 | - | 61 | 71 | 74 | 72 | 75 | 65 |
| Average No. Breakdowns/10,000 km | - | | 6.5 | 3.0 | 2.7 | 2.2 | 2.3 | 2.2 | 1.8 |
| Average Maintenance Costs <u>3/</u> (1973 TD/Bus) | 2,273 | 1,577 | - | - | 4,059 | 4,304 | 4,587 | 4,344 | 4,453 |
| Average Running Costs <u>4/</u> (1973 TD/Bus-km) | | - | - | - | 0.112 | 0.118 | 0.125 | 0.125 | 0.126 |
| Administrative & Misc. Costs (1973 TD '000) | | - | - | - | 849 | 903 | 1,013 | 940 | 964 |
| Average Operating Costs <u>5/</u> (1973 TD/Bus-km) | | - | - | - | 0.227 | 0.227 | 0.243 | 0.236 | 0.241 |

1/ These are SNT data, implying 227 vehicles available for service on the average; Appraisal Report cites 300 vehicles in service.

2/ No. of buses in service (fleet size x average fleet availability)

3/ All wages deflated using the cost of living index; all materials deflated using the wholesale price index.

4/ According to SNT nomenclature, "running costs" include operators' wages and uniforms, other operating expenses and fuel.

5/ The sum of "running", maintenance and repairs, administrative and miscellaneous costs.

Table 5: SNT - TGM SERVICES
MAJOR OPERATING STATISTICS

| | 1973 | Target for 1975 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 |
|---|----------------|--------------------|-------|-------|-----------------|-------------|------------------|--------|--------|
| Passengers Carried (Millions) | 16.3 <u>1/</u> | 19.1 | 15.9 | 18.1 | 19.3 | 19.6 | 20.1 | 21.3 | 22.4 |
| Network Length (km) | 19.5 | - | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 |
| Fleet Size <u>2/</u> (No. cars) | 22 | 26 | - | - | - | 26 | 30 | 36 | 36 |
| Scheduled Kilometrage (1,000 km) | 2,700 | - | 2,700 | 3,000 | 2,542 | 2,807 | 2,800 | 3,302 | 3,200 |
| Average Main- tenance Costs <u>3/</u> (1973 TD/car) | 6,500 | 1,250 | - | - | 8,860 <u>4/</u> | - <u>5/</u> | 13,600 <u>6/</u> | 12,805 | 10,861 |
| Average Running Costs <u>7/</u> | | - | - | - | 0.112 | 0.114 | 0.114 | 0.121 | 0.124 |
| Administrative and Misc. Costs | | - | - | - | 104 | 87 | 90 | 92 | 87.5 |
| Average Operating Costs <u>8/</u> (1973 TD/car-km) | | - | - | - | 0.328 | 0.286 | 0.320 | 0.289 | 0.273 |

1/ This is a corrected figure obtained from SNT sources; Appraisal Report had 16.9 million passengers.

2/ Old cars until mid-1977, but 1974-1976 data not available; data for 1977 and beyond refer to new cars.

3/ All wages deflated using the cost of living index; all materials deflated using the wholesale price index. Track maintenance included.

4/ Last full year with old cars.

5/ Year of transition.

6/ First full year with new cars.

7/ According to SNT nomenclature, "running costs" include operators' wages and uniforms, other operating expenses and fuel.

8/ Includes "running" costs, maintenance and repairs, administration and overhead.

**Table 6: SNT BUS ACQUISITIONS
(1974-1980)**

| | 1974 | | 1975 | | 1976 | | 1977 | | 1978 | | 1979 | | 1980 | | Total No. |
|------------------------------|------|-------|------|------|------|------|------|------|------|------|------|------|------|------|--------------|
| | No. | Cost* | No. | Cost | No. | Cost | No. | Cost | No. | Cost | No. | Cost | No. | Cost | |
| Total Acquisitions | 44 | 744 | 111 | 2022 | 87 | 1895 | 79 | 2121 | 34 | 834 | 65 | 1590 | 157 | 4412 | 577 |
| Standard Buses | 44 | 744 | 111 | 2022 | 67 | 1318 | 18 | 382 | 30 | 729 | 40 | 1060 | 110 | 3118 | 420 |
| Articulated Buses | - | - | - | - | 20 | 577 | 61 | 1739 | 4 | 114 | 25 | 530 | 47 | 1294 | 157 |
| Financed by IBRD Loan | 44 | 744 | 92 | 1643 | 9 | 173 | 61 | 1739 | 4 | 114 | - | - | - | - | 210 |
| Standard Buses | 44 | 744 | 92 | 1643 | 9 | 173 | - | - | - | - | - | - | - | - | 145 |
| Articulated Buses | - | - | - | - | - | - | 61 | 1739 | 4 | 114 | - | - | - | - | 65 |

* In 1,000 TD

Source: SNT (April 1981 mission)

In spite of bus scrapping, the fleet increased by 69% relative to 1973. The average age of the fleet, decreased to under 6 years in 1977, rose to about 7 years in 1980, and is expected to decrease to under 5 years in 1981 following the scrapping of some 16-year-old buses.

4.07 Bus maintenance was substantially improved, in spite of the fact that the depot at Bir Kassa was not completed. This is evidenced 1/ by (i) an increase in bus availability (from 60% in 1973, to 80-83% over the past five years; close to the 85% target) and (ii) a substantial decrease in average number of breakdowns (from 6.5/10,000 km in 1974 to 1.8 in 1980).

4.08 These improvements were achieved at a very high cost. Average maintenance cost per bus not only failed to drop by 30% as targeted, but increased by about 100% in real terms (Table 4). Prices of tires and spare parts increased faster than most other cost components, and so did wages; but low productivity appears to have been a major factor (see para. 4.25), even if explainable in part by pressures exerted by Government to maintain employees on the job even when redundant.

1/ The values assumed by the indicators reflect the fact that buses are rather new, but this fact was also taken into account when targets were set.

4.09 In operational terms, the fleet increase of 69% in the 1973-1980 period has made possible a corresponding increase of 74% in the scheduled kilometrage, 100% in the service network and a decrease of about 26% for daily bus loading. The improvement in level of service implied by the above numbers, generated a 70% increase in the number of passengers; roughly, an 8% growth rate per annum. This compares favorably with the 44% increase in patronage predicted at the time of appraisal for the same period (Table 7).

4.10 For passengers, the level of service has improved in terms of availability (network coverage), frequency and comfort (newer and less crowded buses). There are also fewer breakdowns en route (6% in 1972 vs. 4.6% in 1979). Traffic management improvements have also resulted in higher speeds on suburban segments of bus routes; unfortunately, traffic improvements have been less impressive downtown, in terms of bus priority at signals, or in terms of keeping reserved bus lanes clear of private cars (paras. 5.05 and 5.06). The commercial speeds of some downtown lines have occasionally fallen (e.g., for the line around the Medina, from 11 km/hr. in 1974 to 7 km/hr. in 1977); in other words, bus operations were not efficiently sheltered against general traffic increase. A comprehensive analysis of bus service characteristics remains to be done; SNT Study Unit carried out two surveys (of frequencies, adherence to schedules, commercial speeds and passenger volumes) in 1974 and 1977, but results have not been synthesized. Attempts were made to improve the lot of passengers (e.g., the campaign against smoking in buses, publication of bus network maps, etc.), but these have remained limited. The SNT still lacks a genuine commercial department to study travel market characteristics and to design pertinent service improvements.

TGM Operations

4.11 The TGM line has been completely refurbished, including track, signals, sub-stations and depot. The new rolling stock was progressively introduced, starting in mid-1977; the fleet of 26 cars financed under the project plus 10 extra cars are now operational (paras. 3.05-3.06). The only work items planned under the project and not yet implemented are the protection of the third rail and fencing. The new service is reliable and fast (about 35 km/hr. travel speed). The ride is comfortable, with a minimum of lateral sway and smooth acceleration/braking. Vehicles and stations are well maintained.

4.12 TGM patronage grew from 16.3 million in 1973 to 22.4 million in 1980, an increase of 37% (i.e., at a rate of about 5% per annum). This is only slightly lower than the patronage predicted at the time of appraisal (Table 7).

**Table 7: SNT PASSENGER STATISTICS
COMPARISON OF APPRAISAL FORECAST AND ACTUAL VOLUMES**

| <u>Year</u> | <u>Urban Bus Services</u> | | <u>(million passengers)</u> <u>TGM</u> | | <u>Total</u> | |
|-------------|---------------------------|------------------|---|------------------|-----------------|-----------------|
| | <u>Forecast 1/</u> | <u>Actual 2/</u> | <u>Forecast 1/</u> | <u>Actual 2/</u> | <u>Forecast</u> | <u>Actual</u> |
| 1972 | - | 129.6 | - | 16.3 | - | 145.9 |
| 1973 | 136.7 | 135.8 | 16.9 | 16.3 | 153.6 | 152.1 |
| 1974 | 148.1 | 138.2 | 17.4 | 15.9 | 165.5 | 154.1 |
| 1975 | 161.4 | 159.5 | 19.1 | 18.1 | 180.5 | 177.6 |
| 1976 | 168.6 | 179.2 | 20.5 | 19.3 | 189.1 | 198.5 |
| 1977 | 175.8 | 203.1 | 21.1 | 19.6 | 196.9 | 222.7 |
| 1978 | 183.0 | 209.1 | 21.7 | 20.1 | 204.7 | 229.2 |
| 1979 | 190.2 | 221.4 | 22.3 | 21.3 | 212.5 | 242.7 |
| 1980 | 197.4 | 230.2 <u>3/</u> | 22.9 | 22.4 <u>3/</u> | 220.2 | 252.6 <u>3/</u> |

Sources: 1/ Project Appraisal Report (No. 157a-TUN)
2/ Supervision report by Philippe Laville, Mise en Oeuvre du Projet de Transports en Commun, 1973-1980, October 1980.
3/ SNT Direction Financière, Rétrospective Décennale 1972-1981, Document No. 2, Juin 1981.

4.13 The only operational target set up for the TGM at the time of appraisal, other than the fleet size, involved average maintenance cost. The outcome is very disappointing. Average maintenance cost per car was TD 6,500 in 1973, and the target for the new fleet was set at TD 1,250. 1/ In 1976, the last full year of operations with the old cars, unit maintenance costs increased to TD 8,860. In the three years (1978 through 1980) since the introduction of new cars, maintenance costs declined from TD 13,600 per car 2/ in 1978 to TD 10,861 in 1980, but remained about 100% higher in real terms than those in 1973 (Table 5). A number of technical features of the new cars proved to be inappropriate for operations in the Tunisian environment. For example, ventilation systems were not up to local summer temperatures and windows apertures had to be increased. Other problems led to fleet-wide breakdowns, e.g. short circuits in collecting shoes of electrical motors. Attempts made to correct these shortcomings were expensive not the least because the price of spare parts has been exorbitant.

1/ All these unit costs are in constant 1973 TDs.

2/ This cost includes both vehicle and track maintenance.

Fares

4.14 There were four rate increases during the project period, slightly greater than those agreed upon at the time of negotiations: 30% in January 1974, 10% in August 1977, 15% in April 1978, and 18% in August 1981. However, these increases were too low and too late to offset increases in operating costs. The latest increase was accompanied by a change in fare structure, whereby the first five tariff zones were reduced to two; this may for a time discourage short trips, but should ultimately give a reasonable increase in revenue.

Financial Evaluation 1/

4.15 Because of SNT's financial dependence on the Government (paras. 4.03 and 4.04), conventional financial ratios had not been considered at the time of appraisal, as suitable indicators against which SNT's performance could be measured. Thus, the only targets set up at that time were related to operational and maintenance costs. The linkage between these and financial performance was to be clarified under the technical assistance effort, along with the identification of other targets related to staffing, labor productivity, budget control, etc. A full set of performance measures was to be submitted to the Government, the Tunis District, and the Bank/IDA for approval. Reports were to be semi-annual with annual program reviews, and Governmental subsidy payments provided to SNT in lieu of tariff adjustments were to be linked to the system of performance criteria. The above-described system was never formalized because of sensitive relationships between the SNT management, the labor union and the Government.

4.16 In 1973, SNT showed a gross surplus of TD 1.2 million before charging depreciation and debt financial service, and a net surplus of TD 0.15 million; it had a satisfactory working ratio of 0.85, an operating ratio of 0.97, and a gross cost to total income ratio of 0.98. By 1975, the working surplus had increased to TD 1.47 million but, as capital investment had increased, depreciation charges and debt service offset the working surplus and resulted in a net deficit of TD 0.59 million, after payment of indirect taxes (TD 0.64 million) and direct taxes (TD 0.11 million). As a result of fare increases applied in 1974, 1977 and 1978, SNT continued to show a satisfactory working ratio through 1980. At the same time, fleet performance had improved, and there was a steady growth in total passenger trips. Nevertheless, SNT began to experience financial difficulties, its total earnings not being sufficient to cover all operating and other costs. The reluctance to introduce new fare increases has led to an imbalance in costs and income which (as can be seen in Table 8) was to lead in 1981 to a net deficit in the region of TD 2.6 million, and an operating ratio of 1.06.

1/ For SNT urban bus and rail operations as well as inter-urban services, since SNT accounts for years 1973-1981 did not distinguish between these operations despite Bank/IDA recommendations presumably because of the difficulties involved in allocating certain joint costs (e.g., maintenance and administration related) to urban and inter-urban operations.

Table 8: SNT OPERATING ACCOUNT SUMMARY 1/
TD (000)

| | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | Forecasts | |
|---|-------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------|---------------|
| | | | | | | | | 1980 | 1981 |
| INCOME | | | | | | | | | |
| Traffic Receipts | 6722.00 | 8483.00 | 10104.00 | 11664.00 | 14099.00 | 17445.00 | 19818.00 | 20500 | 21852 |
| Other Income | 93 | 62 | 112 | 137 | 133 | 215 | 294 | 214 | 228 |
| Compensation for Concessionary Fares | 1500 | 1500 | 1500 | 2000 | 2400 | 2400 | 2400 | 2700 | 2700 |
| TOTAL INCOME | 8315 | 10045 | 11716 | 13801 | 16632 | 20060 | 22512 | 23414 | 24780 |
| EXPENSES | | | | | | | | | |
| Employees | 4048 | 5000 | 5726 | 6991 | 8802 | 9609 | 10489 | 12200 | 13092 |
| Materials | 2295 | 2762 | 3159 | 3732 | 3973 | 5121 | 5728 | 6027 | 6537 |
| Other Expenses | 211 | 99 | 617 | 792 | 728 | 877 | 1122 | 1008 | 1116 |
| Indirect Taxes | 487 | 537 | 635 | 847 | 1134 | 1344 | 1316 | 1411 | 1517 |
| Direct Taxes | 67 | 85 | 107 | 129 | 160 | 192 | 197 | 218 | 235 |
| TOTAL EXPENSES | 7099 | 8483 | 10244 | 12491 | 14797 | 17143 | 18852 | 20864 | 22497 |
| WORKING SURPLUS | 1216 | 1562 | 1472 | 1310 | 1835 | 2917 | 3650 | 2550 | 2283 |
| Depreciation | 952 | 1216 | 1666 | 1605 | 2034 | 2654 | 3187 | 3413 | 3877 |
| Contribution to Financing Expenses | 119 | 152 | 398 | 503 | 652 | 789 | 874 | 850 | 1004 |
| NET SURPLUS/(DEFICIT) | 145 | 194 | (592) | (798) | (851) | (526) | (401) | (1713) | (2598) |
| Working Ratio | 0.85 | 0.84 | 0.87 | 0.91 | 0.89 | 0.85 | 0.84 | 0.89 | 0.91 |
| Operating Ratio | 0.97 | 0.97 | 1.02 | 1.02 | 1.01 | 0.99 | 0.98 | 1.04 | 1.06 |
| Gross Cost/Income Ratio | 0.98 | 0.98 | 1.05 | 1.06 | 1.05 | 1.03 | 1.02 | 1.07 | 1.10 |

Source: Philippe Laville, Mise en Oeuvre du Projet de Transports en Commun 1973-1979, October 1979

1/ Includes urban bus services, the TGM, and inter-urban bus services.

4.17 The Government has fulfilled its obligation (para. 4.04) in principle, in regularly paying compensation for concessionary fares; however, it did not to the full extent due. As the following table shows, the payments have increased since 1973 at a pace that would meet inflation, but not inflation and growth in traffic (of which a rather constant portion is on concessionary fares).

| | <u>1973</u> | <u>1974</u> | <u>1975</u> | <u>1976</u> | <u>1977</u> | <u>1978</u> | <u>1979</u> | <u>1980</u> |
|-----------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Payments | 100 | 100 | 100 | 133.3 | 160.0 | 160.0 | 160.0 | 180.0 |
| Wholesale Price Index | 100 | 121.2 | 132.7 | 134.4 | 140.9 | 145.2 | 155.7 | 169.1 |
| Cost of Living Index | 100 | 104.0 | 113.6 | 120.0 | 128.0 | 135.0 | 145.3 | 160.0 |

The Government seems to have preferred meeting its obligations vis-a-vis SNT through funding capital increases, and through occasional rescheduling of SNT's debt to the State, from short to long term; this can be seen from Table 9, "Sources and Applications of Funds Statement".^{1/} While the above method has certainly improved SNT debt/equity ratio, it has made the company's financial planning difficult since the amount and mode of Government funding has had to be negotiated each year and SNT could not rely on any automatic process for compensation (or tariff increase for that matter).

4.18 The most worrying feature in SNT's accounts is the steady increase in capital utilization--resulting from the investment program--and the continuing increase in financial costs. Table 9 shows that this deterioration originates with significant capital investments for the financing of which SNT has been led to borrow on short term. There again, the picture is obscured by the investment program for inter-urban services, as compared to strictly urban operations.

^{1/} Up-to-date results for 1980 and provisional 1981 are available, but could not be reconciled with Operating Accounts.

**Table 9: SNT SOURCES AND APPLICATION OF FUNDS
TD (000)**

| | <u>1974</u> | <u>1975</u> | <u>1976</u> | <u>1977</u> | <u>1978</u> | <u>1979</u> | <u>1980</u> |
|---|-------------|--------------|--------------|--------------|--------------|---------------|-------------|
| <u>SOURCES</u> | | | | | | | |
| Operating Surplus/(Deficit) | 194 | (592) | (798) | (851) | (526) | (401) | (1713) |
| Depreciation | 1216 | 1666 | 1605 | 2034 | 2654 | 3416 | 4031 |
| Capital Contributions | 900 | - | - | 2000 | 3000 | 1500 | 500 |
| Long Term Loans | 3031 | 5202 | 3652 | 6252 | 4119 | 6178 | 4390 |
| Increase in Short Term Debt | - | 2096 | 2875 | 2494 | 1910 | 451 | |
| Subsidy | - | - | 42 | - | - | - | |
| Reduction in Net Assets | - | - | - | 1570 | - | - | |
| TOTAL | 5341 | 8372 | 7374 | 13499 | 11157 | 11144 | |
| <u>APPLICATION</u> | | | | | | | |
| Financing Expenses in Excess of Annual Contributions | (36) | 143 | 873 | (717) | 303 | 233 | |
| Capital Expenditure | 1921 | 5385 | 3707 | 10309 | 4610 | 9269 | 9070 |
| Increase in Stocks | 262 | 704 | 1406 | 1119 | 703 | - | |
| Increase in Current Assets | 1030 | 1411 | 161 | - | 150 | - | |
| Reduction in Short Term Debt | 1092 | - | - | - | - | - | |
| Payment of Long Term Debt | 668 | 1284 | 1369 | 2665 | 2195 | 3889 | 4924 |
| TOTAL | 4937 | 8927 | 7516 | 13376 | 7961 | 13391 | |
| Increase/(Decrease) in Cash | 404 | (555) | (142) | 123 | 3196 | (2247) | |
| | 4341 | 8372 | 7374 | 13499 | 11157 | 11144 | |

Source: Philippe Laville, Mise en Oeuvre du Projet de Transports en Commun
1973-1979, October 1979.

4.19 Table 10 below shows the essential unit costs and revenue over the project period, for the aggregate SNT operations (bus services and TGM combined).

Table 10: SNT UNIT COSTS AND REVENUES
(millimes per passenger trip)

| | <u>1973</u> | <u>1975</u> | <u>1977</u> | <u>1978</u> | <u>1979</u> | <u>1980</u> | <u>Increase Over the 1973-80 period (%)</u> |
|-----------------------|-------------|-------------|-------------|-------------|-------------|-------------|---|
| Labor Costs | 27 | 32 | 40 | 42 | 43 | 47 | 74% |
| Total Costs | 54 | 69 | 79 | 90 | 94 | 96 | 78% |
| Total Revenue | 55 | 66 | 75 | 88 | 93 | 89 | 63% |
| Working Surplus | 8 | 8 | 8 | 13 | 15 | 10 | |
| Net Surplus/(Deficit) | 1 | (3) | (4) | (2) | (1) | (6.5) | |

Source: Philippe Laville, Mise en Oeuvre du Projet de Transports en Commun 1973-1979, October 1979, except for the 1980 column which was corrected on the basis of new patronage data obtained by the May 1981 supervision mission.

It shows that while total costs per passenger trip increased by 78% during this period, labor costs per passenger trip rose by 74%; this reflects the increasing burden of servicing debt and financing capital investment. At the same time, total revenue per passenger trip increased by only 63%, resulting in a serious increase in net deficit per passenger trip. Total revenue throughout this period increased by 181%, made up largely by a 74% growth in passenger trips and a 64% fare increase.

4.20 Balance Sheets for 1978 and 1979 (Table 11) 1/ show that debt:equity ratios are satisfactory—largely as a result of the injection of capital by the Government—, but there has been a narrowing of the working capital position. Sources and Applications of Funds Statements have already indicated a recourse to short term borrowing and non-payment of taxes; this concern is confirmed by a worsening of the working capital position: in 1978, there were net current liabilities of TD 2.05 million; in 1979, these had increased to as much as TD 3.6 million. This is, at best, a delicate financial situation.

1/ The figures, however, could not be reconciled with the Sources and Applications of Funds Statements (Table 9).

**Table 11: SNT BALANCE SHEETS
TD (000)**

| | 1978 | | 1979 | |
|--|---------------|----------------|---------------|----------------|
| | <u>Detail</u> | <u>Aggreg.</u> | <u>Detail</u> | <u>Aggreg.</u> |
| I - ASSETS | | | | |
| Initial expenses (net) | | 7028 | | 6665 |
| A - Fixed Assets | | | | |
| At cost | 34900 | | 39067 | |
| Depreciation | (12530) | | (14628) | |
| Subtotal | | 22370 | | 24439 |
| Loans due to SNT | | 1791 | | 1256 |
| <u>TOTAL</u> | | <u>31189</u> | | <u>32360</u> |
| B - Current Assets | | | | |
| Stocks and materials | 5548 | | 5924 | |
| Short term investments | 2682 | | 2628 | |
| Cash, Bank account | 2504 | | 1947 | |
| Subtotal | | 10734 | | 10499 |
| Deficit | | 524 | | 1104 |
| <u>Less Current Liabilities</u> | | | | |
| Short term loans (less than 1 year) | 4644 | | 5154 | |
| Taxes | 4112 | | 4825 | |
| Other short term debts | 4551 | | 5216 | |
| Subtotal | | (13307) | | (15195) |
| <u>TOTAL</u> | | <u>2049</u> | | <u>3592</u> |
| TOTAL ASSETS | | 29140 | | 28768 |
| ===== | | ===== | | ===== |
| II - FINANCED BY: | | | | |
| Capital Reserves | | 9074 | | 10541 |
| Provision for financing expenses | | 4905 | | 4322 |
| Long Term Loans | | 15161 | | 13905 |
| <u>TOTAL</u> | | <u>29140</u> | | <u>28768</u> |
| ===== | | ===== | | ===== |
| Debt:Equity Ratio | | 1:2.2 | | 1:1.7 |

Source: Philippe Laville, Mise en Oeuvre du Projet de Transports en Commun
1973-1979, October 1979.

Economic Evaluation - Bus Component

4.21 At the time of appraisal, investments in SNT bus services were analyzed in a 3-step sequence: first, it was estimated that investment in the Bir Kassa maintenance facility alone would not be economical; second, it was estimated that the combined fleet replacement and improvements in maintenance would have an internal rate-of-return (hereafter IRR) of 19%; third, when fleet expansion was added to the above program, the IRR became 29-30%. Benefits of the first two steps stemmed from cost savings for a fixed-demand case (equivalent to 1973 patronage); the third step brought an additional benefit--that of capturing trips that would otherwise have been made by car--which was estimated on the basis of average costs of travel by the two modes, as well as assumed occupancies and average trip lengths. Trips that would not have been made in the absence of fleet expansion, or would have been made on foot were not accounted for. In substance then, the justification of the third component rested on reduction in operating costs.

4.22 In the intervening years, the following changes--relative to the "with the project" scenario--have taken place:

- (i) construction of the Bir Kassa maintenance facility has suffered very significant delays (para. 3.10) and SNT has managed with old workshops in Bab Saadoun and Cherguia depot opened in 1974;
- (ii) SNT bought all of the 210 buses as planned in 1973 and at prices as estimated then, but it added another 367 buses to its fleet;
- (iii) the patronage exceeded all expectations, signifying the existence of a considerable latent demand for bus transport.

4.23 Actual events having developed in ways substantially different from those expected "with the project," a straightforward updating of the economic evaluation carried out during appraisal would be erroneous. As for doing a radically new evaluation of the actual case, serious methodological and data problems would be associated with identifying and quantifying a "without project" scenario. On the demand side, the missing key data include trip length distribution for SNT bus passengers and an assessment of the fraction of bus patrons who were transit captives as opposed to passengers which were prospective car travelers and/or pedestrians. On the supply side, the problem is in estimating what maintenance costs in the "without" case could have been--considering that appraisal estimates and expectations proved so different from what actually took place. Nonetheless, the following can be said:

- (i) the actual cost of the bus component came very close to estimates;
- (ii) maintenance and operating unit costs (if consistently measured) could only have decreased with the project--even if only slightly, at worst--in view of the number of controls introduced in all SNT activities; and

(iii) ridership in SNT buses has increased significantly more than expected, and therefore, the effective IRR might--at worst--not have reached the 29-30% mark, but should have come relatively close to such a value, for the most important benefits (as well as the most "profitable" return on investment) accrue as a result of economies achieved by the project diverting to public transport a number of trips that would have otherwise been made by private car. Since this benefit proved to be substantially larger than expected, the IRR could only reflect positively the greater than expected project impact, this partly tempered by a slight fall in other benefits which -- at any rate -- were secondary in magnitude.

4.24 As noted in para. 4.08 and shown in Table 4, unit maintenance costs have not only failed to decrease from their 1973 level (TD 2,273 per bus) as expected, but have actually doubled in real terms (TD 4,453 per bus in 1980)^{1/}. As for the average total operating costs (traffic, maintenance and administration), the AR does not provide any explicit value for SNT bus operations in 1973, but implies a unit cost of about TD 0.133 per bus/km. ^{2/}. This compares with actual operating costs ranging from TD 0.223 in 1976 to TD 0.241 in 1980 (all in 1973 TDs). Thus, contrary to expectations at the time of appraisal, operating costs for SNT buses would have nearly doubled compared to 1973 values, in spite of fleet replacements and expansion, and of some improvements in maintenance. This, of course, is little indicative of what would have happened in the absence of these very actions.

4.25 Three causes for this increase have been identified. First, as noted in para. 4.08, prices of tires and spare parts increased very sharply, and apparently, significantly above average inflation indices. Second, low productivity of the SNT maintenance personnel has been and still is a major problem of the company, but SNT cannot streamline its personnel at will -- as is the case in many other agencies in the country --. Finally, operating costs in the AR were derived from the SNT data produced prior to the introduction of a cost accounting system, whereas the 1976-1980 data were produced by the new system; since the TGM operating cost data show a similar tendency, the change in measurement system may very well be the main cause of substantial variations in unit costs.

4.26 On the positive side, Table 12 shows that, in the 1976-1980 period, SNT bus revenues always covered the corresponding operating costs as well as some capital costs. Furthermore, the sum of fare-box receipts and Government compensation for subsidized fares has been roughly equivalent to the sum of operating and capital expenditures for each year in this period. While these expenditures are accountant's rather than economist's costs, and while Government compensation can only be treated as a rough proxy for additional fare revenues that would have accrued in the absence of subsidized fares, the above numbers suggest that capital investments in the SNT's urban bus operations have been reasonable.

^{1/} Annual kilometrage per bus was roughly the same in 1973 and 1980.

^{2/} AR, Annex 16, page 7.

Table 12: COSTS AND REVENUES OF SNT URBAN BUS AND RAIL OPERATIONS

| | 1976 | | 1977 | | 1978 | | 1979 | | 1980 | |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | Bus | TGM | Bus | TGM | Bus | TGM | Bus | TGM | Bus | TGM |
| Direct operating costs <u>a/</u> | 7.11 | 0.63 | 8.74 | 1.05 | 10.76 | 1.24 | 11.59 | 1.42 | 13.01 | 1.4 |
| Total costs <u>b/</u> | 9.25 | 1.31 | 11.59 | 1.44 | 13.95 | 2.14 | 15.20 | 2.35 | 16.74 | 2.3 |
| Revenue (fares) <u>c/</u> | 7.44 | 1.12 | 9.47 | 1.12 | 11.97 | 1.56 | 13.74 | 1.81 | 14.04 | 1.8 |
| Compensation <u>d/</u> | 1.88 | 0.25 | 2.53 | | 2.17 | 0.11 | 2.22 | 0.12 | 2.49 | 0.1 |
| Total receipts <u>e/</u> | 9.32 | 1.37 | 13.12 | | 14.14 | 1.67 | 15.96 | 1.93 | 16.53 | 1.9 |
| Receipts/Total costs | 1.01 | 1.05 | 1.01 | | 1.01 | 0.78 | 1.05 | 0.82 | 0.99 | 0.8 |
| Passengers carried (millions) | 179.2 | 19.3 | 203.1 | 19.6 | 209.1 | 20.1 | 221.4 | 21.3 | 230.2 | 22.4 |
| Annual Vehicle Kilometerage (millions) | 25.1 | 2.54 | 29.1 | 2.81 | 31.9 | 2.80 | 32.9 | 3.30 | 33.1 | 3.2 |
| Unit operating cost (millimes/passenger) | 39.7 | 32.6 | 43.0 | 53.6 | 51.5 | 61.7 | 52.3 | 66.7 | 56.5 | 63.8 |
| Unit operating cost (millimes/veh-km) | 283.3 | 248.0 | 300.3 | 373.7 | 337.3 | 442.9 | 352.3 | 430.3 | 393.1 | 446.9 |
| Unit total cost (millimes/passenger) | 51.6 | 67.9 | 57.1 | 73.5 | 66.7 | 106.5 | 68.7 | 110.3 | 72.7 | 104.9 |
| Unit total cost (millimes/veh-km) | 368.5 | 515.7 | 398.3 | 512.5 | 437.3 | 764.3 | 462.0 | 712.1 | 505.7 | 734.4 |

- a/ Sum of running, maintenance and administrative costs in current TD million.
- b/ Sum of operating costs, depreciation, taxes and interest payments in current TD million.
- c/ In current TD million.
- d/ Paid by the Government for preferential fares (in current TD million)
- e/ Sum of revenue and compensation (in current TD million).

1 millime = 0.001 TD

Source: SNT Comptabilité Analytique

Economic Evaluation - TGM Component

4.27 At the time of appraisal, three rail and three bus alternatives were evaluated and compared for the TGM component (para. 2.15). An economic rate of return of 16-17% was estimated for the winning rail alternative over a "without" scenario based on abandonment of the TGM rail service and its replacement by bus services operating on city streets.

4.28 In retrospect, a different "without" scenario would have been more appropriate for economic assessment purposes. The reasons have to do with first, the realism of the scenario, and second, the nature of the methodology. As for the first reason, the AR suggests that the Government was not keen on "abandoning" the TGM, and therefore, it would be hardly justified that the related "without" scenario selected at the time of appraisal could be considered as an acceptable reference situation. As for the second reason, the methodology adopted then for economic evaluation would be fairly adequate for comparing marginally different alternatives (e.g., when alternatives differ in costs of supply, while level of service and demand effects are the same), but it is much less adequate when this is not true. In the case of this project, street buses and trains on exclusive right-of-way do not constitute effectively comparable alternatives; differences in level of service provided, corresponding differences in perception by passengers, and conversion of the abandoned right-of-way would have required that a more sophisticated evaluation procedure be adopted than available data could have permitted. Finally, the quoted IRR was overstated since it was computed on "last-but-worst" alternative, rather than on the "last surviving" alternative which would probably have been the alternative B (from Annex 6, page 13 of the AR), involving standard buses operating on converted TGM right-of-way.

4.29 For the purpose of this report, economic analysis of the TGM alternative was revised to reflect concerns of the preceding paragraph and actual costs of the project. For this exercise, alternative B from the AR was adopted for the "without the project" scenario; i.e., the TGM railway as it was reconstructed under this project was compared with a situation where the TGM right-of-way would have been converted into an exclusive busway and passenger service would have been provided using standard urban buses. For the "with the project" cash flow^{1/}, actual capital costs were used, while conversion costs as estimated in the AR were used for the "without the project" case. Operating costs were estimated on the basis of an analysis of actual cost accounts for the TGM railway and the SNT urban bus services from 1976 to 1980. Since the patronage data for the TGM were limited to annual totals, estimates of the fleet and schedule requirements for the bus alternative were based entirely on the details of the actual TGM schedule.

4.30 The key assumption in the analysis was that the bus line would have offered a similar level of service as the TGM, and therefore, would have attracted the same patronage; explicitly, this meant that the shadow bus line was designed to provide the same number of seats as the TGM at any time of the day. This also meant that the bus service would have to have somewhat greater

1/ Capital costs for the TGM include the costs of the extra 10 cars bought by SNT.

frequency and capacity, due to the relatively low ratio of seats to total space on SNT standard buses, while the TGM would retain some advantages in ride comfort and in-vehicle speed, due to shorter station dwell times. The estimated rate-of-return of the TGM railway over the "without TGM" (bus) alternative, computed on this basis came to 10%.

4.31 To test the sensitivity of the rate-of-return to the assumption on equal service, another set of calculations was run assuming that buses should provide the same flow of passenger spaces (rather than seats). This, of course, drastically reduced both the size of the required bus fleet and annual kilometrage. Under this assumption, the TGM railway still comes out with a positive rate of return, but it falls to about 3%.

4.32 The fall in the IRR from 16-17% during appraisal to 3-10% in the present revision is partly due to the different "without" alternatives selected, but stems much more from the near-doubling of prices for the TGM rolling stock (para. 3.04) while prices for buses — because of early contract negotiations — came to be close to those initially estimated.

4.33 In analyzing how successful the TGM project component was, one must, however, go beyond cost-centered confines, and look into its demand and fare aspects. According to Table 12, the TGM covers all of its direct operating costs from the fare box. Its total receipts, however, (fares plus Government compensation for subsidized fares) have fallen short of total (accounting) costs each year since reconstruction; the shortfall ranging from 32% in 1978 to 15% in 1980. Total (accounting) unit costs per passenger are significantly higher than for SNT bus operations. In view of a substantial fraction of TGM users belonging to upper social strata (the rest consisting of the industrial workers using Tunis - Le Kram section) unlike the great majority of SNT bus passengers, the true success of the TGM would be really tested if economic fares were charged to capture some of the consumer's surplus due to the TGM higher level of service compared to SNT bus operations. As it operates now, the TGM is technically successful and offers a good quality of service to some 22 million passengers per year, but it entails a substantial subsidy to upper income residents of the north-eastern corridor of Greater Tunis, who ride the TGM along with lower income residents and workers in the same area.

Organizational Improvements

4.34 The major contribution of the project to the SNT organization has been the use of technical assistance funds to introduce a cost accounting system, which has permitted detailed analyses of costs in relation to use of manpower and equipment, in operations and in maintenance; as well as detailed analyses of the relationship between costs and revenues. The review of bus operations which was launched in late 1979, and the subsequent improvement in bus fleet productivity were, to a large extent, made possible by the above system.

4.35 The SNT management has further demonstrated a concern for its organizational performance through a number of changes that they introduced

between September 1978 and August 1979. The two most significant changes introduced were:

- (i) the creation of a Directorate specifically responsible for procurement of spare parts (the principal reason for days lost to service); and
- (ii) the creation of a Budget Division in the Directorate of Finance.

4.36 The results of the reorganization, however, do not appear to be dramatic. The new Directorate of Supplies does not appear to have had a really noticeable effect on the SNT performance with regard to the supply of parts for vehicle maintenance. In practice, there are still errors in the movement of spare parts, and little improvement in clearing obsolete stocks. Within the organization, there are still long delays in processing orders. SNT also suffers from particular purchasing policies, whereby it is under obligation to purchase Tunisian products whenever possible, some of these products being of doubtful quality; an example frequently quoted is the batteries, the life of which -- when produced in Tunisia -- is in the region of seven months only.

4.37 In addition, SNT has difficulty with supplies of foreign spare parts; to minimize the cost sunk in parts, SNT would wish major manufacturers to keep an adequate supply of spare parts locally, and at the same time, not pass on to SNT the cost of maintaining such inventories. There are also problems with custom clearance and financing which often introduce several months delays in obtaining parts. SNT is therefore faced with the constant problem of balancing delays in the supply of spare parts and holding of such spare parts, against the price it has to pay to foreign manufacturers.

4.38 Establishing a Budget Division in the Finance Directorate should have helped improve financial control. Unfortunately, officers having an adequate understanding of financial management are still too few. The preparation of the 1980 Budget involved a two-stage process; first, measures were identified to reduce costs and increase receipts and to adapt the investment program. Second, following the above exercise, the investment program was effectively reduced, and bus services in the off-peak periods were curtailed, planned recruitment was reduced and economies in the TGM energy costs were sought.

4.39 The question of manpower productivity--especially in maintenance--remains among the weakest spots in SNT, casting a dark shadow on SNT requests to Government to cover its deficits. Formally, the Directorate of Administration is responsible for addressing such questions, but little effort appears to have been spent to address them effectively.

The Future of SNT

4.40 The 1970s have seen a substantial restructuring of the SNT's bus fleet and a complete reconstruction of the TGM, which allowed a major surge in latent demand for travel by public transport. The major events of the 1980s will be (i) the emergence of light rail transit (LRT) in Tunis, and (ii) the proposed splitting up of SNT into three separate companies.

4.41 Light Rail Project. The Tunisian Government contacted the Bank in 1976 in connection with the LRT idea, seeking both technical and financial assistance. In the course of project supervision, the Bank staff had been made aware of feasibility studies for the LRT and were rather sceptical about the prospect of another very large investment in urban transport so soon after that undertaken under the project. Another problem concerned the Government's commitment under the loan agreement, to consider any new major urban transport investment in reference to a transport policy framework that the Tunis District was to develop but took longer than expected. The Bank responded by advising caution, calling for more studies and suggesting that at best, its own role in this project could not go to financing foreign exchange needed for anything but infrastructure, since — in the Bank's opinion — financing rolling stock could be done through supplier's credits. This exchange was the Bank last involvement in the LRT project. The Government eventually decided to proceed on its own; in so doing, a marginal violation of agreements under the project (para. 2.23) was involved since invitations to tender for the LRT were issued in late 1978, shortly before SNT was to be freed of its obligation to consult the Bank on major investments.

4.42 The LTR will consist of a 30-km double track network stretching from the city center in three directions (north, south, and west/northwest). It will run on a surface, exclusive right-of-way, with intersections at grade. The total cost is estimated at TD 82 million (in 1981 terms), of which TD 51 million is for construction and purchase of rolling stock, TD 12 million for price adjustments and contingencies, and the balance for expropriations and relocation of utilities. Construction actually started in late 1980, with completion of the first phase expected in 1984, and the second phase in 1986-88. The rolling stock will cost TD 22 million and will be financed by a supplier (German-French) credit, while the Government will bear the full cost of infrastructure. Execution of the project was given to a special unit in SNT staffed with a dozen engineers and administrative personnel; the unit will shortly convert into an engineering consulting group where the SNT will only be one of six shareholders.

4.43 While the Government has proceeded at considerable speed to design and implement LRT plans, many important questions related to bringing this system into operation and to the impact on other aspects of transport in Tunis have yet to be dealt with. For example, such questions as LRT mode of operation, schedules, fares, personnel, recruitment and training, etc. have not yet been addressed. Furthermore, no work has been done on the impact of the LRT system on street traffic, during construction and later when in operation. Since the LRT will occupy a number of streets in an already sparse downtown arterial network, it will contribute a serious traffic restraint that will require considerable changes in the traffic circulation and parking plans. Finally, no work has yet started on restructuring the bus network to remove duplications, provide bus feeders to LRT lines and arrange for bus/LRT transfer points. Impact of the LRT on the SNT urban bus operations will go much beyond the bus route network; it will include the problem of surplus buses and surplus personnel, all this at a time when SNT is scheduled to be split into separate organizations.

4.44 Dismantling of SNT. The September 1981 transport mission learned in Tunis that the Government had imminent plans to split the SNT into three separate companies:

- (a) a bus company to provide urban transport in Tunis;
- (b) a company to operate the TGM and the future LRT system; and
- (c) an inter-urban bus company.

4.45 Those plans presumably aim at improving urban transport management, the SNT having grown too large. The underlying reason appears to be political: the Government is attempting to break up the power of the 6,000 strong union of SNT employees, which has proved its ability to paralyze economic life in Tunis as was done in January 1978 and in the six-day strike in March 1981. SNT may have grown too large and difficult to manage, and therefore, the division into smaller companies may result in improved operations, but splitting SNT will call for the creation of an institution to coordinate the workings of the new companies so that they would operate-- with respect to routes, fares, transfers, etc.-- as an integrated urban transport system. This is especially crucial because of the changes required by the introduction of the LRT. This issue will loom large in the forthcoming discussions on the urban transport sector between Bank staff and the Government.

5. EVALUATION OF PERFORMANCE - TRAFFIC MANAGEMENT COMPONENT

5.01 The objective of this project component was to support improvements in SNT operations by financing a priority program of traffic engineering measures involving redesign of intersections, traffic signals, and provision of pedestrian underpasses at some key intersections. In addition, technical assistance was to be provided to the Municipality to establish a Traffic Management Unit with capacity to monitor and analyze traffic flows and adjust operations as needed. In the course of project execution, a much more ambitious program of traffic improvements was developed, featuring a sophisticated area traffic control system, which put difficult demands on the Traffic Management Unit in regards to its ability to maintain and run the traffic system, and simultaneously initiate and implement further improvements.

Operations

5.02 In physical terms, the project component has been quite successful. A traffic control system covering a total of 44 intersections, is operational. Another six intersections have been signalized, but these operate independently of the main system. Eleven intersections have been reconstructed and channelized. A new circulation plan has been implemented. About 5 km. of bus lanes were introduced and there are bus priority signals at 9 intersections. More than 20 streets were reserved for pedestrians and 3 pedestrians areas were improved. Directional signing on main roads has been

implemented, and general traffic signing has been improved. Since the cost of the planned three pedestrian underpasses proved excessive, this part of the project component was dropped. Instead special pedestrian signals and protections were installed at the three locations.

5.03 Overall, the investment has resulted in improved performance of the traffic system. While the statistics necessary for making with-and-without comparisons do not exist (para 5.10), there is some indirect evidence of success. According to officials interviewed, and some field observations, inner city congestion has not worsened since 1975, while automobile registrations in Tunis have doubled. Consultants to the Municipality have estimated that capacity of key downtown intersections has been increased by 20-30% and that, without the improvements executed under the project, the congestion now experienced between 6:00 and 7:00 p.m. would be prevalent over a 3-4 hour evening peak; they also claim that vehicular speeds have increased, but there are no data to support these claims.

5.04 The area traffic control system represents a very substantial improvement in the capability of managing traffic in Tunis. While earlier attempts in traffic engineering dealt with individual locations and often solved a problem by moving it elsewhere, the area traffic control tailored to react to on-line flow measurements allows systematic and comprehensive management of traffic flows. At the moment, the system is under-utilized, since only two programs are operational, out of the sixteen that the hardware can handle. Additional programs are being developed by the consultants. The equipment is now operated by local staff trained on-the-job by the supplier and the consultants. The maintenance of equipment is something of a weak spot, however; the supplier has been responsible for the maintenance during the two years that followed installation. A contract was signed with the supplier's local partner, whereby he would be responsible for the next three years for all maintenance and repairs for major breakdowns. Apparently, there is some dissatisfaction with the arrangement, since the Municipality is considering calling for new bids.

5.05 Bus priority measures have not been as effective as expected. The main problem is that automobile drivers do not respect the reserved bus lanes, and enforcement has weakened. With the exception of a contra-flow bus lane along Rue Bab Saadoun and Avenue Ali Belhaouane which has yet to be implemented due to the resistance by merchants, all others are with-flow reserved bus lanes that are easy to violate. Furthermore, at intersections equipped with bus priority signals, lack of enforcement allows automobile traffic to take illegal advantage of early green lights meant for buses.

5.06 Parking is another area where progress has been slim. Only a limited fraction of the Municipality's plans to introduce parking meters and to provide off-street parking have been implemented, and experiments are still underway to measure parking durations and to test reaction of drivers to different parking fees. Parking is essentially free, but scarce in the downtown area and enforcement is lacking; the result is indiscriminate parking in many side streets and on sidewalks to the detriment of traffic and pedestrian flows. The problem is two-fold: on the one hand, the Municipality

has failed to implement a comprehensive parking policy; on the other, the police is faltering in enforcement. Under the project, the 200-strong traffic police squad was provided with 10 tow-trucks and 120 vehicle immobilizers to keep the main corridors free of parked cars. Five tow-trucks only were operational, and the police were not trained as necessary; for example, some vehicles were immobilized by the police in reserved bus lanes instead of being towed away.

5.07 Overall, it appears that the key to continued and further traffic improvements in Tunis is in the hands of traffic police. Judging from casual observation, the compliance of drivers and pedestrians with traffic laws is very low. The police, apparently, are only concerned with getting the traffic moving, to the point of waving vehicles through red lights, or standing in complete indifference to obvious violations--; this is of course threatening to undo a good deal of the improvement achieved by the area traffic control system and other physical improvements.

Traffic Management Unit

5.08 The Traffic Management Unit of the Tunis Municipality has been both the vehicle and the product of traffic improvements described above. The Unit has been very successful in forming and training a group of local technicians to operate the traffic control system and in setting up a depot for maintaining signs, road markings, automatic traffic counters, etc. While the effectiveness of the traffic control group is dependent of the operation of the computer hardware maintained under contract (para. 5.04), the depot is constrained by a lack of transport and communications equipment and of maintenance tools.

5.09 The Unit's most serious problem is a lack of senior staff trained in traffic engineering to manage and plan the work. Since the departure of an expatriate traffic engineer in 1980, the most senior person on the Unit has two years of experience and no formal training in this field; in fact, there is not a single person in the Unit who is a traffic engineer by training. Furthermore, most supervisory posts in the organizational structure are not even filled.

5.10 The experience with a Bank request for traffic statistics has been indicative of this shortage of trained personnel. A list of performance indicators (bus travel speeds, intersections delays, travel times, capacities, accident rates, major flows, etc.) was given to the Unit by a Bank mission in late 1979. The results received in May 1980 by the next mission consisted only of tables with operating characteristics of reserved bus lanes, including data on bus speeds drawn from an experiment impaired by a faulty design prepared by SNT. The project has thus failed "to establish methods for systematic observation and analysis of traffic patterns", by not including funds earmarked for training in traffic engineering.

5.11 The Municipality will soon have to tackle several major traffic-related tasks. The most critical of these is the large-scale effort to rehabilitate road surfaces on the city's main streets. The next five-year

plan for traffic improvements is due soon, which should include actions related to public transport services, pedestrian safety, and traffic management improvements in low-income residential areas. Last but not least will be the adaptation to the LRT, first during its construction (with redistribution of traffic away from the closed streets) and later when the LRT starts operations with its numerous interferences with street traffic. For the Unit to respond to these challenges, a considerable amount of technical assistance and training will be necessary.

6. EVALUATION OF PERFORMANCE - TUNIS DISTRICT COMPONENT

6.01 The Tunis District was established to be the capital region's planning and development control agency, and to introduce integrated planning/programming/budgeting at the regional level. With the help of a technical assistance team, the District was launched with a three-year work program consistent with the role expected from such an agency. Initially, there were delays in building up a competent staff because of the poor salary scale and because of the novel character of the agency. However, the first Director General appointed to the District was effective in obtaining special allowances for his staff and was able to negotiate substantial powers for his agency. It was then possible to lay down the basis for sounder development and to begin influencing decision-making in the capital region. In fact, the second largest cities in the country (Sfax and Sousse) requested that similar agencies be set up for their urban area, and began consulting the District on problems and issues affecting their own development.

6.02 The District carried out sector studies on housing, transport, public finance and industrial development. It produced a Regional Structure Plan; a plan for preserving agricultural land and open spaces, a study on levels of service and operating costs of public and social facilities, a housing feasibility study; a study on development potential of the banks of Lake Tunis, a prospective land use plan for the Municipality of Tunis, and a study of solid waste collection and disposal in the region. At the same time, the District was involved in a great variety of issues from high-rise parking lots, a circulation plan, major drainage and sewerage works, development of the eastern edge of the city center, renewal of the Petite Sicile area, and the location of housing programs and industrial parks. Never before was any urban area in Tunisia the object of such systematic and consistent operational work as regards its overall development.

6.03 To a large extent, agencies like the District depend on the personality and effectiveness of their top management. When the Director General was changed, the level of effectiveness of the District fell although technical work remained of good quality. Nonetheless, the District has had an unquestionably positive impact as evidenced inter alia by:

- (i) the change in national housing policy and the adoption of upgrading and sites-and-services programs in Five-Year Plans;

- (ii) the shelter and solid waste components of the Bank financed Tunisia Second Urban Development Project (Loan 1705 TUN), which were prepared by the District;
- (iii) the gradual re-distributing of growth in the capital region, with more housing programs in the southern areas and more job-creating investment in the northern and western areas;
- (iv) the initiation of programs to assist--financially and technically--small-scale business; and
- (v) the launching of regular national seminars on municipal finance and management.

6.04 At the same time, the Tunis District has fallen short of the expectations that had gradually been built up among decision-makers as the District was making its mark increasingly felt. In recent years, it has not maintained the effectiveness of its first five years of operations, mostly because of the weakening of its leadership; however, the District also suffered from a relative momentary loss of momentum in the very ministries with which it related most, i.e. the Ministry of Interior and the Ministry of Planning.

6.05 In February 1976, a tri-partite review of progress achieved by the District was carried out by the Government, the UNDP and the Bank, in consultation with Tunis District officials. Its conclusions were essentially positive. It was found that the District had achieved a fair level of technical sophistication, and had been responsible for training a number of professional staff. It was also acknowledged that problems of coordination among other agencies remained pre-dominant and greatly conditioned the level of efficiency of the District. The Tunis District had achieved a great deal, both from a policy and project point of view, as described above.

6.06 On balance, and especially compared to similar experiments elsewhere, the Tunis District has proven a success considering the cost and time allocated to establishing it. However, its leadership has changed again and there remains a question mark over whether the Tunis District will be able to continue being an effective tool for regional management.

7. EVALUATION OF PERFORMANCE - SFAX COMPONENT

7.01 The project component in Sfax was executed satisfactorily. Studies were carried out according to plans and produced the types of results expected. At the request of local authorities, the scope of these studies were broadened to include the design of a Master Plan for Greater Sfax for which the Government provided supplementary financing. This development did not hamper the implementation of the original studies; on the contrary, it provided them with a proper framework, allowed issues to be better identified and perceived, and permitted solution to be more readily adopted.

7.02 Eventually, studies on Sfax carried out under the project resulted in important sites and services and upgrading components in the Bank financed Tunisia Second Urban Development Project (Loan 1705 TUN).

8. EVALUATION OF PERFORMANCE - CONSULTANTS AND SUPPLIERS

8.01 Under the project, all suppliers were contracted by executing agencies; so were most consultants with the exception of the consultant to the Tunis District whose services were financed in part under a UNDP project for which the Bank was executing agency.

8.02 As regards the latter consultants, the Bank was responsible for the whole selection and negotiation process. Eventually, a multi-national group was selected which overall gave satisfaction. However, the experience has shown clearly the inherent difficulties in appointing non-native speakers to work closely with local counterparts. A number of such professionals on the team were far less effective and integrated than would have been desirable; as a result, turnover was substantial, irritation on the part of Tunisia officials and professionals followed, and contract partial re-negotiations became necessary.

8.03 As regards other consultants and suppliers, the Bank was consulted on all selections and was satisfied with the decisions recommended by executing agencies. No special dissatisfaction was voiced by these. Occasionally, Bank missions were asked to comment on particular performances; in most cases, Bank comments were taken into account by executing agencies who dealt directly with consultants or suppliers to obtain the improvements sought.

9. EVALUATION OF BANK PERFORMANCE

9.01 Consultations with Bank counterparts on this project have revealed that the Bank assistance was highly valued on a number of subjects, but also perceived as falling short of expectations on a number of others. Bank assistance was particularly appreciated on a variety of questions ranging from questions that usually call for top Government decisions, down to detailed, technical ones. Apparently, Bank support was found decisive on questions such as (i) making the Tunis District a reality, (ii) obtaining from the Government for the benefit of SNT, financial compensation for preferential/social tariffs and agreement to tariff increases, (iii) helping in the search of complementary financing for SNT, and (iv) arguing in favor of substantial housing policy changes. Similarly, Bank regular supervision was found most helpful in maintaining exchanges of views, identifying feasible solutions, and in general terms, broadening the scope of concern, diversifying frameworks of reference and deepening mutual understanding.

9.02 The Bank, however, was criticized for not maintaining a sufficient continuity in its supervisory staff, not allowing more frequent and greater in-depth collaboration, and not favoring steadier involvement of Bank staff in

collaborative work with and among local agencies. Besides the common sensitivity to Bank procedures and control-- frequently perceived as nit-picking and lack of confidence--, Bank counterparts had also the feeling that, beyond the critical starting plan, the Bank soon re-allocated its resources to new up-coming business to the detriment of what had been started, while keeping up its demands and/or expectations vis-a-vis the Borrower as in the earlier phase. Finally, the Bank was perceived as little inclined to diversify its range of interventions -- occasionally, in some new areas-- because of the possible difficulty in developing an acceptable economic justification, or because of pre-determined sectoral allocations, or else because of the longer time horizon involved in recognizing the benefits expected from the project envisaged.

10. CONCLUSION

10.01 Performance under the Tunis District Urban Planning and Public Transport Project shows substantially different levels of achievement from one project component to the next, as well as within the same component from one sub-element to the next. In fact, one could easily refer to achievement beyond the expected in some places and to under-achievement in others. If any one pattern could be somewhat clearly identified, it could be that, on narrow indicators the performance was less, while on more abstract or fundamental criteria the performance was substantially better than expected--although of uneven significance for the long term--.

10.02 The Tunis District was not fully successful in becoming the capital region's all powerful planning agency; but it was decisively influential on policies and programs related to such essential sectors as low income housing, small scale enterprises, solid waste management and spatial pattern of development of Greater Tunis. It was hoped that SNT, the public transport company, would be able to reach--in its traffic, maintenance, administrative and financial operations, a level of efficiency close to that of comparable European companies; but SNT operates with a labor force and within an economic/political environment that preclude certain levels of consistency and commitment. Nonetheless, SNT was able to expand its patronage beyond expectations, to meet targets as concerns the level and reliability of service, and to improve substantially the quality of its cost control. The Government did not compensate SNT for social tariffs as consistently and fully as expected; however, SNT was able to obtain the Government's endorsement for building a Light Rail Transit (LRT) system--which constitutes a remarkable decision in favor of public transport and to restrain the use of the private car--, and a commitment to take up major investment costs related to the LRT.

10.03 The Municipality of Tunis could have been more efficient in helping public transport--especially as regards the operation of reserved bus lanes--, and in monitoring the effect of its traffic improvement programs. But the Municipality eventually launched a program significantly larger than planned-- five times more intersections were redesigned and equipped, and ten times more streets were closed to traffic and turned to pedestrian exclusive use--; and that expansion was highly beneficial, even if at the cost of lesser monitoring and less refined management.

10.04 The Tunis District component has also demonstrated that (i) delicate policy issues, eg. housing, could be addressed and resolved even through hardly established institutions, eg. the Tunis District; (ii) new concerns, eg. solid waste, could be raised and dealt with; and (iii) streams of projects related to these issues and concerned could be initiated. However, the project has also shown that this could be achieved inasmuch as the Bank was able to maintain sufficient continuity, demonstrate understanding of local conditions and be as much of a partner in new endeavors as can be reasonably expected.

**TUNISIA - TUNIS DISTRICT URBAN PLANNING
AND PUBLIC TRANSPORT PROJECT**
(LDRN 937/CREDIT 432-TUN)

Table 1: FORECASTED AND ACTUAL COSTS^{1/}

| Project Part | APPRAISAL FORECAST 2/ | | | | | | ACTUAL COSTS | | | | | | Cost Differential | | |
|--|-----------------------|----------------|-----------------|----------------|-----------------|-----------------|----------------|--------------|-----------------|----------------|----------------|-----------------|-------------------|---------|------|
| | TD(000) | | | US\$(000) 3/ | | | TD(000) | | | US\$(000) 4/ | | | TD | US\$ | |
| | Local | Foreign | Total | Local | Foreign | Total | Local | Foreign | Total | Local | Foreign | Total | | | |
| PUBLIC TRANSPORT (SVT) | <u>3,343.0</u> | <u>7,525.0</u> | <u>10,868.0</u> | <u>7,611.0</u> | <u>17,232.0</u> | <u>24,843.0</u> | n.a. | n.a. | <u>19,286.4</u> | n.a. | n.a. | <u>45,919.9</u> | +77 | +85 | |
| A. 210 buses and spare parts | 2,415.0 | 2,505.3 | 4,920.3 | 5,483.4 | 5,693.4 | 11,176.8 | 1,427.2 | 3,380.4 | 4,807.6 | 3,398.1 | 8,048.6 | 11,446.7 | -2 | +2 | |
| B. Bus maintenance depot | 658.6 | 912.8 | 1,571.4 | 1,513.1 | 2,097.7 | 3,610.8 | 1,520.0 | 2,100.0 | 3,620.0 | 5/ | n.a. | n.a. | 8,619.0 | 5/ +130 | +139 |
| C. Rehabilitation of TGM suburban railway service | 162.2 | 3,891.9 | 4,054.1 | 368.8 | 8,946.9 | 9,315.7 | n.a. | n.a. | 10,550.2 | n.a. | n.a. | 25,071.9 | +160 | +169 | |
| D. Technical and managerial assistance | 107.2 | 215.0 | 322.2 | 245.7 | 494.0 | 739.7 | n.a. | n.a. | 328.6 | n.a. | n.a. | 782.3 | +2 | +6 | |
| TRAFFIC IMPROVEMENTS | | | | | | | | | | | | | | | |
| Municipality of Tunis | <u>435.0</u> | <u>331.0</u> | <u>766.0</u> | <u>1,000.0</u> | <u>762.0</u> | <u>1,762.0</u> | <u>2,063.7</u> | <u>177.5</u> | <u>2,241.2</u> | <u>4,913.6</u> | <u>422.6</u> | <u>5,336.2</u> | +193 | +203 | |
| E. Technical assistance in traffic engineering | 30.7 | 51.8 | 82.5 | 73.7 | 116.7 | 190.4 | 240.3 | 47.9 | 288.2 | 72.2 | 114.0 | 686.2 | +249 | +260 | |
| F. Traffic lights and civil works at intersections | 404.3 | 279.2 | 683.5 | 926.3 | 645.3 | 1,571.6 | 1,823.4 | 129.6 | 1,953.0 | 4,341.4 | 308.6 | 4,650.0 | +186 | +196 | |
| TUNIS DISTRICT | <u>151.0</u> | <u>586.0</u> | <u>737.0</u> | <u>348.0</u> | <u>1,347.0</u> | <u>1,695.0</u> | n.a. | n.a. | <u>728.9</u> | <u>371.0</u> | <u>1,324.0</u> | <u>1,695.0</u> | -1 | 0 | |
| G. Technical assistance for planning and program | 151.0 | 586.0 | 737.0 | 348.0 | 1,347.0 | 1,695.0 | n.a. | n.a. | 728.9 | 371.0 | 1,324.0 | 1,695.0 | | | |
| SFAX URBAN STUDY | <u>56.0</u> | <u>83.0</u> | <u>139.0</u> | <u>130.0</u> | <u>189.0</u> | <u>319.0</u> | n.a. | n.a. | <u>199.1</u> | <u>133.2</u> | <u>340.8</u> | <u>474.0</u> | +43 | +49 | |
| H. Technical assistance | 56.0 | 83.0 | 139.0 | 130.0 | 189.0 | 319.0 | n.a. | n.a. | 199.1 | 133.2 | 340.8 | 474.0 | | | |
| TOTAL | <u>3,985.0</u> | <u>8,525.0</u> | <u>12,510.0</u> | <u>9,089.0</u> | <u>19,530.0</u> | <u>28,619.0</u> | n.a. | n.a. | <u>22,455.6</u> | n.a. | n.a. | <u>53,425.1</u> | +80 | +87 | |

Notes: 1/ As of June 30, 1981
2/ Including contingencies
3/ Exchange rate: US\$ = TD 0.44
4/ Exchange rate: US\$ = TD 0.42
5/ Estimated amount.

**TUNISIA - TUNIS DISTRICT URBAN PLANNING
AND PUBLIC TRANSPORT PROJECT
(LOAN 937/CREDIT 432-TUN)**

**Table 1a: FINANCIAL PROGRAM
(Forecasts and Actuals)**

| Project Part | GOVERNMENT PARTICIPATION | | | | BANK-IDA FINANCING | | | | OTHER FINANCING | | | |
|---|--------------------------|----------------|----------------------|-----------------|--------------------|-----------------|----------------------|-----------------|--------------------|-----------------|----------------------|-----------------|
| | Appraisal Forecast | | Actual Participation | | Appraisal Forecast | | Actual Participation | | Appraisal Forecast | | Actual Participation | |
| | TD(000) | US\$(000) | TD(000) | US\$(000)1/ | TD(000) | US\$(000) | TD(000)3/ | US\$(000) | TD(000) | US\$(000) | TD(000) | US\$(000) |
| PUBLIC TRANSPORT (SNT) | <u>937.0</u> | <u>2,154.0</u> | <u>7,171.8</u> | <u>17,075.5</u> | <u>7,220.4</u> | <u>16,552.0</u> | <u>6,951.8</u> | <u>16,552.0</u> | <u>2,705.0</u> 5/ | <u>6,137.0</u> | <u>5,162.8</u> 6/ | <u>12,292.4</u> |
| A. 210 buses and spare parts | | | 1,652.3 | 3,934.0 | 2,149.3 | 4,927.0 | 2,363.3 | 5,627.0 | | | 792.0 | 1,885.7 8/ |
| B. Bus maintenance depot | | | 3,231.8 7/ | 7,694.6 | 4,854.3 | { | 388.2 | 924.4 | | | | |
| C. Rehabilitation of TGM | | | 2,085.1 | 4,964.5 | | | 4,074.3 | 9,700.7 | | | 4,370.8 | 10,406.7 |
| D. Technical assistance | | | 202.6 | 482.4 | 216.8 | 497.0 | 126.0 | 299.0 | | | | |
| TRAFFIC IMPROVEMENTS (Municipality of Tunis) | <u>435.0</u> | <u>1,000.0</u> | <u>2,063.7</u> | <u>4,913.6</u> | <u>332.4</u> | <u>762.0</u> | <u>177.5</u> | <u>422.6</u> | | | | |
| E. Technical assistance | | | | | 49.7 | 114.0 | 47.9 | 114.0 | | | | |
| F. Traffic lights & civil works | | | | | 282.7 | 648.0 | 129.6 | 308.6 | | | | |
| TUNIS DISTRICT | <u>151.0</u> | <u>348.0</u> | <u>276.9</u> | <u>659.2</u> | <u>216.8</u> | <u>497.0</u> | <u>78.0</u> | <u>185.8</u> | <u>374.0</u> | <u>850.0</u> 9/ | <u>357.0</u> 10/ | <u>850.0</u> 9/ |
| G. Technical assistance | | | | | | | | | | | | |
| SFAX URBAN STUDY | <u>56.0</u> | <u>130.0</u> | | | <u>82.4</u> | <u>189.0</u> | <u>199.1</u> | <u>474.0</u> | | | | |
| H. Technical assistance | | | | | | | | | | | | |
| TOTAL | <u>1,579.0</u> | <u>3,632.0</u> | <u>9,512.4</u> | <u>22,648.3</u> | <u>7,852.0</u> | <u>18,000.0</u> | <u>7,406.7</u> | <u>17,634.4</u> | <u>3,079.0</u> | <u>6,987.0</u> | <u>5,519.8</u> | <u>13,142.4</u> |

Notes: 1/ Obtained from previous column using average exchange rate US\$ = TD 0.42
2/ Including contingencies
3/ Obtained from succeeding column using average exchange rate US\$ = TD 0.42
4/ As of June 30, 1981
5/ Tunisian Bank's participation
6/ Abu Dhabi Fund
7/ Estimate as of May 1, 1981
8/ Same as 1/
9/ UNDP contribution
10/ Same as 3/

**TUNISIA - TUNIS DISTRICT URBAN PLANNING
AND PUBLIC TRANSPORT PROJECT
(C.A. 25770.0 TD'000.0)**

**Traffic Improvement Component
(Details of Revisions)**

| <u>Item</u> | <u>Appraisal</u> | | <u>SETEC (1977)</u> | | <u>Actual</u> | |
|---------------------------|----------------------------|------------------------|----------------------------|------------------------|----------------------------|------------------------|
| | <u>Number of items</u> | <u>Cost TD'000</u> | <u>Number of items</u> | <u>Cost TD'000</u> | <u>Number of items</u> | <u>Cost TD'000</u> |
| Intersection Improvements | 6 | 68.5 ^{1/} | 14 | 175.0 | 11 | 520.0 |
| Traffic Signals | 15 | 67.5 | 15 | 180.0 | 44+6 ^{2/} | 1,260.0 |
| Pedestrian Underpasses | 5 | 485.0 | 3 | 187.0 | - | - |
| Direction Signs | - | - | - | 8.0 | - | 8.0 |
| Rue lanes | - | - | - | 23.7 | (marginal) | n.a. |
| Pedestrian Streets | - | - | 6 | 78.9 | 22 | 165.0 |
| General Signs | - | - | - | 6.0 | (marginal) | n.a. |
| Technical Assistance | - | 75.0 | - | - | - | 288.2 |
| Subtotal | | 696.0 | | 658.6 | | 2,241.2 |
| Contingencies | | 70 (10%) | | 98.8 (15%) | | - |
| TOTAL | | 766.0 | | 757.4 | | 2,241.2 |

1/ Typing error in Appraisal Report corrected

2/ Forty four intersections included in the area traffic control system, plus six independent signalized intersections.

TUNISIA - TUNIS DISTRICT URBAN PLANNING
AND PUBLIC TRANSPORT PROJECT
 (Loan 937/Credit 432-TUN)

Schedule of Disbursements
 US\$(000 millions)

| <u>IBRD Fiscal Year and Quarter</u> | <u>Disbursements During Quarters</u> | | <u>Cumulative Disbursements</u> | |
|---|--------------------------------------|-----------------------------|---------------------------------|---------------|
| | <u>Appraisal</u> | <u>Actual ^{1/}</u> | <u>Appraisal</u> | <u>Actual</u> |
| <u>1973-1974</u> | | | | |
| Dec. 31, 1973 | 0.1 | - | 0.1 | - |
| March 31, 1974 | 0.7 | - | 0.8 | - |
| June 30, 1974 | 2.3 | - | 3.1 | - |
| <u>1974-1975</u> | | | | |
| Sept. 30, 1974 | 2.8 | - | 5.9 | - |
| Dec. 31, 1974 | 1.9 | 1.1 | 7.8 | 1.1 |
| March 31, 1975 | 2.2 | 0.9 | 10.0 | 2.0 |
| June 30, 1975 | 3.0 | 2.1 | 13.0 | 4.0 |
| <u>1975-1976</u> | | | | |
| Sept. 30, 1975 | 2.4 | 3.4 | 15.4 | 7.4 |
| Dec. 31, 1975 | 1.0 | 2.6 | 15.4 | 10.0 |
| March 31, 1976 | 0.8 | 0.4 | 17.2 | 10.4 |
| June 30, 1976 | 0.8 | 0.2 | 18.0 | 10.6 |
| <u>1976-1977</u> | | | | |
| Sept. 30, 1976 | - | 0.1 | - | 10.8 |
| Dec. 31, 1976 | - | 1.2 | - | 11.9 |
| March 31, 1977 | - | 0.3 | - | 12.2 |
| June 30, 1977 | - | 0.5 | - | 12.7 |
| <u>1977-1978</u> | | | | |
| Sept. 30, 1977 | - | 1.3 | - | 14.0 |
| Dec. 31, 1977 | - | 1.6 | - | 15.7 |
| March 31, 1978 | - | 0.2 | - | 15.9 |
| June 30, 1978 | - | - | - | 15.9 |
| <u>1978-1979</u> | | | | |
| Sept. 30, 1978 | - | - | - | 15.9 |
| Dec. 31, 1978 | - | 0.3 | - | 16.1 |
| March 31, 1979 | - | - | - | 16.2 |
| June 30, 1979 | - | - | - | 16.2 |
| <u>1979-1980</u> | | | | |
| Sept. 30, 1979 | - | - | - | 16.2 |
| Dec. 31, 1979 | - | 0.3 | - | 16.5 |
| March 31, 1980 | - | - | - | 16.5 |
| June 30, 1980 | - | - | - | 16.5 |
| <u>1980-1981</u> | | | | |
| Sept. 30, 1980 | - | - | - | 16.5 |
| Dec. 31, 1980 | - | 0.1 | - | 16.6 |
| March 31, 1981 | - | - | - | 16.6 |
| June 30, 1981 | - | 1.1 | - | 17.6 |
| <u>1981-1982</u> | | | | |
| Sept. 30, 1981 | - | - | - | 17.6 |

^{1/} Cumulative sum of this column slightly different from actual cumulative disbursements due to rounding.

TUNISIA - TUNIS DISTRICT URBAN PLANNING
AND PUBLIC TRANSPORT PROJECT
(LOAN 937/CREDIT 432-TUN)

Summary of Compliance with
Loan and Project Agreements
for Traffic Improvements and SNT Components of the Project

| <u>Agreement/Covenant</u> | <u>Compliance</u> |
|--|-----------------------------------|
| A. <u>Loan Agreement</u> | |
| 1. Tunis Municipality, to employ traffic engineering consultant | Yes |
| 2. Government, To agree on and implement | |
| (i) a program of traffic improvements on the basis of traffic consultants' work. | Yes |
| (ii) twenty months after Effective Date, to adopt and implement measures on the basis of special policy studies by Tunis District. | No |
| (iii) not to undertake any new arterial highway improvements without consult- ation with Bank in the light of Tunis District policy work. | No |
| (iv) to establish a high-level Technical Coordinating Committee to help Tunis District. | Yes |
| (v) to compensate SNT for concessionary tariffs in each fiscal year. | Yes |
| (vi) to allow SNT to raise tariffs and, if necessary, provide additional grants to make up the difference between SNT's operating revenue and operating expenses plus debt service in excess of depreciation. | Yes; in large part (para 4.17) |
| (vii) payments under 2(vi) above to be quarterly, calculated on the basis of performance targets (see No. 3(viii) below) and cash needs of SNT. | No (para 4.17) |

Agreement/Covenant

Compliance

B. SNT Project Agreement

3. SNT

- | | | |
|--------|--|--|
| (i) | to employ engineering consultants to help with specifications, bidding documents and bid evaluation. | Yes |
| (ii) | to keep its staffing under continuous review, hiring new staff only if managerial efficiency or the project warrants it. | Yes; within the limitation of socio/political pressures |
| (iii) | to employ management consultants and bus operations/maintenance consultants | Yes |
| (iv) | to employ railway consultants | Yes |
| (v) | not to undertake any major new project until end 1978 without consultation with Bank (except for 110 buses between 1976-78) | Yes; to a large extent. (However, studies on mass transit were started) |
| (vi) | to submit by late 1975, technical/economic justification for 1976-80 urban operations investment program. | No |
| (vii) | should authorize by end 1973 its Directeur-General to sign contracts up to TD 100,000 without approval of SNT Board of Directors. | Yes |
| (viii) | by April 30, 1974, to submit a system of operating and financial performance targets. | No; Government was reluctant because of link with obligation to compensate SNT for low tariffs |
| (ix) | to report every six months on results relative to above targets plus annual review with Bank and Tunis District. | No; see above |
| (x) | accounts to be audited annually by independent auditors and results submitted to Bank no later than six months after end of each year. | For two years, yes; then not regularly and eventually no more |

| <u>Agreement/Covenant</u> | <u>Compliance</u> |
|---|--|
| (xi) to employ consultant in management and cost accounting. | Yes |
| (xii) to increase urban operations tariffs by at least 15% by June 30, 1975. | Yes |
| (xiii) to insure that its operating income covers operating expenses plus debt service in excess of depreciation for all three services until end 1974; thereafter, SNT urban and inter-urban operations to fulfill same condition, but separately. | No; since Government did not authorize all tariff increases that would have been necessary |
| (xix) to consult with Bank on any debt for inter-urban operations exceeding TD 250,000. | No |