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STAFF APPRAISAL REPORT

EGYPT

GREATER CAIRO URBAN DEVELOPMENT PROJECT

May 14, 1982

EMENA/Urban Projects Division

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## CURRENCY EQUIVALENTS

<u>Official Foreign Exchange Rate</u>	
1 Egyptian Pound (LE)	= US\$1.43
1 US Dollar (\$)	= LE 0.70

<u>Rate for Commercial Bank Transactions</u>	
1 Egyptian Pound (LE)	= US\$1.20
1 US Dollar (\$)	= LE 0.84

## MEASURES AND EQUIVALENTS

1 meter (m)	= 39.37 inches (in)
1 square meter (m <sup>2</sup> )	= 10.8 square feet (sq. ft)
1 cubic meter (cu. m)	= 35.3 cubic feet (cu. ft)
1 kilometer (km)	= 0.62 mile (mi)
1 hectare (ha)	= 10,000 m <sup>2</sup> or 2.471 acres
1 acre	= 4,047 m <sup>2</sup> or 0.405 ha
liter per capita per day (lcd)	= 0.264 US gallon per capita per day (gpcd)
1 kilogram (kg)	= 2.2 pounds (lbs)
1 pound (lb)	= 0.454 kg
1 ton (short)	= 2,000 lbs or 907 kg
1 tonne (metric)	= 2,205 lbs or 1,000 kg

## ABBREVIATIONS AND ACRONYMS

CBD	- Central Business District
LIHDU	- Low Income Housing Development Unit
MOP	- Ministry of Planning
MRHR	- Ministry for Reconstruction, Housing and Land Reclamation
GOPP	- General Organization for Physical Planning
CTD	- Central Traffic Department
TPA	- Transport Planning Authority
CTA	- Cairo Transport Authority
NOPWASD	- National Organization for Potable Water and Sanitary Drainage

## FISCAL YEAR

July 1 - June 30

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This report is based on the findings of an appraisal mission that visited Cairo in May 1980. The mission consisted of A. Pellegrini (Mission Leader), R. Anson, D. Cook (Bank), R. Edwards, W. Henry, and J. Kirke (Consultants). Field work was completed by R. C. Wildeman (Mission Leader) and D. Cook (Bank), J. Kirke, A. El Sherif and P. Spinner (Consultants) in January 1981. Project costs were updated in March 1982 by R.C. Wildeman (Mission Leader) and D. Cook (Bank). This report was prepared by R. C. Wildeman.

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## GREATER CAIRO URBAN DEVELOPMENT PROJECT

### I. SECTOR BACKGROUND

#### A. Country Background

##### National Urban Strategies

1.01 The inhabitable area of Egypt is restricted to only about 39,000 square kilometers located along the banks of the Nile and its delta. Population pressure on this land is severe, with an average density of about 1,100 people per square kilometer of usable land. The population is currently estimated at 43 million and is growing at a rate exceeding 2.5% per year. Rural population growth is outstripping rural job creation. This has resulted in large scale rural-to-urban migration, where the urban growth is now averaging 3.3% per year compared to 1.6% per year in rural areas. About 45% of the population, or 19 million people live in urban areas (communities of more than 20,000 people).

1.02 The urban structure of Egypt exhibits a striking degree of primacy, with about half of the urban population concentrated in Greater Cairo. As part of a national urban strategy aimed at redirecting growth away from Greater Cairo and from agricultural land, the Egyptian Government has embarked on an ambitious program to construct new cities in the desert at Sadat City, Tenth of Ramadan City and King Khalid City. However, the economy of Egypt relies heavily on a diversified range of activities performed by the central Government. These activities are heavily centralized in Cairo, which is the most significant urban center. Its position as the national seat of Government and the principal social, educational and cultural center further increases its attractiveness to the most talented professionals who are reluctant to locate outside of Cairo because of the less attractive conditions existing there. These conditions are causing problems in the development of a national hierarchy of cities, with the result that the importance of Cairo is unlikely to diminish in the near future.

##### Urban Poverty and Access to Basic Services

1.03 Some 30% of all urban families fall below the Bank-defined 1980 relative urban poverty threshold of LE 500 (US\$615) per household per year. There is also evidence of marked inequality in income distribution and access to services. In Greater Cairo, for example, only about 65% of the population has access to public potable water supply, and less than half is connected to public sewerage systems. Moreover, most of the existing sewerage system was designed to serve only a fraction of existing demand. This, plus the lack of streetcleaning and solid waste collection

leads to frequent blockages and overflows. High housing standards, rapidly rising construction costs, and limited construction capacity have exacerbated the critical housing shortage. Recent areas surveyed by the Ministry of Housing in the higher-density neighborhoods of the city show overcrowded living space and the lack of basic sanitary facilities as a critical feature of the living conditions of both poor and middle income families. This is shown by the high infant mortality rate which is about 85 per 1,000 inhabitants. Although no detailed surveys exist, the conditions are probably similar in other urban centers throughout the country.

1.04 The Government's tariff and pricing policies have prevented authorities responsible for urban services from raising enough revenues to adequately maintain existing facilities and respond to new demands. Tariffs and charges bear little relation to production and operating costs. Sewerage services are provided free and the water tariff is only about 10 to 20 percent of the cost of supply. Correspondingly, electricity charges are increasingly inadequate and fare revenues in public transport usually do not cover more than a fraction of operating costs.

#### Impact of National Policies on Local Government

1.05 For planning and administrative purposes, Egypt is divided into 26 governorates, each headed by a governor appointed by the President. Recently, however, the Government has instituted a national policy to increase local autonomy. Following the amendment in 1980 by the Peoples' Assembly of Law 52 on the Local Government System, Governorates are now, in principle, responsible for planning, design and implementation of investments within the Governorates. However, control over fiscal management, taxation, regional and national planning remained with the central Government, so that the administration of the governorates is still closely linked to national policies.

1.06 In addition to the above, the governorates do not have well-defined planning or coordination responsibilities over the activities of other ministries or agencies responsible for major public works such as water and sewerage infrastructure, or the provision of basic urban services such as health and education. Although many of the governorates have planning offices, their staffs are small and often perform tasks beyond their professional competence.

1.07 The staffing difficulties of the governorates are widely acknowledged. Wages are so low that employees of the governorates often are not expected to perform even routine duties without receiving some sort of bonus payment. Under these circumstances, officials of the governorates are reluctant to hire additional staff because of their inability to attract and keep qualified staff. The governorates are concerned also about their ability to manage staff and to achieve effective performance from them, and concerned that once hired, it is almost impossible to eliminate staff from the payroll. This has led to widespread inefficiencies in providing the municipal services for which the governorates are directly responsible. These services include the construction and maintenance of city streets, traffic management and enforcement, and street cleaning.

Agencies Concerned with Urban Growth

1.08 The central Ministry of Local Government (MLG) sets general policies and guidelines in line with national development plans and coordinates the actions of local government units with central ministries. Within the urban sector, there are several overlapping jurisdictions. Few of the agencies have a really clear mandate.

- (a) The Ministry of Planning (MOP) is responsible for approving budgetary appropriations for all central ministries, public authorities and the governorates, and also undertakes regional planning studies. Recommendations arising out of these studies, however, must be approved by a High Level Committee which includes a representative from the MOP and the local governors;
- (b) The Ministry for Reconstruction, Housing, and Land Reclamation (MRHR) is responsible for reconstruction, new town development, housing, public utilities, and the development of desert land. While the role of the MRHR in funding low-income housing schemes has diminished as a consequence of decentralization of responsibility to the governorates, it would continue to be used by the governorates as a national coordinating agency and would provide assistance to the governorates in the implementation of certain large scale projects;
- (c) The General Organization for Physical Planning (GOPP) was created in 1973 and is responsible for coordinating the spatial development, including the preparation of urban master plans, for each of the major cities. The role of the GOPP relative to the new decentralization policy is still evolving;
- (d) The Central Traffic Department (CTD), of the Ministry of Interior is responsible for training of traffic police, for coordination of traffic police functions among local governorates and for driver vehicle testing and licensing. It provides the technical advice to local traffic police departments in the governorates;
- (e) The Transport Planning Authority (TPA) of the Ministry of Transport is responsible for longer term transport planning, both for urban and non-urban areas, and for providing technical advice to the governorates;
- (f) The National Organization For Potable Water and Sanitary Drainage (NOPWASD), owns and operates facilities throughout the country, except in Cairo, Alexandria, and the Suez Canal Region, where the provision of potable water, sewerage and drainage facilities are provided by municipal agencies.

## B. Transport Development Issues of Greater Cairo

### The Setting

1.09 The City of Cairo, the capital of Egypt, is the largest city in Africa and the Middle East. About 50% of the urban population (22% of the total population) or 9.5 million people are concentrated in Greater Cairo, which includes the Governorate of Cairo, the cities of Giza and Imbaba in the Governorate of Giza located to the west of the Nile River, and the City of Shoubra El Kheima in the Governorate of Kalyubia to the north of Cairo. The population in Greater Cairo is growing at an annual rate of 4% compared to the national urban rate of 3.3%, and at this pace will reach 16 million by the year 2000.

1.10 The extremely rapid growth in population of Greater Cairo has resulted in a very high average population density of 40,000 persons per Km<sup>2</sup> compared to 26,000 persons per Km<sup>2</sup> in Manhattan and 21,000 persons per Km<sup>2</sup> in Bangkok. In some of the older districts, such as Rod El Farag and Bab El Sharia, population densities averaging 100,000 persons per Km<sup>2</sup> are common. The newer residential areas of Nasr City and Heliopolis, however, have been developed with very low densities, and the population is of the order of 9,000 persons per Km<sup>2</sup>.

1.11 Commercial activities are generally located along the major axes. The main commercial centers are the Central Business District (CBD) in which most of the banking and service industries are concentrated, and to the east of this area, Mouski in which most of the traditional trades are located. These two areas provide about 210,000 jobs. The industrial activities within the CBD specifically, and throughout the city generally, are small scale - 3 to 4 employee firms are common. The principal manufacturing areas are located to the north of the city at Shoubra El Kheima and to the south of the city at Helwan, which is the major center for steel, automotive, and chemical industries.

### Travel Patterns

1.12 The rapid pace of urbanization in Cairo has triggered an even faster growth of demand for urban transport. Daily trips by all modes have increased by about 7% per year during the 1971-78 period, to about 5.5 million. By the end of 1978 the CBD, for example, was estimated to generate about 600 person trips per hour per hectare compared with 139 person trips per hour per hectare in Central London. Some 63% of person trips are made by using public transport (including taxis and shared taxis), 23% are by walking, and 14% by private cars and motorcycles. About 90% of peak hour



motorized trips are made on buses and other high occupancy vehicles. Private car ownership is low at around 20 per thousand inhabitants versus 300 to 450 for many European and North American cities. However, it has recently been growing at the rate of 17% per annum, more than four times the rate of urban growth.

1.13 Given the rapid rate of increase in car ownership, it is likely that in the long-term it will be necessary to introduce measures that will directly restrain unnecessary, inefficient or unproductive use of the automobile. Although a variety of restraint alternatives are available, one of the most effective is a program of graduated increases in the price of motor fuel. Significant achievement in this direction is likely to be complicated by the structure of the Egyptian economy, which is characterized by a system of price controls and price subsidies that virtually covers all goods and services, including petroleum products. However, the domestic price of gasoline has been increased in the last three years and is now about 60% of world prices in comparison to diesel and fuel oil prices which average 20% and 6% respectively of world prices.

1.14 The Bank has already raised the issue of gasoline pricing with the Government in the context of the energy sector lending program. The Government has stated its intention to bring domestic energy prices more closely in line with international levels. A continuing dialogue is being maintained with the Government on the appropriate measures to be introduced.

#### The Road Network and Traffic Management

1.15 About 25% of Greater Cairo's total urbanized area is road space. However, the practical traffic carrying capacity of these roads is approximately 25% less than that achieved in developed countries where maintenance standards are higher and driver vehicle performance are better. The severe transport infrastructure problems of Greater Cairo, therefore, are not attributable to a lack of total space devoted to road use, excessive vehicle densities or low vehicle occupancy rates, but are more a function of a high percentage of unsurfaced roads in the city's secondary and tertiary network; bottlenecks in the existing primary road network and in its repair and maintenance; rapid and unmanaged growth in private car ownership; and the absence of parking restraint and other traffic management measures. These conditions are exacerbated by Cairo's high average population density. The existing road network is shown in Map 15403.

1.16 With the notable exceptions of certain high income suburbs (Heliopolis, Maadi and Dokki), the general state of repair of roads and footpaths in Greater Cairo is extremely poor. The CBD area is illustrative of Cairo's overall transport problems. The footpaths are frequently unsurfaced and blocked by building materials and parked vehicles, thus forcing pedestrians into the streets. The resultant conflict of moving vehicles

with pedestrians and parked vehicles is both dangerous and inefficient. Inadequate parking control, the low standards of traffic signs and signals, and the lack of resources for control and enforcement aggravate the traffic problem. Many of the existing traffic signal installations operate poorly and are in need of repair. Drivers do not generally expect signals to work and therefore ignore them frequently, often encouraged by traffic police who direct traffic independently of the signals. Acute shortages of trained staff and facilities preclude driver and vehicle testing procedures from being anything but cursory and there are no established facilities for driver education and training. Accident rates in Cairo currently rank among the highest in the world at 80 fatalities and 600 injuries per 10,000 vehicles. This level is 20 times that of the U.K. or the U.S.A.

#### Street Conditions in Residential Areas

1.17 In many heavily built up low income sections of the city, there are effectively no secondary roads, and where they exist they are unpaved. According to consultant reports, at least 60% of the area of Greater Cairo has no surfaced road network. This includes well-established districts where three to six story apartment buildings house up to 150,000 people per square kilometer. The lack of surfacing results in problems of solid waste removal, emergency vehicle access, flooding, silting and blockage of sewer lines. Such problems are strongly interrelated. Until the streets are reasonably surfaced, solid waste collection vehicles cannot gain access to the houses.

1.18 Cairo has no system of solid waste management in the sense usually understood in industrialized countries. The cleaning of streets and public markets, for example, is the responsibility of the governorates. There is no municipal responsibility for collection of household and business waste. Families who desire solid waste collection services make arrangements through a unique system of brokers, who function as "middlemen" operating a type of franchise system in which access to the zones is awarded to the Zabbaleen, a community which earns its livelihood from garbage collection. The Zabbaleen work for the brokers free of charge, collecting the garbage by going door-to-door in donkey-drawn carts. Recycling the solid waste into pig feed and other reusable commodities is the main incentive for the Zabbaleen in providing this service.

1.19 The solid waste is a recycling resource to the Zabbaleen. Because they are paid nothing to haul it, a rough and ready type of sorting occurs at the pick up point. Those items of little or no value are discarded on the streets. The worst effects are in the approximately 60% of the city, generally the lower income areas, where the residents do not for one reason or another arrange for this service, or where the solid waste is perceived by the Zabbaleen to be of negligible "recyclable value" and who therefore do not collect it. Preliminary data indicate that of the approximately 3000 tons of solid waste generated daily in Cairo, about 1800 tons are collected by the Zabbaleen, 900 tons are collected by the municipal street sweepers, while the remaining 300 tons are left uncollected. The problem is further aggravated by capacity constraints -- there simply are not enough Zabbaleen to handle the accelerating volume of garbage generated by the growth of the city.

1.20 Because of the lack of surfacing and lack of street cleaning and solid waste management, public health problems in such areas are severe. Children, who usually go barefoot in the dirt streets and alleys, are at particular risk. In one section of the Imbaba District of Giza, street conditions are so bad that there is no access for public transport within a five square km area, and officials responsible for emergency services stated that they could not gain access to the whole area for ambulances or fire engines. The absence of street-lighting in these high density areas adds further to the difficulties of living there.

#### Public Transport

1.21 The Cairo transit situation is characterized by extremely high ridership and a strong individual dependency upon public transit as a mode of travel within Greater Cairo. The bulk of public transport is provided by the Cairo Transport Authority (CTA) which operates buses, trams, and river buses, and its subsidiary, the Greater Cairo Bus Company (GCBC), which operates a newer fleet of buses on selected routes at higher fares. The total vehicle stock of the CTA bus operations, and its subsidiary, the GCBC comprises about 2300 vehicles. Operating speeds range from 28 kph to 7 kph depending on location and length of route. Passenger loadings on the buses are extremely high with up to 2100 passengers per unit per day.

1.22 On a typical day about 32% of the operational fleet is not available for service because of various operational and engineering reasons. The poor operating performance is shown by CTA's overall vehicle kilometers, which peaked in 1970-72, and then fell sharply to a ten-year low in 1974. Since then, however, the CTA has succeeded in reversing the trend and vehicle kilometers have been increasing gradually and in 1977 were back to the 1967/68 level. The full reasons for these sharp variations are not completely known, though it was noted that 1974 marked the beginning of substantial new levels of financial aid to the CTA from the central government.

1.23 Public transport services are also provided by the Heliopolis Metro System, the Egyptian State Railways and by about 37,000 taxis and 800 larger fixed route shared taxis. Especially noteworthy is the fixed route shared taxi system in which 12-seat minibuses operate on specified routes. This service is a relatively new phenomenon in Cairo, but it is supported by the Central Traffic Police and by a well-organized drivers' union. Since its introduction two years ago it has grown at a rapid rate, and now accounts for at least 1% of public passenger trips. Growth in this service should relieve some of the strain on buses and trams but, given the existing high share of passenger trips made on buses and trams and the fare differential between subsidized public transport and privately operated minibuses, it is likely that for the medium-term, buses and trams will continue to dominate the public transport sector.

### C. Bank Involvement in the Urban Sector

1.24 The general Bank strategy for Egypt is to promote a wide range of projects in the productive and social sectors and in infrastructure. The overriding consideration of this strategy is the positive developmental impact of the institution building and sector policy aspects of the Bank's operational work. Urban sector work has also been recently initiated with a view to an improved understanding of demographic trends and sectoral priorities at the national level and for greater Cairo.

1.25 A loan for a Water Supply Project in Alexandria was approved in December 1977 and a Water Supply Engineering Credit approved in 1978 led to the development of a water supply project in Beheira through which a number of institutional and financial policy questions associated with the water supply sector are being addressed. The First and Second Population Projects provide improved family planning and health care services in several low income urban areas. Another three credits have been provided in the education sector to meet a variety of training and educational needs of the urban poor. The first project is now complete, and implementation of the other two is proceeding well. Other urban related projects that are programmed for Bank Group consideration include Education IV, and Urban Development III. An expanded involvement in comprehensive urban development over the long-term is proposed for Egypt.

### D. Review of the First Urban Project

1.26 An initial step towards supporting the Government's urban program is the First Urban Project (Credit 831-EGT) which includes pilot schemes in sites and services, slum upgrading and solid waste management (including upgrading one of the Zabbaleen settlements). It also provides funds for emergency rehabilitation of water and sewer works in Assiut and funds for consultant services to assist in training and institutional development. The project is innovative in terms of its target group (the lower 40% of the income distribution) and in testing cost-effective solutions to low-income housing and solid waste disposal problems. The project operates in three governorates--Cairo, Alexandria, and Assiut. The Governorates are responsible for designing and implementing their components, with coordination provided by the Low Income Housing Development Unit (LIH DU) in the Executive Agency for Joint Projects, an agency within the MRHR which handles technical assistance and lending programs in low income housing.

1.27 Implementation has been slower than expected at the time of appraisal. There are several reasons for this, including a lack of understanding of the concepts underlying the shelter components in the governorates and the MRHR, major changes in the institutions responsible for the project, changes in project designs following credit signature, discontinuities in personnel, and especially an acute shortage of

experienced and competent personnel in the MRHR and the Governorates to design and implement the shelter components. Due to the appointment of a particularly well-qualified solid waste consultant in Cairo, the solid waste component in that city is progressing better than the other project components, although it is not trouble free.

1.28 Given inadequate government personnel policies, including extremely low staff remuneration, it is unlikely that any governorate will soon acquire the ability to design and implement its components without substantial outside technical assistance. On the other hand, the governorates do have a lot of "junior" staff of limited ability but who can do designs if well supervised. The basic strategy for the project is, therefore, to encourage LIH DU to equip itself with staff of sufficient experience and competence to provide needed guidance to the governorates. Governorates are also being encouraged to engage consultants for tasks for which their own staff are insufficient although replicability requires that maximum use be made of governorate's office staffs. IDA is also supervising this project intensively, with the view to expedite physical implementation or to reformulate the project.

1.29 During the course of identification of the proposed project, it was agreed with the Government to delay consideration of further shelter related components until substantial progress was achieved in the first project. Rather, it was decided to develop a project that would deal with the question of appropriate standards and costs in urban development in another manner. The seriousness of the urban transport problems in Cairo, which has long been a high priority concern to the Government, seemed to provide an appropriate mechanism. It was also felt that the proposed project should be oriented toward broader municipal management and planning issues.

1.30 Among the key factors causing delay in the first project were lack of detailed designs and lack of experienced Governorate personnel for project implementation. Safeguards built into the second project included the preparation of detailed designs and contract documents by the time of negotiations for about 33% of the project, i.e. that part of the project to be implemented in the first year (paras. 2.10-2.11). The project includes substantial provisions for hiring local consulting firms to undertake detailed design work of specialized items that cannot be done by Governorate staff (para. 2.04).

## II. THE PROJECT

### A. The Concept and Key Features of the Project

#### Concept

2.01 The heavy concentration of population in Greater Cairo and the magnitude and intensity of its problems firmly establish the city as a major focus of urban development policies. This is accentuated by the recent devolution of responsibility to the governorate level. The Project concept recognizes this and is based on the premise that programs and projects for Cairo, to be successful, must be tailored to the limited implementation capacity of the local administration, must be sequential within the context of the total urban services delivery needs and resources available, and must be designed so that existing capacity can be gradually built upon.

2.02 The main objectives of the project are to initiate a revised approach to urban transport based on low cost engineering and management measures, improve the efficiency of public transport, and to strengthen Government institutions thereby developing their management and planning capabilities and enhancing their capacity to undertake further urban development. In addition, the project seeks to improve the living conditions of Greater Cairo's urban poor through upgrading of selected low income areas.

#### Key Features and Summary Description

2.03 Special attention has been given to developing a revised urban transport strategy that explicitly focuses on low cost traffic engineering measures and the paving of bus routes in poor areas, emphasizing the use of minimal design standards and low-cost materials. To better manage traffic circulation, to help ensure that non-essential traffic is discouraged from entering the congested commercial areas, to gradually increase on-street parking control, and to provide protection, safety and comfort to the pedestrian, special emphasis has been placed on traffic management measures, including revised circulation schemes and the enforcement of traffic regulations and parking controls.

2.04 The traffic engineering road maintenance component, which would serve as the prototype for streamlining other governorate operations, represents a four-year "time-slice" of low cost physical investments and accounts for about 50% of the governorates planned expenditures on roads. This component, together with the traffic enforcement component is also closely linked to the institutional component, which would provide the structural, organizational and procedural improvements necessary to facilitate the efficient execution of the physical works. The component is aimed at a series of associated policy and administrative measures, including the training of managers, technical staff and technicians in project agencies, and feasibility studies for possible future investments.

2.05 Given the size and growth rate of the City of Cairo, the general conditions of the low income areas, and the competing demands for resources, the Bank has encouraged the Government to focus as much as possible on low-cost approaches to improving the conditions of the urban poor. With this in mind, a pilot street cleaning and solid waste collection component has been designed to focus on four low-income neighborhoods. This pilot scheme will be based on the experience in solid waste management gained under the first urban project. The component, which also includes road paving and installation of street lights, would not only produce important immediate benefits to the urban poor in these areas, but would also serve as a prototype for developing a larger scale program that could be considered for assistance in future projects.

2.06 The fifth component, public transport, is centered on those steps that the CTA should take now to achieve measurable institutional improvements, and to bring CTA to the point where a substantial lending operation could be considered in a future project. Efforts with the CTA, therefore, are focused on limited financial measures and on operational performance, especially maintenance, which is considered an essential first step in a program of institutional reform. The approach is based on the premise that an improved level of service is a prerequisite for obtaining public and political support for future financial reforms. This has resulted in the inclusion of substantial technical assistance for management, training and maintenance and also finance for the completion of a major bus overhaul center.

2.07 The project locations are shown in Map 15404. The total estimated cost of the Project is US\$116 million including design and supervision, physical, and price contingencies. The following is a summary description of the Project:

- (a) Traffic Engineering and Road Maintenance - (US\$56 million) would be implemented along selected primary and secondary routes, and within the CBD and would include resurfacing of roads and repair and widening of footpaths, construction and paving of key bus routes and reserved bus lanes, limited expansion of automatic traffic signals, channelization at junctions, improved signs and road markings, street lighting on selected major corridors, vehicles, equipment for road surfacing, improvements to the traffic, circulation plan within the CBD, construction of pedestrian only rights of way, and construction of two off-street parking garages;
- (b) Traffic Enforcement - (US\$4 million), includes the purchase of motorcycles, tow-trucks and driver training automobiles, refurbishing an existing training center, and the provision of materials and training aides;
- (c) Institutional Development - (US\$13 million) includes components for improving the organization, procedures and training of governorate staff; improving the operational, financial and management procedures of the CTA; developing an improved

strategic action plan for Greater Cairo; and preparation of selected studies and surveys for possible future urban development projects;

- (d) Area Upgrading - (US\$15 million), would be undertaken in four lower income areas of the city, and would include the removal of refuse, levelling and paving of roads and footpaths, installation of street-lighting, and the provision of street cleaning and solid waste disposal on a pilot basis;
- (e) Public Transport - (US\$28 million), includes the completion of a bus overhaul center, installation of maintenance equipment, provision of service trucks and a limited radio-telephone system, refurbishing and equipping of an in-house training center for drivers and the maintenance staff;

#### B. Origin and Status of Preparation

2.08 Discussions about the Project were held in parallel with the supervision of the First Urban Development Project (CR831-EGT). The Project was identified in November 1978. During Project preparation, the Bank had an extensive dialogue with Government officials at both the local and national levels on the possible mix of components. A large proportion of the discussions was devoted to reshaping urban transport policy. This resulted in positive changes in the governorates' transport program, most notably a shift in emphasis away from construction of new elevated roadways and flyovers in the direction of traffic engineering and road maintenance. This approach resulted in important modifications and cost savings.

2.09 Project preparation was the responsibility of a Technical Working Group which was coordinated by the TPA, and which included representatives of local and central Government agencies involved with traffic and transport in Greater Cairo. Consultants who prepared key elements of the project worked under a grant from the British Government. An early conclusion of the consultants was that the Traffic and Transport Plan in Greater Cairo, produced by SOFRETU in 1973, and accepted by the Government in 1974, provided an overall framework within which to plan and implement traffic engineering and management measures in the city.

2.10 Because of the nature of the small-scale works involved, it would be inappropriate to attempt to complete detailed designs for all such works too far in advance of scheduled implementation. It was agreed with the governorates that prior to negotiations, detailed or functional designs as the case may be would be prepared for works to be started during the first year of project implementation, and that detailed designs of other components would be scheduled according to the year of implementation. Should actual costs of the traffic engineering and road maintenance and the area upgrading subprojects prove to be more or less than appraisal estimates,



quantities would be adjusted (e.g. the extent of footpaths to be reconstructed, or roads to be resurfaced) to fit within the budget.

2.11 Works currently scheduled for implementation in the first year for which detailed designs and tender documents have been completed include: Misr Sudan Flyover, Sharikat St., Manshiet Nasser Entrance, and the Shurabeya Bus Route. Functional designs were completed for the Galaa, Dokki and Giza Squares, the Monira Upgrading Area, the Ghamra Depot and the Gizr Suez Workshop including proposals for productivity increases at the workshop. In addition, specifications and draft tender documents for vehicles and equipment to be used by the Cairo Governorate and the traffic police, and for training equipment to be used by the CTA have also been completed. These items account for approximately 33% of total project costs. These designs were partially financed through advances from the Association's Project Preparation Facility.

### C. Project Description

#### Traffic Engineering and Road Maintenance Component

2.12 Background. To improve bus operating conditions, traffic flows and road capacities, thus providing attractive alternatives for non-essential vehicles currently using the CBD roads as through routes, traffic engineering and road maintenance works would be implemented along several primary and secondary routes which are currently unable to meet traffic needs (see Map 15404 for route locations). Typical traffic engineering measures are shown in Annex V. The component is divided into thirteen sub-projects which are described below.

2.13 Salah Salem Sub-Project. This corridor is an outer peripheral route connecting the Cairo International Airport through Heliopolis and then running in a south-westerly direction through Old Cairo where it merges with the Autostrade and becomes Al Ahram Street, crossing the Nile River at the Giza Bridge. It is a divided three-lane roadway throughout, but improvement works are required on a 10.4 Km stretch between Oruba Square and Giza Bridge to make better use of this existing facility, and provide an attractive alternative to routing traffic through the CBD. The proposed works, which are estimated to cost US\$2.7 million, would consist of:

- (i) channelization of six junctions and installation of automated traffic signals;
- (ii) installation of advance warning and route signs;
- (iii) road resurfacing and footpath repair and construction;

- (iv) construction of two lanes for slower moving vehicles to improve operating conditions on the steep gradients on either side of the Citadel; and
- (v) construction of a pedestrian footbridge.

2.14 Misr Sudan Flyover Sub-Project. The main east-west route serving and by-passing the CBD is the Ramses Street corridor. Major junction improvements have already taken place at Ramses Square and Abbassia Square and a north-south overpass has been completed at Oruba Square. However, heavy traffic congestion exists at the junction of Ramses and Misr Sudan Street. To eliminate the congestion, a three lane overpass, estimated to cost US\$5.0 million, would be constructed.

2.15 Giza, Gala and Dokki Squares Sub-Project. The route connecting the squares is a dual two or three-lane roadway which is in generally satisfactory condition. Junctions and traffic signing in the squares, however, are inadequate. Estimated to cost US\$0.9 million, the sub-project would consist of:

- (i) junction improvements comprising the installation of automated signals, channelization of lanes, marking the approaches to the junctions, and generally streamlining the road space at Giza, Gala and Dokki Squares; and
- (ii) implementation of a traffic management scheme in Giza Square.

2.16 Port Said Street Sub-Project. Port Said Street, an inner peripheral route to the east of the CBD, runs from the Ismailia Canal Road in a south-westerly direction crossing Ramses Street, Sh. El Gheish, Sh. Al Azhar, Sh. El Qalaa, and El Saad El Barrani Street to connect with Kasr El Aini and the Corniche El Nile at the Saqyas Aquaduct area. El Saad El Barrani Street is a single roadway about 14 meters wide of which only eight meters are available for traffic. The proposed works, which are estimated to cost US\$4.3 million would consist of:

- (i) the renovation and resurfacing of about 10.0 km of Port Said Street and footpaths, and a total of about 5.1 km of Sh. El Gheish, El Qalaa, El Azhar El Zahir Streets; and
- (ii) improvements to 16 major junctions.

2.17 Corniche El Nile Corridor Sub-Project. The Corniche is an important north-south route servicing long-distance through traffic, inter urban traffic and city traffic. At the north end of Greater Cairo, it links with the agricultural roads to Alexandria and with Tanta to the south. In addition to acting as the main commuting facility from Maadi and Helwan it connects with the main road to upper Egypt. North of the 26th July Bridge and south of the Giza Bridge the Corniche is a dual roadway facility. Between these two bridges, it operates as a mixture of one way systems,

dual roadways and single roadways. The objective is to upgrade it to primary road standards. The physical works, which are estimated to cost US\$2.7 million, would consist of:

- (i) channelization of junctions and installations of automated traffic signals;
- (ii) road paving; and
- (iii) a feasibility study to recommend additional grade separated junctions and additional road widening schemes.

2.18 Secondary Routes. To improve access to major through routes, and to increase bus penetration in industrial and low income residential areas, similar traffic engineering measures and road maintenance works would be implemented along the secondary routes described below.

2.19 Shari Shubra Route Sub-Project. Shubra Street is the main access from the northern side of the CBD serving large residential areas in the north of the city. The total route length is 7.2 km and contains six major junctions and 40 minor access junctions. North of Rod El Farag, Shubra Street is a divided roadway with the tram lines located in a separated central median. Each roadway is approximately 12 meters wide, but because of the roadside activities the effective width of each roadway is nine meters. South of Rod El Farag, Shubra Street and El Tera't El Boulaqeyah Street operate as a one-way system with Shubra Street carrying the south-bound traffic. Both streets are single roadways with the two-way tram lines running down the center of Shubra Street. The proposed works, which are estimated to cost US\$1.9 million, would consist of:

- (i) major and minor junction and access road improvements;
- (ii) resurfacing of roads and footpaths; and
- (iii) relocation of tram lines.

2.20 Manshiet Nasr and Shurabeyia Access Roads Sub-Project. Manshiet Nasr is situated on the Eastern edge of Cairo's built up area between the City of Dead and the Mokattam Hills. It houses approximately 70,000 people of which 15,000 form the largest Zabbaleen settlement in Cairo. Some funds for upgrading this area were included in the First Urban Project, but additional funds will be required to provide adequate bus routes. Shurabeyia is an area to the north of Ramses Street bounded to the east and west by railway lines. Because of the poor condition of the roads, it is not served by public transport. The physical works are estimated to cost US\$1.8 million, and would consist of the construction of access roads and street-paving.

2.21 Sharikat Route Sub-Project. This road connects the northern entrance of the Baghos Tunnel (and hence Ramses Street) with the Ismalia Canal Road. The route is 4.5 km long and contains four major junctions and 20 minor and access road junctions. The roadway width ranges from 12 to 20 m. The proposed works, which are estimated to cost US\$1.8 million, would consist of:

- (i) renovation and resurfacing of the route;
- (ii) improvements and channelization of junctions; and
- (iii) construction of footpaths.

2.22 Bus Routes Sub-Project. In general, most roads providing access to low-income areas are in extremely poor condition because of lack of maintenance, and in some cases are unpaved and undrained. Bus penetration into these areas is generally difficult, and in many instances impossible. The objective of this component is to improve this situation by means of a road resurfacing and paving program to allow bus penetration into the low income areas and improve access to affordable means of transport for lower-income groups. The bus route paving program will be carried out over a length of approximately 16 Km on routes selected by the CTA and agreed with the Cairo and Giza Governorates. The physical works are estimated to cost US\$10.8 million, and will consist of basic drainage and road paving.

2.23 Road Maintenance and Street-Lighting Sub-Project. To improve the efficiency of the Governorates' ongoing road maintenance and street lighting program, facilities for preventative maintenance and routine inspection of asphalt trucks, rollers and other equipment, as well as offices, canteen, and toilets would be provided. Access roads to the Ghamra Asphalt plant also would be improved.

2.24 The sub-project, which is estimated to cost US\$6.1 million, would consist of:

- (i) the construction of a maintenance workshop;
- (ii) the purchase of plant equipment, a weighbridge, canteen and hardstandings;
- (iii) the purchase of trucks, rollers, watersprayers, and pickups for highway maintenance;
- (iv) the purchase of jeeps, flatbed trucks, and hydraulic platform vehicles for the maintenance of street lighting installations; and
- (v) hand carts and miscellaneous equipment for street cleaning.

2.25 CBD Traffic Management Sub-Project. The CBD covers an area of approximately 2 km<sup>2</sup> of mixed land use including hotels, residential offices, small-scale business, insurance and banking interests. It is bounded by four squares: Ramses, Ataba, Gumburiya and Tahrir. Approximately 112,000 people work in the CBD while 68,000 residents live in the area. There are 150,000 private vehicle movements per day, and because of a lack of off-street parking facilities (about 5,000 spaces are provided), more than 17,000 vehicles are parked wherever they can find space. Most of these vehicles are double and triple parked on the existing roads and many are parked on the sidewalks.

2.26 The sub-project follows a strategy aimed at restricting and discouraging traffic which has no reason to be in the CBD. It concentrates on a reallocation and reorganization of the existing street space in order to gain benefits for pedestrians and to give priority to essential users by controlling the movement and parking of vehicles (see Map 15405 for details). On street parking will be allowed to the extent that it does not interfere with pedestrians or the smooth flow of traffic. Total existing on street parking will be reduced by about 3,370 spaces with the introduction of traffic engineering and management measures. The Governorate is encouraging the development of additional parking spaces, particularly in new buildings currently under construction. In addition to the foregoing, the project includes the construction of a 400-600 space car park over the existing Ataba Square bus station, and an 800-1000 space car park at Opera Square. Assurances were obtained during loan negotiations that parking charges would be set to recover all costs, both capital and operating.

2.27 However, there are still difficulties in attempting to enforce parking control, and measures to enhance effective enforcement will be undertaken. First, the traffic police will be strengthening an existing central traffic unit (para. 4.12) to enforce parking in the CBD. Second, the authorities have already introduced legislation to raise the current level of fines for parking violations; this is expected to be a further deterrent to violators.

2.28 The proposed works, estimated to cost US\$18.2 million, would consist of:

- (i) curb realignments, road and footpath construction, barriers, road markings and traffic signs along 15 km of circulation corridors and access loops, together with improvements to 25-30 major junctions;
- (ii) construction of a 400-600 space parking garage over the existing Ataba Square bus station and an 800-1000 space car park at Opera Square.
- (iii) footpath construction, barriers, road markings and traffic signs near the Bab El Luk Metro Terminal.

### Traffic Enforcement Component

2.29 The objective of this component is to promote the safe and orderly flow of traffic by providing a conspicuous traffic police presence, by setting an example of good driver behaviour to other road users, and by enforcement of the traffic laws. The improvement of road use behaviour is, therefore, a particularly important aspect of the police traffic role. In order to improve the effectiveness of the traffic police, suitable vehicles with good communications and traffic equipment would be provided.

2.30 To further strengthen the enforcement of traffic regulations, an existing police training center would be refurbished, and equipment and training aids would be installed. Priority would be given to training and retraining officers, constables and lower rank patrolmen who are directly involved in traffic operations and control. The training would be directed towards improving the police image, performance of duty and practical solutions to present traffic problems. All basic police training courses would include instruction in road traffic law, control, enforcement and road accident procedures.

2.31 This component, whose estimated cost is US\$3.8 million would consist of:

- (i) the purchase of 178 motorcycles, 11 tow trucks, and 12 driver training automobiles;
- (ii) the construction and installation of 17 vehicle inspection centers, a drivers' training track, drivers' licensing equipment and base communications equipment; and
- (iii) refurbishing an existing training center, including the provision of materials and teaching aides.

### Institutional Development Component

2.32 An immediate priority of the Project is to develop a basis for a continuing policy dialogue with the Government, and to work with the key agencies in strengthening the weaker parts of their operation given the limited absorptive capacity of the institutions concerned. Organizational and financial reforms such as the development of appropriate revenue producing mechanisms that might include property tax, land value tax, betterment or user charges to generate funds for an expanded programme of urban development are considered to be outside the implementation capacity of the governorates at this time. While these reforms would be taken up in the context of possible future projects, the groundwork for such initiatives is being developed through the proposed component. The component, estimated to cost US\$13.3 million, is divided into eight sub-projects described below.

2.33 City of Cairo Strategic Action Plan. This sub-project, estimated to cost US\$2.5 million, will provide about 220 man-months of consulting services to the Cairo Governorate to develop specific physical, socio-

economic, financial, legal and institutional measures which together can be recommended as a strategic action plan for Cairo. Terms of reference for the plan with detailed task descriptions have been drafted and are being reviewed by the Government and the Bank. The plan will take the form of the preparation of policies and programs for the city with particular emphasis on:

- (i) designated areas of strategic importance within the existing and proposed area of Greater Cairo;
- (ii) recommendations for specific policies, projects, and programs by sector within such areas;
- (iii) the priority to be given to such projects and programs based on an evaluation of their potential to affect desirable change and improvement;
- (iv) the program of investments consistent with the City's resources and implementation capacity to carry out the policies, plans, and programs identified;
- (v) the institutional and organizational requirements to support such projects and programs, and the need for improvements in the capacity of existing institutions; and
- (vi) the resource requirements to support such programs and the need to devise measures for increasing the current resources by fiscal or administrative arrangements.

2.34 Urban Service Delivery Mechanisms. This sub-project, estimated to cost US\$1.1 million, will be implemented by the Governorate of Cairo in tandem with the Strategic Action Plan, and will provide about 80 man-months of consulting service to assist the Cairo Governorate to:

- (i) prepare an inventory of existing manpower and equipment resources and an inventory of historical levels of expenditure for each category of service;
- (ii) recommend and seek agreement of appropriate service levels for maintenance, including the development of detailed operational manuals and standards;
- (iii) develop detailed operational manuals, outline standards, and operating procedures to achieve the agreed service levels, together with a review of alternative methods of providing the services including contract services;
- (iv) propose the manpower, equipment and material requirements together with the level and scale of logistical support; and
- (v) review staff compensation policy, identify training needs, and indicate how these needs can be met.

2.35 Infrastructure Survey. This sub-project, estimated to cost US\$2.5 million, will provide technical services to the Cairo Governorate to conduct a survey of underground utilities in older areas in Cairo.

2.36 Solid-Waste Management. This sub-project, estimated to cost US\$0.6 million, will provide about 40 man-months of consulting services to the Cairo Governorate, and would utilize data gathered under a study financed by the First Urban Project (Credit 831-EGT) together with additional surveys and pilot programs that would provide a detailed solid waste management program for the City of Cairo.

2.37 Advisory Services. This sub-project, estimated to cost US\$0.6 million, will provide funds to the Cairo and Giza Governorates to establish an implementation unit consisting of two full-time advisers for Cairo and one for Giza for a term of about four years each, together with the requisite office equipment and support staff. The advisers will help oversee project designs and implementation, and will assist the governorates in establishing a traffic management unit and the basics of a city engineering department. The advisers will also assist in the development of traffic engineering design parameters, the preparation of a traffic sign manual, and the development of street lighting and specification standards, including those for the construction and maintenance of roads and footpaths.

2.38 Sekeit El Wailli Route Location Study. This sub-project, estimated to cost US\$0.6 million will provide about 40 man-months of consultant services to the Governorate of Cairo to identify a high capacity east-west road.

2.39 Traffic Management. This sub-project, estimated to cost US\$2.3 million, will provide training needs to the traffic police. The component will consist of a program aimed at training a cadre of about 10 officers at an overseas training center in general traffic operations and management. These officers will become traffic instructors in Cairo. The program would provide training in traffic records, commercial vehicle enforcement, supervision of traffic police personnel, on-scene accident investigation, traffic engineering, driver licensing and testing, traffic law enforcement, public information and traffic operations.

2.40 Cairo Transport Authority. This sub-project, estimated to cost US\$3.1 million, will provide about 160 man-months of consulting services to assist the Cairo Transport Authority to develop specific policies, plans and programs for the CTA and to allow for overseas training visits for CTA personnel. Particular emphasis will be placed on the following:

- (i) the role of trams;
- (ii) the types of buses required to meet operational requirements, including production specifications of chassis and body components;
- (iii) long-term maintenance requirements and the design of the technical training syllabus and examinations;



- (iv) the operational control of vehicles (buses and trams), including on-the-road inspections, crewing, and fare box collection procedures;
- (v) administrative and financial procedures, including materials management, purchasing procedures, budget development, cash management, and development of a revised fare structure;
- (vi) financial and statistical reporting, including monitoring procedures for current traffic operations, performance indicators, and routes and schedules.
- (vii) training center support;
- (viii) production engineering and two senior technicians for operational support during first 15 months of Gizr-Suez workshop operations;
- (ix) feasibility studies, including identification and initial preparation of a possible future project; and
- (x) fellowships for overseas training.

Area Upgrading Component

2.41 Solid waste collection is provided only in higher income areas, and it is estimated that the amount collected is only some 45% of all household waste. The public street cleaning service is understaffed and ill-equipped to clean even the surfaced roads and as a result refuse accumulates, especially in the lower income areas. In some areas of Central Cairo and Giza this refuse may be up to half a meter deep with some streets completely blocked by it and by builders' materials.

2.42 The objective of the component is to develop a pilot program for solid waste management and for upgrading selected low-income areas of the city, the aim being to use it as a prototype for developing larger scale programs. Based on discussions with the Cairo and Giza Governorates the following four areas were chosen:

Name	Govern- orate	Approximate Total Area km2	Approximate Population	Area of Roads and Footpaths m2
Rod El Farag	Cairo	0.8	65,000	240,000
Abdine	Cairo	0.5	40,000	150,000
Old Giza	Giza	0.8	65,000	250,000
Monira	Giza	<u>0.5</u>	<u>40,000</u>	<u>200,000</u>
Total		<u>2.6</u>	<u>210,000</u>	<u>840,000</u>

2.43 The compacted refuse will be removed and the roads will be upgraded to minimum standards by hauling in fill where necessary, and grading and compacting to a suitable profile. After compaction the roads will be sprayed with either a heavy oil or a bitumen cut back with a volatile solvent so that it penetrates the surface of the soil and inhibits dust. Street lighting would be installed where required. Funds will be provided under the project for salaries and equipment required to finance the solid waste collection and street cleaning. To ensure the long-term success of the component, assurances were obtained during negotiations that the Cairo and Giza Governorates would continue the solid waste collection and street cleaning services in the designated areas.

2.44 The component, which is estimated to cost US\$14.8 million, would consist of:

- (i) development of an approved plan for streets and sidewalks, public transport routes, and pedestrian and market areas;
- (ii) removal of refuse;
- (iii) levelling and paving of roads and footpaths;
- (iv) installation of street lighting; and
- (v) wages or contract fees for solid waste collection and street cleaning.

Public Transport Component

2.45 The CTA maintenance system has a four zone structure, north, south, east and west. All engineering functions are controlled by a garage engineer reporting to a garage manager. There are four principal workshops located at Nasr, Ameriya, Koba and Boulak. With the exception of Nasr, which was built in 1970 as a composite workshop for engine, body and chassis overhaul, the others are small areas in converted garages. In addition, there are four engine overhaul shops--at Nasr (east zone), Imbaba (west zone), Mezalet (north zone), and Basatin (south zone). The engine overhaul shops are equipped with a variety of machine tools, some of which are of recent origin.

2.46 A review of the maintenance practices and procedures of the CTA has highlighted the following deficiencies:

- (i) workshop functions are fragmented with major unit overhauls being undertaken in garages as well as workshops;
- (ii) workshops are characterized by underutilization of space, badly laid out shops and equipment, and poor production line techniques;

- (iii) poor quality of engine overhaul--the best engine overhaul has an average life of 16 months, while the average is five months. This compares with an overhaul life in European countries of two years;
- (iv) poor quality of chassis and body overhaul--which is done bi-yearly compared with once every six years in European cities;
- (v) inadequate storekeeping and purchasing methods as evidenced by extensive stocks of redundant materials; and
- (vi) a shortage of skilled and semi-skilled labor aggravated by the lack of adequate training facilities.

2.47 The total capacity for body and unit overhaul of the principal workshops is 80 vehicles per month. With an operating fleet of about 2000 buses, and with an overhaul cycle of two years, there is a requirement to overhaul 1000 buses per year. In theory, the requirement matches the capacity. In practice the capacity to undertake complete overhauls is seriously inadequate and there is always a backlog of work. Unit overhauls, for example, presently take ten days excluding assembly.

2.48 The component would finance the construction of a composite overhaul center where engine, chassis and body repairs can be done under one roof. The work can then be undertaken using production techniques with inspection and testing at each stage to controlled standards with the aid of appropriate equipment and skilled manpower. The overhaul center will be located at the existing Gizr Suez facility, which is already partly constructed. It has a ground floor of 33,000 m<sup>2</sup> with a similar underground basement area. Preliminary designs and revised cost estimates were made available prior to negotiations. The overhaul center would replace three inefficient existing garages.

2.49 Technical training will be provided at the existing Monib Training Center which is currently being remodelled and extended. The training will consist of full and part-time courses, with practical training at the garages. A training workshop will be constructed under an existing contract, but equipment has been included in the Project. Specifications for the equipment were made available prior to negotiations.

2.50 The component, which is estimated to cost US\$28.1 million, would consist of:

- (i) the construction of a 33,000 m<sup>2</sup> lightweight industrial structure on top of an existing concrete deck, estimated to cost US\$11.2 million;
- (ii) purchase and installation of machines tools, radio equipment, and service trucks, estimated to cost US\$9.9 million;

- (iii) purchase of spare parts and other inventory items, estimated to cost US\$6.2 million; and
- (iv) purchase and installation of equipment for the Monib Training Center, estimated to cost US\$0.8 million.

### III. COST ESTIMATES, FINANCING PLAN AND LOAN ADMINISTRATION

#### A. Cost Estimates

3.01 The total cost of the project is estimated at US\$116 million, of which US\$60 million or 52% represents the foreign exchange component. Base cost estimates which exclude taxes, are expressed in prices of March 1982 and are based on preliminary designs for most project components. A physical contingency of 10% on base costs was allowed on all components except for technical assistance. Total price increases are estimated at 31% of base costs plus physical contingencies and allow for expected price inflation of 14% in 1982, and 13% thereafter on all local cost items including physical contingencies, and 8% in 1982 and 1983, decreasing to 7.5% in 1984 and 7.0% thereafter on all foreign cost items including physical contingencies. Total contingencies are estimated to be about 41% of base costs. The project contains about 400 man-months of consulting services to assist in the preparation of engineering drawings, specifications and construction supervision, and about 500 man-months for technical assistance. The average estimated cost of these services in prices of March, 1982 is US\$10,200 per man-month including travel and subsistence. The summary cost estimates are shown in Table 3.1, while the detailed cost estimates and other supplementary data are shown in Annex I.

Table 3.1: PROJECT COST ESTIMATES SUMMARY

	<u>LE Million</u>			<u>US\$ Million</u>			<u>%</u>
	<u>Local</u>	<u>Foreign</u>	<u>Total</u>	<u>Local</u>	<u>Foreign</u>	<u>Total</u>	<u>Foreign Exchange</u>
A. Traffic Engineering and Road Maintenance	17.13	12.36	29.49	21.07	15.20	36.27	42
B. Traffic Enforcement	0.31	2.15	2.46	0.36	2.66	3.02	88
C. Institutional Development	2.00	6.01	8.01	2.46	7.39	9.85	75
D. Area Upgrading	5.14	2.77	7.91	6.32	3.41	9.73	35
E. Public Transport	4.70	10.50	15.20	5.78	12.92	18.70	69
F. Design and Supervision	<u>2.72</u>	<u>1.01</u>	<u>3.73</u>	<u>3.35</u>	<u>1.24</u>	<u>4.59</u>	<u>27</u>
Base Costs	<u>32.00</u>	<u>34.80</u>	<u>66.80</u>	<u>39.34</u>	<u>42.82</u>	<u>82.16</u>	<u>52</u>
Physical Contingencies	2.82	2.68	5.50	3.47	3.29	6.76	49
Price Contingencies	<u>11.17</u>	<u>11.02</u>	<u>22.19</u>	<u>13.42</u>	<u>13.89</u>	<u>27.31</u>	<u>51</u>
Total Project Cost	<u>45.99</u>	<u>48.50</u>	<u>94.49</u>	<u>56.23</u>	<u>60.00</u>	<u>116.23</u>	<u>52</u>

B. Financing Plan

3.02 Advances totalling US\$1 million have already been granted from the Association's Project Preparation Facility (PPF). This credit will be repaid over a 5 year period at 3/4%. In order to cover the full foreign exchange cost of the project (estimated at US\$60 million) a Bank loan of US\$59 million is proposed. The loan will be made to the Arab Republic of Egypt for a term of 20 years, including five years of grace at the prevailing Bank interest rate. Of the remaining US\$56 million or 48% of total project costs, US\$11 million would be financed by the CTA, and US\$45 million would be financed by the national government in the form of budgetary transfers. Transfers of this kind are in line with government policy to strengthen the capacity of local governments to undertake and implement municipal infrastructure investments.

3.03 Of the total loan of US\$59 million, about US\$20.5 million would be on-lent to the CTA. The Government would assume the foreign exchange risk on this loan. In order to establish the principle that on-lending rates should be equitable and conducive to the efficient mobilization and allocation of financial resources, assurances were obtained during loan negotiations that the funds on-lent by the government to the CTA will be under the same terms as the Bank loan. Execution of a subsidiary loan agreement will be a condition of loan effectiveness.

Table 3.2: FINANCING PLAN  
US\$ million

Implementing Agency	Total	Bank <sup>1/</sup>		Government		CTA	
		Group	%		%		%
Cairo Governorate	73.21	33.60	46	39.61	55	-	-
Giza Governorate	11.75	5.90	50	5.85	50	-	-
CTA	31.27	20.50	66	-	-	10.77	34
	<u>116.23</u>	<u>60.00</u>	<u>52</u>	<u>45.46</u>	<u>39</u>	<u>10.77</u>	<u>10</u>

1/ Includes PPF advances totalling US\$1 million

C. Procurement and Disbursement

Procurement

3.04 Contracts for the supply of equipment and materials valued at US\$250,000 or more and estimated to total about US\$10.0 million will be awarded through international competitive bidding procedures in accordance with Bank guidelines. Contracts under US\$250,000, open also to foreign contractors, will be awarded on the basis of local competitive bidding procedures acceptable to the Bank. For bid evaluation purposes under international competitive bidding, a margin of preference equal to 15% or the applicable customs duties, whichever is lower, will be allowed for materials and equipment manufactured in Egypt.

3.05 Contracts for civil works valued at US\$1.5 million or more will be awarded through international competitive bidding in accordance with Bank guidelines. Civil works contracts under US\$1.5 million will be awarded through local competitive bidding open also to foreign contractors, using procurement procedures acceptable to the Bank. Because of a large number of local contractors, it is expected that all such contracts will be won by local bidders.

3.06 All civil works contracts valued at US\$1.5 million or more and equipment, materials and technical assistance contracts valued at US\$250,000 or more will be subject to the prior review of procurement documentation by the Bank. These represent about 15% of the contracts and will result in coverage of about 20% of the estimated value of contracts. The balance of the contracts will be subject to post review after contract signature on a selective basis.

Disbursements

3.07 The proceeds of the proposed loan amount of US\$59 million will be disbursed as follows:

<u>Category</u>	<u>Allocation of Loan In US\$ Millions</u>				<u>% of Expenditures To be Financed</u>
	<u>Cairo</u>	<u>Giza</u>	<u>CTA</u>	<u>Total</u>	
Materials and Equipment	4.4	1.6	10.2	16.2	100% of foreign expenditures and 100% of local expenditures ex-factory and 75% of local expenditures
Civil Works	12.3	2.5	2.7	17.5	37%
Consulting and Training Services	10.4	0.8	3.6	14.8	100%
Unallocated	<u>5.5</u>	<u>1.0</u>	<u>4.0</u>	<u>10.5</u>	
	32.6	5.9	20.5	59.0	

3.08 Retroactive financing in an amount not exceeding US\$400,000 is recommended for expenditures incurred from June 30, 1982, for hiring of consultants and preliminary work on selected smaller items.

3.09 As shown in Table 3.3, the estimated disbursement profile of the project is 5.5 years, against an average disbursement profile for Urban Projects within the EMENA Region of 6.0 years. The shorter than average disbursement profile is justified because of the advanced state of preparation of several of the project components. The closing date will be December 31, 1987.

Table 3.3: ESTIMATE DISBURSEMENT SCHEDULE

Fiscal Year	Quarter Ending	Disbursements (US\$ million)	Cumulative Disbursements (US\$ million)
83	December 31, 1982	2.00	2.00
	March 31, 1983	2.25	4.25
	June 30, 1983	2.05	6.30
84	September 30, 1983	3.86	10.16
	December 31, 1983	4.15	14.31
	March 31, 1984	3.42	17.73
	June 30, 1984	3.11	20.84
85	September 30, 1984	3.80	24.64
	December 31, 1984	3.40	28.04
	March 31, 1985	3.42	31.46
	June 30, 1985	3.17	34.63
86	September 30, 1985	3.25	37.88
	December 31, 1985	3.43	41.31
	March 31, 1986	3.60	44.91
	June 30, 1986	3.30	48.21
87	September 30, 1986	3.72	51.93
	December 31, 1986	2.07	54.00
	March 31, 1987	1.70	55.70
	June 30, 1987	1.80	57.50
88	September 30, 1987	1.00	58.50
	December 31, 1987	0.50	59.00

VI. ORGANIZATION AND MANAGEMENT

A. Programming

Agency Responsibility

4.01 In line with the recent policy to transfer greater decision making authority to the Governorates, responsibility for project implementation will be primarily at the local level. Three agencies will have key implementation responsibilities. The Governorate of Cairo will be responsible for the largest share, about 63% of the total, while the Giza Governorate and the CTA will be responsible for 10% and 27% respectively. Agency responsibility for each project component is shown in Annex I, while the implementation plan is shown in Annex II.

4.02 Each of the implementing agencies will be responsible for all of the requisite programming and budgeting of their respective components, including design, bidding, procurement and construction. The Governorates would be responsible for the implementation of all road maintenance and traffic engineering measures. These measures, which are small scale and disaggregated, include road resurfacing and paving; curb re-alignments; small-scale roadway, footway and lay-by construction and repair; removal and resiting of street lighting, traffic signs, signals and other street furniture; road markings; traffic sign manufacture and installation; and pedestrian barriers, etc. Works of this nature are within the implementation capacity of the Governorates.

## B. Organizational Structure of the Governorates

### The Cairo Governorate

4.03 Overall municipal policy is determined by the Cairo City Council, which consists of 130 members each elected for a period of four years. Appointed by the President, the Governor is the Chief Executive Officer of the City, and in this capacity, is also Chairman of the City Council. There are four Assistant Governors; three of them act as general coordinators while one is responsible for city operations. The Governorate employs a total staff of about 129,000 people, of which 37,000 work in city operations, 1,200 work in housing and reconstruction, 62,000 work in education, 19,000 work in health, 5,000 work in social affairs and 4,800 work in administration.

4.04 All city operations are organized into three functional departments: (i) solid waste, electrical and mechanical services; (ii) roads and bridges; and (iii) planning and construction. Twelve district offices are located throughout the city. Each district office, where appropriate, is responsible for one or more of the departmental activities. Coordination of traffic enforcement and public information is provided by the Ministry of Interior, Central Traffic Department, (para. 1.08), but functional responsibility is controlled by the Governorate under the direction of the Manager of Traffic Police. The cost of traffic police operations is charged to the Governorate budget. The organization chart is shown in Annex III.

4.05 The Traffic Management and Planning Unit, which is located in the Planning and Construction Department, consists of three engineers, two architects, and three assistants. A major thrust of the project is to strengthen this unit, which is currently unable to discharge its responsibilities efficiently. Despite the use of consultants, however, the existing staff needs to be augmented. Assurances were obtained during negotiations, therefore that in addition to the existing staff, two engineers and four technicians would be hired and in place by March 31, 1983.



### Giza Governorate

4.06 The organizational structure of the Giza Governorate is very much like that of Cairo. Overall policy is determined by the City Council, which consists of 21 members, each elected for a term of four years. The Governor is appointed by the President. City operations are organized by seven functional departments consisting of housing, finance, administration, planning, roads and bridges, workshops and street lighting, and three district councils (which consist of the west, north and south districts). Employing a total staff of about 5,200 people, 20 work in housing, 380 work in finance and administration, 4,000 work in roads and bridges, and 800 work in workshops and street lighting. Of the total staff, about 3,800 work in the district councils. Traffic enforcement and public information are coordinated by the Ministry of the Interior, but managed and financed in the same manner as the Cairo Governorate. The organization chart is shown in Annex III.

4.07 At the present time there is no traffic planning and management unit. Assurances were obtained during loan negotiations that two engineers and three technicians will be appointed to the Planning Department by March 31, 1983 to form the basis of a new traffic planning unit.

### C. Detailed Implementation Procedures

#### Special Use of Advisors for Project Implementation

4.08 Given the staffing difficulties of local government units, the governorates have adopted a policy of contracting out most specialized technical work to qualified local consultants and engineering firms. As a result, project implementation will rely heavily upon consultants. Working as an integral part of the management team of the Cairo and Giza Governorates, the consultants will prepare the detailed designs and contract documents and supervise construction. However, notwithstanding the use of consultants, considerable assistance is required at the governorate level to help in establishing the traffic planning units, including the development of standard procedures for the recording and analysis of traffic data and accident statistics for the planning, design and procurement of major civil works, in managing and supervising the work of the design consultants, and in training local staff. This work would be carried out by three senior advisors--two for Cairo and one for Giza. These advisors would form the core of the implementation unit. Assurances were obtained during negotiations that three advisors under job descriptions and qualifications satisfactory to the Bank would be hired and in place by November 30, 1982 and would continue in that capacity during the implementation period of the project. Two potential advisors with qualifications satisfactory to the Bank have already been identified.

4.09 While the design consultants are expected to be primarily local consultancy firms, it is possible that the senior advisors may be foreign. It has been agreed, however, that the Governorates will first try to find local candidates, but that if suitable local candidates are not found foreign advisors will be hired.

Accident Investigation

4.10 The Cairo and Giza Governorates would develop specialized units capable of dealing with the extraordinary problem of traffic accidents in Greater Cairo. These units would be functionally responsible to the Central Traffic Department under the direction of the Manager of Traffic Police. The units would include trained specialists to investigate serious and fatal accidents and be the front line force to deal with most accidents.

4.11 Each of the traffic police authorities would designate officers and constables for specialized training to enable them to undertake the defined role of the unit. Assurances were obtained during negotiations that adequately staffed and equipped units would be in place by December 31, 1984 and maintained thereafter. It is estimated that the additional manpower required would be:

<u>Cairo</u>	<u>Giza</u>	<u>Total</u>
5 officers	2 officers	7 officers
70 constables	40 constables	110 constables

Traffic Enforcement and Parking Control

4.12 The implementation of the CBD traffic management proposals will require the strengthening of the traffic enforcement and parking control unit to enforce the regulations and traffic management measures. Assurances were obtained during negotiations that the Cairo Traffic Department, would maintain and adequately staff and equip its traffic enforcement and parking control unit. It is estimated that the additional manpower requirements would be:

<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>Total</u>
2 officers	3 officers	4 officers	9 officers
5 constables	9 constables	12 constables	26 constables
100 soldiers	170 soldiers	220 soldiers	490 soldiers

D. The Cairo Transport Authority

4.13 The CTA is governed by a six person Board of Directors, including the Chairman. Activities are divided into nine functional areas, each with a department head reporting directly to the Chairman. The CTA employs a total staff of about 27,000. The organization chart is shown in Annex III. The majority of management level employees are qualified engineers who are competent to implement the physical aspects of the project. However, their ability to make inroads into the operational problems of the CTA is constrained by the lack of qualified supervisors. Therefore, and as mentioned earlier, substantial technical assistance and training is planned to strengthen the operational capacity of the CTA.

4.14 Recent surveys have revealed a large number of fundamental problems in the operations of the CTA. Maintenance systems and associated logistics, for example, are characterized by extraordinarily complex procurement procedures, irrational criteria for determining spares quantities, a lack of quality control and an inadequate understanding of preventative maintenance. In the area of financial and management information, there is essentially no cost control system (very few cost centers have been established) and budgeting and budget planning procedures are primitive. Operating objectives, for the most part, are unspecified or unclear. Vehicle procurement practices aggravate the maintenance problem by considering first cost instead of the life-cycle cost in making procurement decisions, while the resulting diversity of vehicle makes and models greatly complicates the maintenance and parts supply problem.

4.15 Politically determined low fares have held revenues in check during a period when costs have been rising sharply. The lack of internally generated funds, coupled with insufficient government subsidies, have resulted in reduced maintenance levels as a means of balancing the cash flow. The low level of daily buses available for revenue service is due almost entirely to maintenance related problems. Thus, the phenomenon of high ridership is further complicated by the shortage of assigned vehicles. Severe overcrowding results, and this contributes to inadequate fare collection procedures and to the wear and tear of the fleet which, in turn, exceeds the capacity of the maintenance function. The level of manpower in the maintenance department is high, but it consists primarily of unskilled labor which contributes to high manning ratios and a low level of manpower efficiency. Compounding the problem, the streets of Cairo are extremely crowded, and this results in a low operating speed and reduced efficiency of the CTA fleet.

4.16 The combination of these factors has resulted in a transit system which is in need of improved techniques for planning and controlling the maintenance activities so that fleet availability and manpower efficiency can be improved. If the actual useful life of each bus, for example, were increased even from five to seven years (the length of the depreciation cycle), the fleet availability would improve, and the need for new vehicle

purchases would be reduced. Increased vehicle availability would serve to reduce the ridership per vehicle, which would in turn reduce the rapid rate of deterioration brought about by the heavy passenger loads.

4.17 Between 1978 and 1979 a total of 400 specially manufactured buses were put into service with the GCBC, which was established to operate on selected routes at higher fares. The structural and electrical designs of the buses, however proved to be inadequate for the Cairo conditions, and as a result the average daily operating fleet is now less than 180 units. Financial performance has been less than expected, and operating losses have been high. Because the CTA management is contemplating closing down the GCBC, these operating deficits have not been consolidated into the CTA financial results analyzed in Chapter V.

#### E. Supervision

4.18 Particularly in its early stages, the project would require intensive supervision. An estimated 48 person-weeks of Bank staff and consulting time would be needed for the first year of the project, 36 person-weeks for the second, and 24 person-weeks for each of the third and fourth years.

### V. FINANCIAL ANALYSIS

#### A. Local Government Finance

##### Introduction

5.01 Of the three implementing agencies for the project--the Cairo Governorate, the Giza Governorate, and the Cairo Transport Authority (CTA)--only the CTA is potentially a commercially oriented undertaking. Since the governorates function as subdivisions of the national government with limited budgetary flexibility, their financial structure is only briefly described below. A fuller financial analysis has been prepared for the CTA.

##### Greater Cairo-Municipal Finances

5.02 The three governorates of Greater Cairo--Cairo, Giza, and Kalyubia--have only limited responsibility for the provision of urban services. Until recently they were concerned mostly with street construction and maintenance. However, in line with the recent transfer of responsibilities to the local level, the governorates are now responsible for housing. Public utility services such as public transportation, water, sewerage, street drainage, electricity and telephones are provided by other agencies (para. 1.08). There is no publicly controlled or managed solid waste management system for Greater Cairo (paras. 1.18-1.19). As shown by the table below, the local revenue base is weak: the governorates rely on the central government for about 80% of their resources.

GREATER CAIRO  
**Table 5.1: CONSOLIDATED STATEMENT OF REVENUES AND EXPENDITURES**  
(In LE Millions)

	1977		1978		1979		1980	
	LE	%	LE	%	LE	%	LE	%
<u>Revenues</u>								
<b>Locally Generated Revenues</b>								
Land Tax	1.2	1	1.2	1	1.2	1	1.3	1
Automobile Tax	7.5	7	8.6	7	10.4	6	11.5	4
Building Tax	3.3	3	2.8	2	3.0	2	3.4	1
Entertainment & Utility Tax	21.2	21	24.8	19	23.2	14	32.7	13
	<u>33.2</u>	<u>32</u>	<u>37.4</u>	<u>29</u>	<u>37.8</u>	<u>23</u>	<u>48.9</u>	<u>19</u>
<b>Externally Generated Revenues</b>								
Subsidies	66.7	68	91.7	70	113.0	69	151.0	59
Credit Facilities Grants	-	-	1.8	1	12.6	8	19.3	8
Public Housing Grants	-	-	-	-	-	-	36.6	14
	<u>99.9</u>	<u>100</u>	<u>130.2</u>	<u>100</u>	<u>163.4</u>	<u>100</u>	<u>255.8</u>	<u>100</u>
<u>Expenditures</u>								
Salaries	71.3	71	93.4	72	120.0	73	134.7	53
Current Expenditures	19.7	20	21.7	16	22.9	14	26.8	10
Capital Investments	7.1	7	13.0	10	17.6	11	90.8	36
Capital Transfers	1.8	2	2.1	2	2.9	2	3.5	1
	<u>99.9</u>	<u>100</u>	<u>130.2</u>	<u>100</u>	<u>163.4</u>	<u>100</u>	<u>255.8</u>	<u>100</u>

5.03 In addition to the subsidies and grants provided by the central government, principal sources of municipal revenues are land tax, automobile tax, building tax and an entertainment tax. As other sources of tax revenues are limited, land taxes are potentially the most important sources of revenues. The expenditure classifications of each of the governorates are roughly the same. Salaries are the largest single expenditure, accounting for about 53% of the total. The next largest item is capital investments, which have increased from an average of 10% of expenditures during the 1977/79 period to 36% in 1980. The increase is mostly the result of the recent government devolution policy in which the governorates will directly undertake a larger proportion of capital works.

Greater Cairo Urban Expenditures

5.04 The total capital expenditures in the Greater Cairo area amounted to LE 1066 million during 1980, or LE 125 per person per year. As shown by the table below, more than 90% of the investments channelled into the urban sector originate outside the governorate budgets. Table 5.2 shows the breakdown by category for 1979 and 1980.

Table 5.2: GREATER CAIRO - URBAN INVESTMENTS  
(In LE Millions)

Expenditure	1979					1980				
	Central	Cairo	Giza	Kalyu- bia	Total	Central	Cairo	Giza	Kalyu- bia	Total
Municipal Services	-	2.5	1.7	-	4.2	-	4.7	1.1	-	5.8
Industry	264.8	-	-	-	264.8	313.2	-	-	-	313.2
Electricity	31.8	0.4	0.6	0.3	33.1	54.9	0.9	1.2	0.6	57.6
Other Services	91.9	1.1	0.6	0.5	94.1	82.3	1.5	1.0	0.8	85.6
Housing	44.5	-	-	-	44.5	32.8	30.0	5.1	2.0	69.9
Water and Sewerage	88.1	-	-	-	88.1	161.2	-	1.4	2.8	165.4
Transportation	145.5	2.4	2.4	0.5	150.8	183.7	20.5	5.4	2.5	212.1
Telecommunications	31.6	-	-	-	31.6	61.1	-	-	-	61.1
Other	69.4	1.1	0.9	0.5	71.9	90.7	3.6	0.7	0.6	95.6
	<u>767.6</u>	<u>7.5</u>	<u>6.2</u>	<u>1.8</u>	<u>783.1</u>	<u>979.9</u>	<u>61.2</u>	<u>15.9</u>	<u>9.3</u>	<u>1066.3</u>

5.05 Of the total expenditures in 1980, about 20% or LE 212 million were transportation related. For Greater Cairo, these expenditures included LE 17.1 million for roads and streets and LE 28.2 million for bridges and flyovers, accounting for about 8% and 13% respectively of the total. Included in these figures are expenditures for road maintenance and resurfacing done by contract. Salaries which cover maintenance done by municipal staff are included in separate governorate budgets, but this primarily involved patching potholes. Because the governorates' budgetary system does not segregate capital expenditures from road maintenance costs, it is not possible to determine precisely what proportion of the transportation budget is used for maintenance. Table 5.3 shows the transportation expenditures by category.

GREATER CAIRO  
Table 5.3: TRANSPORTATION EXPENDITURES BY CATEGORY  
(In LE millions)

Expenditure	1979					1980				
	Government					Government				
	Central	Cairo	Giza	Kalyu- bia	Total	Central	Cairo	Giza	Kalyu- bia	Total
Roads and Streets	8.4	2.4	1.2	0.5	12.5	10.3	3.2	2.8	0.8	17.1
Bridges & Flyovers	13.6	-	0.1	-	13.7	10.8	15.5	0.3	1.6	28.2
Area Traffic Control	-	-	1.1	-	1.1	-	1.9	-	-	1.9
Road Equipment	-	-	-	-	-	-	1.4	0.4	0.1	1.9
Sub-Total	<u>22.0</u>	<u>2.4</u>	<u>2.4</u>	<u>0.5</u>	<u>27.3</u>	<u>21.1</u>	<u>22.0</u>	<u>3.5</u>	<u>2.5</u>	<u>49.1</u>
Operating Subsidies etc.	123.5	-	-	-	123.5	162.6	0.4	-	-	163.0
	<u>145.5</u>	<u>2.4</u>	<u>2.4</u>	<u>0.5</u>	<u>150.8</u>	<u>183.7</u>	<u>22.4</u>	<u>3.5</u>	<u>2.5</u>	<u>212.1</u>

## Impact of the Project on Governorate Finances

5.06 Given the inadequate financial base of the governorates, the financing of the project has been structured in such a fashion it fits within trends in governorates' capital expenditures. However, one of the key objectives of the project is to shift the composition of these expenditures to increase the proportion spent on maintenance and traffic management contracts (which the governorates' budgeting system is including under capital expenditures). New paving, particularly in the upgrading areas, will require additional maintenance expenditures. At the level of the pilot schemes included in the Project these additional expenditures would be relatively minor. Should a major program be developed as a consequence of the success of the pilot schemes, additional financial measures would be required. The impact of the project will be monitored closely during project implementation.

### B. The Cairo Transport Authority

#### Financial Structure

5.07 As shown in Annex (IV), the CTA is quite large, having, as of December 31, 1979, US\$229 million in total assets. However, total liabilities and capital of the enterprise amounted to US\$346 million as of the same date, thus reflecting an accumulated deficit of US\$117 million. Of the total liabilities, and capital, 59% or US\$204 million is owed to the Government. This debt reflects CTA policy of showing the accumulated effect of the Government subsidies (which consist of an operating subsidy; debt service subsidy; and capital subsidy) as a liability on the balance sheet, even though the CTA does not have the financial capacity to repay the debt. Because of this, these transactions may be regarded, for all practical purposes, as contributed capital. The remaining US\$142 million consists of US\$68 million owed to equipment suppliers, US\$31 million to banks and unsecured creditors, while US\$43 million is in the form of reserves and capital.

#### Operating Performance

5.08 While the CTA is a public utility and should be perceived of as a commercially oriented undertaking, it should be recognized that until recently fares have remained largely unchanged. As a result, it has always operated at a loss, never generating sufficient funds to meet day-to-day expenses nor to cover its debt service requirements, working capital needs, or the contributions required to finance new works. Thus, the CTA has become accustomed to operating as a highly subsidized institution, and its management philosophy and practices have been deeply engrained along these lines.

5.09 The overall financial performance of the CTA is poor, which can be largely attributed to the low regulated fares. Fare increases require the

consent of the Peoples Assembly. However, in 1978, the CTA implemented an innovative program that resulted in higher average fares within the same fare structure. Essentially, the program consisted of reducing the number of second class seats on each bus in favor of higher fare first class seats. As shown by the figures below, this resulted in average bus fares increasing from 1.6 piasters in 1977 to 5.0 piasters in 1982. For buses, this meant fare increases of 8%, 29%, 36%, 41%, and 19% for the years 1978, 1979, 1980, 1981, and 1982 respectively, and somewhat higher percentages for trams and river buses.

Table 5.4: AVERAGE FARE PER PASSENGER  
(in Piasters)

Travel Mode	Fares					
	1977	1978	1979	1980	1981	1982
Buses	1.56	1.69	2.18	2.97	4.20	5.00
Trams and Trolleys	1.11	1.56	2.10	2.86	4.20	4.50
River Buses	1.19	1.69	2.14	3.20	5.20	5.20

5.10 Mostly as a result of the fare increases during the 1978-80 period, and possibly as a result of shifting some of the losses into the GCBC, the operating subsidies payable by the Government to the CTA have remained relatively constant, at about LE 23 million (US\$33 million) per annum (see Annex IV for details). The debt service and capital subsidies, together, averaged about LE 29 million (US\$42 million) per annum during the same period, so that the total annual subsidy averaged about LE 52 million (US\$75 million). This figure is expected to escalate during the 1981-84 period. The increasing dependence on Government subsidies is accentuated by the increasing gap between variable expenses (the direct costs incurred, excluding depreciation and interest charges, to keep a vehicle on the road) and total revenues.

#### Background of the Project

5.11 During Project preparation, the Bank had been asked to consider making a sizeable loan to the CTA and to expand CTA's fleet size. It was concluded, however, that CTA's current technical performance, especially poor maintenance and low fare structure, precluded consideration of such an operation without substantial financial reforms. It was agreed with the Government, therefore, that Bank involvement with the CTA at this point would be limited in scope, and essentially would be aimed at assisting the enterprise develop an improved level of service as a first step in a program of institutional reform (which would necessarily include substantial fare increases), and to bring the CTA to the point where a future lending operation could be considered. While financial viability for the CTA is a desirable objective, it is not considered achievable in the short-term. Therefore, significant fare increases were not considered appropriate in the context of the proposed Project.



5.12 This conclusion was based on the following considerations. First, the public has for years accepted that the CTA provides a poor public service, with overloaded and badly maintained buses, at low fares. Second, token or hastily improvised fare increases would only give the appearance of a solution and raise expectations of improved performance far beyond the capacity of CTA to achieve. Third, the fare increases necessary to begin a program of financial improvement will mean changing the whole operating culture of an important public sector institution. Lessons learned from other similar situations suggest that public reaction to such changes is unpredictable. It could range all the way from passive acceptance to physical violence. Fourth, if substantial fare increases are implemented too hastily, only to be later rescinded because of public pressure, the credibility of the CTA, already low, would be completely destroyed. Then, as a consequence, any further attempts at restoring financial viability would have to be shelved indefinitely.

#### Impact of the Project

5.13 Thus a decision has been made to concentrate on improvements in bus operating efficiency which will be achieved through more effective outshedding, increases in kilometers run per bus, and reductions in the manning ratios. As shown in Table 5.5, effective outshedding, defined as a percentage of the total fleet completing its route schedule, is expected to increase from its present level of 68% to 77% by the end of 1985. Effective outshedding will increase through the project mostly as a result of a reduction in breakdowns originating from better maintenance and improved supporting physical facilities financed by the project. The number of kilometers run per bus per day would also increase from its 1979 average of 207 to 211 by the end of 1985 and the manning ratio would decrease from 20 employees per bus in 1979 to 16 by 1985. Moreover, the average life of a bus is expected to increase from the present life of five years to seven years by the end of 1984.

Table 5.5: KEY PERFORMANCE INDICATORS

	1982	1983	1984	1985
Effective Outshedding	71%	73%	75%	77%
Kilometers Run Per Bus Per Day	219	219	219	219
Daily Passenger Trips (millions)	3.20	3.45	3.62	3.80
Manning Ratio	19	18	17	16

5.14 Assurances were obtained during negotiations that CTA's performance in achieving its operational and financial objectives will be monitored through key performance indicators acceptable to the Bank. Understandings were reached that the CTA will reach the performance indicators shown in Table 5.5. Further indicators such as bus headways on selected runs, peak hour operating speeds for buses and ratios of passengers to seating capacity will be developed when the data becomes

available. This data is expected to be a by-product of the traffic and route rationalization measures to be undertaken as part of the institutional development component.

5.15 The improvements in bus operating efficiency are expected to have a positive impact on the revenues generated by the enterprise. For example, improved outshedding and route rationalization measures are expected to increase revenues by LE 3.0 million (US\$3.7 million) by the end of 1985. Improved fare collection procedures, partly a function of the increased operating efficiency, and partly a result of the institutional development measures will yield an additional LE 2.2 million (US\$2.7 million) in revenues by the end of 1985. Savings generated from reduced capital expenditures are expected to total about LE 6.9 million (US\$8.5 million) by the end of 1985. Table 5.6 summarizes, in prices of 1982, the revenue impact of the project.

Table 5.6: REVENUE IMPACT STATEMENT  
(LE Millions)

	1983	1984	1985	1986	1987
Increase in Revenues:					
Productivity Improvements	1.89	1.93	3.02	3.02	3.02
Fare Collection	.58	1.40	2.15	2.15	2.15
	<u>2.47</u>	<u>3.33</u>	<u>5.17</u>	<u>5.17</u>	<u>5.17</u>
Capital Savings	-	-	-	6.90	6.90
	<u>2.47</u>	<u>3.33</u>	<u>5.17</u>	<u>12.07</u>	<u>12.07</u>
US\$ Equivalent	<u>3.04</u>	<u>4.10</u>	<u>6.36</u>	<u>14.85</u>	<u>14.85</u>

5.16 Despite the the revenue increases obtained during the 1978-80 period, and the additional revenues generated under the project, variable operating costs per kilometer run exceed the average revenue per kilometer run. Because the operational improvements planned will increase the number of buses to the road at any given time, the efficiency improvements will in the short term further widen the gap between revenues and operating costs. This gap is aggravated by the adverse impact on the CTA of recent prices increases in the cost of rolling stock. As a result, subsidy requirements are expected to increase from LE 50 million per annum (US\$72 million) by the end of 1980 to LE 169 million per annum (US\$202 million) by the end of 1984, totalling about LE 493 million (US\$609 million) during the 1981-84 period. It is noteworthy that 75% of the total subsidy requirements comprise capital and debt services subsidies (directly related to new equipment purchases), while the remaining 25% consists of operating subsidies. Table 5.7 below summarizes the estimated subsidy requirements. Details are shown in the financial projections attached as Annex IV.

Table 5.7: SUBSIDY REQUIREMENTS  
(LE Millions)

	1980	1981	1982	1983	1984	1982-84
Operating Subsidy	22.7	24.8	28.6	31.5	37.0	121.9
Capital Subsidy	13.0	27.1	42.5	44.4	43.8	157.8
Debt Service Subsidy	14.6	25.0	37.4	62.5	87.9	212.8
	<u>50.3</u>	<u>76.9</u>	<u>108.5</u>	<u>138.4</u>	<u>168.7</u>	<u>492.5</u>
US\$ Equivalent	<u>71.9</u>	<u>109.9</u>	<u>130.2</u>	<u>166.1</u>	<u>202.4</u>	<u>608.6</u>

5.17 While it is recognized that the formulation of a comprehensive strategy to improve CTA's financial situation must await the findings and recommendations of the consultants CTA is planning to hire under the project, the need for suitable interim measures to narrow the gap between costs and revenues has become acute. Therefore, assurances were obtained during negotiations that CTA shall (i) continue to take measures to increase its revenues and reduce its operating expenses in order to improve its financial position; and (ii) exchange views regularly with the Bank with respect to such measures to be taken by CTA and the time schedule for the implementation thereof. Preparation of a plan satisfactory to the Bank regarding the measures to be taken by CTA to increase its revenues and reduce its operating expenses has been specified as a condition of disbursement on the CTA component. Pending the outcome of the above studies, the Bank intends to continue its dialogue with the Government with the view to stabilizing the capital and debt service subsidies of the CTA.

5.18 Although fare increases per se have not been stipulated as a condition of the project, the sensitivity of the fare question does not, however, diminish its importance. A suitable strategy for financial improvement must have planned fare increases as its centerpiece. Such increases should be:

- (a) introduced gradually, according to a carefully planned strategy;
- (b) coupled with perceived improvements in service to the public;
- (c) implemented with a firmness of resolve, and good judgement regarding their level and timing so as to ensure public acceptance;
- (d) related to financial objectives established by agreement between the Bank and the CTA;
- (e) related to planned and achieved increases in productivity and efficiency; and
- (f) be associated with a well-planned program of public relations and public education.

5.19 CTA recognizes the need to develop a comprehensive strategy to improve their financial situation. Preliminary ideas under consideration by the enterprise include consolidation of route structure, owner/driver

plans for certain types of operations and establishing subsidiary companies for premium service, both to the travelling public and to tourists. Future fare increases are expected to be developed in this context. Obviously, some measures will need further study before they can be introduced, while the introduction of others might need to be phased, so that significant improvements to CTA's financial position will take some time to achieve.

5.20 As mentioned earlier, inefficiency and low fares are the main contributing factors to CTA's growing deficits. Bank involvement with the CTA at this time is based on the premise that the inefficiencies would be addressed within the context of the proposed project, while future fare increases would be addressed within the context of a possible future project. The CTA has expressed interest in Bank participation in a project dealing exclusively with the enterprise, and discussions are currently underway to determine the scope of such an undertaking. In this regard, the Government is expected to define its policy to bring about a gradual real increase in average fares, so as to significantly reduce the gap between revenues and expenses (including depreciation).

5.21 Given the low public sector wage levels, perhaps the most critical aspect to the future success of the CTA lies with the incentive wage program which has been introduced in the last few years. The incentive wage program gives maintenance employees, bus drivers, and conductors an opportunity to significantly increase their monthly earnings, thereby making their total wage package somewhat competitive with the private market place. Illustrative of the incentive scheme, a bus driver currently earning LE 40 per month can increase his earnings to LE 80 per month. Essentially, the scheme is a bonus for reduced absenteeism and sick leave. While there is no guarantee that the introduction of the incentive scheme will reduce turnover and increase productivity, the fact that wage levels are now closer to the private sector should induce more skilled workers to seek employment with the CTA.

#### Future Finances

5.22 Looking forward, the financing requirements of the CTA during the 1981-84 period, including the ceiling on operating subsidies are estimated at US\$1221.5 million. This amount includes US\$122.8 million for cash operating losses, US\$35.4 million for working capital needs, US\$261.7 million for debt service, US\$791.8 million for fixed assets (which includes the proposed sub-project), and US\$9.8 million for investments in the GCBC. About 47% of requirements, or US\$578.6 million, would be financed by Government subsidies, while the remaining 53% or US\$642.9 million would be financed by long-term debt. Table 5.8 summarizes the financing requirements.

Table 5.8: FINANCING PLAN 1981-84  
(in millions)

	<u>LE</u>	<u>US\$</u>	<u>%</u>
<u>Application of Funds</u>			
Cash Operating Losses	99.8	122.8	10
Working Capital Requirements	28.8	35.4	3
Debt Service	<u>212.8</u>	<u>261.7</u>	<u>21</u>
	<u>341.4</u>	<u>419.9</u>	<u>34</u>
Rolling Stock	352.0	433.0	36
Building and Equipment	291.7	358.8	29
Investments in G.C.B.C.	<u>8.0</u>	<u>9.8</u>	<u>1</u>
Total Application of Funds	<u>993.1</u>	<u>1221.5</u>	<u>100</u>
<u>Source of Funds</u>			
<u>Government Subsidies:</u>			
Operating	99.8	122.8	10
Debt Service	212.8	261.7	21
Capital	<u>157.8</u>	<u>194.1</u>	<u>16</u>
	<u>470.4</u>	<u>578.6</u>	<u>47</u>
Long-Term Debt	<u>522.7</u>	<u>642.9</u>	<u>53</u>
	<u>993.1</u>	<u>1221.5</u>	<u>100</u>

## VI. PROJECT JUSTIFICATION

### A. Introduction

#### Objectives

6.01 The proposed project's objectives are to initiate and implement a revised urban transport strategy (including an improved institutional capability) which will make more efficient use of existing transport facilities in Greater Cairo. More specifically, the project aims to improve the population's mobility, particularly the public transport and pedestrian facilities by: (i) introducing cost-effective traffic engineering and management measures that would increase the road capacity and access to public transport users and pedestrians; (ii) improving the effectiveness of the traffic police; (iii) providing road maintenance facilities; (iv) improving the operational and maintenance efficiency of the Cairo Transit Authority; and (v) providing technical assistance to the major implementing agencies.

## Evaluation Methodology

6.02 An economic rate of return (ERR) and net present value (NPV) were calculated for the project components for which quantification was possible--this represented about 70% of the total project cost. The evaluation is based on estimates of incremental costs and benefits based on a "without project case" and "with project case." Although the benefits of some components were not possible to isolate and quantify (i.e., police enforcement, technical assistance), their costs were included in the economic analysis because they were considered important elements in generating the benefits, especially in the corridor and public transport improvements. The area upgrading and road maintenance schemes are not interdependent with other project elements. In these cases where the benefits were not quantifiable, they were evaluated on least-cost and qualitative criteria in order to assure maximum net benefits and consistency with the project's objectives.

### B. Summary of Benefits by Major Components

6.03 Benefits from Corridor Improvement Schemes. Traffic engineering and management actions over Cairo's major and most strategic primary, secondary and access corridors will improve the traffic flows and capacities of these congested routes. In addition, the provisions of these route alternatives from the CBD to through traffic, will improve the pedestrian movement, will reduce congestion in the CBD, and will improve public transport penetration. These increases in speed and mobility will produce substantial benefits in terms of vehicle operating cost savings and time value savings for all modes of transport. The economic rate of return (ERR) of these schemes, which comprise about 18% of total project costs, is 42%. It is noteworthy that public transport passengers are expected to reap about 62% of the schemes' total benefits.

6.04 Benefits from Central Business District. Junction improvement, ancillary traffic management and parking control measures in the highly congested CBD area are expected to discourage non-essential traffic (i.e., through traffic and illegal parking), and therefore improve the mobility and travelling speeds of essential vehicle traffic and pedestrians. The refurbishing of footpaths along key streets is expected to provide the pedestrian with added safety and comfort. The provision of two parking garages is the first stage of an innovative parking policy, which will help achieve a balance between demand for parking and demand of other activities which need road space. The economic rate of return is 18% for the CBD street and pedestrian improvements and 20% for the offstreet parking garages. These latter estimates are probably minimum figures based on estimates of the parking financial revenues which would accrue to the Cairo Governorate, and do not account for benefits obtained from more efficient use of road space.

6.05 Benefits from the Upgrading Scheme. The rehabilitation of the secondary and access roads in selected densely populated low income neighborhoods--by the removal of refuse, levelling and paving of roads and footpaths, and the provision of street lighting and a street cleaning service--would provide substantial improvements in public health, access for emergency vehicles, traffic flow and general environmental conditions. The urban poor are expected to be the primary beneficiaries. Although the conceptual and empirical difficulties of evaluating this component make it difficult to quantify these benefits, they are considered a critical phase to improving the living conditions of Cairo's population. In addition, these improvements are expected to increase the land prices of the areas affected (perhaps by as much as 10%). Rent control and the scarcity of housing, however, make evaluation of available data unreliable, and probably will limit the market transactions that may potentially result from these improvements.

6.06 Therefore, it is not appropriate to estimate an ERR on this component. The major justifications are the social benefits and the low cost design to producing these benefits within the context and strategy of the proposed project.

6.07 Benefits From the Maintenance and Street Cleaning and Lighting Equipment. The provision of trucks, equipment and technical assistance should lead to a considerable improvement in the maintenance of Cairo's deteriorating road network, especially of its secondary and access roads.

6.08 The pilot street cleaning and solid waste collection programs in the selected low-income areas (including the areas in the upgrading scheme) should improve the access to pedestrians and general living conditions of the surrounding population. The provision of equipment will improve the maintenance of street lighting, especially along the non-primary roads. Although these benefits are difficult to quantify, they are expected to improve the mobility of Cairo's travellers.

6.09 Benefits From Improved Police Equipment. The project's expected improvements in traffic flows will depend partly on the success of the project's proposed police enforcement measures--provision of motorcycles, tow trucks, and technical assistance and training for the various police departments. These benefits are assumed to be included in the vehicle operating cost savings and the time attributed to the corridor improvements.

6.10 Benefits From Public Transport. The equipment for the Monib training center, the centralization of the bus overhaul function at Gizr-Suez workshop, the installation of the radio/telephone equipment, the upgraded wage-incentive program and the operationally-oriented technical assistance activities, taken together as an integrated package, are expected to improve CTA's operational efficiency and quality of bus service. The ERR of these activities, including the related maintenance costs, and 100% of the technical assistance costs, is 26%. Perhaps the more important benefits are related to helping CTA lay the foundation and

first phase of an efficient bus operation and strategy for future improvements. The benefits are assumed to include the time value savings and delayed investment due to increased vehicle life, as well as increased bus revenues due to improved outshedding, better fare collection, increased bus mileage, and improved response time.

### C. Summary Economic Results

6.11 The ERR of the various components range from 18% to over 157%, and of the overall project, is approximately 29%; the results not only confirm that the project is economically justified, but also show that low-cost transport investments, with a strong orientation toward traffic management, could produce high benefits within a short-period of time.

6.12 Some of the specific components that may be vulnerable to changes in benefits and/or costs are: the off street parking garages, which still depend on the parking charges and/or the values assigned to the foregone rental income for the space being used; the traffic forecasts for Misr Sudan Streets, and the effects of the project's CTA maintenance improvements on producing net incremental revenues and benefits. These components, in particular, should be monitored closely during the project's implementation period. Finally, the value of time savings (estimated at one-third the wage rate) comprise about 67% of the project's total quantifiable benefits. If, however, the value of time savings were decreased by 50%, therefore assuming that non-work related person trips are valued only by one-sixth the wage rate, and capital costs were increased by 20%, then the overall project ERR would drop to about 24%.

### D. Distribution of Benefits

6.13 The proposed project, by increasing the efficiency in the use of the road capacity and of the existing public transport fleet, is expected to benefit all classes of travellers. A substantial portion of the project's benefits for each component will accrue to public transport vehicles and users, and therefore, is generally consistent with the project's objectives. Approximately 68% of the project's total quantifiable benefits are expected to benefit public transport vehicles and passengers; time value savings comprise most of these benefits, although the increased speeds should help the operating costs of the buses and increase their effective miles operated per day. Thus, the frequency of bus service should increase. Approximately 22% of the project's economic benefits are estimated to accrue to private automobiles and taxis, primarily in terms of decreased vehicle operating costs. The project's proposed parking controls in the CBD are expected to disbenefit those vehicles that have been parking illegally and/or free at the expense of pedestrians and essential vehicle traffic.



#### E. Impact on the Urban Poor

6.14 The lack of data regarding the socioeconomic profile of the benefiting areas and passengers makes it difficult to assess accurately the project's impact on the urban poor. Bank estimates show that about 30% of Cairo's population is classified as being below the absolute level of poverty. Given the relatively low bus fares, the poor spend probably less than 5% of their total household income for this item. Moreover, Cairo's housing shortage and limited employment opportunities are additional factors suggesting that the poor rely on public transport as their major means of transport. The project plans to improve CTA's geographical coverage, especially its penetration in low income and unserved areas. Thus, approximately 22% of the project's costs will be directed to the urban poor. The major components contributing to this poverty impact, to varying degrees, include the corridor improvements, area upgrading, pedestrian walkways, maintenance and street-cleaning improvements and the CTA project actions. Similarly, about 20% of the project's quantifiable benefits are expected to accrue directly to the urban poor, particularly in terms of the value of time savings and improved street cleaning services.

#### F. Energy Impact

6.15 One of the project's major benefits will be to increase the operating speeds of the various modes of transport in Greater Cairo. Based on an estimated relationship between vehicle operating costs and speed by mode of transport, and based on the proportion of vehicle operating costs comprised by fuel (valued at world market prices) for the various vehicle types, approximately 40% of the vehicle operating costs are estimated to be fuel savings. Based on the project's estimated vehicle operating costs (expressed in terms of NPV), these fuel savings over the next 25 years are equivalent to about LE 8.6 million. This estimate assumes 1980 prices, a constant price of fuel, and assume that the vehicle mileage - excluding buses - remains constant.

#### G. Land-Use and Environmental Impact

6.16 The project was designed to be consistent with Cairo's existing land-use plans and to minimize any possible negative environmental effects. The project's financing of a strategic action plan will provide a needed framework for guiding land-use patterns and the delivery of urban services in Greater Cairo. The specific dimensions and location of major schemes have been designed to protect some of Cairo's major antiquities. In addition, the project's police enforcement measures are expected to reduce traffic noise and air pollution from exhaust fumes.

## H. Project Risks

6.17 The proposed project carries the risks inherent to any program involving more than one implementing agency. Other risk elements are also present. First, there is the risk that the low public sector pay scales which make it difficult to attract qualified staff may permanently constrain the implementation capacity of the various agencies. The second risk concerns actions that the governorates are required to take to complement the physical measures. These include enforcing parking regulations and modifying bus routes. Positive factors making these risks acceptable are the use of technical experts in project implementation, and emphasis placed on institution building. Perhaps the most positive factor of all is that the project is the first comprehensive attempt at improving urban efficiency through low-cost technology, and will form the basis for continuing policy dialogue with the government to develop and implement future organizational and financial reforms.

6.18 The third risk concerns the additional financial resources required by the CTA to keep vehicle maintenance standards at appropriate levels. Presently, the CTA depends heavily on Government subsidies. In the absence of substantial tariff increases, these subsidies will increase significantly. Resistance by the Government to providing increased subsidies would negate the benefits of the CTA subproject. However, there has been no indication of decreasing government commitment to public transport in Greater Cairo. In fact, as noted earlier in this report (para. 1.22), 1974 marked the beginning of substantial new levels of financial aid from the central government to the CTA. This risk is, therefore considered acceptable.

## VII. AGREEMENTS REACHED AND RECOMMENDATIONS MADE

7.01 During negotiations, assurances were obtained that:

### A. CAIRO GOVERNORATE

- (i) Parking charges for off-street parking financed under project will be set to recover all costs, both capital and operating (para. 2.26);
- (ii) Subsequent to completion of the project, solid waste collection and street cleaning services would continue and would be financed through the resources of the Governorate (para. 2.43);
- (iii) The staff of the Traffic Management and Planning Unit will be increased by two engineers and four technicians by March 31, 1983 (para. 4.05);

- (iv) Two senior engineering advisors under job descriptions and qualifications satisfactory to the Bank will be appointed by November 30, 1982 (para. 4.08);
- (v) An accident investigation unit would be established by December 31, 1984 and maintained (para. 4.11); and
- (vi) The traffic enforcement and parking control unit would be maintained and adequately staffed and equipped (para 4.12).

B. GIZA GOVERNORATE

- (i) Subsequent to completion of the project, solid waste collection and street cleaning services would continue and would be financed through the resources of the Governorate (para. 2.43);
- (ii) Appointment of two engineers and three technicians to the Giza Planning Department by March 31, 1983 to form the core of a new Traffic Management and Planning Unit (para. 4.07);
- (iii) Appointment of one engineering advisor by November 30, 1982 under a job description and qualifications satisfactory to the Bank (para. 4.08); and
- (iv) An accident investigation unit would be established by December 31, 1984 and maintained (para. 4.11).

C. CTA

- (i) Funds would be on-lent by the Government to the CTA at a rate equal to Bank's interest rate (para. 3.03);
- (ii) Performance in achieving operational and financial objectives will be monitored through key performance indicators (para. 5.14); and
- (iii) Measures would be taken to increase revenues and reduce expenses and exchange views with the Bank with respect to such measures and their timetable for implementation (para. 5.17).

7.02 Preparation of a plan satisfactory to the Bank regarding the measures to be taken by CTA to increase its revenues and decrease its operating expenses has been specified as a condition of disbursement on the CTA component (para. 5.17).

7.03 The execution of a subsidiary loan agreement between the Government and CTA has been specified as a condition of effectiveness (para 3.03).

7.04 With the assurance and conditions indicated above, the proposed project is suitable for a Bank loan of US\$59 million equivalent.

EGYPT URBAN II  
GREATER CAIRO URBAN DEVELOPMENT PROJECT  
SUMMARY OF PROJECT COST ESTIMATES

Annex 1  
Page 1 of 2

A. TRAFFIC ENGINEERING AND ROAD MAINTENANCE	US\$ MILLION		LE MILLIONS		PERCENT FOREIGN EXCHANGE	ALLOCATION OF CONTINGENCIES IN LE MILLIONS					IMPLEMENTING AGENCIES									
	LOCAL	FOREIGN	LOCAL	FOREIGN		DESIGN AND SUPERVISION	BASE COST	PHYSICAL CONT.	SUB-TOTAL	PRICE CONT.	GRAND TOTAL	GOVERNORATE OF CAIRO		GOVERNORATE OF GIZA		TRANSPORT AUTHORITY				
												LE	USA	LE	USA	LE	USA			
PRIMARY CORRIDORS																				
1. SALAH SALEM	1.20	0.65	1.85	0.98	0.53	1.50	35	0.11	1.61	0.13	1.76	0.47	2.23	2.74	2.23	2.74	0.00	0.00	0.00	0.00
2. MHR SUDAN FLYOVER	2.40	1.25	3.65	1.98	1.05	3.00	35	0.21	3.21	0.30	3.51	0.97	4.00	5.02	4.08	5.02	0.00	0.00	0.00	0.00
3. GIZA/GH/AD/DMKI SQUARE	0.34	0.18	0.52	0.27	0.15	0.42	35	0.03	0.45	0.04	0.49	0.21	0.70	0.56	0.00	0.00	0.00	0.00	0.00	0.00
4. CORNICHE	0.97	0.52	1.49	0.79	0.42	1.21	35	0.08	1.29	0.12	1.42	0.74	2.16	2.65	2.16	2.65	0.00	0.00	0.00	0.00
5. FORT SAID STREET	1.60	0.86	2.46	1.30	0.70	2.00	35	0.14	2.14	0.20	2.34	1.15	3.55	4.34	3.53	4.34	0.00	0.00	0.00	0.00
	6.50	3.50	10.00	5.28	2.85	6.13	35	0.57	8.70	0.81	9.51	3.18	12.69	15.61	11.99	14.75	0.00	0.00	0.00	0.00
SECONDARY CORRIDORS																				
6. SHARI SHUBRA	0.64	0.46	1.32	0.70	0.37	1.07	35	0.07	1.14	0.11	1.25	0.28	1.50	1.88	1.53	1.88	0.00	0.00	0.00	0.00
7. MANSHET NASSER AND SHURABEYA	0.76	0.41	1.17	0.62	0.33	0.95	35	0.07	1.32	0.10	1.41	0.37	1.48	1.82	1.49	1.82	0.00	0.00	0.00	0.00
8. SHARIAT	0.58	0.27	1.05	0.55	0.30	0.85	35	0.06	0.91	0.09	0.99	0.47	1.46	1.80	1.46	1.80	0.00	0.00	0.00	0.00
9. BUS ROUTES-CAIRO	2.93	1.98	4.91	2.35	1.28	3.63	35	0.28	3.93	0.37	4.29	1.56	5.95	7.23	3.90	4.89	1.52	2.40	0.00	0.00
10. BUS ROUTES-GIZA	1.46	0.79	2.25	1.19	0.64	1.83	35	0.13	1.96	0.18	2.14	0.73	2.92	3.59	2.40	2.40	0.00	0.00	0.00	0.00
	6.69	3.60	10.30	5.44	2.93	8.37	35	0.59	8.96	0.98	9.94	3.46	13.25	16.38	10.52	12.70	2.93	3.60	0.00	0.00
MAINTENANCE FACILITIES AND EQUIPMENT																				
11. OHARRA ASPHALT PLANT-EQUIPMENT	0.22	0.32	0.54	0.19	0.26	0.44	60	0.03	0.47	0.04	0.51	0.10	0.61	0.74	0.61	0.74	0.00	0.00	0.00	0.00
12. OHARRA ASPHALT PLANT-YARD PAVING	0.07	0.10	0.17	0.06	0.08	0.14	60	0.01	0.15	0.01	0.16	0.04	0.20	0.25	0.00	0.00	0.00	0.00	0.00	0.00
13. MAINTENANCE EQUIPT. - CAIRO DEPOT	0.00	0.32	1.32	0.00	1.07	1.07	100	0.07	1.14	0.11	1.25	0.28	1.50	1.88	1.50	1.88	0.00	0.00	0.00	0.00
14. MAINTENANCE EQUIPT. - GIZA DEPOT	0.18	0.67	1.05	0.14	0.71	0.85	89	0.06	0.91	0.09	0.99	0.10	1.09	1.55	1.09	1.35	0.00	0.00	0.00	0.00
15. YARD PAVING - CAIRO DEPOT	0.02	0.10	0.12	0.02	0.09	0.10	89	0.01	0.11	0.01	0.12	0.01	0.13	0.16	0.13	0.00	0.00	0.00	0.00	0.00
16. STREET CLEANING EQUIPMENT-CAIRO	0.06	0.31	0.37	0.05	0.25	0.30	89	0.02	0.32	0.03	0.35	0.04	0.39	0.46	0.37	0.46	0.00	0.00	0.00	0.00
17. STREET CLEANING EQUIPMENT-GIZA	0.15	0.15	0.31	0.13	0.13	0.26	80	0.02	0.27	0.03	0.29	0.08	0.32	0.46	0.32	0.46	0.00	0.00	0.00	0.00
18. STREET LIGHTING EQUIPMENT-CAIRO	0.00	0.55	0.55	0.00	0.45	0.45	100	0.03	0.48	0.05	0.53	0.03	0.56	0.68	0.56	0.68	0.00	0.00	0.00	0.00
19. STREET LIGHTING EQUIPMENT-GIZA	0.00	0.17	0.17	0.00	0.14	0.14	100	0.01	0.15	0.01	0.16	0.01	0.17	0.21	0.00	0.00	0.00	0.00	0.00	0.00
	0.70	3.90	4.60	0.57	3.17	3.74	85	0.26	4.00	0.37	4.36	0.61	4.99	6.13	4.70	5.79	0.28	0.35	0.00	0.00
CBD TRAFFIC MANAGEMENT																				
20. JUNCTION & PEDESTRIAN WAYS	1.58	1.19	2.77	1.28	0.97	2.25	48	0.23	2.48	0.23	2.70	1.12	3.82	4.70	3.82	4.70	0.00	0.00	0.00	0.00
21. ABDINE BUS TERMINAL & PARKING	2.40	1.29	3.69	1.95	1.05	3.00	35	0.21	3.21	0.30	3.51	1.39	4.90	6.03	4.90	6.03	0.00	0.00	0.00	0.00
22. OPERA SQUARE PARKING	3.20	1.72	4.92	2.60	1.40	4.00	35	0.28	4.28	0.40	4.68	1.39	6.07	7.47	6.07	7.47	0.00	0.00	0.00	0.00
	7.17	4.20	11.38	5.83	3.42	9.25	37	0.72	9.97	0.93	10.89	3.90	14.79	18.19	14.79	18.19	0.00	0.00	0.00	0.00
SUB-TOTAL A	21.07	15.21	36.27	17.13	12.34	29.49	42	2.13	31.62	2.95	34.57	11.15	45.72	56.24	41.81	51.43	3.91	4.81	0.00	0.00
B. TRAFFIC ENFORCEMENT																				
1. MOTORCYCLES TON TRUCK & AUTOS	0.00	2.26	2.26	0.00	1.84	1.84	100	0.07	1.93	0.18	2.12	0.20	2.32	2.85	2.32	2.85	0.00	0.00	0.00	0.00
2. TRAINING CENTER	0.00	0.24	0.24	0.00	0.21	0.21	100	0.01	0.22	0.02	0.24	0.02	0.26	0.32	0.26	0.32	0.00	0.00	0.00	0.00
3. INSPECTION CENTERS & TRACK	0.36	0.14	0.50	0.31	0.10	0.41	25	0.03	0.44	0.04	0.48	0.02	0.50	0.61	0.50	0.61	0.00	0.00	0.00	0.00
	0.36	2.64	3.00	0.31	2.15	2.46	86	0.13	2.59	0.25	2.84	0.24	3.08	3.78	3.08	3.78	0.00	0.00	0.00	0.00
SUB-TOTAL B	0.36	2.64	3.00	0.31	2.15	2.46	86	0.13	2.59	0.25	2.84	0.24	3.08	3.78	3.08	3.78	0.00	0.00	0.00	0.00
C. INSTITUTIONAL DEVELOPMENT																				
1. CAIRO GOVERNORATE	1.23	3.95	5.21	1.03	3.24	4.32	75	0.00	4.22	0.00	4.32	1.58	5.90	7.26	5.49	6.75	0.41	0.51	0.00	0.00
2. GIZA GOVERNORATE	0.18	0.80	0.41	0.00	0.25	0.25	75	0.00	0.33	0.00	0.33	0.12	0.45	0.55	0.42	0.51	0.03	0.04	0.00	0.00
3. CENTRAL TRAFFIC DEPARTMENT	0.42	1.25	1.67	0.34	1.02	1.36	75	0.00	1.36	0.00	1.36	0.52	1.88	2.21	1.88	2.21	0.00	0.00	0.00	0.00
4. CAIRO TRANSPORT AUTHORITY	0.42	1.65	2.46	0.50	1.90	2.40	75	0.00	2.40	0.00	2.40	0.54	2.94	3.12	0.00	0.00	0.00	0.00	2.94	1.12
	2.46	7.39	9.85	2.00	6.01	8.01	75	0.00	8.01	0.00	8.01	2.76	10.77	13.25	7.79	9.38	0.44	0.55	2.94	3.12
SUB-TOTAL C	2.46	7.39	9.85	2.00	6.01	8.01	75	0.00	8.01	0.00	8.01	2.76	10.77	13.25	7.79	9.38	0.44	0.55	2.94	3.12
D. AREA UPGRADING																				
1. SHEHRA ROD AL FARAO	2.04	1.10	3.14	1.66	0.89	2.55	35	0.18	2.78	0.26	2.98	1.26	4.24	5.22	4.24	5.22	0.00	0.00	0.00	0.00
2. ABDINE	1.28	0.69	1.97	1.04	0.56	1.60	35	0.11	1.71	0.16	1.87	0.74	2.61	3.21	2.61	3.21	0.00	0.00	0.00	0.00
3. MONIRA	0.86	0.46	1.32	0.70	0.37	1.07	35	0.07	1.14	0.11	1.25	0.24	1.49	1.84	1.49	1.84	0.00	0.00	0.00	0.00
4. OLD GIZA	2.15	1.16	3.31	1.75	0.94	2.69	35	0.19	2.88	0.27	3.15	0.56	3.71	4.56	0.00	0.00	0.00	0.00	4.56	0.00
	6.32	3.41	9.73	5.14	2.77	7.91	35	0.55	8.46	0.79	9.25	2.80	12.05	14.83	6.84	8.43	5.20	4.40	0.00	0.00
SUB-TOTAL D	6.32	3.41	9.73	5.14	2.77	7.91	35	0.55	8.46	0.79	9.25	2.80	12.05	14.83	6.84	8.43	5.20	4.40	0.00	0.00
E. PUBLIC TRANSPORT																				
DISR-SUEZ WORK SHOP																				
1. BUILDING CONSTRUCTION	1.66	1.41	3.09	1.35	1.15	2.50	44	0.18	2.68	0.25	2.93	1.06	3.99	4.90	0.00	0.00	0.00	0.00	3.99	4.90
2. YARD PAVING AND INFRASTRUCTURE	1.49	1.27	2.77	1.22	1.04	2.25	46	0.14	2.41	0.23	2.63	0.88	3.51	4.32	0.00	0.00	0.00	0.00	3.51	4.32
3. HEAVY DUTY EQUIPMENT	1.54	4.61	6.15	1.25	3.75	5.00	70	0.25	5.25	0.50	5.75	1.21	7.04	8.68	0.00	0.00	0.00	0.00	7.04	8.68
4. LIGHT FIXTURES AND FURNITURES	0.31	0.92	1.33	0.20	0.75	1.00	75	0.07	1.07	0.10	1.17	0.44	1.61	1.98	0.00	0.00	0.00	0.00	1.61	1.98
5. SPARE PARTS	0.39	3.74	3.94	0.32	2.38	3.20	70	0.09	3.29	0.32	3.60	1.47	5.07	6.24	0.00	0.00	0.00	0.00	5.07	6.24
	5.39	11.76	17.16	4.39	9.57	13.93	69	0.65	14.78	1.40	16.18	5.06	21.24	26.17	0.00	0.00	0.00	0.00	21.24	26.17
OTHER ITEMS																				
6. RADIO EQUIPMENT	0.15	0.46	0.62	0.13	0.38	0.50	75	0.04	0.54	0.05	0.59	0.10	0.69	0.84	0.00	0.00	0.00	0.00	0.69	0.84
7. SERVICE TRUCKS	0.08	0.23	0.31	0.06	0.19	0.25	75	0.02	0.27	0.03	0.30	0.04	0.34	0.39	0.00	0.00	0.00	0.00	0.34	0.39
8. TRAINING CENTRE EQUIPMENT	0.15	0.46	0.62	0.13	0.38	0.50	75	0.04	0.54	0.05	0.59	0.03	0.62	0.76	0.00	0.00	0.00	0.00	0.62	0.76
	0.38	1.15	1.54	0.31	0															

GREATER CAIRO URBAN DEVELOPMENT PROJECT  
Supplementary Data Sheet

Category	LE
<u>Cairo and Giza Governorates</u>	
<u>Ghamra Asphalt Plant (line A-11)</u>	
Weighbridge	50,000
Canteen and toilets	30,000
Office improvements and equipment	20,000
Workshop and equipment	200,000
Telephones and communications equipment	10,000
Training facilities and equipment	130,000
	440,000
	=====
<u>Maintenance Equipment-Cairo Depot (line A-13)</u>	
10- 7/10 ton dump trucks at LE40,000 each	400,000
12- 8/10 ton smooth wheel rollers at LE30,000 each	360,000
1 - rubber tire surface finisher	70,000
2 - jeeps or land rovers at LE17,500 each	35,000
2 - graders (medium size) at LE50,000 each	100,000
1 - mobile bitumen sprayer	35,000
1 - heating and planing machine	70,000
	1,070,000
	=====
<u>Maintenance Equipment-Giza Depot (line A-14)</u>	
5 - 7/10 ton dump trucks at LE40,000 each	200,000
3 - 8/10 ton smooth wheel rollers at LE30,000 each	90,000
3 - 3/5 ton smooth wheel rollers at LE25,000 each	75,000
2 - 1/2 ton pick-up trucks at LE20,000 each	40,000
3 - rubber tire front end loaders at LE45,000 each	135,000
2 - tractor mounted compressors with jack hammers at LE25,000 each	50,000
Handcarts (unspecified amount)	10,000
Tools and shop maintenance equipment	250,000
	850,000
	=====
<u>Street Cleaning Equipment-Cairo (line A-16)</u>	
Handcarts and other equipment	250,000
	=====
<u>Street Cleaning Equipment-Giza (line A-17)</u>	
Handcarts and other equipment	250,000
	=====
<u>Street Lighting Equipment-Cairo (line A-18)</u>	
10 platform trucks with 15 meter reach hydraulic lift at LE45,000 each	450,000
	=====
<u>Street Lighting Equipment-Giza (line A-17)</u>	
3 platform trucks with 15 meter reach hydraulic lift at LE45,000 each	135,000
	=====
<u>Ministry of Interior</u>	
<u>Motorcycles Tow Trucks and Autos (line B-1)</u>	
178 - heavy duty motorcycles at LE7,500 each	1,335,000
11 - tow trucks at LE20,000 each	220,000
12 - training sedans at LE12,000 each	144,000
Drivers licensing Equipment	110,000
Base Communications Equipment	30,000
	1,839,000
	=====
<u>Training Center (Line B-2)</u>	
Refurbishing Training Center	145,000
Publication of Highway Code	60,000
	205,000
	=====
<u>Inspection Centers and Track (Line B-3)</u>	
17 Vehicle Inspection Centers	110,000
Training Track	300,000
	410,000
	=====
<u>Institutional Development (Line C-3)</u>	
Road Safety Education	200,000
Traffic Control Team	175,000
Consulting Services	450,000
Middle Management Officer Training	410,000
Senior Management Officer Training	70,000
Traffic Management Officer Training	50,000
	1,355,000
	=====

**EGYPT**  
**GREATER CAIRO URBAN DEVELOPMENT PROJECT**  
 Implementation Schedule

	1981				1982				1983				1984				1985				1986							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
<b>A. PRIMARY AND SECONDARY CORRIDORS AND ROAD MAINTENANCE</b>																												
Salah Salem							■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■				
Misir Sudan Flyover							■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■				
Giza/Gala/Dokki Squares							■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■				
Corniche							■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■				
Port Said Street							■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■				
Shari Kat							■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■				
Manshiet Nasr and Shurabeyia							■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■				
Bus Routes							■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■				
Ghamra Depot							■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■				
Street Cleaning Equipment							■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■				
Maintenance Equipment							■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■				
Street Lighting Equipment							■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■				
<b>B. CENTRAL BUSINESS DISTRICT TRAFFIC MANAGEMENT</b>																												
Streets, Junctions and Footpath							■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■				
Bus Terminal/Parking							■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■				
Opera Square Parking							■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■				
<b>C. TRAFFIC ENFORCEMENT</b>																												
Motorcycles and Tow Trucks							■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■				
Training School and Police Training Equipment							■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■				
<b>D. PUBLIC TRANSPORT</b>																												
Gizr Suez Workshop							■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■				
Building							■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■				
Equipment							■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■				
Spares							■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■				
Training Center, Equipment							■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■				
Radios and Communications							■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■				
Service Trucks and Garage Cleaning Equipment							■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■				
<b>E. AREA UPGRADING</b>																												
Shubra Rod El Farag							■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■				
Abdine							■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■				
Monira (Giza)							■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■				
Old Giza							■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■				
<b>F. INSTITUTIONAL DEVELOPMENT</b>																												
Cairo/Giza Governorates							■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■				
Traffic Police							■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■				
CTA							■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■				

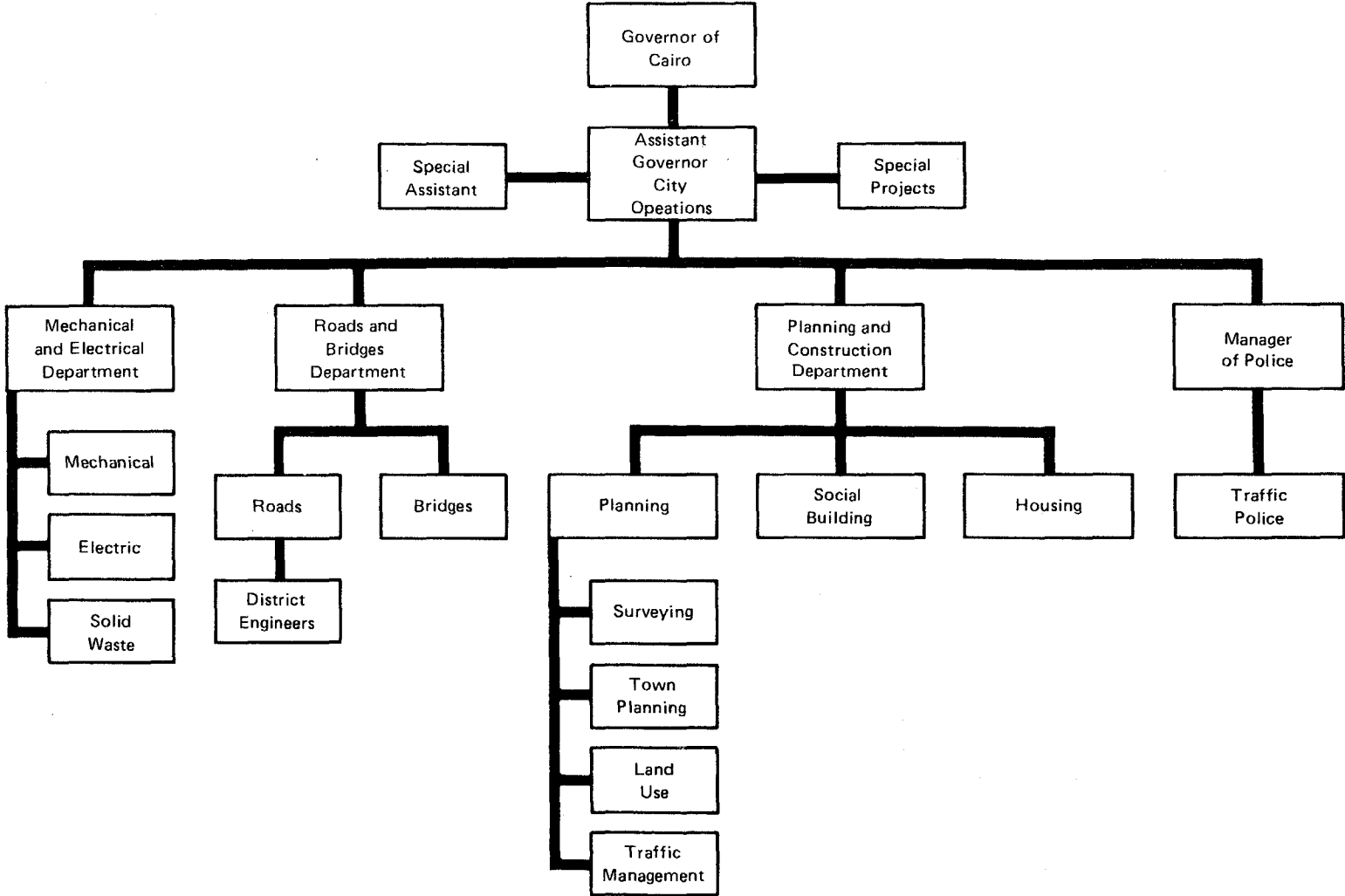
**LEGEND**  
 ■ Design  
 ■ Bidding  
 ■ Supply of Equipment

World Bank-22468

GREATER CAIRO URBAN DEVELOPMENT PROJECT  
ESTIMATED TIMETABLE FOR APPOINTMENT OF CONSULTANTS

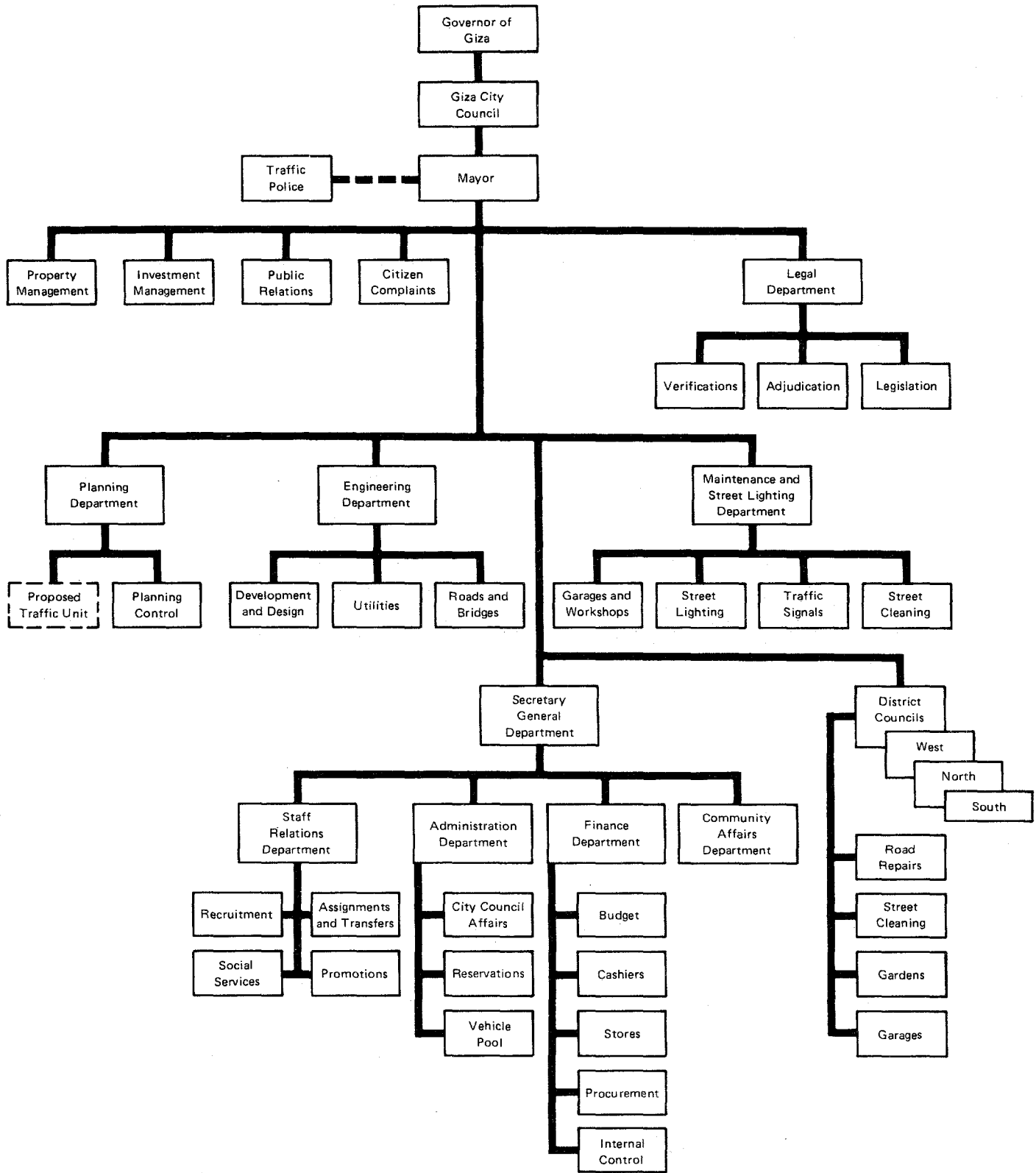
<u>Cairo Governorate</u>	<u>Approximate Date of Appointment</u>
Salah Salem	September 30, 1982
Misr Sudan Flyover	Appointed
Corniche	September 30, 1982
Port Said Street	December 31, 1982
Shari Kat Street	December 31, 1982
Manschiet Nasr and Shurabeyia	Appointed
Bus Routes	September 30, 1982
Central Business District	December 31, 1982
Rod El Farag	June 30, 1982
Abdine	June 30, 1982
Strategic Action Plan	December 31, 1982
Urban Service Delivery	December 31, 1982
Infrastructure Survey	December 31, 1982
Solid Waste Management	June 30, 1982
Sekeit El Wailli	December 31, 1982
<u>Giza Governorate</u>	
Giza/Gala/Dokki Squares	Appointed
Bus Routes	September 30, 1982
Monira	Appointed
Old Giza	September 30, 1982
<u>Ministry of Interior</u>	
Traffic Management	December 31, 1984
<u>CTA</u>	
Gisr-Suez Workshop	December 31, 1982
Institutional Assistance	June 30, 1983

**CAIRO GOVERNORATE  
CITY OPERATIONS**

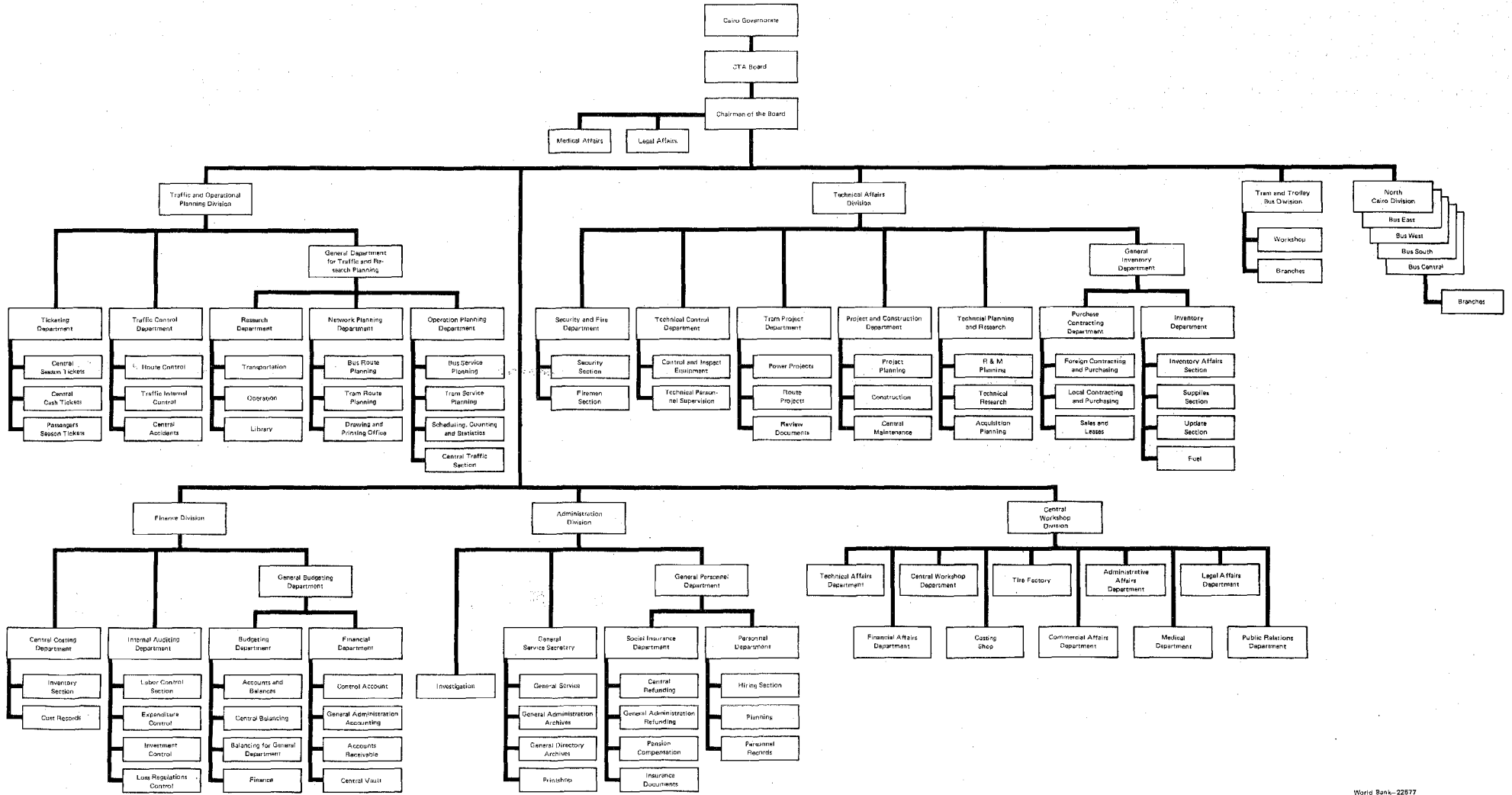




CITY OF GIZA  
(A DIVISION OF THE GIZA GOVERNORATE)



THE CAIRO TRANSPORTATION AUTHORITY



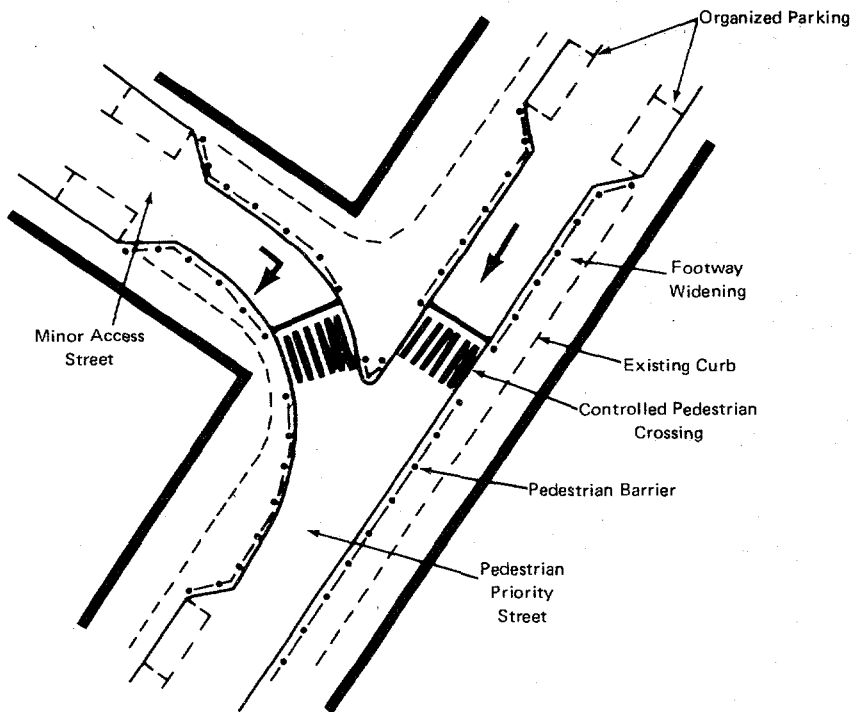
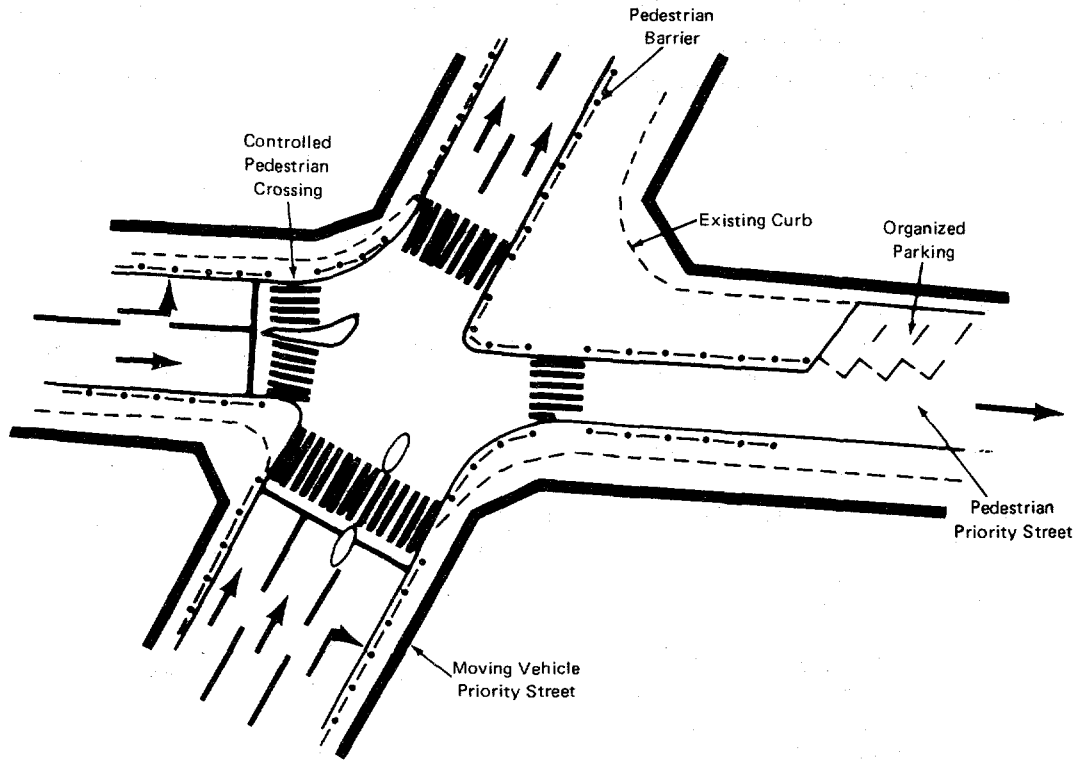
CAIRO TRANSPORT AUTHORITY  
FINANCIAL RESULTS  
AS AT DECEMBER 31  
(LE 000's)

	1977	Actual 1978	1979	Estimated 1980	1981	Forecast			
						1982	1983	1984	
<b>BALANCE SHEET</b>									
<b>Current Assets:</b>									
Cash in Bank	833	1051	4967	4400	4600	4800	5000	5200	/a
Accounts Receivable-Net /a	21399	27592	23809	26000	28000	30000	32000	34000	Amounts due from the National Government and its instrumentalities.
Inventory Parts and Supplies	24280	30693	36888	41000	47000	54000	62000	72000	
	<u>46312</u>	<u>59336</u>	<u>65664</u>	<u>71400</u>	<u>79600</u>	<u>88800</u>	<u>99000</u>	<u>111200</u>	/b
<b>Other Assets</b>									
Investment in GCBC /b	26	25685	16985	18000	20000	22000	24000	26000	Represents an investment in an unconsolidated wholly owned subsidiary, the Greater Cairo Bus Company (G.C.B.C.).
<b>Fixed Assets</b>									
Rolling Stock /c	58293	64269	80123	116000	158000	242000	327000	418000	/c
Buildings and Equipment /c	17415	16936	17107	56000	88000	113000	258000	321700	Depreciation and accumulated depreciation is based on the straight line method of 15% for buses and 10% for other rolling stock, buildings and equipment.
Construction in Progress/d	18014	24103	34627	11627	29627	92627	36627	37627	
	93722	105308	131857	183627	275627	447627	621627	777327	
Accumulated Depreciation/c	39337	46090	54283	64422	85522	125422	167222	234522	
	<u>54385</u>	<u>59218</u>	<u>77574</u>	<u>119205</u>	<u>190103</u>	<u>322205</u>	<u>454405</u>	<u>542805</u>	
Total Assets	<u>100923</u>	<u>144239</u>	<u>160223</u>	<u>208605</u>	<u>289705</u>	<u>433005</u>	<u>577405</u>	<u>680005</u>	/d
<b>Current Liabilities</b>									
Bank Loans	14468	9585	3962	5200	5600	6000	6400	6800	
Accounts Payable	13612	16226	18104	22900	25600	27700	29900	32300	/e
Current Portion-Long Term Debt	8500	11200	11407	13946	25757	40467	56031	71031	Terms of existing loans range from 3 to 7 years, variable interest rates of 5% to 8%. New loans for financing bus acquisitions have been assumed up to 9.6% over 7 years.
	<u>36580</u>	<u>37411</u>	<u>33473</u>	<u>42046</u>	<u>56957</u>	<u>74167</u>	<u>92331</u>	<u>110131</u>	
<b>Long-Term Debt</b>									
Less Current Portion /e	26600	49955	47439	84033	150087	270530	385264	470532	
	<u>8500</u>	<u>11200</u>	<u>11407</u>	<u>13946</u>	<u>25757</u>	<u>40467</u>	<u>56031</u>	<u>71031</u>	
Due to Government /f	18100	38755	36032	70087	124330	230063	329233	399501	
Reserves	68248	98052	142854	193176	270024	378538	516959	685703	/f
Capital	8201	19057	12942	15142	17342	19542	21742	23942	Represents amounts owing on subsidy transfers. Loans are interest free with unspecified maturity dates.
Paid-in	16532	16532	16532	16532	16532	16532	16532	16532	
Accumulated Deficit	(46738)	(65568)	(81610)	(128378)	(195480)	(285837)	(399392)	(555804)	
Total Liabilities and Capital	<u>100923</u>	<u>144239</u>	<u>160223</u>	<u>208605</u>	<u>289705</u>	<u>433005</u>	<u>577405</u>	<u>680005</u>	/g
<b>STATEMENT OF REVENUES AND EXPENSES</b>									
<b>Revenues</b>									
Buses /g	15299	16899	20860	29275	34217	38259	43344	47652	
Trams and Trolleys	1311	2075	3079	4620	5686	6769	7820	9029	
River Buses	107	219	264	394	440	462	486	509	/h
	<u>16717</u>	<u>19193</u>	<u>24203</u>	<u>34289</u>	<u>40343</u>	<u>45490</u>	<u>51650</u>	<u>57190</u>	In the case of the forecast period, unit costs increase in proportion to kilometers run and include expected annual price increases of 10% for drivers, shop wages and overhead and a 6 millimes per litre increase in the price of fuel.
<b>Expenses</b>									
Variable Road Costs /h									
Drivers and Conductors Wages	6578	8133	8852	9623	11090	12740	14600	16730	
Fuel	2286	2461	3066	3367	4085	4692	5205	5745	
Overhead	317	242	290	319	350	385	420	465	
	<u>9181</u>	<u>10836</u>	<u>12208</u>	<u>13309</u>	<u>15525</u>	<u>17817</u>	<u>20225</u>	<u>22940</u>	
Variable Maintenance Costs /h									
Shop Wages	6445	7355	7946	8567	9900	11405	13160	15160	
Parts and Supplies	6687	9773	11266	14397	16870	19765	22161	25693	/i
Overhead	70	116	137	152	166	183	201	221	In the case of the forecast period, costs assume an annual increase of 10% for expected price increases.
	<u>22383</u>	<u>28080</u>	<u>31557</u>	<u>36425</u>	<u>42461</u>	<u>49170</u>	<u>55747</u>	<u>64014</u>	
Central Services /i	1200	1281	1447	1664	1830	2013	2215	2436	
Administration /i	10287	12478	16471	18942	20836	22920	25215	27732	
Interest				3156	11019	11644	22028	31920	/j
Depreciation	10812	11698	13031	20868	31300	50100	60000	87500	Subsidy required to cover cash operating losses.
Total Expenses	<u>44682</u>	<u>53537</u>	<u>62506</u>	<u>81057</u>	<u>107446</u>	<u>135847</u>	<u>165205</u>	<u>213602</u>	
Net Loss	<u>27965</u>	<u>34344</u>	<u>38303</u>	<u>46768</u>	<u>67103</u>	<u>90357</u>	<u>113555</u>	<u>156412</u>	/k
<b>CHANGES IN FINANCIAL CONDITION</b>									
<b>Financial Resources Were Provided By:</b>									
Government Operating Subsidy /j	17153	22646	25272	22742	24784	28613	31530	36992	/l
Government Capital Subsidy /k		29003	12468	13015	27100	42500	44400	43800	Subsidy required to cover principal and interest payments on long-term debt.
Government Debt Service Subsidy /l	9100	11000	14200	14565	24964	37401	62495	87951	
	-	62649	51940	50322	76848	108514	138425	168743	
Long Term Debt /e	-	22935	15854	48000	80000	146200	155200	141300	/m
	-	<u>85584</u>	<u>67754</u>	<u>98322</u>	<u>156848</u>	<u>254714</u>	<u>293625</u>	<u>310043</u>	In the case of the forecast period, new bus purchases have been assumed to average 300 per year at a cost of LE90,000 each.
<b>Financial Resources Were Used For:</b>									
Debt Service									
Principal	7000	8500	11200	11407	13945	25757	40467	56031	
Interest	2100	2500	3000	3158	11019	11644	22028	31920	
	<u>9100</u>	<u>11000</u>	<u>14200</u>	<u>14565</u>	<u>24964</u>	<u>37401</u>	<u>62495</u>	<u>87951</u>	
Cash Operating Losses	17153	22646	25272	22742	24784	28613	31530	36992	
Working Capital	-	14693	10473	-	5100	6700	7600	9400	
Investments in GCBC	-	25659	(8700)	1015	2000	2000	2000	2000	
Purchase of Rolling Stock /m	-	5976	15854	44000	50000	92000	101000	109000	
Building and Equipment	-	(479)	171	39000	32000	25000	145000	63700	
Construction in Progress	-	6089	10524	(23000)	18000	63000	(56000)	1000	
	-	<u>85584</u>	<u>67794</u>	<u>98322</u>	<u>156848</u>	<u>254714</u>	<u>293625</u>	<u>310043</u>	
<b>KEY INDICATORS-BUS OPERATIONS</b>									
Revenue Per Kilometer (Km) Run	14.3	15.9	19.2	27.5	29.5	30.3	31.9	32.7	
Variable Costs Per Km Run	16.8	21.1	23.2	27.9	29.7	31.5	33.4	34.5	
Fixed Costs Per Km Run	20.2	22.7	26.7	35.5	47.7	51.2	66.2	68.9	
Negative Revenue Cost Spread	22.7	27.9	30.7	35.9	47.9	52.4	67.7	70.7	
Effective Outshedding	64	68	69	68	68	71	73	75	
No. of Passengers/Bus/Day	2100	2140	1940	1960	2040	2040	2030	1990	
No. of Km Run/Bus/Day	229	228	220	211	219	219	219	219	
Manning Ratio (Buses)	22	22	20	20	20	19	18	17	

CAIRO TRANSPORT AUTHORITY  
FINANCIAL RESULTS  
SUPPLEMENTARY DATA SHEET

	1977	1978	1979	1980	1981	1982	1983	1984
<b>SCHEDULE OF EXPENSES (In LE 000's)</b>								
Drivers and Conductors Wages								
Buses	5091	6347	7064	7731	9010	10452	12086	13962
Trams & Trolleys	1470	1761	1762	1864	2050	2255	2480	2730
River Buses	17	25	26	28	30	33	35	38
	<u>6578</u>	<u>8133</u>	<u>8852</u>	<u>9623</u>	<u>11090</u>	<u>12740</u>	<u>14601</u>	<u>16730</u>
Fuel								
Buses	2013	2137	2722	2989	3669	4234	4701	5191
Trams & Trolleys	258	300	314	345	380	418	460	506
River Buses	15	24	30	33	36	40	44	48
	<u>2286</u>	<u>2461</u>	<u>3066</u>	<u>3367</u>	<u>4085</u>	<u>4692</u>	<u>5205</u>	<u>5745</u>
Overhead-Road Costs								
Buses	301	237	283	311	342	376	410	454
Trams & Trolleys	15	-	-	-	-	-	-	-
River Buses	1	5	7	8	8	9	10	11
	<u>317</u>	<u>242</u>	<u>290</u>	<u>319</u>	<u>350</u>	<u>385</u>	<u>420</u>	<u>465</u>
Shop Wages								
Buses	4827	5412	5644	6081	7004	8049	9224	10571
Trams & Trolleys	1540	1828	2178	2352	2751	3200	3767	4407
River Buses	78	115	124	134	145	156	169	182
	<u>6445</u>	<u>7355</u>	<u>7946</u>	<u>8567</u>	<u>9900</u>	<u>11405</u>	<u>13160</u>	<u>15160</u>
Parts and Supplies								
Buses	5703	8310	9516	12472	14367	16508	18919	20168
Trams & Trolleys	978	1452	1701	1871	2444	3192	4170	5446
River Buses	6	11	49	54	59	65	72	79
	<u>6687</u>	<u>9773</u>	<u>11266</u>	<u>14397</u>	<u>16870</u>	<u>19765</u>	<u>23161</u>	<u>25693</u>
Overhead-Maintenance								
Buses	29	15	35	39	43	47	52	57
Trams & Trolleys	32	92	67	74	81	89	98	108
River Buses	9	9	35	39	42	47	51	56
	<u>70</u>	<u>116</u>	<u>137</u>	<u>152</u>	<u>166</u>	<u>183</u>	<u>201</u>	<u>221</u>
Depreciation-Rolling Stock								
Buses	9730	10006	10734	15368	19100	23700	29000	34200
Trams & Trolleys	346	888	1464	2100	3800	9200	14900	20700
River Buses	25	54	73	100	100	100	100	100
	<u>10101</u>	<u>10948</u>	<u>12271</u>	<u>17568</u>	<u>23000</u>	<u>33000</u>	<u>44000</u>	<u>55000</u>
Depreciation-Buildings and Equipment								
Buses	361	363	359	2290	7700	11590	19690	20490
Trams and Trolleys	347	384	398	1000	590	5500	6300	7100
River Buses	3	3	3	10	10	10	10	10
	<u>711</u>	<u>750</u>	<u>760</u>	<u>3300</u>	<u>8300</u>	<u>17100</u>	<u>26000</u>	<u>27600</u>
<b>FINANCIAL AND OPERATING STATISTICS</b>								
Total Passenger Trips/Year								
Buses	978676	995861	956994	985704	1076000	1170000	1260000	1320000
Trams and Trolleys	104104	132806	146860	161546	177700	195700	215700	236700
River Buses	8999	12927	12346	12300	12300	12300	12300	12300
	<u>1091779</u>	<u>1141594</u>	<u>1116200</u>	<u>1159550</u>	<u>1266000</u>	<u>1378000</u>	<u>1488000</u>	<u>1569000</u>
Average Fare/Passenger(In Millemes)								
Buses	15.6	16.9	21.8	29.7	31.8	32.7	34.4	36.1
Trams & Trolleys	11.1	15.6	21.0	28.6	30.0	31.5	33.0	34.7
River Buses	11.9	16.9	21.4	32.0	33.6	35.3	37.1	38.9
<b>Bus Fleet Operations</b>								
Total Size	1990	1866	1943	2029	2130	2230	2330	2430
Effective Size	1273	1277	1351	1378	1450	1575	1700	1825
Total Kilometers Run/Year (000's)	106809	106382	108747	106278	116000	126000	136000	146000
No. of Kilometers Run/Bus/Year	83900	83300	80500	77125	80000	80000	80000	80000
Effective Size/Total Size (%)	64	68	69	68	68	71	73	75
<b>Number of Employees</b>								
Drivers	5558	5545	5458	5742	6030	6310	6590	6870
Conductors	5923	6041	6208	6240	6520	6800	7080	7360
Vehicle Maintenance	7461	7429	7046	7345	7720	8100	8470	8845
Inspectors	969	952	1013	954	995	1040	1080	1125
Administrative & Clerical	4167	4189	3979	4143	4200	4200	4200	4200
Other	3748	3614	3474	2834	2900	2900	2900	2900
	<u>27826</u>	<u>27770</u>	<u>27178</u>	<u>27258</u>	<u>28365</u>	<u>29350</u>	<u>30320</u>	<u>31300</u>
<b>Bus Fleet Unit Operating Costs</b>								
Revenue/Kilometer(Km) Run	14.3	15.9	19.2	27.5	29.5	30.4	31.9	32.6
Drivers & Conductors Wages/Km Run	4.7	5.9	6.5	7.3	7.8	8.3	8.9	9.6
Fuel/Km Run	1.9	2.0	2.5	2.8	3.2	3.4	3.5	3.6
Shop Wages/Km Run	4.5	5.1	5.2	5.7	6.0	6.4	6.8	7.2
Parts and Supplies/Km Run	5.3	7.8	8.7	11.7	12.4	13.1	13.9	14.0

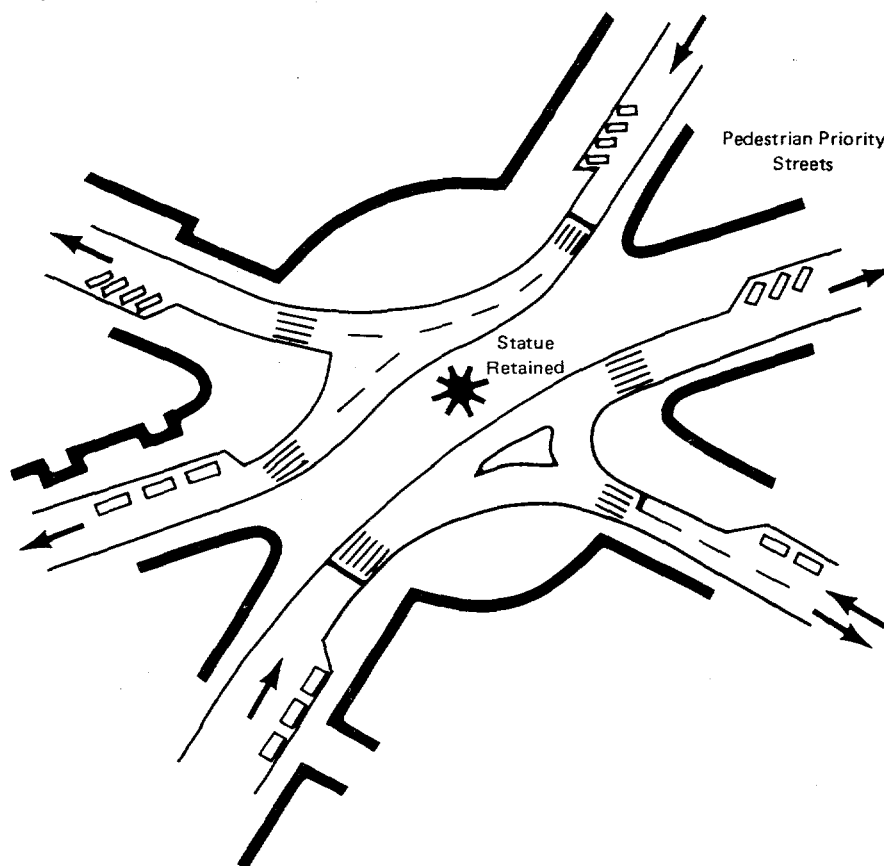
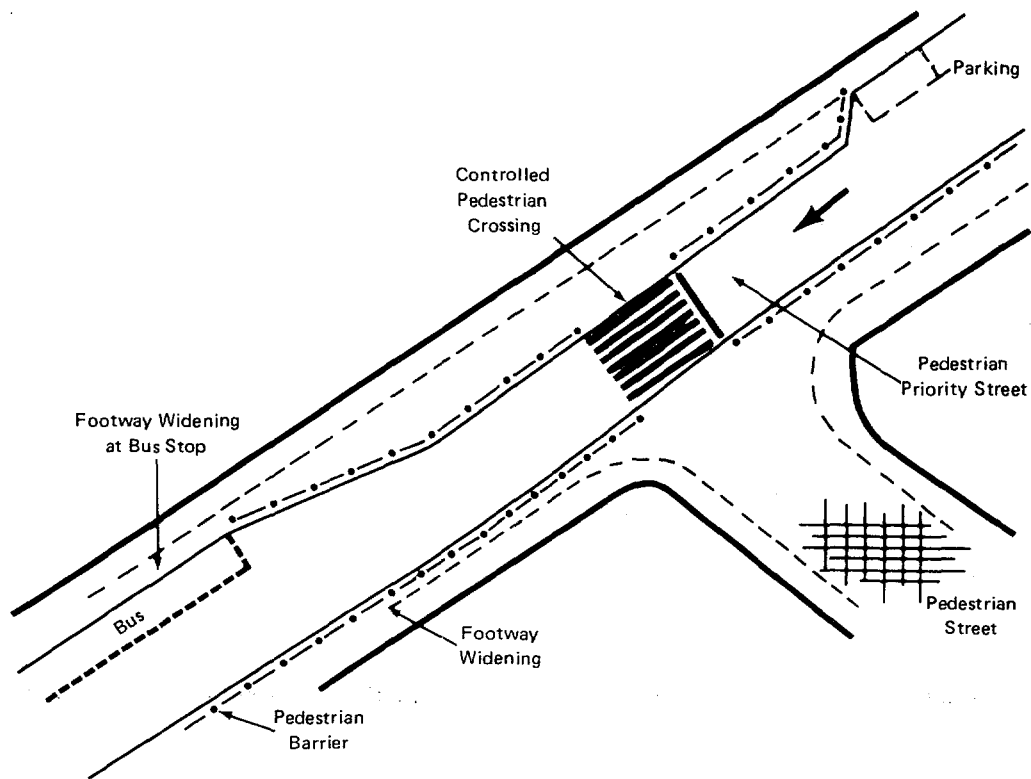
EGYPT  
CAIRO TRANSPORT PROJECT  
TYPICAL TRAFFIC ENGINEERING MEASURES



Typical traffic engineering and management re-organization on pedestrian priority street system.

Note: Typical representation not to scale or engineering accuracy.

EGYPT  
CAIRO TRANSPORT PROJECT  
TYPICAL TRAFFICE ENGINEERING MEASURES



Note: Typical representation not to scale or engineering accuracy.

EGYPT

CAIRO TRANSPORT PROJECT

Selected Documents and Data Available in the Project File

Cairo Urban Transport Project, Jamieson Mackay and Partners Preparation Report, July 1980.

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Socio-Economic Report on Service Areas, Es-Parsons, December 1979.

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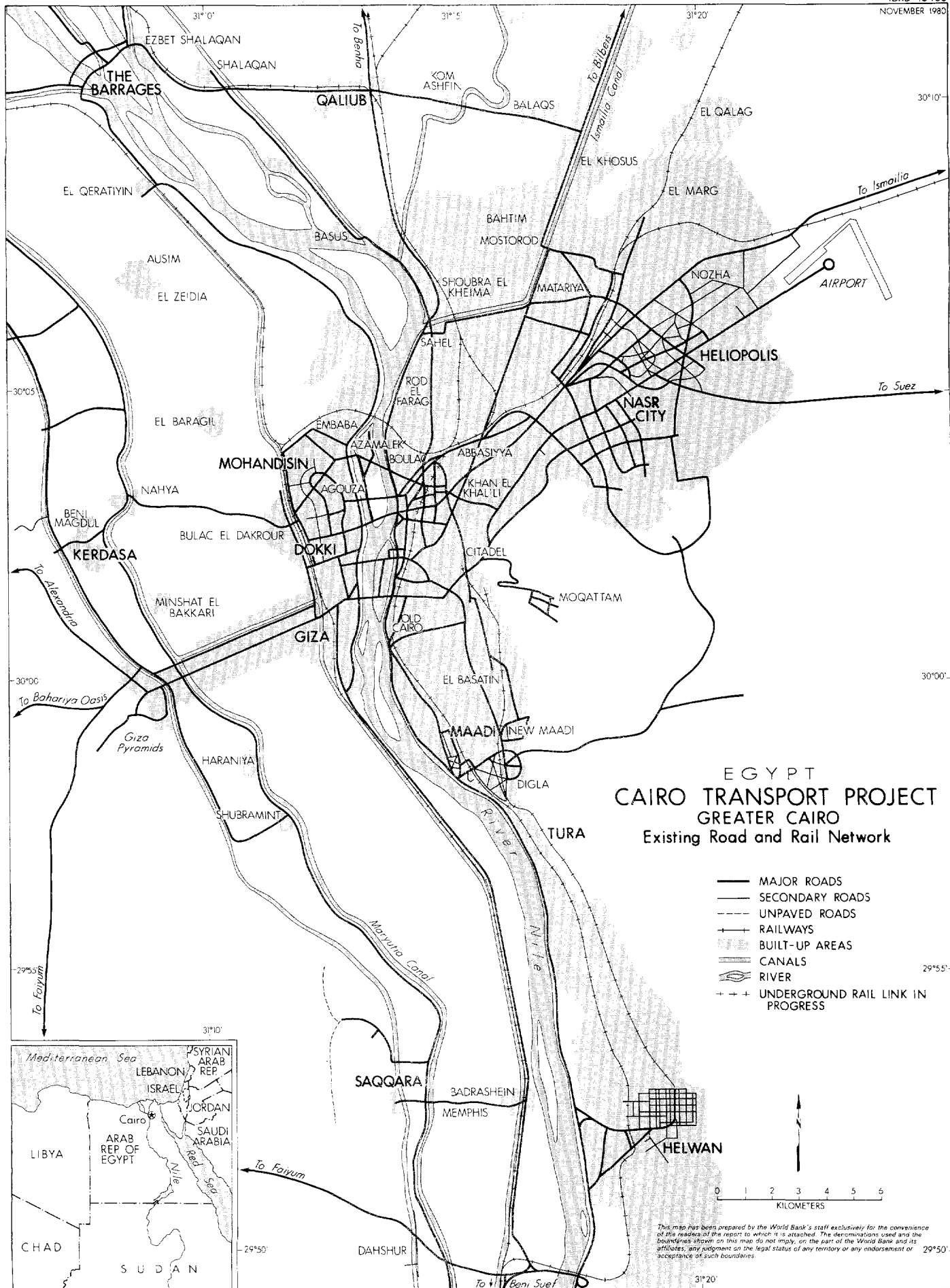
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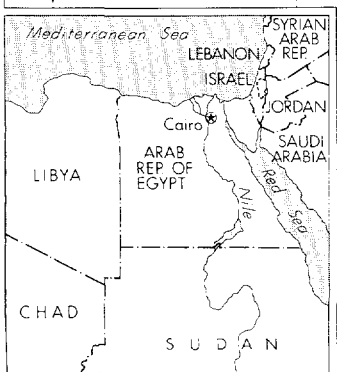
The General Population and Housing Census, Arab Republic of Egypt, 1976.

Study of the Zabbaleen in Cairo, 'OXFAM', March 1979.



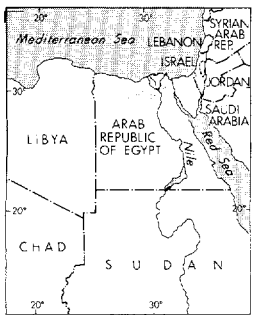
EGYPT  
CAIRO TRANSPORT PROJECT  
GREATER CAIRO  
Existing Road and Rail Network

- MAJOR ROADS
- - - SECONDARY ROADS
- ..... UNPAVED ROADS
- + + + RAILWAYS
- ▨ BUILT-UP AREAS
- ▭ CANALS
- ~ RIVER
- + + + UNDERGROUND RAIL LINK IN PROGRESS

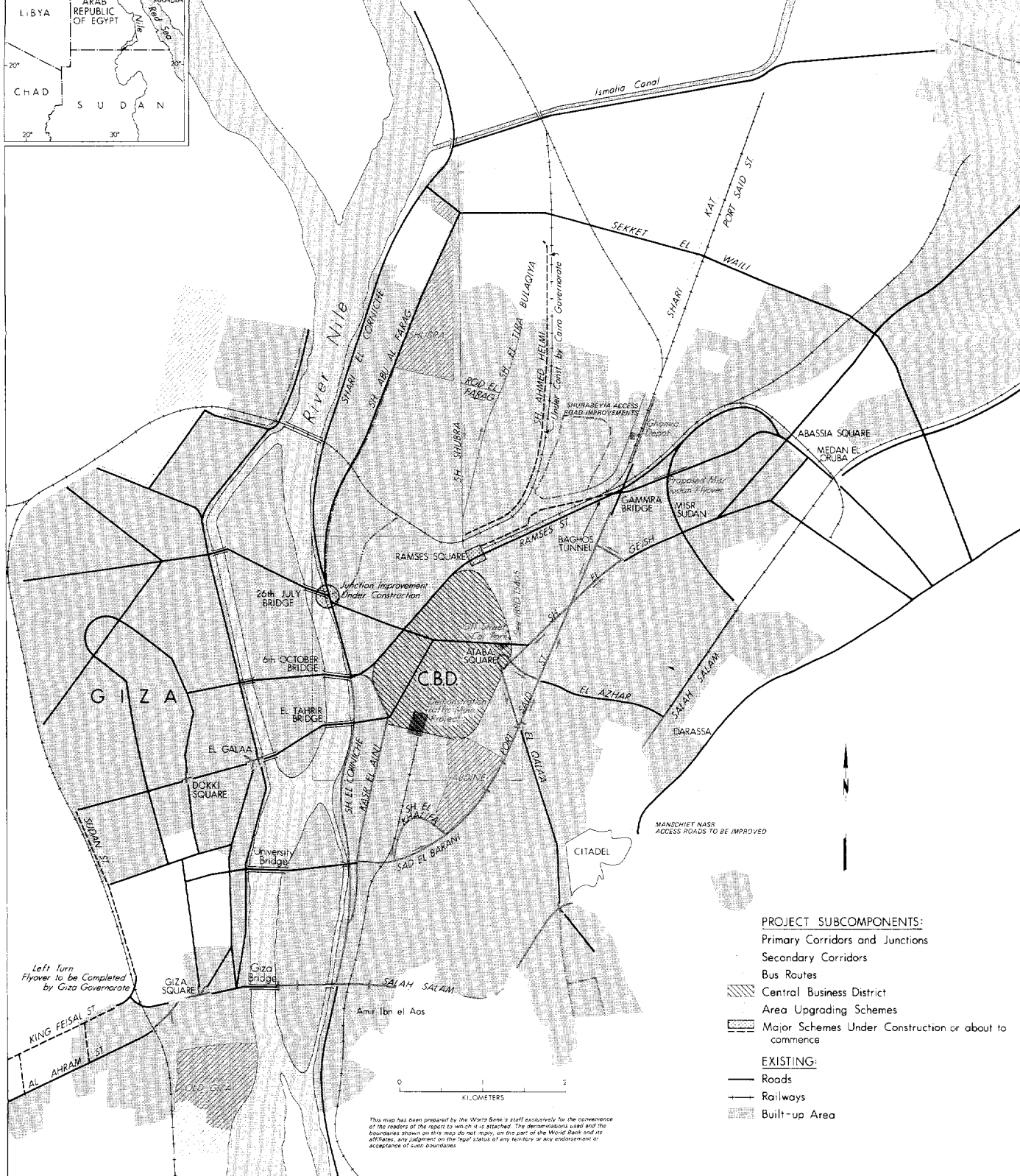


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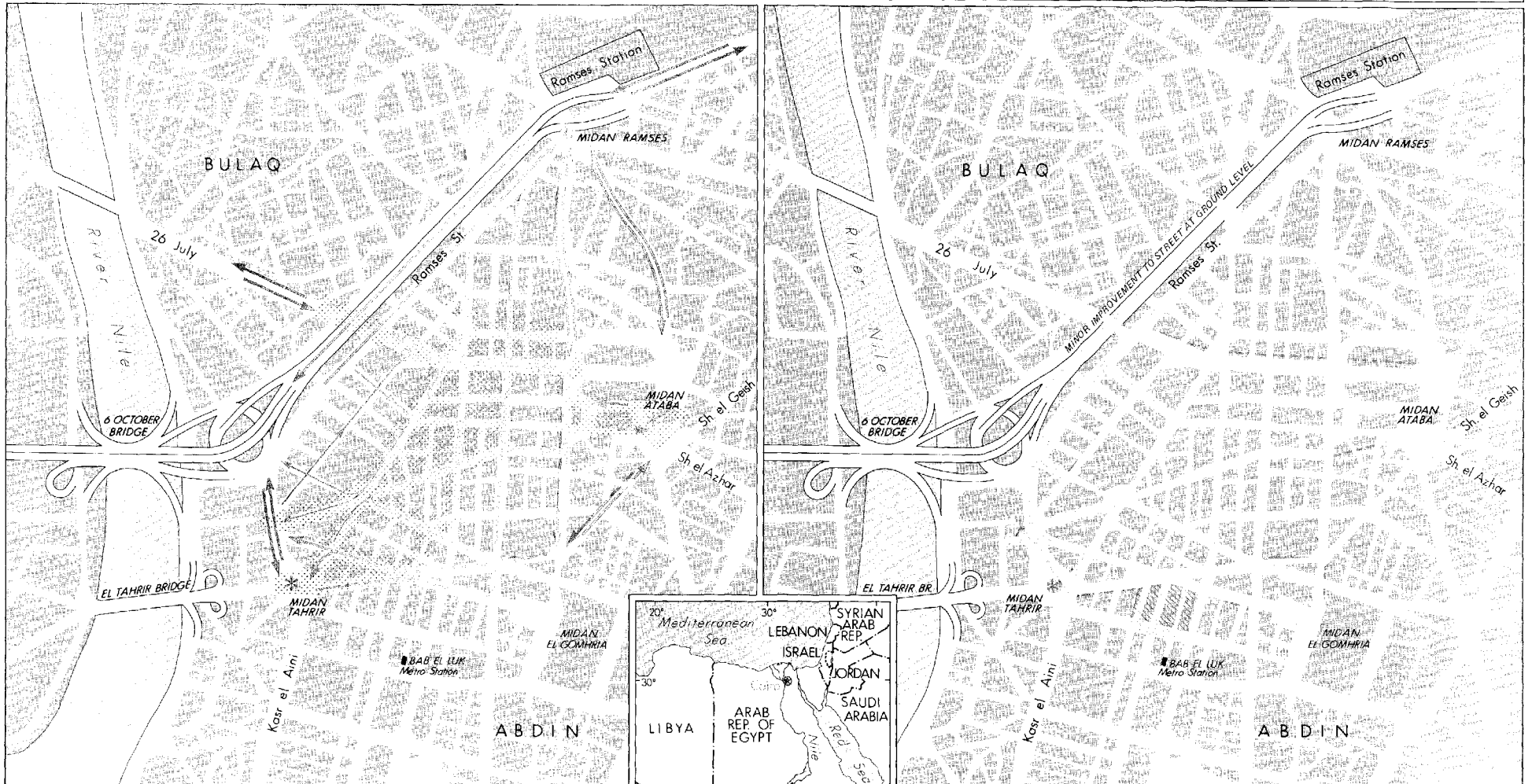
# EGYPT CAIRO TRANSPORT PROJECT PRINCIPAL TRANSPORT CORRIDORS



# EGYPT

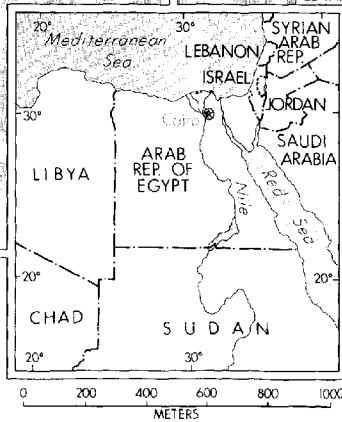
## CAIRO TRANSPORT PROJECT

### CENTRAL BUSINESS DISTRICT



#### BASIC RESTRICTED THROUGH ROUTE STRATEGY

- MAJOR TRAFFIC CIRCULATION ROUTES
- MINOR TRAFFIC CIRCULATION ROUTES
- MAJOR PEDESTRIAN ACTIVITY
- MAJOR SQUARES
- BUILT-UP AREAS



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#### IMMEDIATE ACTION PLAN

- MAJOR IMPROVEMENT WORKS
- MINOR IMPROVEMENT WORKS
- PEDESTRIAN PRIORITY STREETS
- CONTROLLED PARKING ZONE
- MULTI-STORY PARKING GARAGE
- PEDESTRIAN OVERBRIDGE
- MAJOR SQUARES
- BUILT-UP AREAS
- DEMONSTRATION AREA

