

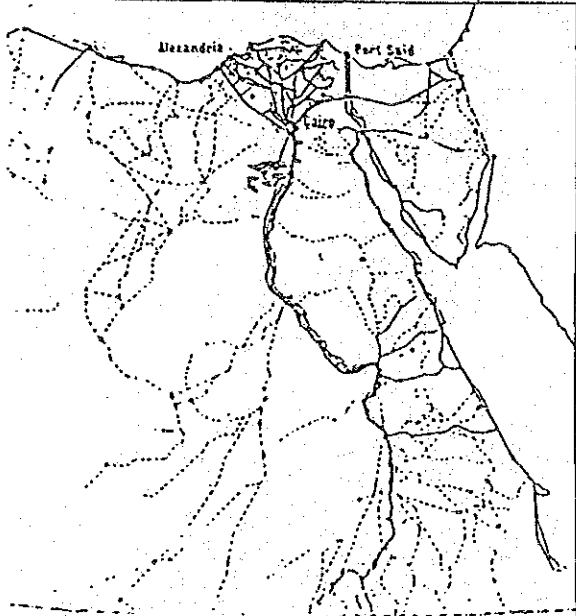
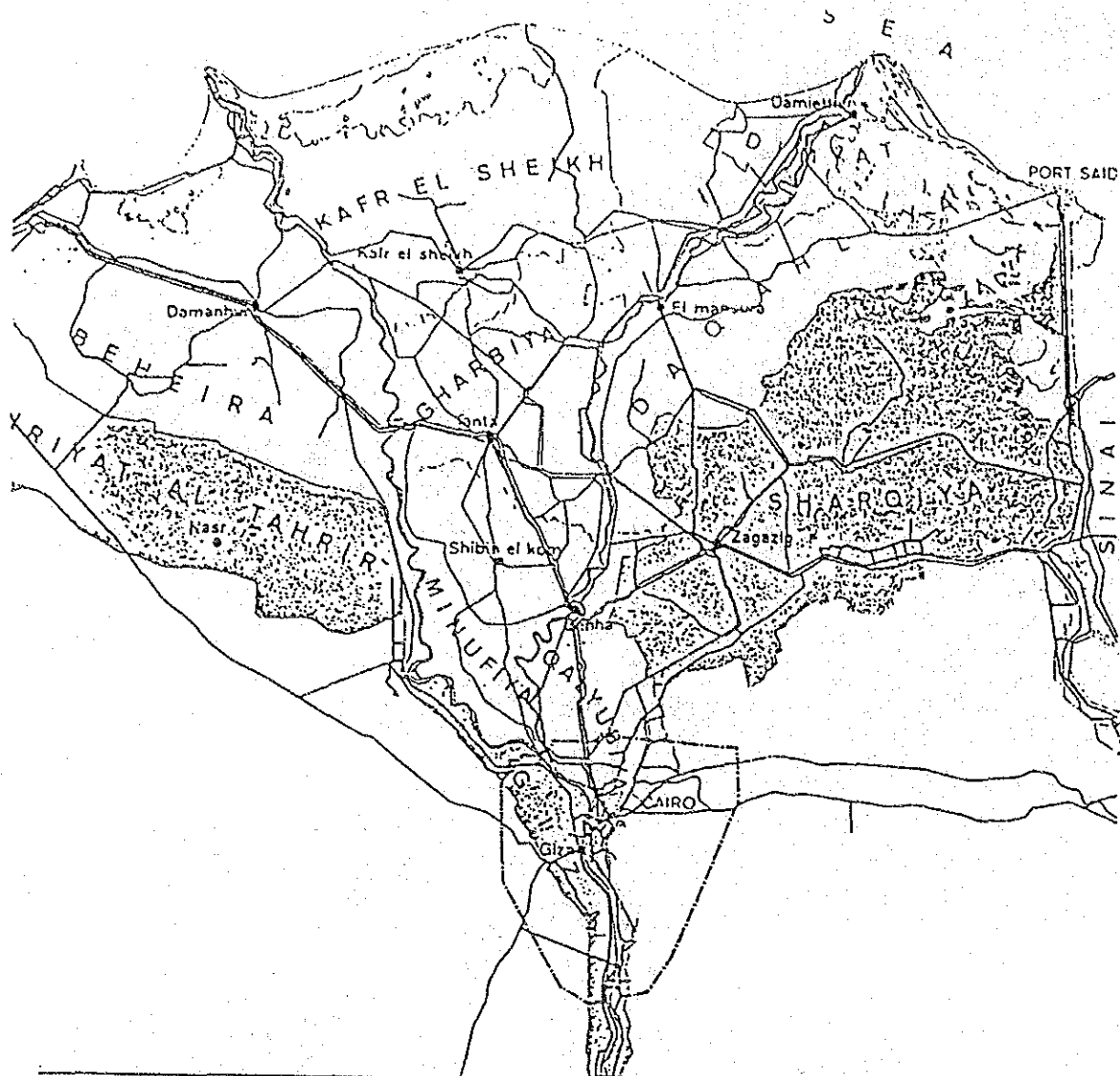
4. エジプト側の要請書

GREATER CAIRO TRANSPORTATION

MASTER PLAN STUDY

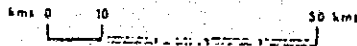
(Summary of the Scope of Work)

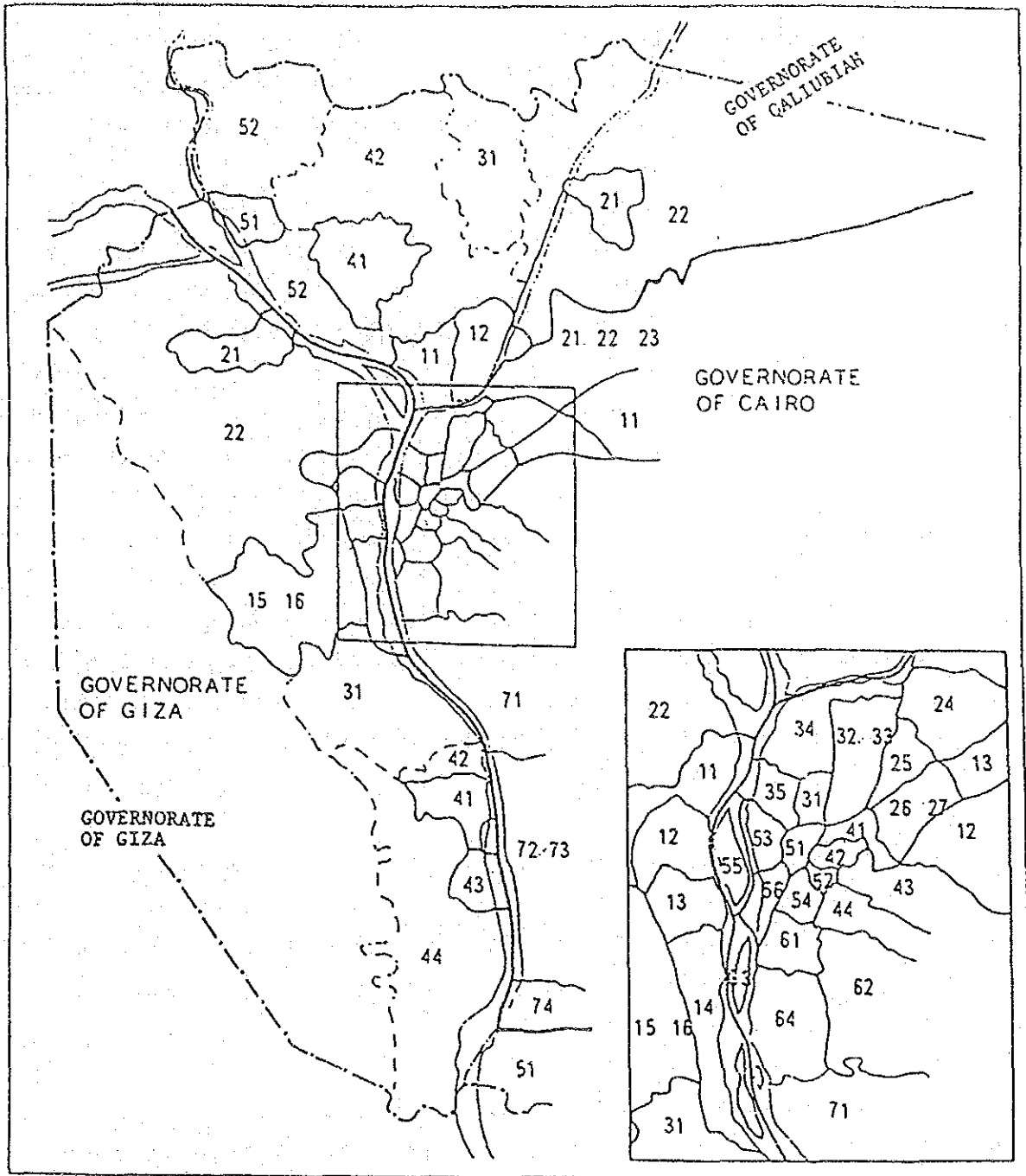
APRIL 1985



- Limit of greater chiro area
- Macadamized roads
- Main railways

MAP OF
ARAB REPUBLIC OF
EGYPT





ADMINISTRATIVE LIMITS

- Limit of Qism and Madinat
- Limit of Markaz
- Limit of the Greater Cairo Region
- 32 Code number of Qism or Markaz within the Governorate

BACKGROUND OF THE PROJECT

Greater Cairo Region, comprising the Governorate of Cairo, the cities of Giza and Imbaba in the Governorate of Giza and the city of Shoubra El Kheima in the Governorate of Qalyubiya, is a core area of administrative and economic activities in Egypt.

The population of the Greater Cairo Region was estimated at 7.9 millions in 1976 and 10 millions in 1984, and the annual average growth rate was around 3% during that period. The natural growth of population in Egypt is approximately 2% per annum, so that the social internal migration to the Greater Cairo Region is estimated at about 2% per annum. The population of the region in 1984 accounted for about 25% of the total population of the country. This implies that the centralization of the region is severe with its related urban problems.

The Greater Cairo Region Long Range Urban Development Scheme, Hereinafter referred to as the Master Scheme, has been prepared so as to solve the urban problems on a regional scale and to disperse the population. The Master Scheme for year 2000 was prepared by the Ministry of Development and New Communities in 1983.

In the Master Scheme, the structure plan of the homogeneous sectors was proposed to disperse the centralized urban functions. The Master Scheme was authorized by the Government in 1984. Therefore the development of master plan study for transportation became an urgent subject to complete the Master Scheme effectively.

Under these circumstances the Government of Egypt has decided to request the Japanese Government to conduct the transportation master plan study to provide, through conforming with these structure plans, the development of road network and public transportation systems.

OBJECTIVES OF THE STUDY

The objectives of the study are:

- To review the previous related studies
- To prepare a strategic development and action plan for Cairo.
- To develop, from an evaluation of alternatives, a preferred integrated inter-modal transportation master plan to serve the needs of Greater Cairo for the period to 2000.

DEFINITION OF THE STUDY AREA

The main study area for the Transportation Master Plan is essentially the area covered by the strategy plan developed within the Master Scheme. Besides the Master Plan should consider the transportation demands to/from the existing and planned satellite cities around the Greater Cairo Region. The plan shall also address the subject of integration of the transportation system within the study area with that of the national transportation network.

SCOPE OF THE STUDY

(1) Preparatory Work in Japan

- 1) Collection and analysis of available data.
- 2) Clarification of the scope of the study and establishment of the study approach.

(2) Work in Egypt

- A-1) Review of related previous studies.
- A-2) Collection and analysis of related data.
- A-3) Preparation of Inception Report including the results of the discussions with the related authorities.

A-4) Transportation Surveys

- 1) Person trip survey
 - Sampling size: about 10,000 household;
 - Trip generation/ attraction model;
 - Trip distribution pattern;
 - Model split; and
 - OD tables.
 - 2) Roadside interview survey
 - 20 percent of sampling rate of cross-sectional traffic volume at the cordon-line.
 - 3) Road traffic volume count survey
 - Cross-sectional traffic volume count in arterial roads and at screen-lines.
 - 4) Survey of goods movements
 - Interview survey of various industrial companies;
 - Roadside interview survey for trucks; and
 - Traffic counting of truck movements.
 - 5) Survey of public transportation network
 - 6) Road Inventory survey
 - 7) Compilation of data (Coding and computer processing)
- B-1) Collection of existing topographical maps to a scale of 1 to 5,000, 1978.
- B-2) Aerial photographic survey
- B-3) Updating of the existing topographical maps
- B-4) Preparation of reduced topographical maps to a scale of 1 to 25,000
- C-1) Preparation of the strategic development and action plan

- D-1) Analysis of the transportation survey results.
- D-2) Establishment of the transportation master plan.

TIME SCHEDULE OF THE STUDY (Work Schedule)

See attached paper.

EXPECTED ASSIGNMENT OF EXPERTS

Project Manager
Senior Transport Engineer
2 - Traffic Engineers
Urban Planner
Transportation Economist
Economist
Highway Engineer
Civil Engineer (Public transportation systems)
Public Transportation Operation Specialist
2 - System Engineers
2 - Photogrammetrists
2 - Ground Surveyors

PROJECTS TO BE EXAMINED

The transportation development projects which will be examined through the study will cover, but not limited to the following:

- (1) Roads
 - Arterial roads (including expressways)
 - Secondary road network
 - Feeder road network
- (2) Railways
 - Interzonal railways network (including heavy railway)
 - Intrazonal railways network (including subway and street-car)

(3) Bus System

- Bus terminals
- Bus operation route network
- Bus-lanes

(4) Other transportation Facilities

- Public car parking space
- Public spaces at the railway station
- Truck terminals

The study team will prepare final report containing its findings and recommendation of all parts of the study, in particular the following subjects will be dealt with separately:

- Expressways, arterial and secondary road network
- Railway network including subway (including the role of existing street-car)
- Effective bus operational system
- Truck terminals

SCHEDULE OF GREATER CAIRO TRANSPORTATION MASTER PLAN STUDY

(TENTATIVE)

	1st Year												2nd Year				
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	
G.C. Development Frame	Review of M.S. (Past Studies) Study (Socio-economic Framework) Alternative Development Frame																
G.C. Transportation Master Plan	(Detailed Planning of OD Survey) (Inventory Survey of Transport Network Preparation) Survey Analysis (Compiling and Data Analysis) Traffic Forecast (Modal Split and Future Traffic Demand Forecast) Master Plan																
Survey and Mapping	Survey & Mapping (1/5000 Updating) Production (1/25,000)																
	Inception	Progress	Interim	Progress	Interim	Progress	Interim	Progress	Interim	Progress	Interim	Final D.F.	Draft Final D.F.	Progress (II)	Interim (II)	Draft Final T.P.	Final Report.
		(I)	(I)	(I)	(I)	(I)	(I)	(I)	(I)	(I)	(I)	(I)	(II)	(II)	(II)	(II)	
																	27 months

CAIRO GOVERNORATE
OFFICE OF DEPUTY GOVERNOR
FOR ENGINEERING AND TECHNICAL
AFFAIRS -

DRAFT SCOPE OF WORK
GREATER CAIRO REGION

A STUDY TO REVIEW THE LONG RANGE
MASTER SCHEMES AND PREPARE THE
REGION TRANSPORTATION MASTER PLAN

A. INTRODUCTION AND DESIGN PHILOSOPHY

Introduction

1. Greater Cairo is, jurisdictionally, a highly fragmented area comprising 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 Kalinbiya to the north of Cairo. Growing at an annual rate of around 3% (compared to just over 2% annually for the national population), and with a population estimated at 10 million in 1984, Greater Cairo is the largest urbanized area in the Middle East and Africa.
2. The operation and management of urban services, not all of which are the responsibility of the Cairo and Giza Governorates, has demonstrated serious deficiencies due to the lack of sufficient fiscal and management resources and logistical support to provide a satisfactory level of service.
3. The existing land use maps and Master Schemes for Greater Cairo was completed in 1983. It was entitled "Master Scheme" rather than "Master Plan" because it acknowledged the need for constant review and updating during the intervening period.
4. The current Transport Master Plan for Greater Cairo was formulated by the SOFRETI Study, which was approved by the Cabinet of Ministers in September 1974. The study provided the justification for a new metro system and includes plans for highways, traffic management and public transport at 1980, 1985, 1990. The metro system is under construction at present. It is now over 10 years since the plan was formulated, the plan do not reflect major changes in housing and infrastructure projects under taken during the past 11 years.
5. With some slight variations, private vehicle ownership is approximately 22 vehicles per 1,000 persons and is rising at 17 per cent per annum, and average family income is approximately LE700 per year. In addition, person trips are currently generated at a rate of one trip per person per day on all transportation modes, and the division between modes is 63 per cent public transport, 23 per cent pedestrian and 14 per cent private car and motorcycle.

6. Although car ownership and family income are low compared to other cities of the World, traffic congestion is evident in the City Centre and parking demand exceeds supply. Furthermore, public transport is often grossly over-crowded and is effected by general traffic congestion, poor road surfaces and a lack of modern transport management measures to increase the effectiveness of the current highway and public transport facilities. To resolve these transport improvements are planned, or are in course of construction, by the responsible transport agencies in Greater Cairo.
7. Particular attention is drawn to the current World Bank Project loan to support certain remedial immediate term measures to improve traffic management and public transport. The project also supports an ongoing effort aimed at strengthening the institutional and managerial apparatus of the Governorate, e.g. Management and Operation Program (MOP). The CBD component of the project places heavy emphasis on institutional development which calls for the creation of a Traffic Management Unit (TMU) capable of interceding on traffic management matters. The TMU will be strengthened and expanded under the consultancy component of the MOP.
8. The responsible transport agencies involved in transport and traffic in Greater Cairo are as follows:-
 - (a) The Governorate of Cairo (CG)
 - (b) The Governorate of Giza (GG)
 - (c) The Governorate of Kalubia (KG)
 - (d) The Ministry of Transport, Transport Planning Authority (TPA), mainly responsible for national transport planning and intercity travel, for all modes operating on highways, Inland Waterways and Rail roads.
 - (e) The Cairo Transport Authority (CTA), with its subsidiary the Greater Cairo Bus Company (GCBC), administratively responsible to the Governor of Cairo and technically responsible to the TPA.
 - (f) The Heliopolis Company administratively responsible to the Ministry of Housing.
 - (g) The Central Traffic Department (CTD) of the Ministry of Interior, technically responsible for Traffic Police Division in each of the Governorates of Cairo, Giza and Kalubia, whose governors are administratively responsible for these divisions.
9. A series of studies of traffic and public transport conditions and proposals for their improvement have been carried out. The most relevant to the proposed program are:-
 - (i) Greater Cairo Transportation Master Plan, Ministry of Transportation, RATP SOFRETU, 1973.

- (ii) Recommended Improvements in Public Transportation for the Cairo Metropolitan Area, February 1983, Cairo Transport Authority.
- (iii) Improvement of Public Transport in the Central Business District, February 1983, General Organization for Physical Planning, Ministry of Development.
- (iv) The National Urban Policy Study, 1982, Ministry of Development, PADCO.
- (v) Egypt National Transport Study, Phase III 1984, Ministry of Transportation, NEDECO.
- (vi) Cairo Urban Transport Project (CUTP), Project Preparation, July 1980, Transport Planning Authority, Ministry of Transport.
- (vii) Greater Cairo Region Long Range Urban Development Strategy, Master Scheme, 1983, Ministry of Development, GOPP.

Design Philosophy :

10. A crucial decision has confronted the Cairo Governorates for at least 20 years — namely whether or not to place a primary emphasis on designing the road system and use of space to cater to the private automobile or to stress the development of a mass transportation system. Voices have been raised in several quarters from time to time calling for the development of a public transport system before all else. However, with the exception of emergency measures, most investment has gone into servicing the needs of the private automobile owner.
11. Such investment, however, has provided an added incentive to the proliferation of private vehicles, especially in the Central Business District (CBD)— a process that the Governorate wishes to discourage rather than encourage. Recognizing this as a major problem, the Governorate has recently signed a consultancy contract for the planning and design of a range of traffic, bus and tram improvements in the CBD. The consultancy is being financed under the Greater Cairo Urban Development Project (Loan 2176-EGT). The consultancy places a heavy emphasis on institutional development which calls for the creation of a Traffic Management Unit capable of interceding on traffic management matters.
12. While the primary institutional focus is on traffic management, the consultancy is also required to propose realistic traffic and transport policy options in the medium and long term. The consultants are also required to sketch out in broad terms the institutional and organizational needs for improved traffic planning and to propose in broad terms a realistic institutional development proposal to expand the focus on traffic management into a full fledged focus on traffic management and transport planning. The consultancy is not required however to develop transport strategies in detail or to carry out detailed evaluations.

13. The commencement of construction for the first phase of the Cairo Metro Systems has added a sense of urgency to the need for a transport planning capability. The Metro is expected to be operational in approximately two years time. The first phase will consist of a total of 41 kms of track which will link the Helwan and Al-Marg railwa lines through the CBD by about 5 kms of underground track from Bab-el-to Ramses Square with six stations in the CBD itself. Operational details are in the final planning stage but it is understood that the metro service in peak periods will be a high capacity/high frequency system (headways of approximately 60 seconds are being considered). The Ministry of Transportation and Communications is responsible for the physical planning and construction of the system, but may ultimately turn it over to the Governorate for management and operations. However, the institutional framework, the financing of operations, and the integration of the metro system with existing public transport facilities have yet to be determined in detail.
14. There is also considerable concern as always over the size of the bus fleet, and current investment plans call for the purchase of about 250 new buses per year over the next five years. As necessary as these purchases may be, it does not get around the fundamental problem of putting additional buses on to streets that are too congested to handle them. For instance, the most heavily traveled routes are along the northeast axis where demand for public transport is greater, but where optimal use of the new units cannot be made because traffic is already nearly at a standstill during rush-hours. The same holds for lines coming from or going to Helwan in the south or where a line crosses any of the Nile bridges. New buses can pick up additional passengers, but may further reduce the speeds at which they operate.
15. The Governorates recognizes that there are now important trade-offs between investments that must be considered. For example, reduction in population density would provide significant additional space for residences, but, by expanding the urbanized area, would increase transport and infrastructure costs. The commuting that now takes place by automobile and the proposal for major transport investments like the new metro system are another manifestation of these trade-offs implicit in combining or separating work places and residences. As in the case of utility infrastructure, the choice of investment becomes even more compelling.
16. In the case of public transit there are choices to be made between diesel, gasoline and electric trolley buses, light rail systems and the metro, and also between large and small capacity vehicles. In the links with the new communities there are choices between fixed rail and bus systems. In providing access to outlying areas across the river the high cost solutions like the ring roads and bridges have to be evaluated and compared to the benefits. All of these choices require analysis of alternative investments and assessment of inter-sectoral priorities and implications. Such choices must be based on relatively sophisticated analysis which also implies the need for increased transport capacity.

17. To summarize the trends, effective governance of Greater Cairo, and specifically of its pre-eminent members, is impeded by three major constraints :
 - (i) the immense demographic challenge presented by annual increments averaging 300,000 people, while many of the current 10 million inhabitants are already insufficiently supplied with municipal services;
 - (ii) fragmented institutional responsibilities at all levels from the National Government down to individual Districts, and hence fragmented and wasteful investment decisions at a time of severe public sector resource constraints; and
 - (iii) overall institutional weaknesses in management capacity and in the personnel generally, their qualifications, and their rewards.
18. The basic design philosophy of this current study is to prepare the Urban/Transport Master Plan so that the Governorates planning effort will be effectively carried out, and in particular better able to coordinate the proposed plans and schedules in a realistic manner given the existing legislative framework and institutional capacities and actual and anticipated resource constants.
19. In carrying out the study, the team shall work mainly in close cooperation with the staff of Cairo Governorate and also the staff of other related government agencies.

B. SECTORAL BACKGROUND

(Reference to Cairo Governorate
Other Governorates have similar
Arrangements)

Local Government Structure

20. The Governorate of Cairo holds the dual status of a municipality and a city. It was not, however, until 1949 that the legal status of the Governorate was changed from a Capital District run by the National Government to that of a municipality. In 1960, the Local Administration Law merged the administration of the Governorate with that of the municipality to create a single multipurpose administrative unit consisting 16 kisms (corresponding to neighborhoods) which are in turn now grouped into 12 Districts (corresponding to boroughs). Similar arrangements are for Giza and Kaliubia Governorates.
21. The Governorate affairs are administered through a dual council system: an Executive Council and a Legislative Council. The Executive Council is appointed by the Central Government and comprises the Governor (who has ministerial rank) and his civil service department heads (who are career functionaries of their mother ministries): technical affairs, education, youth, health, social services, and finance etc.

Each Department Head holds the rank of Undersecretary and has as his primary role the coordination between the Governorate and his Ministry objectives. The Legislative Council, more often referred to as the Popular Council (and sometimes referred to as the People's Council), is elected by popular vote and participates "across-the-board" in Governorate affairs. A number of seats on the Popular Council are always reserved for representatives of the working class. The two Councils interact in a framework of "checks and balances" in addressing Governorate affairs.

22. In 1975, Law 52 went a step further and created a two-tier system of local government by endowing the Districts with legal personality and establishing for the first time locally elected District Councils. Thus the Districts became local government entities, each with an Executive Council and Popular Council having approximately the same responsibilities as the Governorate. In fact District administrative process could be viewed as a microcosm of the larger Governorate process. Law 52 did not, however, define in a clear way the functions of the Governorate vis-a-vis the Districts with regard to municipal activities. For example, the Districts are responsible for issuing licenses, regulating and controlling building construction, maintaining government buildings, public parks, gardens and environmental improvement programs, constructing and maintaining tertiary roads, and enforcing laws regulating entertainment and public shops. The Governorate is responsible for the planning and budgetary process and the overall supervision of these activities. In addition, it is also responsible for the construction and maintenance of primary and secondary roads, bridges, and cultural activities such as museums, public libraries and tourism promotion.
23. Following the amendment of Law 52 in 1980 by the National Assembly, The Governorate is now, in principle, responsible for the design and implementation of investments within its geographic boundaries. However, control over fiscal management, taxation, regional and national planning remained with the Central Government which continues to supply over two-thirds of the Governorate's funding, so that the Governorate in reality continues to operate much along the lines of a Capital District.
24. The Governorate responsibilities split into two parts. On the one hand, it is responsible for a total staff of about 160,000 employed at the Governorate and District level and on the other, it has responsibility for the work of three public utility agencies (dealing with water, sewerage and public transport), and for three land development companies. Out of the 160,000 Governorate and District staff, 72,000 work in education, 29,000 in health, 5,000 in social affairs, 44,000 in city operations, 3,200 in housing and reconstruction and 6,800 work in administration.
25. The operational work is split between two departments; (i) planning and capital works, which come under the direction of the Adviser for Technical Affairs and encompass physical planning, primary roads and bridge construction and housing; and (ii) operation and maintenance which is carried out by the Cairo Cleaning and Beautification Authority (CCBA constituted in 1983) which is linked to the Districts (who actually carry out the work) and four deputy mayors who have jurisdiction over three districts each. The organisation of CCBA and its links to

the districts are still evolving and the political and executive responsibilities have not been adequately clarified. Two other agencies are in embryo and will be financed under the same World Bank project. These are (i) Traffic Management and Transport Planning Agency (TMTPA); and (ii) a Land Development Agency (LDA).

26. The three constituent public utility agencies for which the Governor has major responsibility, and which operate on a metropolitan wide basis, are the General Organization for Greater Cairo Water (GOGCW), the General Organization for Greater Cairo Sewerage and Sanitary Drainage (GOSSD), and the Cairo Transport Authority (CTA). Power and telecommunications services are provided by national level agencies which operate outside the control of the Governorate. The three public sector land development companies, also considered constituent agencies for which the Governor has some responsibility, comprise: the Maadi Development Company, the Heliopolis Company for Housing and Development (which also operates the Heliopolis Metro System) and the Nasr City Company for Housing and Development. In practice these companies operate completely outside of the Governorate-wide planning framework (to the extent that one exists). The Governorate is also involved in managing and operating composting and slaughterhouse enterprises.
27. The response to the growth of the city has been inadequate. Concern is repeatedly expressed about the loss of agricultural land to urban use, but the urban poor, in the absence of support have been forced to build their own houses where ground water is available. In the last 20 years, over seventy-five percent of the housing constructed in Cairo has been built by the informal sector and the development thrusts into agricultural lands are evidence of the Governorate's failure to get ahead of growth.

Local Government Finances and the Budgetary Process

28. The total revenues generated by the Governorate cover only about one-third of the salaries and expenses of the Governorate. Further, the Governorate is not legally empowered to expand its tax base nor substantially increase its revenues. The Governorate's budget over the last 20 years has consistently shown that: (i) local revenues account annually for less than a third of all Governorate resources with the remaining two-thirds coming as transfers and grants from the Central Government, (ii) the budgets as a whole have been devoted overwhelmingly to current operational expenses with little left over for investment; and (iii) in aggregate terms the annual public sector outlay to finance Governorate operations and provide services and maintenance amounts to only about \$20 per capital (in prices of 1980) -- clearly much less than what is required to operate an urban center of this size and complexity. The demographic pressures which will push the Greater Cairo population to at least 16 million by the year 2000 severely compound this problem.

29. While a balancing effort of this nature is not unusual in today's international fiscal environment, its success almost always depends heavily on a sophisticated analysis of individual projects and a framework for assigning relative priorities between projects and sectors. Under present Governorate arrangements, individual projects are formulated by the sectoral agencies, and the detailed designs are assigned to private consultants who do the actual work and supervise the contractors. In the analysis of projects, technical feasibility and compatibility with narrow sectoral objectives appear to be the main focus of emphasis rather than the economic analysis which would assist the Governor and the other decision-makers. Sectoral allocations in the budget are determined in the context of sectoral strategies and overall priorities set forth in broad quantitative terms, so that there is no comprehensive planning to resolve the apparent competition for funds to be spent on urban construction and efficient urban operations and management. While the previously referred to master plan entitled "The Greater Cairo Long Range Urban Development Scheme" provides some of the answers, it has not been fully adopted by all the agencies and is only at best a rough, but useful guide. Further, there is an absence of institutional capacity to operationalize the plan.

C. OBJECTIVES

30. The objectives of the current study is twofold
- (i) review the 1983 Master Scheme for Greater Cairo and to provide the Cairo authorities with more effective planning instruments to support and manage the growth of the city over the next fifteen years.
 - (ii) develop, from an evaluation of alternatives, a preferred integrated inter-modal transportation plan to serve the needs of Greater Cairo for the period to 2000.

D. STUDY ORGANIZATION AND STEERING COMMITTEES

E. SCOPE OF THE WORK

Phase I: Review of the 1983 Master Schemes; Duration 6 months

TASK (1)

34. The Study Team will be required to review all data and information relating to the growth and present state of the City, including prior commitments to development and proposed plans for growth and change. The following list indicates the range of subject matter which should be covered by surveys and investigation prior to the commencement of Task (2) of the Study. The initial scale of mapping and the level of detail required, as well as the methodology for data collection, compilation, processing storage and retrieval, should reflect the need to focus on strategic action for the City as a whole. A second level of information is required to support decisions on specific policies, programs, projects and actions within those areas identified in Task (2) as requiring early public intervention to achieve the stated goals of the City. The scale and level of detail of Task (1) survey work will be decided after review of the existing documentation available to the Cairo authorities.
- 34.1 Existing land use and activity maps, including status of vacant land, with land ownership classified into private and public categories.
- 34.2 Community facilities, public and private
- 34.3 Population (numbers, densities, rates of growth, etc.)
- 34.4 Structural condition of major buildings or of areas of homogenous use characteristics
- 34.5 Communications:
- roads: hierarchy, capacity, traffic volumes desire lines, public transport route capacities
 - rail: trams, metro and suburban rail, indicate stops, capacity and other relevant operational information
 - waterways
 - telephones, radio and television coverage
- 34.6 Water supply
- 34.7 Sewerage
- 34.8 Electricity and gas
- 34.9 Areas served by a solid waste collection service and location of solid waste disposal sites.

- 34.10 Boundaries of districts
- 34.11 Buildings of historic or religious importance
- 34.12 Residential areas by income category highlighting areas of relative and absolute poverty
- 34.13 Major development commitments, differentiating between hard and soft commitments
- 34.14 Areas developed without formal planning permission
- 34.15 Areas where current development restrictions apply, e.g. ;
 - airport funnels or flight paths
 - areas strategic to national security
 - areas liable to flooding
 - steep slopes
 - areas of high amenity or antiquity value
 - areas with foundation problems, e.g., soft subsoils (Windblown sands), rock, etc.
 - areas subject to pollution

TASK (2)

- 35. The Study Team will be required to review all data and information relating to the growth and present state of the City, including prior commitments to development and proposed plans for growth and change. These will include, but not to be limited to, the following subjects:
 - 35.1 A review of the past and existing conditions pertaining to all physical and functional aspects of the City's structure including those subjects identified for survey and investigation in Task (1)
 - 35.2 A preliminary appraisal of the causes and results of growth, including the formal response of the public sector through regulatory measures and executive action. This would require an initial assessment of the roles and delivery capacity of existing institutions, current legislation and fiscal resources available to promote, execute and maintain public services.
 - 35.3 A preliminary review of the private sector's methods of carrying out development through legal channels, in conjunction with the informal response made, particularly by lower-income groups, to satisfy needs for housing, employment services, etc.

36. The Study Team will prepare and present a report at the end of two months describing their views on the existing situation and identifying those critical or contentious issues likely to be of major significance in the strategic review of the 1983 Master Scheme and the preparation of new plans, policies, and programs of action necessary to achieve efficient development.
37. The report will also present initial views on alternative policies, plans and programs which appear to provide a means of overcoming constraints and exploiting the opportunities identified during the familiarization period.
38. In close liaison with the Cairo authorities, the Study Team will draw up a more detailed program of study activities based on the reviews and discussions of their report. In addition, the Study Team will identify the need and design for any further surveys and investigation required.
39. Based on the preliminary reviews, the Study Team will prepare a deficiency analysis in order to make a more accurate diagnosis of the problems and the need for the provision of public services. This analysis will deal with physical characteristics, as well as the delivery of services, and will be based on a study of existing and desirable service levels and standards. The Study Team will plot the physical areas and assess the number and characteristics of inhabitants served by existing and proposed services such as:
 - 39.1 Health facilities
 - 39.2 Education services
 - 39.3 Recreation and community facilities
 - 39.4 Water supply/fire hydrants
 - 39.5 Sewerage/other forms of sanitation
 - 39.6 Surface water drainage
 - 39.7 Electricity/gas
 - 39.8 Telephone
 - 39.9 Emergency and servicing vehicle access
 - 39.10 Solid waste collection and street cleaning
 - 39.11 Bus and public transport routes
40. The Study Team should critically review and analyze the existing facilities in each sector. This should consist of a review of the historical levels of expenditure, current policies, strategies, standards, levels and spatial distribution of services and on-going projects and programs. The Study Team should assess the extent to which the current policies and programs address the residual deficiencies and growth problems and reach down to the lower-income groups.

41. In order to establish whether improvements can in fact be made, a more detailed investigation should be undertaken of the human and financial resources and the consequent delivery capacity of institutions involved in the provision of services. This will identify any constraints arising from the characteristics of existing structures and resources and may focus on the scale of need for administrative change and the amount that resources will have to be increased if the existing and future population is to be provided with improved services in the short term.
42. With the knowledge and understanding of the City's physical, demographic and socioeconomic characteristics, its resources and the capacity of its institutions, the Study Team will identify and present factors which may constrain desirable development and the opportunities which can be exploited to facilitate the achievement of the City's stated goals.
43. After major reviews with the relevant authorities, the Study Team will be in a position to develop specific physical, socio-economic, financial, legal and institutional measures which together can be recommended as a strategic development and action plan for Cairo, supporting the 1983 MASTER Scheme. This will take the form of the preparation of policies, plans and programs for the City with particular emphasis on:
 - 43.1 Designated areas of strategic importance within the existing and proposed area of Greater Cairo.
 - 43.2 Recommendations for specific policies, projects, and programs by sector within such areas.
 - 43.3 The priority to be given to such projects and programs based on an evaluation of their potential to effect desirable change and improvement.
44. As the most likely scenarios for the rate, location, and characteristics of urban expansion will have been previously agreed, forward planning at City-scale will be limited to the identification and design of policies, plans, and programs promoting such metropolitan growth. The Study Team will undertake an appropriate level of analysis to be able to make recommendations on the strategic use of land and the alternative network requirements at city-scale of movement and infrastructural systems. This context will provide the basis to plan the most effective short-term investments in the provision of transportation systems and public utility services, and identify major rights-of-way which should be reserved at an early stage, as well as any additional or incremental improvements that can be made to existing systems which will facilitate longer term solutions. The network plan will also serve as one of the instruments for the identification and location of areas of strategic importance to the City's future development.

45. On the basis of the network analysis as well as deficiency and threshold analysis and the constraints and opportunities studied, the Study Team will identify those development policies, sectors and geographic areas of the City where early action is imperative if the use of public resources is to lead to maximum benefits to the population.

46. REPORTING:

The Study Team will present reports of the following stages of the study period, to be presented to and revised by the relevant authorities

After 2 months - an Inception Report

After 4 months - a Progress Report

After 6 months - a Draft Final Report.

PHASE II: Greater Cairo Transportation Master Plan.

47. The proposed Study Area shall cover the extent of the urbanised area of Greater Cairo anticipated for the year 2000, and the proposed outer ring road system. The study will also recognise an area of influence in the hinterland.
48. The Study Area should be divided into some 300 to 400 internal zones whose boundaries relate to National Census districts, particular land uses and are smaller in area towards the city centre. These zones should cover areas of proposed, as well as existing, development. Data on population, socio-economic indices, and employment should be tabulated for the existing situation by zone to act as the planning base of the transport study.
49. The design years for the study would be 1990, 1995 and 2000 with the base situation constructed for 1985. The 1990 and 1995 years should be considered as the periods for which relatively firm projections could be made and the year 2000 considered as the long term planning horizon for which ranges of projections would be most appropriate.
50. The time periods for which travel projections should be analysed are envisaged as normal weekdays (Monday to Thursday) and for 1990 and 1995 a peak period as well as the all-day situation should be assessed. Hourly, daily and monthly variation monitoring records would be required for the main travel modes.
51. The study should consider the effects on alternative highway and public transport networks of all modes of travel; proposed metro; suburban rail; tram; stage and unit fare bus; Ward bus; private bus; shared taxi (including Ramses minibus); taxi, motorcycle; car and commercial vehicle. The impact of pedestrians, cycles, River Nile ferries and slow moving vehicles would also need to be considered.
52. The transport model shall predict travel demands and analyse and evaluate alternative transport strategies for the design years. The model must also be able to assess a variety of long term land use strategies.
53. The previous studies and sources of information provide a background from which the study can be executed rapidly by updating and supplementing previous work. A two year programme from start to finish is envisaged which is appropriately staged and allows adequate time for liaison between the interested transport agencies.

54. The formulation and evaluation of alternative transportation plans and the selection of a preferred strategy would be effected and influenced by all the interested transport agencies in Greater Cairo and the conclusions of the National Transport Study (NTS). Cairo Governorate would therefore control and direct the liaison and co-ordination required between these agencies and the NTS for the purpose of this study. The formulation and recommendation of a preferred transportation plan and programme would, however, be the sole responsibility of the Study Team. Cairo Governorate would provide the study offices, second staff to work with the Study Team, and provide relevant data and plans from other Government Departments.

SOURCES OF DATA

55. The SOFRETU Study (1971-74) undertaken for the Ministry of Transport, is recorded in a number of detailed reports which provide the basis for its recommendations. Surveys were undertaken in 1971 and 1972 and included 10,000 households, road counting, cordon surveys and other interviews. The planning base was the 1966 National Census comprising 33 districts in Greater Cairo and it recorded population and employed population per district. Employment was calculated from the journey to work tables produced by the household survey and an employment survey made in 1967. The study projections subsequently subdivided the districts and was based on 245 internal zones and 9 external zones. Forecasts of future private vehicle traffic were based on car ownership and trip rate growth assumptions. Forecasts of public transport passengers by mode were based on trip rate assumptions and the characteristics of each mode expressed in time and cost terms. The study recommended traffic management proposals and highway plans for 1980, 1985 and 1990. In addition, a new metro system and tram, bus and terminal reorganisation was proposed.
56. The Entrances to Cairo Study (1975-76) undertaken for the Ministry of Housing and Reconstruction, proposed a series of major road improvements from 1977 to 1986 around and leading from the periphery of Greater Cairo. The study essentially used existing data but it did undertake classified counts at 31 locations and an origin-destination survey at 14 locations for four hours of a day. Growth factors were calculated by corridor from 1975 to 1985 and 2000. The study predictions and conclusions are now subject to an ongoing review by the General Organisation for Physical Planning.
57. The University of Cairo, in conjunction with the Ministry of Transport, undertook an origin-destination survey at 249 stations on 8 April 1977 with an overall sample rate of 10% and in addition 19 enumeration stations were surveyed. The data has now been analysed and the University is developing movement matrices on a 40 zone basis. In 1978 the University of Cairo undertook a further survey of all forms of public transport over five days in April. The passengers were surveyed on the modes and the

modes surveyed were 345 buses, 30 trams, 16 trolley buses, 6 River Nile ferries and 12 metro trams. Rail passengers were surveyed at stations. The data has been tabulated and analyses are being pursued in conjunction with MIT University Transportation team to determine the effects of changes to routes and forms of operation.

58. The Cairo Urban Transport project preparation 1979/80 undertaken for the Ministry of Transport, has collated existing data and undertaken limited intersection counts and journey times. This has been used for the evaluation of specific schemes for early implementation-
59. The National Transport Study 1979/81 undertaken for the Ministry of Transport, has collected transport data outside Greater Cairo and is to provide recommendations in the short and long term on a national basis.
60. The National Census 1976 has produced tabulations of population by district (kysm) within each of the three Governorates (Cairo, Giza and Kaloubeia) comprising Greater Cairo. The data lists the population, households and employed population. The number of employees working in each district is not available.
61. In addition to these studies the transport authorities produce periodically or annually, statistics, plans and programmes which would form an essential input into this study.

ANALYTICAL METHODS

62. The depth and breadth of the analytical methods to be used in this study should be set in relation to the need for firm projections and evaluations of important schemes and the problems of the uncertainty of future situations. In particular, procedures proposed should take account of :-
 - (a) the requirements of proper economic and operational evaluations of individual policies and measures
 - (b) the need to consider socio-economic factors, parking charges, public transport tariff levels and other aspects which effect travel behaviour
 - (c) the need to evaluate competing transport expenditure options between and within highways and public transport facilities
 - (d) the range of uncertainty of future population growth, economic activity, investment levels and travel demands.

In particular, the methods used in the analysis should not be so time consuming or elaborate that rapid appraisals can not be easily undertaken in the subsequent monitoring stage.

63. The computer facilities to be used by the study are fundamental to its success and should have the characteristics of easy access, guaranteed utilisation, modern technology of a reputable manufacturer, easy maintenance, and an economic charging rate. Different approaches should be considered, viz:-
- (i) Using a commercial computer bureau.
 - (ii) Procurement of a new computer essentially for this study.
 - (iii) Using another machine, e.g. privately owned, university, etc.

In order that the subsequent monitoring work can be effective the approach to computer facilities should remain valid for at least five years from the start of the study.

64. The computer programs used for data processing, the transportation model, and evaluations should be compatible with the proposed computer facility and be a fully developed and proven suite. Documentation should be available including a detailed operators manual and test runs of all programs should be made prior to implementation. These programs should be made available in the source version which shall become the ownership of the Governorate. The data bank compiled by the study should be fully indexed and a back-up data storage facility provided.
65. The transfer of technology to the Governorate staff on the analytical methods is an essential part of this study and every effort should be made to involve this staff in all aspects of the work.

TRANSPORTATION SURVEYS

66. The population, socio-economic, and land use data by zone shall be obtained from National Census data or other sources, updated as necessary to provide the base year planning data. Information on employment by zone shall be collated from published sources, a household interview survey and/or obtained by limited survey of the major employers.
67. A household interview survey shall be undertaken in order to obtain household characteristics and person. trip records. A sample of some 10,000 households should be surveyed, stratified by location and socio-economic level. This data should be used to assist synthesising travel demands and investigating travel relationships.

68. An external cordon interview survey shall be carried out around the study area to determine for passengers by all modes their origin and destination. A minimum sample rate of 20 per cent should be obtained over a typical daily period.
69. An inner cordon interview survey shall be located around the Central Business District and using the River Nile as one boundary. This survey should include passengers by all modes and by both directions in the peak period. A minimum sample rate of 15 per cent should be obtained and the methodology of this survey should ensure a sufficient statistical confidence level. Particular attention should also be paid to commercial vehicle traffic.
70. Screen line counts of passengers by mode, direction and time period shall be carried out to provide calibration and validation data.
71. Public transport route, frequency and patronage surveys shall be carried out by route surveys within the study area. The modes should include: rail, trams, private buses, buses, mini-buses, shared taxis, etc., and sufficient information should be collected to describe travel demands and facilities. Patronage and use of terminal facilities should also be surveyed.
72. Highway inventories shall be undertaken to record route type, distance, speed and volumes by time period. These inventories are to include intersection details and parking. A parking survey in the CBD of duration and use of space should be undertaken to supplement existing knowledge.
73. The information collected by new surveys shall be collated with other recent data to provide a comprehensive transportation data bank. Consistency checks should be undertaken but duplication should be avoided.
74. All new surveys shall be designed to undertake coding and computer processing economically and the data format should be compatible with the computer programs to be used, and the form of the transport model. Data processing, storage and retrieval shall be designed and documented to enable subsequent monitoring and other analysis to proceed rapidly without need of computer programming intervention.

TRANSPORT MODEL

75. A transport model shall be developed on a computerised mathematical basis to simulate the existing travel demands in Greater Cairo on each link of the highway network and each line of the public transport networks. Specifically this will involve the allocation of vehicle flows to the existing highway network and passengers to each of the lines by mode of the public transport networks for a peak period and a typical day.

76. The detailed formulation of the model shall be responsible to the objectives of the study and the selection of "synthetic" as an alternative of "partial matrix" techniques, would need to be justified.
77. The model should be formulated to reflect the conventional phases of travel generation, distribution, model choice, and assignment. Its recognition of the transport networks should take account of travel time, distance, tariff and other similar costs, and service characteristics. The model should use to a maximum the data collated and analysed but if relationships have to be transferred from other countries to assist the model formulation then the basis of these should be explicitly stated.
78. The calibration of the model, for different time periods and/or modes should ensure internal consistency between different sources of data. The validation of the major outputs of the model, in terms of existing vehicle flows and passenger movement; should be undertaken against independent data sets, normally counts on screen lines, and would serve as the basis for assessing the level of confidence to be placed in the model. In addition, the feasibility of validation by back projection to 1971/2 should be assessed.

DEVELOPMENT OF ALTERNATIVE STRATEGIES

79. The approach to the selection of a preferred transportation plan and programme shall be to first evaluate alternative strategies to 1990 and then to project the preferred 1990 strategy forward to the year 2000. At this later date a preferred strategy should be evolved and tested for its robustness to accommodate changing socio-economic situations. Thus, the resultant transport plan and programme should be firm in the first decade and have the flexibility to accommodate long term changes.
80. The testing of alternative transport strategies to 1990 shall firstly include the following:-
 - (i) A 1990 transport plan,
 - (ii) A strategy which only includes facilities currently under construction or planned for 1990. This strategy is the effective economic base for evaluation other alternatives.
 - (iii) The SOFRETU 1990 transport strategy.
 - (iv) A strategy which is orientated towards public transport (e.g. new metro system, etc) and allocates very limited funds to new highway.
 - (v) A strategy which is orientated towards major highway construction and allocates very limited funds to public transport.

81. The evaluation of these initial options would illustrate a range of impact and enable the Government and the Study Team to define the potential strategies to be analysed with a combination of different investment levels, highway facilities, public transport facilities and/or levels of traffic restraint. At the end of this stage an Interim Report shall be produced and the Study Team shall identify a preferred 1990 transport plan for detailed analysis and the approach to sensitivity testing of transport plans to the year 2000.
82. The planning forecasts for 1990 and year 2000 shall be based on the "best estimate" of the future development of Greater Cairo and provide at a zonal level, estimates of population, employment, economic indices and car ownership. The review of the 1985 Land Use Master Scheme for Greater Cairo being undertaken by the General Organization for Physical Planning (GOPP) should be incorporated at this stage. In addition, for the year 2000 an "alternative planning forecast" should be made which should comprise changes to land use location, scale, economic activity and/or car ownership. This alternative would be used for testing the robustness of the year 2000 transport strategy to alternative long term planning forecasts.
83. The forecasts of future travel demands by mode and time period for 1990 and year 2000 shall be based on the planning forecasts and the travel characteristics observed in Greater Cairo modified as appropriate by relationships found from other countries. The basis of these forecasts shall be explicit and capable of being monitored and subsequently amended as part of the Government's work subsequent to the study. The travel demands by mode shall be facility-sensitive so that major new modes (e.g. the metro system) should lead to a re-distribution of trips. These travel demands would be predicted for weekday peak and all day periods at 1990 and for an all day period at year 2000.

EVALUATION OF ALTERNATIVE STRATEGIES

84. The evaluation framework for each alternative 1990 strategy shall provide a comparison to the economic base in operational, economic, financial and planning terms.
85. The operational evaluation shall take the travel assignments to both private and public transport networks and assess operational indices of average speed, loadings and capacity, level of service and other operational aspects. The evaluation should identify by location deficiency or performance of each strategy and thus assist strategy development by indicated further refinements or modifications.
86. The economic evaluation shall assess the benefits by mode and relate these to facility costs. The construction, maintenance and operating costs and user costs shall be evaluated to provide the internal rate of return. The financial aspects should also be separately considered.

87. The planning and environmental impacts of each strategy shall consider the potential opportunities or constraints on the development of the city and the impact on the environmental heritage in terms of noise; visual intrusion etc of new transport facilities.
88. Each strategy should be prepared in sufficient detail that particular areas of constructional difficulty is investigated to ensure feasibility and adequate cost estimation.
89. The need for co-ordination between modes (e.g. metro and bus services) should be identified by strategy in order to assess inter-dependence and the need for regulatory controls and inter agency planning.
90. The phasing of major alternatives from 1985 to 1990 shall be assessed in terms of ease of implementation, accumulation of benefits over the plan period, scheduling of financial and manpower resources.
91. As a result of placing these individual evaluations into an overall evaluation framework, a preferred 1990 transportation strategy shall be evolved by the Study Team and it should then be projected forward to the year 2000. For that design year the most probable land use pattern and transport facilities, in relation to travel demands and transport expenditure, would be identified. The sensitivity of these transport facilities to changes in long term planning projections should be assessed in order to refine the transport plan for year 2000. It is envisaged that up to three alternative transport strategies would need to be analysed broadly in operational, economic, financial and planning terms.
92. The preferred long term transportation plan from 1990 through to year 2000 would provide a programme for each of the transport agencies for Greater Cairo. The components of this plan, the need for co-ordination or the complexities of planning, execution and operation may indicate that institutional changes are required. The Study Team shall recommend any changes to the existing transport organizations or institutions which would be required to implement the long term transport plan for Greater Cairo.

MONITORING AND TRAINING

93. One of the main objectives of the study is to enable the Authorities to utilise the methods developed by the study to monitor and update the results. The organization of the study should be designed to fulfill this objective and would cover, but not be restricted to, the following methods.
94. The Authorities would deploy two graduate engineers full time to the study, one to concentrate on the transport planning and evaluation aspects, the other to concentrate on the analytical and computational aspects. In addition, other staff would be attached part time to the study. These staff should be trained in all aspects of the work so that at the completion of the study they can perform the subsequent monitoring and updating work.

95. Monitoring and updating shall be the responsibility of the Governorate and the Study Team shall in a two year period subsequent to the study undertake to provide :-
- (a) Advisory services from their personnel engaged on the study, totalling 6 man months.
 - (b) Maintenance of the computer facilities.
 - (c) Maintenance of the computer programs.
96. Training is to be provided by the Study Team to the respective Authorities staff in three ways:-
- (a) One-the-job training
 - (b) In-house seminars.

A formal programme for each of these aspects is required to enable the widest level of familiarisation and training to be obtained, including technical training documentation.

REPORTING

97. The reports prepared by the study will be major output of the work and shall be clearly presented in the English and Arabic languages as appropriate and be well documented and ordered.
98. Monthly Progress Reports shall be submitted to describe by task the work undertaken together with the planned completion date and the work to be undertaken in the following month.
99. Technical Papers shall record all the major technical procedures and analyses undertaken by the study and shall include summaries of data of general interest. These papers shall list the documented records (computer output etc) which provides the ultimate reference sources.
100. An inception Report shall be prepared at the end of the second month of the study and shall define the detailed work programme, study methodology, organization, resource requirements, information needs, and any other matter requiring resolution or clarification.
101. A Transportation Survey Report shall describe all the transport surveys undertaken and other information collated. It shall record the location, extent and response of each survey and the method of coding and analysing the data. The analysis and evaluation of the results shall be fully described and the output documentation and computer data bank recorded.
102. A Transportation Model Report shall give a clear description of the elements of the transport model, how they were formulated and how the transportation data was used in their construction. The calibration of each of these elements shall be set down and the validation reported together with the statistical significance in order to provide the measure of the confidence which can be placed in its use.

103. A Transportation Strategies - Interim Report shall be produced to describe the procedures carried out in the forecasts of planning socio-economic or travel data. In addition, the formulation and evaluation of the first range of alternative strategies and the 1985 transport plan would be described.
104. A Transportation Strategies Report shall be produced as an extension to the previous Interim Report and including the formulation and evaluation of all alternative strategies analysed. This will include the preferred strategy, its phasing and sensitivity analysis.
105. A Summary Report shall be submitted describing the study and its conclusions.
106. Approval of all reports (except Technical Papers) will be required and the approval period, timing of reports and copies required are to be decided later. Twenty five copies of draft reports in English shall generally be required and in the event that no comments are forthcoming within the approval period the documents will be deemed to be approved.
107. Translation of all documentation received or produced by the study between the English and Arabic languages shall be the responsibility of the Study Team.

TERMS OF REFERENCE FOR CBD IMMEDIATE ACTION PROGRAM
(PART I), PUBLIC TRANSPORT CORRIDORS (PART II) AND INITIAL TRANSPORT
STRATEGY DEVELOPMENT (PART III)

Introduction and Context

1. The Government of the Arab Republic of Egypt has agreed a loan with the World Bank for a program of measures to improve and develop urban transport, solid waste disposal and institutional capabilities of the municipal agencies in Cairo - the Cairo Urban Development Project (Cairo UDP). As part of the urban transport subproject, the Cairo Governorate intends to appoint consultants for the planning, design and contract preparation of a series of measures and policies within the Central Business District (CBD) and on a selected number of major public transport corridors to/from the CBD.

2. A series of studies of traffic and public transport conditions and proposals for their improvement have been carried out since 1980. The most relevant to the proposed program are:

- (i) Cairo Urban Transport Project (CUTP)
Project Preparation, July 1980
Transport Planning Authority
Ministry of Transport
- (ii) Recommended Improvements in Public Transportation for the Cairo Metropolitan Area
Feb. 1983
Cairo Transport Authority
- (iii) Improvement of Public Transport in the Central Business District, February 1983.
General Organization for Physical Planning
Ministry of Development

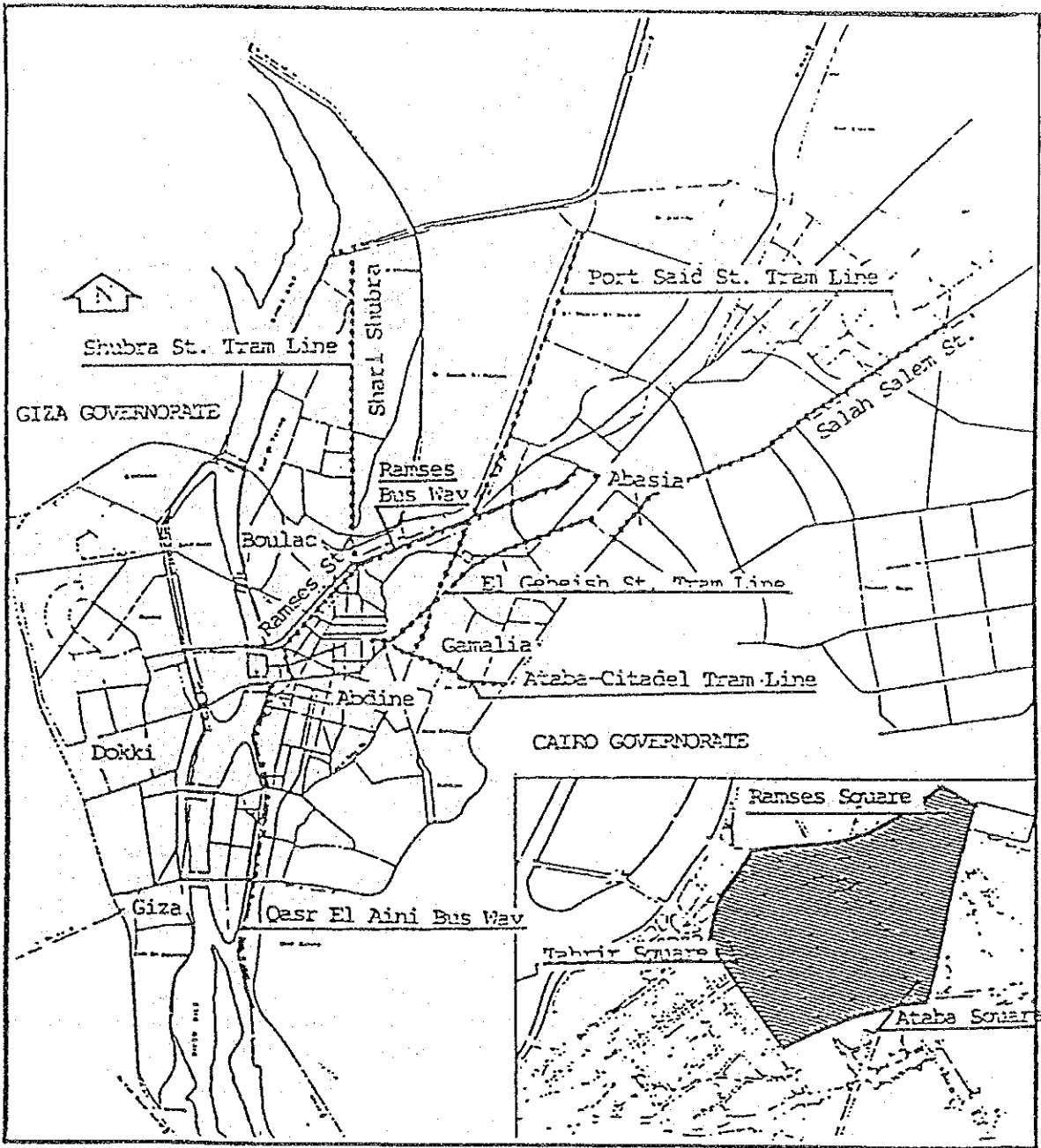
3. The present consultancy appointment will draw upon these studies and proposals and amend and supplement them as necessary in:

- Development
- (i) of a Central Business District (CBD) Traffic Plan and identification and design of proposals and preparation of contract documents for implementation of an Immediate Action Program of traffic management and operations schemes to realise the CBD traffic plan. The implementation of the schemes will be funded under the Cairo UDP.
- (ii) identification, planning and specification of all necessary management measures and institutional arrangements to support the Immediate Action Program of physical works.
- (iii) detailed planning and design of a series of identified and committed public transport infrastructure and road improvement schemes for implementation in the short/medium term on the approaches to, and within, the CBD. The implementation of the schemes will not be funded under the Cairo UDP.

(iv) assessing the longer term strategic transport needs of the CBD for subsequent consideration in detail in the preparation of an integrated Strategic Action Program (outside the present appointment) which will include public transport land assembly, cadastral records, public utilities etc.


4. The Terms of Reference are presented in three parts:-
- (i) Part I - Immediate Action Program for the CBD.
 - (ii) Part II - Public Transport Corridors.
 - (iii) Part III - Initial Transport Strategy for the CBD.

The general location of the study work is shown in the attached Fig. 1.



..... Tram line included in study

- - - - - Bus way included in study

 Central business district

LOCATION PLAN

FIG 1.

PART III

INITIAL TRANSPORT STRATEGY DEVELOPMENT AND

INSTITUTIONAL DEVELOPMENT

Background

87. As has been noted in section 3, the Cairo UDP includes the development (outside this appointment) of a Strategic Action Plan which covers sectors other than transport and extends over Greater Cairo. The transport proposals of the Strategic Action Plan will be developed using conventional land use transport modelling techniques. An objective of Part III of the present study is to develop realistic strategies for Central Cairo for inclusion in the development of the Strategic Action Plan. The strategies will be a development and integration of the strategies identified in the references noted in Section 2 but modified as a result of the detailed investigations of the central area of Cairo included in the present study.

88. Traffic planning is not currently dealt with on a consistent basis in the Governorate of Cairo. Part III will also evaluate the current institutional arrangements for traffic matters and propose an outline institutional development program to create a Traffic Management and Planning Unit in the Governorate of Cairo.

Objectives

89. The consultant is required to propose realistic traffic and transport policy options for the Cairo CED in the medium and long term. The objectives are to provide realistic input into the Strategic Action Plan studies.

90. The consultant is required to assess the institutional and organizational needs for improved traffic planning in the Governorate of Cairo and to propose a realistic institutional development proposal for a Traffic Management and Planning Unit.

Scope of Work

91. During the course of the present study, the consultant will have developed immediate action proposals for the CED, developed tram and bus way proposals on approaches to the CED, and considered some aspects of longer-term policy in assessing the downtown tram loop. To develop these proposals, the consultant will have analyzed and reviewed, inter alia:

- existing travel data
- proposals from previous studies
- constraints to transport development (both physical and institutional)
- committed transport proposals
- problems and deficiencies in the existing transport systems.

92. Based on these data and background, realistic traffic and transport policy options will be identified. It is not required to develop transport strategies in detail or to carry out detailed evaluations. In devising possible strategy options considerations will be given to:

- (i) the balance between public and private transport, the level of private transport (cars) which can realistically be accommodated and the level of restraint of private vehicles which is required for efficient operation of the system;
- (ii) the level of public transport provision required;
- (iii) the impact of the committed road construction program;
- (iv) the level of parking provision required for efficient operation of the system; and
- (v) etc.

93. In particular, the Governorate of Cairo, recognizing the need to increase public transport efficiency and quality as a means of alleviating traffic congestion in the CED requires that in developing strategic options, the consultant consider the case for a park-and-ride system. The park-and-ride investigation will be a "pre-feasibility study" to identify the general case for such a system in order that the Cairo Governorate can determine if further resources should be committed to development and to provide an input to the Strategic Action Plan Study. The investigation will consider, inter alia:

- the general case for park-and-ride (possible corridors, potential ridership);
- the physical opportunities (car park location, land acquisition requirements, etc.);
- the policy requirements (extent of restraint on other vehicles, extent of bus priority measures for an attractive system, etc.);
- the operational requirements (bus fleet, type of buses, car park size, etc.);
- impact on and integration with other modes (metro, tram);
- the organizational requirements (administration of car parks, etc.); and
- the cost (bus purchase program, car park construction, bus lane or bus way construction) and economic impact.

-1-

94. During the course of Parts I and II, the consultant will have identified the potential for the implementation of transport management policies and institutional problems. The consultant will therefore assess the present institutional and organizational arrangements and responsibilities for traffic scheme and policy planning, design, operation, and maintenance. Based on the evaluation, recommendations will be made for a phased introduction of a Traffic Management and Planning Unit. The evaluation and recommendations will include:

- agency responsibilities for scheme and policy planning, design, maintenance, etc.;
- staff levels;
- scheme and policy planning procedures;
- staff training needs;
- need for technical assistance;
- etc.

Reports

95. The output will be a Report which sets out a limited number (say, three) of outline CED strategies with varying but realistic levels of road provision, public transport provision, level of restraint of private vehicles, etc., for testing and evaluation in the Strategic Action Plan Study. An initial assessment of "park-and-ride" would be included in the Report and if considered viable the Terms of Reference for a detailed design would be included.

96. The Report would set out the consultant's recommendations for traffic management and planning and institutional development in the Governorate of Cairo.

97. The Reporting procedures will be as for Part I.

TERMS OF REFERENCE
MANAGEMENT AND OPERATION
PROGRAMS (MOD)

TRAFFIC MANAGEMENT AND TRANSPORT PLANNING

Task 11: Transport Planning Action Program

Objectives

131. The Governorate proposes to expand the scope of the Traffic Management Unit to complete its transport planning and operations needs. The consultants, therefore, shall develop an Action Package whose objectives will be to:

- (i) strengthen and expand the scope of the Traffic Management Unit;
- (ii) develop interim strategic transport policies for Greater Cairo including, inter alia, the determination of the balance between public and private transport;
- (iii) determine the balance between public transport modes, extension of services, structure of service routes, and the extent of the highway program/network; and
- (iv) develop an investment program and priorities for transport infrastructure within the budgetary limits defined by OPCM.

Output

132. The consultants shall be responsible for:

- (i) defining the scope of activities for the responsibilities of the expanded Traffic Management and Transport Planning Unit;
- (ii) preparing a work program for the Unit and target implementation program for financial year 1985 (it is anticipated that this would derive largely from the design contracts currently in progress under the Greater Cairo Urban Development Project); and
- (iii) defining the staff levels, and training requirements necessary to form the Unit.

133. The consultants shall be required to develop as part of the Action Package a transport planning capability such that it can achieve the type of objectives noted above. The Action Package would define, inter alia, the scope of activities, the definition of liaison procedures between agencies (Governorate departments such as Highways and Bridges, public transport agencies such as C.T.A., Heliopolis Metro, GOPP, etc), staff levels, staff

qualifications, training needs, and technical assistance needs within a target program for the first three years activities. The consultants shall also be required to prepare an interim transport policy and a detailed transport investment program for the Governorate for financial year starting June 1985 (investment programs for other agencies, e.g. C.T.A., will be developed by these agencies) within the limits set by the OPCM.

134. The consultants shall ensure that the Traffic Management and Transport Planning Unit has the capacity to:

- (i) identify the institutional organization that is necessary to administer, operate and maintain the Metro System and to develop an implementation plan for that organization;
- (ii) identify from available data at an order of magnitude level the financial implications of operating and maintaining the Metro System at fare levels specified by the Governorate and thus prepare an initial Financing Plan for the first 5 years of the metro Operation, including subsidy levels, start-up requirements and operating funds; and
- (iii) identify the options for the integration of bus, tram and the Metro System which could be brought into operation in parallel with the introduction of the Metro System. This latter task will result in the preparation of terms of reference for a detailed evaluation of the options and the preparation of an implementation plan. Based on this plan, the broad level estimates of financial requirements noted in (ii) above shall be refined enough to enable the Governorate to plan and budget for the Metro System at a detailed level.

135. The consultants shall be required to work closely with the consultants for the "CBD Study" who are contracted to develop outline strategic transport policy options for central Cairo and with the technical team for the Greater Cairo Long Range Urban Development Scheme who are developing long term planning and development options for the central area of Cairo.

136. It is envisioned that this Action Package is a likely candidate for support from bilateral and agencies, both for funding and for technical assistance. The consultants shall be required to determine the availability and extent of bilateral aid in expanding the scope of this unit.

Task 12: Parking Authority Action Package

137. The development of a parking policy will be a key factor in the alleviation of present traffic congestion and in the development of a balanced public and private transport policy. A parking policy will be concerned with

both on-and off-street parking facilities and regulations. Extensive parking measures and facilities are currently in various stages of planning and implementation and include:

- (i) an on-street policy for the central area of Cairo to be developed as part of the "CED Study";
- (ii) the construction of two off-street parking garages (1600 spaces); and
- (iii) nine further off-street parking garages mainly in Cairo CBD are the subject of design/construct/operate bids for the Governorate.

Objectives

138. The consultants shall develop an Action Package whose objectives will be to:

- (i) create and install a parking authority;
- (ii) set parking charges,
- (iii) operate off-street parking garages either directly or administer through contract/leasing arrangements;
- (iv) plan future off street parking provisions and coordinate its implementation (i.e., identify land, arrange acquisition, and prepare financing packages);
- (v) administer on-street policy (the Traffic Police will remain responsible for parking enforcement); and
- (vi) implement an on-street parking system in terms of personnel recruitment/administration, collection of charges, and procurement of any necessary equipment.

Output

139. The consultants shall be required to devise all necessary organizational actions to establish the Parking Authority; define its functions in detail; prepare an implementation plan including staff levels and structure; equipment requirements; Authority organization and working practices; etc.

Mandpower Development

Task 13: Staff Rationalization Action Package

140. The Governorate employs about 40,000 people in municipal operations. The deployment of staff, salary levels and staffing ratios of these manpower resources is greatly influenced by national policies. While it is clear that

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SCOPE OF WORK
FOR
GREATER CAIRO REGION
TRANSPORTATION MASTERPLAN STUDY
IN
THE ARAB REPUBLIC OF EGYPT
BETWEEN
JAPAN INTERNATIONAL COOPERATION AGENCY
AND
CAIRO GOVERNORATE

CAIRO, OCTOBER , 1986,

(CAIRO GOVERNORATE)

Mr. TAKASHI YAJIMA
Leader of the Preliminary
Survey Team,
The Japan International
Cooperation Agency (JICA)

(MINISTRY OF ECONOMIC COOPERATION)

I. INTRODUCTION:

In response to the official request of the Government of the Arab Republic of Egypt, the Government of Japan decided to conduct the Greater Cairo Region Transportation Masterplan Study in the Arab Republic of Egypt (Hereinafter referred to as "the Study") within the framework of the Agreement on Technical Cooperation between the Government of Japan and the Government of Egypt.

The Japan International Cooperation Agency (hereinafter referred to as "JICA"), the official agency responsible for the implementation of the technical Cooperation programmes of the Government of Japan, will undertake the Study, in close cooperation with the authorities concerned of the Government of Egypt.

Cairo Governorate (hereinafter referred to as "Governorate") shall act as the counterpart agency to the Japanese study team and also as the coordinating body in relation with other relevant organizations for the smooth implementation of the Study.

The present document sets forth the Scope of Work for the Study.

II. OBJECTIVES OF THE STUDY

The principal objective of the Study is to formulate a comprehensive urban transport masterplan in the Greater Cairo Region for the period of the year of 2000.

The specific objectives are as follows;

- 1) To update urban transport data base through conduct of necessary supplemental transport surveys,
- 2) To recommend immediate actions, if necessary, through review and assessment of on-going and planned projects/proposals,
- 3) To formulate a long-term and comprehensive urban transport masterplan,
- 4) To prepare urban transport investment programs, not only for short-term but also for mid-term and long-term,
- 5) To transfer relevant technologies to Egyptian counterpart personnel in the course of the Study.

III. SCOPE OF THE STUDY

1. STUDY AREA

The main study area for the Transportation Masterplan Study is essentially the area covered by the strategy plan developed within "Greater Cairo Region Long Range Urban Development Scheme" (General Organization for Physical Planning, Ministry of Development, 1983)

Besides the main study area defined above, the area surrounding the Greater Cairo Region, where new settlements are planned, is included as the sub study area, in order to consider the transportation demand to/from the existing and planned satellite cities around the Greater Cairo Region.

2. STUDY FRAMEWORK

The study comprises three (3) phases:

Phase 1: Survey, Analysis and assessment of Urban Transport Issues

The Study in this phase shall include a review of existing studies and data base, conduct of supplemental transport surveys, analysis of transport problems and assessment of short-term pending projects/proposals to specifically define the planning issues.

Recommendation of priority projects for immediate action, if necessary, shall also be included, basing on such assessment.

Phase 2: Formulation of Urban Transport Masterplan

This phase shall formulate a long-term, comprehensive urban transport masterplan in conformity with the overall urban development policy. Assessment of alternative urban development scenario, forecast of future transport demand, formulation and assessment of alternative urban transportation plans shall also be made.

Phase 3: Formulation of Investment Folio

This phase shall prepare an investment folio which includes relevant information on the proposed projects/actions such as financial requirement, priority ranking, implementation schedule, responsibilities of relevant agencies, etc. Proposals for necessary feasibility studies on the selected projects shall also be included.

3. Item of the Study

3.1 Phase 1

3.1.1 Collection of Relevant Data and Information, and their assessment

- a) socio-economic parameters
- b) maps and land-use information
- c) transport network and facilities
- d) transport demand
- e) public transport
- f) traffic management
- g) administrative and institutional set-up
- h) other related information

3.1.2 Review and Assessment of Existing Transport Studies

Transport and urban development studies relevant to this Study shall be reviewed and assessed. The following studies, among others, shall be particularly examined.

- a) "Greater Cairo Region Long Range Urban Development Scheme - Master Scheme" February 1983, General Organization for Physical Planning, Ministry of Development
- b) "Second Urban Development Project - CBD Components" November 1985, Cairo Governorate
- c) "Greater Cairo Transportation Planning Study" May 1973, Ministry of Transport
- d) "Cairo Urban Transport Project - Transport Planning Aids and Methods" February 1983, Cairo University

3.1.3 Review of "Master Scheme" and Determination of Future Urban Development Framework

The 1983 Master Scheme shall be reviewed to such an extent as required to determine the overall future urban development framework, on which the long-term and comprehensive urban transportation masterplan shall be based

3.1.4 Conduct of Supplementary Transport Surveys

Based on the full assessment of the available data base and planning requirements, the following transport surveys should be conducted to update urban transport data base.

- a) home interview survey:
- b) cordonline survey
- c) screenline survey
- d) public transport passenger survey
- e) CBD parking survey
- e) other surveys such as road inventory and travel speed

3.1.5 Analysis of Existing Transport Condition

3.1.6 Review and Assessment of Short-term Transport Projects/Proposals

3.1.7 Identification and Recommendation of Priority Projects

Short-term priority projects shall be identified amongst on-going and planned urban transport projects/proposals. Immediate actions, if necessary, shall be recommended.

3.2 Phase 2

3.2.1 Preparation and Assessment of Urban Land-use Alternatives

Within future urban development framework, land-use alternatives including population distribution shall be developed and assessed from urban transport point of view. Necessary recommendations, if any, shall be made regarding the subject.

3.2.2 Forecast of Transport Demand

- a) car ownership
- b) future OD tables
- c) methodologies on demand forecast

3.2.3 Evaluation of Alternative Strategies for Transport Development

- a) modal-split between public and private transport
- b) functional split between rail and road transport
- c) road network configuration
- d) role of Ring Road
- e) extention/expansion of Metro system
- f) sub modal-split among different public transport modes
- g) demand control and pricing measures

3.2.4 Formulation and Recommendation of Urban Transport Masterplan

- a) policy framework for urban transportation
- b) overall transport network
- c) road development
- d) road traffic management
- e) rail transport development
- f) public transport improvement
- g) others

3.3 Phase 3

3.3.1 Preparation of Projects List and Assessment of Projects

- a) preparation of projects list, including preparation of preliminary plan and cost estimates
- b) economic assessment and priority ranking

3.3.2 Formulation of Investment Plan

- a) mid-term and long-term investment program including project description, financial requirements, implementation schedule, interaction with other projects
- b) five (5) year action program including details of projects and all actions need to be initiated.
- c) financial plan

3.4 Conclusions and Recommendations

Conclusions and recommendations covering Phase 1-3 shall be presented including the followings;

- a) methodologies for monitoring and updating of the program
- b) drafted Terms of Reference for selected priority projects
- c) necessary improvement for fiscal and institutional systems

IV. SCHEDULE OF THE STUDY

The whole study will be carried out in accordance with the attached tentative schedule. (See Appendix I)

V. REPORT

JICA shall prepare and submit following reports in English to the Government of Egypt.

1. Inception Report Thirty (30) copies at the beginning of the Study in Egypt.

2. Progress Report(I) Thirty (30) copies within four (4) months after the beginning of the Study, incorporating recommendation on short-term priority projects

3. Progress Report (II) Thirty (30) copies within ten (10) months after the beginning of the study, incorporating the result of the Study in Phase-1.

4. Interim Report Thirty (30) copies within fifteen (15) months after the beginning of the Study, incorporating the result of the Study in Phase-2

5. Draft Final Report Fifty (50) copies within
twenty-one (21) months after the
beginning of the Study,
incorporating whole Study
results, conclusions and
recommendations

The Government of Egypt shall provide JICA with its
comments on the Draft Final Report through the JICA Egypt
Office within one (1) month after the receipt of the Draft
Final Report.

6. Final Report Fifty (50) copies within two (2)
months after the receipt of the
comments on the Draft Final Report
from the Government of Egypt through
the JICA Egypt Office.

VI. UNDERTAKINGS OF THE GOVERNMENT OF EGYPT

1. Within the framework of the Agreement on Technical Cooperation between the Government of Japan and the Government of the Arab Republic of Egypt, signed on June 15th, 1983, the Government of Egypt shall take necessary measures to the Japanese Study Team (hereinafter referred to as the Team) as follows:

(1) To permit the members of the Team to enter, leave and sojourn in Egypt for the duration of their assignment therein, and exempt them from alien registration requirements and consular fees,

(2) To exempt the members of the Team from taxes, duties and any other charges on equipment, machinery and other materials brought into Egypt for the conduct of the Study,

(3) To exempt the members of the Team from income taxes and other charges of any kind imposed on, or in connection with any emoluments or allowances paid to the members of the Team for their services in connection with the implementation of the Study,

(4) To bear claims, if any arises, against the members of the Team resulting from, occurring in the course of, or otherwise connected with, the discharge of their duties in the implementation of the Study, except when such claims arise from gross negligence or willful misconduct on the part of the members of the Team.

2. To facilitate smooth conduct of the Study, Governorate shall take necessary measures in cooperation with other relevant organizations:

(1) To secure permission for entry into private properties or restricted areas for the conduct of the Study,

(2) To secure permission for the Team to take all data and documents (including photographs) related to the Study out of Egypt to Japan,

(3) To provide the medical services as needed. Its expenses will be chargeable on members of the Team,

(4) To ensure the safety of the members of the Team when and as it is required in the course of the Study.

3. Governorate shall, at its own expenses, provide the Team with the followings:

(1) Available data and information related to the Study,

(2) Counterpart personnel and supporting staff necessary for the Study,

(3) Office space with necessary equipment in Governorate,

(4) Credentials or identification cards.

VII. UNDERTAKINGS OF JICA

For the implementation of the Study, JICA shall take the following measures:

1. To dispatch, at its own expense, the Team to Egypt.
2. To pursue technology transfer to the Egyptian counterpart personnel in the course of the Study.

VIII. CONSULTATION

JICA and the Government of Egypt shall consult with each other in respect of any matter that may arise from or in connection with the Study.

APPENDIX

Tentative Schedule

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
WORK IN EGYPT																								
WORK IN JAPAN																								
REPORT SUBMISSION																								
	Δ			Δ					Δ						Δ						Δ			Δ
	Inception Report								Progress Report (II)												Draft Final Report			Final Report

6. エジプト側関係機関リスト及び面会者リスト

エジプト側関係機関リスト及び面会者リスト

関 係 機 関	面 会 者
1. Cairo Governorate (カイロ州政府)	(1) Dr. Youssef Sabry Abu Taleb (知事) (2) Eng. Salah Sherazy (知事付交通部門顧問) (3) Dr. Ahmed Mobarak (同補佐)
1) Cairo Transport Authority (カイロ州交通公社)	(1) Eng. Mahmoud Aouni (総裁)
2) Greater Cairo Bus Company (大カイロバス公社)	関係者
2. Ministry of International Cooperation (経済協力省)	(1) Mr. Bayumi (次官補) (2) Mr. Hamed Mostafa (経済協力部長)
3. Ministry of Transport (運輸省)	
1) Transport Planning Authority (運輸計画公社)	(1) Dr. A.K.F. Lashine (副総裁) (2) Dr. Mohamed Shaker (技術部長)
2) Roads and Bridges Authority (道路橋梁公社)	
Egyptian Railway Authority (エジプト国鉄)	
3) River Transport Authority (河川運輸公社)	
4) National Authority for Tunnels (地下鉄公社)	(1) Eng. M. Abdel Salam (総裁)
4. Ministry of Reconstruction and New Communities (開発省)	
1) General Organization for Physical Planning (計画局)	(1) Eng Michel Fouad (計画局長) (2) Mr. Tag El Sahly (カイロ大都市圏計画部長)
5. Ministry of Housing and Reconstruction (住宅省)	
1) Heliopolis Company (鉄道公社)	
6. Ministry of Interior (内務省)	
1) Central Traffic Department (中央交通管理局)	
7. Giza Governorate (ギザ州政府)	
8. Kalubia Governorate (カルビア州政府)	
9. Cairo University (カイロ大学)	

なお、在エジプト日本側面会者は次の通り。

山田 順三	在エジプト日本国大使館公使
鹿籠 雅純	在エジプト日本国大使館一等書記官
橋本 明彦	国際協力事業団エジプト事務所所長
松浦 正三	国際協力事業団エジプト事務所所員
小森 毅	国際協力事業団エジプト事務所所員

JICA